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CONTENTS

Kanittha Pattanasing, Somnuk Aujirapongpan, Supit Ritkaew, Anuman Chanthawong, Sirichai Deelters. THE IMPACT OF DYNAMIC CAPABILITIES AND DYNAMIC PERFORMANCE MEASUREMENT ON COMPETITIVE PERFORMANCE: EVIDENCE FROM THAI HOTEL ENTREPRENEURS	10-28
Agus Suman, Dwi Budi Santoso, Ronny Ersya Novianto Putra. THE ROLE OF LOCAL FINANCIAL INSTITUTIONS FOR FARMER INDEPENDENCE: A CASE STUDY OF MALANG AND BATU	29-39
Urszula Widelska, Marta Jarocka, Laima Jeseviciute-Ufartiene, Zivile Jezerske. CUSTOMER ORIENTATED LEADER – CONTRIBUTION TO FUTURE RESEARCH	40-52
Erika Župerkienė, Ligita Šimanskienė, Daiva Labanauskaitė, Julija Melnikova, Vida Davidavičienė. THE COVID-19 PANDEMIC AND RESILIENCE OF SMEs IN LITHUANIA	53-65
Hanna Shevchenko, Mykola Petrushenko, Borys Burkynskyi, Nina Khumarova, Alina Kodzhebash. INPUT-OUTPUT ANALYSIS OF RECREATIONAL ASSETS WITHIN THE INCLUSIVE SUSTAINABLE DEVELOPMENT IN UKRAINE	90-109
Vera Komarova, Natalya Selivanova-Fyodorova, Oksana Ruza, Jerzy Kazmierczyk, Iluta Arbidane. MODERN TRENDS IN THE ECONOMIC DIFFERENCES BETWEEN COUNTRIES AND WITHIN THEM: COMPARISON OF THE WORLD AND THE EUROPEAN UNION	110-121
Monika Adamczyk, Alina Betlej. SOCIAL DETERMINANTS OF DIGITAL EXCLUSION IN AN AGEING SOCIETY. THE CASE OF POLAND	122-135
Andrea Cori, Mattia Granata, Ketil Lelo, Salvatore Monni. MAPPING COOPERATIVES IN ITALY	136-163
Margarita Išoraitė, Gintarė Gulevičiūtė. A STUDY OF ONLINE ENTREPRENEURSHIP EDUCATION UNDER CONDITIONS OF A PANDEMIC	179-192
Beata Gavurova, Matus Kubak. THE EFFICIENCY EVALUATION OF PUBLIC PROCUREMENT OF MEDICAL EQUIPMENT	193-209

Giedrė Strakšienė, Henrika Ruginė, Laura Šaltytė-Vaisiauskė. CHARACTERISTICS OF DISTANCE WORK ORGANIZATION IN SMEs DURING THE COVID-19 LOCKDOWN: CASE OF WESTERN LITHUANIA REGION	210-225
Michał Comperek, Magdalena Kowalska, Anna Misztal. THE SUSTAINABLE DEVELOPMENT OF TRANSPORT ENTERPRISES IN THE CONTEXT OF MACROECONOMIC CONDITIONS. THE CASE OF CENTRAL AND EASTERN EUROPEAN COUNTRIES	226-247
Ieva Meidutė – Kavaliauskienė, Gitana Dudzevičiūtė, Agnė Šimelytė, Nijolė Maknickienė. SUSTAINABILITY AND REGIONAL SECURITY IN THE CONTEXT OF LITHUANIA	248-266
Kamran Ahmed Siddiqui, Mohammad Emad Al-Shaikh, Ishtiaq Ahmed Bajwa, Abdulaziz Al-Subaie. IDENTIFYING CRITICAL SUCCESS FACTORS FOR UNIVERSITY BUSINESS INCUBATORS IN SAUDI ARABIA	267-279
Vanessa Pertuz , Luis Francisco Miranda, Arturo Charris-Fontanilla, Lorena Pertuz-Peralta. UNIVERSITY-INDUSTRY COLLABORATION: A SCOPING REVIEW OF SUCCESS FACTORS	280-290
Kamran Ahmed Siddiqui, Mohammad Emad Al-Shaikh, Ishtiaq Ahmed Bajwa, Omar Alenzi. VENTURE CAPITAL CHALLENGES IN SAUDI ARABIA	291-302
Le Dinh Hac , Dinh Tran Ngoc Huy, Nguyen Ngoc Thach, Bui Minh Chuyen, Pham Thi Hong Nhung, Tran Duc Thang, Tran Tuan Anh. ENHANCING RISK MANAGEMENT CULTURE FOR SUSTAINABLE GROWTH OF ASIA COMMERCIAL BANK - ACB IN VIETNAM UNDER MIXED EFFECTS OF MACRO FACTORS	291-307
Tomas Davulis, Ligita Gasparėnienė, Evaldas Raistenskis. ASSESSMENT OF THE SITUATION CONCERNING PSYCHOLOGICAL SUPPORT TO THE PUBLIC AND BUSINESS IN THE EXTREME CONDITIONS: CASE OF COVID-19	308-322
Kristina Samašonok, Agnė Juškevičienė. SOCIAL COMPETENCE-BASED PROGNOSTIC POSSIBILITIES OF CREATIVITY EXPRESSION AMONG STUDENTS OF SOCIAL PROFILE	324-339
Romel Ramón González-Díaz, Ángel Eduardo Acevedo-Duque, Santos Lucio Guanilo Gómez, Elena Cachicatari Vargas. BUSINESS COUNTERINTELLIGENCE AS A STRATEGY TO SHIELD SMES FROM THE COMPETITION	340-352
Olha Bezpalova, Maryna Yunina, Svitlana Korohod, Kristina Rezvorovich, Tshahik Ohanian. LEGAL REGULATION OF ENTREPRENEURIAL ACTIVITY IN THE NATIONAL SECURITY SYSTEM	340-355

Marcel Lincényi, Jaroslav Čársky. THE EFFECTIVENESS OF FUNDS SPENT ON THE CAMPAIGN WITH REGARD TO THE RESULTS OF THE ELECTIONS IN THE SLOVAK REPUBLIC	356-366
Lidiia Karpenko, Oleksandr Ignatenko, Olena Taranenko, Iryna Oliinyk, Ripsime Khrenova-Shymkina. LAYER AND STRUCTURAL COMPONENTS OF MODERN INVESTMENT SECURITY OF THE COUNTRY	367-383
Anatolii Kulish, Oleksandr Yunin, Olha Us, Iryna Shapovalova, Ivan Yaromii. SMUGGLING AS A THREAT TO ECONOMIC SECURITY OF THE STATE	384-399
Kostiantyn Buhaichuk, Nataliia Varenia, Vitalii Khodanovych, Maryna Kriepakova, Valentyn Seredynskyi. LEGAL ASPECTS OF MIGRATION REGULATION AS A FACTOR OF NATIONAL SECURITY	402-419
Tetiana Kolomoiets, Nelli Tsybulnyk, Oleksandr Moroz, Vitaliy Prymachenko, Vadym Khashev. INFLUENCE OF SHADOW ECONOMY LEGALIZATION ON NATIONAL SECURITY OF UKRAINE	420-437
Oleksandr Ilchenko, Oksana Brusakova, Yuliia Burchenko, Artem Yaroshenko, Yaroslav Bagan. THE ROLE OF A DEFENCE INDUSTRY IN THE SYSTEM OF NATIONAL SECURITY: A CASE STUDY	438-454
Oleksii Shumilo, Ivan Lytvyn, Volodymyr Shablysty, Tetiana Kornyakova, Irina Popovich LEGAL MECHANISM TO ENSURE NATIONAL SECURITY IN THE FIELD OF USE OF NATURAL RESOURCES	455-470
Oleksandr Bryhinets, Roman Shapoval, Alona Bakhaieva, Vitalii Pchelin, Andrii Fomenko. PROBLEMS OF INTELLECTUAL PROPERTY IN THE NATIONAL SECURITY SYSTEM OF THE COUNTRY	471-486
Ladislav Mura, Zuzana Hajduová. MEASURING EFFICIENCY BY USING SELECTED DETERMINANTS IN REGIONAL SMEs	487-503
Marinko Škare, Sanja Radolović, Manuela Tvaronavičienė. MANAGING THE INSTITUTIONAL ENVIRONMENT AND IMPACT ON THE COMPETITIVENESS OF TRANSITIONAL ECONOMIES	504-526
Aneta Wysokińska-Senkus, Justyna Górna. TOWARDS SUSTAINABLE DEVELOPMENT: RISK MANAGEMET FOR ORGANIZATIONAL SECURITY	527-544
Leszek Borowiec. DIRECT SUBSIDIES AND COMPENSATION FUNDS IN FINANCING OF UNIVERSAL POSTAL	545-564

Daiva Labanauskaitė, Erika Župerkienė, Alexander Kumpf, Ligita Šimanskienė, Francesca Dobmann, Sophie - Marie Koller. DEVELOPMENT OF DIGITAL AND ENTREPRENEURIAL COMPETENCES FOR THE FUTURE LABOUR MARKET NEEDS	565-581
Gábor Kincses, Mihály Ormos, Zsolt Bartha. MOTIVATIONAL PECULIARITIES OF ELITE WOMEN TENNIS PLAYERS FROM THE POST-SOCIALIST COUNTRIES	582-591
Mykola Sidak, Edita Hajnišová, Michal Fabus. DETERMINATION OF OBJECTIVES AND RESPONSIBILITIES OF PUBLIC ADMINISTRATION BODIES IN CORRELATION WITH LEGAL AND MANAGERIAL ASPECTS: A STUDY OF SLOVAK REPUBLIC	592-603
Nur Hayati Abd Rahman, Shafinar Ismail, Eeng Ahman, Aas Nurasyiah, Neni Sri Wulandari. THE EFFECT OF REGULATORY PERFORMANCE ON ECONOMIC GROWTH	604-617
Andrey Zahariev, Anelia Radulova, Aleksandrina Aleksandrova, Mariana Petrova. FISCAL SUSTAINABILITY AND FISCAL RISK IN THE EU: FORECASTS AND CHALLENGES IN TERMS OF COVID-19	618-632
Agnė Tvaronavičienė, Natalija Kaminskienė, Irena Žemaitaitytė, Maria Cudowska. TOWARDS MORE SUSTAINABLE DISPUTE RESOLUTION IN COURTS: EMPIRICAL STUDY ON CHALLENGES OF THE COURT-CONNECTED MEDIATION IN LITHUANIA	633-653
Luis Enrique Valdez-Juárez, Dolores Gallardo-Vázquez, Elva Alicia Ramos-Escobar. ENTREPRENEURIAL ORIENTATION AND CSR: A DYNAMIC CAPABILITY IN THE CORPORATE PERFORMANCE OF MEXICAN SMES	654-680
Krzysztof Waliszewski, Anna Warchlewska. HOW WE CAN BENEFIT FROM PERSONAL FINANCE MANAGEMENT APPLICATIONS DURING THE COVID-19 PANDEMIC? THE POLISH CASE	681-699



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THE IMPACT OF DYNAMIC CAPABILITIES AND DYNAMIC PERFORMANCE MEASUREMENT ON COMPETITIVE PERFORMANCE: EVIDENCE FROM THAI HOTEL ENTREPRENEURS*

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Abstract. This research aims to provide empirical evidence on the causal relationships among the effects of dynamic capabilities and the dynamic performance measurement on high performance organizations (HPOs) and the competitive performance of hotel businesses in a world-class tourism destination of Thailand. The research using questionnaires to collect data from 115 hotel businesses located at a world class tourism destination in Thailand. The data were first analysed using descriptive statistics and then confirmatory factor analysis and structural equation modelling were conducted. The study results reveal that the causal relationship model fit the empirical data ($\chi^2 = 74.39$, p-value = 0.15, $\chi^2/df = 1.18$, CFI = 0.99, GFI = 0.92, NFI = 0.96, RMSEA = 0.04, and SRMR = 0.03). In addition, the results also indicate that the dynamic capabilities have a direct positive effect on dynamic performance measurement. The study reflects that being a HPO not only has a direct positive effect on competitive performance but is also a complete mediator in transferring the effects of the dynamic capabilities and dynamic performance measurement to competitive performance. Under an increasingly dynamic environment, traditional performance measurement innovations that only consider measurement and management tend to lead to imperfections and lower benefits. Additionally, traditional performance measurements are static characteristics; therefore, it is essential to catch up with the dynamic environment. This research will provide empirical evidence of the causal relationship of how dynamic capabilities and dynamic performance measurement affect a HPO and competitive performance towards excellence under a dynamic environment.

Keywords: Dynamic Capabilities; Dynamic Performance Measurement; High Performance Organization

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1. Introduction

The World Tourism Organization (UNWTO) has ranked Thailand as one of the ten most popular tourist destinations on the globe (UNWTO, 2019). Subsequently, the hotel business, the core business of the country's tourism industry, has been continuously expanded and experienced crucial competition while attempting to maximize its number of customers. It is undeniable that quality of service is the heart of the hotel business since quality enhances customers' satisfaction and loyalty. Service quality also increases market share, provides satisfying returns to investors while reducing costs and the risk from price competition, and, above all, creates competitive capabilities (Lu, Berchoux, Marek, & Chen, 2015). Amid the current critically competitive environment, the survival of the hotel business, therefore, depends on the quality of the service provided to satisfy its customers (Moshin & Lockyer, 2010). Furthermore, it becomes imperative for hotel management to study and comprehend excellent service practices so that their organizations can achieve improved performance and be better than other organizations. In other words, in order to create sustainable competitive advantages for an organization, a hotel's service has to be excellent (Lu et al. 2015).

Thompson, Peteraf, Gambel & Strickland (2016) stated that a firm with a tendency to be more efficient than its competitors is the one with strategies and the abilities to practically perform according to the strategies. Likewise, Roshan & Jenson (2014) mentioned that having good competitive strategies does not mean that the organization can achieve its goals unless the strategies are efficiently performed. The main factor in implementing these strategies is a management system and measurement linked with the organizational strategies (Giovannoni & Maraghini, 2013). De Waal, Goedegebuure & Hinfelaar's (2015) study reveals that the management system and its performance results are strongly connected with a high performance organization (HPO) at a significant level. Obviously, the management system and the performance results of the enhancing and driving behaviours play important roles in creating overall performance regarding both financial and nonfinancial matters. (Aujirapongpan & Hareebin, 2020)

Nevertheless, with today's environment becoming increasingly more dynamic, the original performance measurement that solely considered evaluation and management tends to lead to imperfections and lower benefits (Srimai, Radford, & Wright, 2011), which is similar to the traditional measurement of fixed characteristics. Since it is essential to catch up with the dynamic environment, Kennerley & Neely (2003) proposed that performance measurement be managed in a dynamic operational pattern in order to maintain relationships and efficiency. It is imperative that the process of managing a performance measurement system reflect the organizational components' relationships (e.g., the system of manpower, infrastructure, culture, etc.) in transformed performance contexts and strategies. Bititci, Turner & Begemann (2000) additionally explained the necessity of dynamic performance measurement as the need to examine and respond to a firm's internal and external environmental changes and the necessity to review and prioritize its domestic goals. Bititci et al. (2000) further proposed that a dynamic performance measurement system should contain (1) an external control system, which will examine and continuously send signals of external environmental transformation to an organization; (2) an internal control system, which will continuously inspect and send signals on the changes within an organization; (3) a performance review system, which will allow important information to be part of the decision-making; and (4) a transmittal system toward real practice, which will perform based on the renewed strategies and component priorities. Moreover, Bititci, Nudurupati, Turner & Creighton (2002) indicated that dynamic performance measurement depends on a repetitive environment or circle, ongoing information technology development and new creations to support management decisions, and day-to-day operations. Kennerley & Neely (2003) also confirmed that a lack of effective information technology obstructs the utilization of a performance measurement system.

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The above details indicate that effective performance management is a sustainable practice connected with strategies in every organizational activity, and effective performance management has to be dynamic in order to continuously build a repetitive circle and develop and create new information technology leading to uninterrupted systematic organizational learning and self-learning. Subsequently, ongoing consistency is created to be in line with new required positions or, in other words, the ability to be dynamically consistent is created so that an organization can achieve better performance measurements than its competitors (Srimai et al., 2011).

There is, however, some confusion in the literature on how the utilization of a performance measurement system affects the overall operations of an organization. De Waal, Beatrice, & Heijden (2015) showed that the impact of management on performances is not clearly understood. In addition, Bourne, Melnyk, Bititci, Platts & Andersen (2014) indicated that many studies on this impact towards on firm performances provide contradictory results since some studies claimed that the management of performance results helps increase both financial and nonfinancial outcomes of the organization while others found disadvantages of using a performance management system. Obviously, the comprehension of this issue is still far from perfect (Bourne et al., (2014). Additionally, among the papers investigating organizations having better performances than their competitors, or HPOs, none clearly studies the causal relationship (De Waal & Goedgeburre, 2017) since they mostly reveal the relationship between the conceptual framework of an HPO and the operational improvement. Similarly, Keller (2011) stated that there are several studies assessing organizations that perform better than their competitors; yet, the reason why they are better is unclear. Parnell, Dent, O'Regan & Hughes (2012) pointed out that the differences in performance outcomes can be because of local conditions, product types, service delivery methods, developmental history, cultural diversity, industrial complications, or even luck.

The aim of this paper is to provide empirical evidence on the causal relationship of dynamic capabilities and dynamic performance measurement with HPOs and performance results. The theoretical management framework was collected to create the frame of the reasons for different performance outcomes, and the framework included 3 main factors: (1) dynamic capabilities, (2) dynamic performance measurement, and (3) HPOs. The findings lead to the creation of guidelines for managing organizations towards intelligence in dynamic environments.

2. Theoretical Framework

Dynamic Capabilities and High Performance Organizations

De Waal, Goedgebuure & Akaraborworn (2014) defined the phrase “high performance organization - HPO” as an organization that can reach its financial goals for a duration of 5 years or more in which such achievement does not have to be higher than other firms in the same field, whereas Holbeche (2005) stated that the core factors or components of a high performance organization is dynamic capabilities and innovation. Likewise, Eisenhardt & Martin (2000) explained that the ability to be dynamic means that a firm is effective and conducts the best practices; and De Waal (2012) stated that in the literature related to the perceptions of resource-based and dynamic capabilities, there are many important factors leading to an organization achieving high performance. For this paper, three components are set to explain dynamic capabilities: (1) sensing capability, (2) learning capability, and (3) innovative and reconfiguring capability.

Sensing capability is the ability to perceive and understand business changes, opportunities, and obstructions that threaten an organization while recognizing its existing capabilities compared to its competitors in order to adjust and improve itself to be better (Teece, 2012). Blackman, Buick, O'Donnell, O'Flynn, & West's (2012) study

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concluded that an organization able to respond and blend into the transformed environment must hold management and employees jointly responsible for performance outcomes, comprehend that their roles are significant for the firm and be able to attain the dynamic capabilities necessary to be a HPO by knowing that improved capabilities to manage operations will upgrade all levels of the firm towards high performance.

Learning capability is the ability to absorb, digest or learn new things externally and later adjust or apply this knowledge by blending the new knowledge with existing knowledge to create new knowledge for an organization and the ability to transmit this new knowledge throughout the entire firm (Teece, 2012). However, this practice overlaps knowledge management. Aujirapongpan, Vadhanasindhu, Chandrachai & Cooparat (2010) explained that knowledge management is a process of dynamic characters being related to an individual's ability to manage the data, information technology, knowledge, activities, experiences, beliefs, values and creativities in his/her firm in order to create new knowledge or new conceptions. Different organizational capabilities need to be developed to allow the access, exchange, transmission, and dissemination of the knowledge so that such knowledge can be efficiently applied in real practices. Bagorogoza & De Waal's (2010) study on the relationship between knowledge management and high performance using the performance results of a financial institution in Uganda disclosed that knowledge management affects organizational operations through high performance; or, in other words, knowledge management improves an organization and allows it to become high performance, which further leads to more effective operations.

Innovative and reconfiguring capability is the ability to transform, transfer, blend or integrate resources and competencies to construct a new capability (MacInerney-May, 2011) that accordingly leads to various creations of new products, services and processes (Wang & Ahmed, 2007; Lazonick & Prencipe, 2005) that are beneficial to the firm. There are several studies presenting the relationship between the innovative capability and performance results of an organization (Rujirawanich, Addison, & Smallman, 2011; Phusavat, Comepa, Sitko-Lutek & Ooi, 2011) and claiming that the innovative capability is a factor increasing competitive capabilities and the ability to create new ideas towards achieving high performance (Noordin & Mohtar, 2013). That is, a firm with dynamic capabilities composed of abilities in perceiving, learning, innovating and reconfiguring can upgrade its status. This is represented as the following hypothesis:

***Hypothesis 1:** Dynamic capabilities have a positive significant relationship with a HPO.*

Dynamic Capabilities and Competitive Performance

Breznik & Lahovnik (2016) indicated that an organization with dynamic capabilities is capable of building competitive competencies that accordingly affect its operations, which is in line with Li & Liu (2014), who posited that dynamic capabilities have a positive significant effect on competitive advantages. Similarly, Teece (2012) stated that a firm with dynamic capabilities, which include abilities to perceive, grasp opportunities, reconfigure resources and transform knowledge consistent with the unstable opportunities and its environment, could create and maintain its competitive advantages. This occurs since the main sources of these competitive advantages are the capabilities related to a firm, such as its human resource (Barney & Clark, 2007; Newbert, 2007) and marketing competencies (Kor & Mahoney, 2005), the latter of which are the abilities to identify customers' needs, especially the process of creating knowledge on marketing (Barrales-Molina, Martínez-López, & Gázquez-Abad, 2014). In addition, other capabilities such as management, research and development, and innovation are also imperative for an organization (Birchall & Tovstiga, 2005). This is supported by Breznik & Lahovnik's (2016) paper stating that organizations focusing on dynamic capabilities tend to have good practices

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or high performance regarding organizational competency, such as strong management emphasizing a reward system, clear communication, fairness in all levels, open policies, trustfulness between employees and management, etc. Moreover, Breznik & Lahovnik (2016) also revealed that a certain level of utilizing dynamic capabilities enables them to distinguish high performing and low performing organizations through evaluating the performances, which include consideration of financial and non-financial data. It is obvious that a firm with high dynamic capabilities has higher overall performance than one with low dynamic capabilities. Thus, the next hypothesis is given as follows:

***Hypothesis 2:** Dynamic capabilities have a positive significant relationship with competitive performance.*

Dynamic Capabilities and Dynamic Performance Measurement

A performance measurement system plays an important role in managing a firm to become efficient and effective (Kennerley & Neely, 2002), and being dynamic in unstable environments is an essential factor in selecting the format of a control system or performance measurement system. Bastian & Muchilish's (2012) paper on the relationship between the perception of environmental instability and performance measurement shows that perceiving environmental instability has a positive relationship at a significant level with a performance measurement system, both financial and nonfinancial aspects, whereas Hoque (2004) claimed that environmental instability has an indirect effect on a firm's operations through the use of a nonfinancial performance measurement system. Aujirapongpan & Hareebin (2020) additionally disclosed that dynamic capabilities have a positive relationship with dynamic performances. If a firm has dynamic capabilities and is able to perceive environment instability, subsequently, it contains the dynamic performance to be able to respond to the environmental instability. This is stated in the following hypothesis:

***Hypothesis 3:** Dynamic capabilities have a positive significant relationship with competitive performance.*

Dynamic Performance Measurement, HPOs and Competitive Performance

The measurement control and operational management system is a key factor in practical improvement. Kennerley & Neely (2002) claimed that a performance measurement system plays an important role in managing a firm to be efficient and effective, whereas Wisner, Epstein & Bagozzi (2003) indicated that practices conducted according to the mechanisms of a management control system can lead to superior performance. Epstein & Roy (2003) also demonstrated that a performance measurement system comprised of different operating, societal, environmental and economic indices enables a firm to progress towards sustainable superior performance. De Waal et al.'s (2015) paper further reveals a strong significant relationship between the components of a performance management system and the components of a HPO.

Ittner, Larcker & Randall (2003), Henri (2006), and Pavlov & Bourne, (2011) pointed out that a performance measurement system has a positive effect on a firm's operations, and Bastian & Muchilish's (2012) paper used a nonfinancial performance measurement system to find that the measurement system has a positive relationship with a firm's performance results. Moreover, Teeratansirikool, Siengthai, Badir & Charoenngam (2013) unveiled that a financial performance measurement system has a positive relationship with a firm's operational outcomes while a nonfinancial performance measurement is not related to these outcomes. Thus, practices according to the mechanisms of a performance measurement system enable an organization to achieve higher status; however,

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since the present environment is becoming more dynamic, Kennerley & Neely (2003) proposed that performance measurement must be managed dynamically, and Bititci et al. (2000) explained the necessity of having dynamic performance measurement as “being dynamic is essential for inspection and response to environmental transformations, both internal and external of an organization.” Therefore, the next hypotheses are stated as follows:

Hypothesis 4: *Dynamic performance measurement has a positive significant relationship with a HPO.*

Hypothesis 5: *Dynamic performance measurement has a positive significant relationship with competitive performance.*

HPO and Competitive Performance

The focus of this paper is on a performance measurement of HPOs. The HPO is defined as “an organization that achieves financial and non-financial results that are exceedingly better than those of its peer group over a period of five years or more.” How the organization practice of a HPO compares to that of its peers can be done by considering the results of their competitive performance (De Waal et al, 2014).

Since the HPO framework was developed, there have been many studies uncovering a positive relationship between HPO scores and competitive performance (De Waal & Gordgeburre, 2017). For instance, De Waal's (2012) studies on gigantic European international companies in the retail industry discloses that there is a clear direct link between HPO scores and financial results since companies with the highest HPO scores have the highest financial results, and, in contrast, the companies with the lowest HPO scores have the lowest financial results. In addition, Pett, Sie, & Wolff's (2016) study on the hotel business in France explained that the characteristics based on an HPO framework have direct positive relationships with competitive performance. Moreover, De Waal & Gordgeburre (2017) revealed that the firm performances of many organizations were improved after applying the HPO framework for 2 years or more such as Irina University College in Tanzania, Nabil Bank Limited in Nepal, a British consortium of IT companies, a banana grower and exporter in the Philippines and a Dutch cable company. Hence, the following hypothesis is proposed:

Hypothesis 6: *Being a HPO has a positive significant relationship with competitive performance.*

Therefore, the conceptual model with the developed hypotheses of this research is shown in Figure 1.

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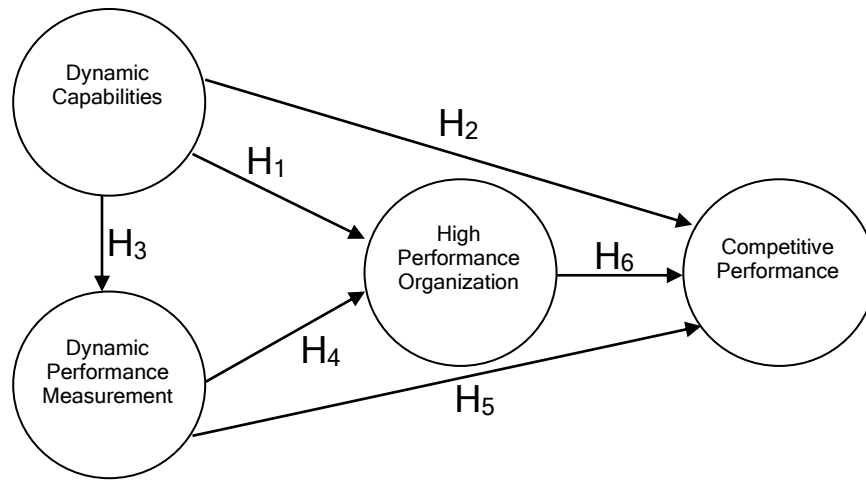


Figure 1: The conceptual model

3. Methodology

Population and Sampling Technique

The population in this research is the four and five star hotel businesses, the hotels have been awarded a star rating from the Thai Hotels Association. The standard criteria for determining the stars rating are physical environment, amenities, security and quality services (Thai Hotels Association, 2019). And the hotels also are located at the world class tourism destinations of Thailand in 7 provinces, namely, Bangkok, Phuket, Chon Buri, Krabi, Surat Thani, Phang Nga and Chiang Mai, which resulted in a total of 1,015 hotels (SiamFreestyle, 2019). This research has used the stratified random sampling technique in which the population was divided into 7 strata based on the tourism destination. Random samples are then selected from each stratum in a proportionate manner.

Data Collection

This research collected data using questionnaires that were distributed to the high-level administrators of the four and five star hotel businesses in Bangkok, Phuket, Chon Buri, Krabi, Surat Thani, Phang Nga and Chiang Mai, which are the world class tourism destinations of Thailand.

The contents of the questionnaires were validated by five academic experts to ensure that the designed measurement scale was easy to evaluate and did not cause any confusion. After that, the questionnaires were pretested by 30 hotel businesses and then the reliability was analysed by using Cronbach's alpha coefficient. An acceptable reliability score is one that is greater than 0.7 (Cortina, 1993). The results of the reliability of each construct measures vary from 0.830 to 0.967, showing that the questionnaire has a high level of reliability. Then, 600 complete questionnaires were sent by mail to the high level administrators of the hotels in the seven tourism destinations mentioned above. The data were gathered for four months from September 2019 to December 2019. After eliminating four incomplete questionnaires, 115 questionnaires were usable. A minimum sample size for conducting structural equation modelling analysis is 100 to 500 samples, as recommended by Schumacker & Lomax (2015). Therefore, 115 samples are still sufficient.

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The total sample of 115 individuals consists of 73.9% females and 26.1% males. The majority of the respondents are aged from 31-40 years old, which represents 36.5% of the total; 78.3% of the respondents hold a bachelor's degree; 44.3% hold the position of department head 3% and 37.4% have less than 5 years of work experience. With regards to hotel characteristics, the largest proportion are independent hotels at 62.6%, 36.5% of the hotels have more than 15 years of service, 57.4% of the hotel are five star hotels, 43.5% of the hotels have more than 200 employees and Europeans and Americans are the major customers for 55.7% of the hotels.

Measurement

Four constructs were measured in this study, namely, dynamic capabilities, dynamic performance measurement, high performance organization (HPO) and competitive performance. First, twelve items that originate in part from MacInerney-May (2011) and Jantunen, Ellonen & Johansson (2012) were adopted to measure three factors of the dynamic capabilities construct. Second, eighteen items from Bititci et al. (2000), DeNisi & Murphy (2017) and Aujirapongpan & Hareebin (2020) were used to measure four factors of the dynamic performance measurement construct. Third, twenty-four items developed by De Waal et al. (2014) and De Waal & Gordgeburre (2017) were used to measure five factors of the HPO construct. Finally, eleven items were adapted from Matear, Gray & Garrett (2004) and the American Management Association (2007) to assess the two factors of the competitive performance construct. The respondents were asked to score each item by using a five-point Likert scale ranging from 1 (extremely low agreement) to 5 (extremely high agreement). Only the construct of competitive performance was measured by using a different range from 1 (much lower than important competitors) to 5 (much higher than important competitors).

4. Results

Assessment of the Measurement Model

The confirmatory factor analysis (CFA) was conducted to evaluate the validity of a measurement model. Cronbach's alpha (α) and the composite reliability (CR) were used to assess the reliability while the factor loading and average variance extracted (AVE) were used to assess the validity of measurement (Homsud, 2017). Additionally, the acceptable level for Cronbach's alpha and the composite reliability is greater than 0.7, and that for the factor loading and average variance extracted is higher than 0.5 (Hair, Sarstedt, Hopkins & Kuppelwieser, 2014). Table 1 shows the findings of the CFA. The reliability and validity of the measurement model satisfy the minimum criteria.

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Table 1: Reliability and validity of the measurement model.

Constructs	Observable variables	Factor loading	α	CR	AVE
Dynamic capability (DYC)	Sensing capability (SENS)	0.80	0.89	0.90	0.75
	Learning capability (LERN)	0.89	0.83		
	Innovation and reconfiguring capability (INNO)	0.92	0.95		
Dynamic performance measurement (DYP)	External monitoring system (EXTE)	0.76	0.92	0.93	0.76
	Internal monitoring system (INTE)	0.89	0.92		
	Review system (REVI)	0.95	0.94		
	Deployment system (DEPL)	0.88	0.94		
High performance organization (HPO)	Management quality (MANA)	0.77	0.97	0.94	0.75
	Openness and action orientation (OPEN)	0.89	0.84		
	Long-term orientation (LONG)	0.83	0.89		
	Continuous improvement and renewal (CONT)	0.92	0.96		
	Workforce quality (WORK)	0.88	0.92		
Competitive performance (COP)	Financial performance (FINA)	0.80	0.93	0.87	0.76
	Nonfinancial performance (NONF)	0.95	0.95		

Furthermore, the results regarding the goodness of fit indices of the measurement model from the CFA were provided. The acceptable fit levels include that the normed chi-square (χ^2/df) is lower than 3.00; the goodness-of-fit index (GFI), normed fit index (NFI), and comparative fit index (CFI) are at least 0.90; the root mean square error of approximation (RMSEA) is lower than 0.08; and the standardized root mean square residual (SRMR) should be less than 0.10 (Hair et al., 2010).

Table 2 summarizes the goodness of fit indices and their acceptable levels. All the fit indices values confirm that the proposed measurement model has a good fit with the data.

Table 2: A summary of the goodness of fit indices and their acceptable levels.

Goodness of fit indices	Acceptable levels	Index values
χ^2		74.39
P-value	>0.05	0.15
χ^2/df	<3.00	1.18
CFI	≥ 0.90	0.99
GFI	≥ 0.90	0.92
NFI	≥ 0.90	0.96
RMSEA	<0.08	0.04
SRMR	<0.10	0.03

Hypothesis testing

The hypothesis testing was undertaken using structural equation modelling (SEM) with LISREL 9.3. Table 3 shows the direct, indirect, and total effect of each construct relationship, and it illustrates that the standardized coefficients of the six hypothesized relationships are statistically significant as expected. In addition, Hair et al. (2014) stated that R^2 values of 0.75, 0.50 and 0.25 indicated that a model's predictive power was substantial, moderate and weak, respectively. The results showed the R^2 value was between 0.51 and 0.66; thus, all independent variables in this study were able to moderately explain the variance in the dependent variables.

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Table 3: Direct and indirect effects for the structural model

Dependent variables	Independent variable									R ²
	DYC			DYP			HPO			
	TE	IE	DE	TE	IE	DE	TE	IE	DE	
DYP	0.74**	-	0.74**	-	-	-	-	-	-	0.58
HPO	0.80**	0.40**	0.40**	0.55**	-	0.55**	-	-	-	0.66
COP	0.70**	0.70**	0.00	0.54**	0.41**	0.13	0.76**	-	0.76**	0.51

Note: DYC = Dynamic capability, DYP = Dynamic performance measurement, HPO = High performance organization, COP = Competitive performance, DE = Direct effect, IE = Indirect effect, and TE = Total effect

**Significant at the 0.01 level

Table 3 shows the testing results of the six hypotheses. The results show that dynamic capabilities have both a significant direct and indirect effect on the HPO with a total effect coefficient of 0.80 and a p-value of 0.01. Additionally, dynamic capabilities have a significant direct effect on dynamic performance measurement with a *coefficient* of 0.74 and a p-value of 0.01. Therefore, H1 and H3 were supported. The dynamic performance measurement was found to have a significant direct effect on a HPO with a *coefficient* of 0.55 and a p-value of 0.01, supporting H4. The results also indicated that the dynamic capabilities and dynamic performance measurement have significant indirect effects on competitive performance via the HPO. The total effect coefficient between dynamic capabilities and dynamic performance measurement and competitive performance were 0.70 and 0.41, respectively, and they were significant with p-values of 0.01. Hence, the two hypotheses H2 and H5 were supported. Last, the finding also supported H6, confirming that the HPO was found to have a significant direct effect on competitive performance with a *coefficient* of 0.76 and a p-value of 0.01.

Mediation Analysis

To test the mediating role of the HPO, this study adopted the three-step approach outlined by Nguyen, Le, Trinh & Do (2019). In addition, N explained three step approach as follows: In step 1, examine the measurement model to assess whether the direct path coefficient from the independent variable to the dependent variable (IV-->DV) is significant. In step 2, examine the completely mediated model to assess whether the direct path coefficients from the independent variable to the mediator (IV-->M) and the mediator to dependent variable (M-->DV) are significant. In step 3, examine the partially mediated model, including the path coefficient from the independent variable to the dependent variable that included the mediator (IV+M-->DV). Complete mediation is present when the direct path coefficient from the independent variable to the dependent variable is no longer significant after the mediator has been controlled, and partial mediation is present when the direct path coefficient from the independent variable to the dependent variable is reduced after the mediator has been controlled. The results of testing the mediating effects are presented in Table 4 and Table 5.

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Table 4: Results of testing the mediating effect (DYC + HPO-->COP)

Model	df	χ^2	CFI	GFI	SRMR	RMSEA	$\Delta \chi^2$	Δdf
Measurement model	4	3.421	1.000	0.989	0.024	0.000	-	-
Completely mediated model	28	35.896	0.992	0.940	0.033	0.049	-	-
Partially mediated model	27	35.877	0.992	0.940	0.033	0.054	0.019	1

Table 5: Results of testing the mediating effect (DYP + HPO-->COP)

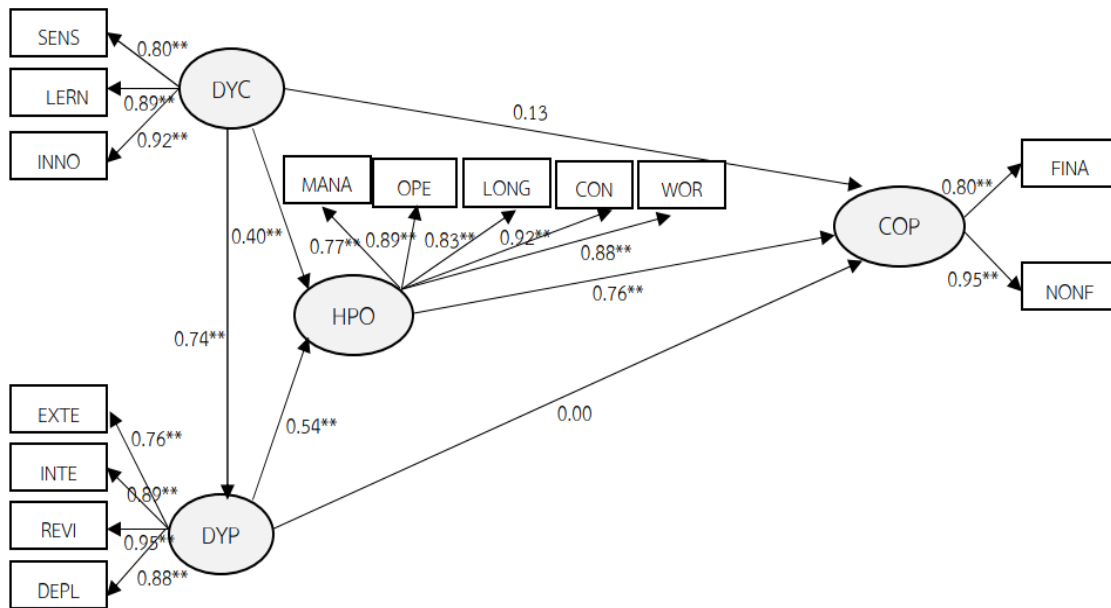
Model	df	χ^2	CFI	GFI	SRMR	RMSEA	$\Delta \chi^2$	Δdf
Measurement model	5	2.445	1.000	0.993	0.011	0.000	-	-
Completely mediated model	34	55.670	0.983	0.925	0.030	0.074	-	-
Partially mediated model	33	54.966	0.983	0.927	0.028	0.076	0.674	1

Table 4 shows the fit indices of the proposed relationship model between DYC and COP when HPO is a mediator. In step 1, the direct effect of the independent variable (DYC) on the dependent variable (COP) in the absence of the mediator (HPO) was significant ($\beta = 0.66$, $p < 0.01$). In step 2, a completely mediated model with the mediator showed a good fit to the data ($\chi^2/df = 1.128$, CFI=0.992, GFI= 0.940, SRMR= 0.033, RMSEA =0.049) and the direct path coefficients from DYC-->HPO and HPO-->COP were significant. In step 3, the partially mediated model that included the mediator (HPO) and the direct path from DYC to COP indicated a good fit to the data ($\chi^2/df = 1.118$, CFI=0.992, GFI= 0.940, SRMR= 0.033, RMSEA =0.054), but the results showed that there was no longer a significant direct effect of DYC on COP (β decreased to 0.00 and was not significant, as shown in Table 3). Therefore, the researcher reports that the mediator (HPO) completely mediates the effect of DYC on COP.

Table 5 presents the fit indices of the proposed relationship model between DYP and COP when HPO is a mediator. In step 1, the direct path coefficient from DYP-->COP in the absence of HPO was significant ($\beta = 0.62$, $p < 0.01$). In step 2, a completely mediated model with the mediator showed a good fit to the data ($\chi^2/df = 1.29$, CFI=0.986, GFI= 0.928, SRMR= 0.063, RMSEA =0.051) and the direct path coefficients from DYP-->HPO and HPO-->COP were significant. In step 3, the partially mediated model that included the mediator (HPO) and the direct path from DYP to COP indicated a good fit to the data ($\chi^2/df = 1.32$, CFI=0.985, GFI= 0.927, SRMR= 0.063, RMSEA =0.054), but the results showed that there is no longer a significant direct effect of DYP on COP (β decreased to 0.13 and was not significant, as shown in Table 3). Therefore, the results indicate that the mediator (HPO) completely mediates the effect of DYP on COP.

All of the structural paths for the final model are presented in Figure 2.

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**significant at the 0.01 level

Figure 2: Research results

5. Discussion

Theoretical Contributions

The study points out that dynamic capabilities have a positive relationship with HPO and with competitive performance for hotel businesses because dynamic capabilities are the firm's abilities to create, reconfigure and transform its entire existing resources to respond to environmental transformation, inside and outside the firm; therefore, having dynamic capabilities can upgrade their performance towards achieving outstanding performances (Pattanasing, Aujirapongpan & Srimai, 2019). Ngo, Pavelkovam, Thi Phan & Nguyen) 2018(additionally stated that dynamic capabilities lead to an adjustment of business processes to meet the customers' needs, which are very important to the firm's goals. Therefore, when being compared with their competitors, organizations with high dynamic capabilities obviously have high performance results, which is consistent with Zhan & Chen (2013) who posited that a firm having dynamic capabilities in applying existing resources has better performance results. Moreover, Chien & Tsai (2012), Aujirapongpan & Hareebin (2020) and Pattanasing, et al. (2019) revealed that dynamic capabilities have a positive relationship with a firm's performance.

The study indicated that dynamic capabilities have a positive relationship with dynamic performance measurement, which occurs because the measurement system plays an important role in organizing a firm to be more efficient and effective. Being dynamic in an unstable environment is a key factor in selecting the format of a control system or operational evaluation. Therefore, if a firm possesses dynamic capabilities and is able to perceive the uncertainty, it can conduct dynamic performance measurement to respond to the environmental uncertainty. Regarding the relationship between the perception of environmental uncertainty and a performance

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measurement system, this is consistent with Bastian & Muchilish (2012) who stated that perceiving environmental uncertainty has a significantly positive relationship with a performance measurement system.

Dynamic performance measurement has a positive relationship with HPO, and this occurs because the practices following the mechanisms of a management control system can lead to higher performance (Wisner et al., 2003), which agrees with Epstein & Roy (2003), who stated that a performance measurement system enables a firm to achieve higher and more sustainable performance. This is consistent with De Waal et al. (2015), who disclosed strong significant relationships between the components of a system and both managing performance results and HPO. This study additionally finds that dynamic performance measurement has a positive relationship with competitive performances for hotel businesses, which is due to having measurement control and performance results management systems as key factors in their operational enhancement. Kennerley & Neely (2002) stated that a performance measurement system plays an important role in making a firm more efficient and effective, which is compatible with Ittner et al. (2003) and Henri (2006), who found that a performance measurement system has a positive effect on the performance results of an organization.

This study shows that HPO has a positive relationship with competitive performance, and this occurs because a HPO is an organization that has illustrated its excellent achievements in various management aspects (American Management Association, 2007). Moreover, a HPO is an organization with a strong management pattern that focuses on achieving its goals. Furthermore, it is a place of learning that pays attention to its stakeholders and emphasizes human resource management to ensure that its employees possess skills and perform the tasks to the best of their abilities while the organization continuously improves its products, processes and services. These components lead a HPO to become the best and be ahead of its competitors; subsequently, its performance results are also at a higher level. All statements are in line with De Waal's (2012) work on gigantic European international companies in the retail business, which exemplifies that there is a clear direct link between means, HPO scores and financial results since companies with the highest HPO scores achieve the best financial results whereas the ones with the lowest HPO scores are those with the lowest financial results. This work is correlated with the studies on Peruvian mining companies (De Waal & Escalante, 2011), manufacturing firms in Tanzania (Godfrey, 2010) and hotel businesses in France (Pett, et al., 2016) in which they all claim that characteristics based on a HPO framework have positive direct relationships with competitive performance results.

The study further finds that HPO is a complete mediator between the dynamic capabilities and competitive performance of hotel business. Additionally, HPO is a complete mediator between the dynamic performance measurement and competitive performance of the firm. This shows that dynamic capabilities and dynamic performance measurement are essential to a firm's competitive performance. In other words, dynamic capabilities and dynamic performance measurement help to enhance a HPO and accordingly lead to improved performance results, which is in line with Bagorogoza & de Waal (2010) who indicated that HPO is a mediator between knowledge management and organizational performance. This study additionally reveals that learning capability or knowledge management is beneficial to an organization and it becomes one of the indicators of dynamic capabilities. Moreover, Pattanasing, et al. (2019) discovered that HPO completely mediates dynamic capabilities and organizational performance.

Managerial Implications

The findings of this paper can be used as a guideline for hotel management; that is, the management's awareness of the creation of dynamic capabilities becomes mandatory in order to upgrade its firm into a HPO and further

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achieve better performance than its firm's competitors. Dynamic capabilities are related to an ability to perceive opportunities or obstacles that may impact the firm; thus, management needs to focus on observing and predicting various transformation trends, which include customers' behaviours, competitors' strategies, technologies, or even regulations and controls. The sooner this happens, the better it will be for immediate adjustments or corrections. Moreover, for the benefit of an organization, additional attention should be given to learning capability or learning management, innovative capability and resource reconfiguration related to the ability to create new capabilities within the firm. Hence, management is obliged to focus on seeking and bringing in new knowledge into its firm, integrating that new knowledge with the existing knowledge, and, at the same time, enhancing the atmosphere of knowledge exchange that subsequently leads to practical improvement and service development towards excellence. External experts or outsourcing might be used for the less significant activities of the firm, such as obtaining customers through online and offline agencies, etc., in which the experts or outsourcing can do better than the personnel of the hotel business.

Furthermore, hotel management needs to strongly pay attention to dynamic performance measurement, since it is the integrated operating system that is connected to the strategies of all the activities within an organization. Meanwhile, being dynamic initiates a circle of repetition, development and creation of new information technology that accordingly helps the firm systematically learn more while continuously creating and conducting self-improvement to be consistent with the new required status. The findings of this paper also uncover that dynamic performance measurement helps upgrade a firm to become a HPO and further leads to the firm's best practices. In developing dynamic performance measurement, the management is compelled to focus on the following: (1) setting up an external control system, including determining indicators for the performance results in order to assess significant parameters and represent external environmental transformation as the firm's input; (2) determining an internal control system, including setting up indicators of performance results so that considerable parameters are examined to represent internal environmental transformation; (3) creating an inspection system to review the efficiency of the performances, which include reporting performance outcomes to those concerned, focusing on promoting strong points and correcting weak points so that immediate actions for improvement can occur; and (4) creating a deployment system for effective performance, which includes giving attention to employees' participation in setting up goals and indicators, and more importantly, the performance measurement system must be consistent with a reward system.

Limitations and Future Research

The data of this study were analysed by an analytical structural equation modelling method and the accuracy is based on the sampling size. As Kline (2011) stated, this modelling method is a statistical tool that requires a large size of a sampling group, that is, the number of samples should be 20 for every 1 observable variable. This paper consists of 4 hidden variables subdivided into 14 observable variables, making the total of 280 samples. However, since the number of returned questionnaires did not meet expectations, the final number of samples was only 115, which is lower than the set standard. Hence, there might be some limitations in the accuracy of the statistics in the findings. Moreover, this study develops a structural model among dynamic capabilities, dynamic performance measurement, HPO, and the competitive performance results of hotels in the global tourist attractions of Thailand; therefore, there might be some limitations to the broad application of these findings. Thus, in order to come up with more universal conclusions that can be broadly utilized, the structural model can be applied for future studies of other businesses, e.g., producer groups, service groups of financial institutes, healthcare services, educational services or even hotel businesses in other global tourist attractions.

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THE ROLE OF LOCAL INFORMAL FINANCIAL INSTITUTIONS FOR SUSTAINABILITY OF FARMERS: A CASE STUDY OF MALANG AND BATU *

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Abstract. The majority of Indonesian farmers are entirely dependent on the activities in the agricultural sector. However, the current agricultural system tends to work against farmers' welfare. This study aims to examine the role of local informal financial institutions in creating sustainable farmer welfare using a qualitative approach. The results of the study indicate that there is a dominant role of local informal financial institutions. This domination causes farmers to become helpless during harvest season, resulting in farmers' dependence on local informal financial institutions and their inability to enjoy sustainable welfare.

Keywords: independent farmers; local financial institutions; farmers' welfare

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JEL Classification: Q12, P36, O18

1. Introduction

About 75% of Indonesian farmers depend on narrow agricultural land, which is less than 0.5 hectares (BPS, 2014). Therefore, government policy is needed to empower farmers to enjoy sustainable prosperity. Previous research has shown that agricultural sector development policies often create the phenomenon of 'elite capture' and pseudo welfare for farmers (Putra and Suyatna, 2018). Indirectly, this phenomenon makes it difficult for farmers to access information on agricultural cultivation and post-harvest activities so that they suffer losses. Such an event is due to the behavior of non-agricultural actors who monopolize information. As a result, farmers'

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income growth has slowed down due to reduced agricultural land and weak agrarian culture (Lubis, 2014; Partadireja, 1974).

In building independence, farmers need complete information without pressure or intervention from non-agricultural actors, both in the cultivation process and in post-harvest activities (Mubyarto, 1994b). Farmers will be able to enjoy complete information through strengthening three things, namely agricultural institutions, culture, and socio-economic ties among farmers, as well as farmers' strong bargaining position. All of which will contribute to a sustainable increase in farmer income (Arsanti and Bohme, 2018; Khan et al., 2017; Priesel et al., 2017; Christensen, 2014).

Empirical evidence in Sesbany's (2008) research shows that the control of information by non-agricultural actors, namely local financial institutions, causes farmers to have low bargaining power due to lack of market access, partial information, and small capital. Therefore, it is difficult for farmers to set prices and increase their income. The same thing was expressed by Christensen (2014), who states that a strong farmer institution will enable farmers to make independent decisions in more profitable cultivation and post-harvest activities.

Therefore, this study seeks to describe how significant the role of informal local financial institutions is in realizing farmer independence; whether this role will achieve farmer independence as indicated through the process of empowering farmers and strengthening the existing agricultural culture (Wulandari et al., 2017; Akobeng, 2017; Suman and Putra, 2015), or actually causing the impoverishment of farmers (Besser et al., 2017; Wulandari et al., 2015; Sajogyo, 2005). The research results are expected to be able to provide an overview, especially for policymakers and formal and informal financial institutions to play an active role in building independence, increasing bargaining power, and empowering farmers. The ideas presented in this study are presented in two parts. First is an explanation of the freedom of cultivation that has been strived for by farmers as well as the factors that make the role of local financial institutions weak in influencing their autonomy. The second is an explanation of the role of strong local financial institutions in creating post-harvest independence and the factors that cause it.

2. Literature Review

Farmers' independence, according to Mubyarto (1994a), is a picture of farmers' consistency in developing their farming business without being tied to other parties, either directly or indirectly, in striving for productivity, existence, and sustainability of their independence. There are six indicators of farmer independence that need to be built and achieved according to Sajogyo (2005), namely as follows: (a) active participation of farmers accompanied by an increase in the quality and capability of human resources, (b) increased tenure of land and productive assets per agricultural workforce, (c) equal distribution of productive assets, technology and financing per agricultural workforce, (d) diversification of agriculture in a broad sense, (e) development of independent rural financial institutions and, (f) development of agricultural institutions and agricultural resources. Suyatna et al., (2016) stated that the prerequisite for strengthening the six indicators is the development of access to (a) equitable land ownership; (b) pro-farmer inputs and production; (c) markets that provide welfare for farmers; and (d) freedom to organize and determine a production space that is more collaborative with outsiders and mutually beneficial. Independent cultivation must build institutional strengthening and agricultural culture to realize productive intentions and cooperation between farmers in increasing pre-production productivity and during production.

The phenomenon in the United States studied by Christensen (2014) shows the role of the government in building independent farmer cultivation through the creation of the Staying Put institution, which connects farmers' needs

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in farming and ensures that the commodities produced are distributed to the market. The institution is useful because it utilizes local knowledge and bonds between farmers. Meanwhile, research by Preisel et al. (2017) explains that government intervention is needed to strengthen culture and social relationships between farmers in determining the cultivation process. Starting from the processing stage, selecting agricultural production facilities, to recruiting independent workers who are oriented towards increasing income and productivity. It can be done by strengthening socio-economic motivation and farmer empowerment strategies that are appropriate to the farmer's local culture.

On the other hand, Khan et al. (2018) explained that government intervention would have an impact on strengthening the independence of farmers in the pre-production and production stages, as well as stabilizing prices and the post-harvest market. In the pre-production and production stages, farmers are facilitated by increasing their knowledge and skills, certification of production quality, mapping of grown commodities, measuring the quality of agricultural inputs, as well as improving agrarian technology and measuring productivity. Furthermore, the ideal post-harvest independence must build mutually beneficial collaboration between farmers and non-agricultural actors to form the power of information on prices and markets. Thus, farmers can increase networking and bargaining power to create better value-added.

The study conducted by Utama et al. (2019) explains that the concept of the Ba'i As-Salam contract promoted by Islamic banks in Indonesia can provide comprehensive information on the market for farmers. Islamic banks will assist farmers in obtaining information on prices and profitable market opportunities. Meanwhile, Arsanti and Bohme (2018) examined cooperation between farmers and seed companies on organic chili commodities in increasing productivity and ensuring price stability. The company will regulate the marketing and production aspects, which include land management and the selection of production infrastructure to improve the quality and quantity of products. Thus, the commodity produced can be accepted by the market. Furthermore, strengthening farmers through the use of technology was reviewed by Flor et al. (2016) in which agricultural research institutes work with farmers to ensure increased productivity and price certainty. These efforts have increased the real welfare of farmers because they can cut the distribution chain without harming the end-level farmers and traders.

Ideally, farmer self-reliance development should be inclusive and oriented towards improving sustainable farmer welfare. For this reason, a collaboration between farmers and stakeholders is needed to create a productivity ecosystem that is more applicable and in line with the development of science and technology. The absence of this collaboration has the potential to reduce the interest of the farming community, which in turn will make Indonesia dependent on food imports and shrink the supply of agricultural commodities (Purwanegara et al., 2018; Soeparno et al., 2018). In realizing this, competitive farmers, have the power to make decisions, have social inter-social ties, and post-harvest activities are needed that are more equitable and benefit all parties. In the agricultural trade system, there should be no party who takes personal benefits, and there should also be parties who experience dependence resulting in a pattern of impoverishment directly or indirectly (Putra and Suyatna, 2018). Failure to achieve ideal farmer independent development will result in not creating sustainable farmers' income and will create dependence on farmers to maintain their existence (Suseno and Suyatna, 2006).

3. Research Method

This study uses a qualitative method with a phenomenological approach. The stages of data collection in this study are observation, interviews, and documentation. Data collection was carried out in three villages in Malang Regency and Batu City, namely Tegalweru, Bocek, and Beji, from March to August 2019. In the early stages, researchers observed by looking for facts in the field regarding the role of informal financial institutions in

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agricultural activities. From the points that have been gathered, in-depth interviews were conducted with informants, including farmers and non-farmer actors, to explore the information obtained. Determination of informants in the study using the snowball sampling method. Finally, documentation is carried out to find hidden facts that have not been obtained in the previous stages. The information collected was then analyzed using a comprehensive data analysis technique. The first stage of the analysis is coding to map the reliability and strength of the data. Furthermore, the information is sorted, analyzed, and interpreted to obtain findings. These findings are then matched with supporting documents in the form of study results and research findings with similar themes to strengthen the resulting analysis (Skovdal and Cornish, 2015).

4. Results and Discussions

The results of the study found that the independence of farmer cultivation was influenced by the strong attachment to agricultural culture and networking among farmers. However, the post-harvest freedom of farmers is very dependent on local informal financial institutions because of their mastery of price and market information and the strength of the capital of these institutions. Therefore, farmers' bargaining power and networking are fragile, resulting in the impoverishment of farmers.

4.1. The Role of Informal Local Financial Institutions in Agricultural Cultivation Independence

Based on the analysis of the data that has been collected, it is known that the willingness to work productively and the strong Indonesian agricultural culture causes farmers to make decisions for land cultivation, selection of agricultural production facilities, and the need for labor independently. There are two farmer groups studied, namely citrus farmers and maize farmers. The two commodities have different cultivation periods in which oranges require a long cultivation period of ten months, while sweet corn has a shorter cultivation period of between forty to ninety days. Citrus farmers, in general, still have strong socio-economic and economic ties in their communities. On the other hand, maize farmers have social interactions in the form of factions/blocks, which result in a weak socio-economic link within their group as a whole (quotation from the interview is attached).

The land management aspect is classified into three things, namely land use, selection of land management techniques, and selection of processes for increasing land productivity. In this case, the independent nature of farmers will be influenced by land ownership status, where farmers who own land tend to be freer to make decisions. On the other hand, farmers who rent agricultural land tend to choose a quick management system to optimize income because they have to pay land rent. In general, the farmers studied used semi-modern tillage techniques. It can be done because farmers have extensive knowledge as a result of long experience in understanding the characteristics of the commodities planted. The agricultural policy carried out by the government is felt by farmers only as a formality and has not yet achieved community empowerment. Farmers independently learn the procedures for increasing productivity, especially in paying attention to the nutrients needed by commodities to grow well, as well as pest control.

Furthermore, in making decisions about the use of production facilities, which include seeds, fertilizers, and pesticides, farmers consider the expected quality, quantity, and productivity. Farmers will tend to choose the most expensive seeds that are considered to have the best product marketing opportunities. Meanwhile, to choose fertilizers and pesticides, farmers decide to rejuvenate nutrients in agricultural land with organic fertilizers. The action is carried out due to the decline in land quality caused by the green revolution that was carried out during the New Order era. These findings are in line with Suseno and Suyatna (2006). When planting begins, farmers will carefully measure the amounts of fertilizers and pesticides used to ensure the quality and productivity of the

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commodities produced. On the one hand, it is hoped that these commodities will be economically profitable. On the other hand, products are also expected to be safe when consumed by end consumers.

The decision making for the need for labor is carried out based on the availability of agricultural labor offers in each region. Currently, there are only a few workers who are interested in working as agrarian laborers because they are considered not having high wages as in non-agricultural sectors, for example, as construction workers; as Putra and Suyatna (2018) findings. This phenomenon has led to an increase in the bargaining power of farmworkers. In each village, the landowner and farm laborers make an agreement regarding the wages that would be given as compensation for working on the land. The laborers' wages are based on the length of time needed to increase the productivity of the farm and the types of activities that are a burden to farm laborers.

Currently, the government has not yet produced an ideal policy in connecting the agricultural sector with related stakeholders to increase the existence, bargaining power, productivity, and real welfare of farmers. If this continues, it is not surprising that farmers are forced to struggle on their own, which results in farmers' dependence on non-farmer actors who have complete information independently. As a result, the welfare of farmers is difficult to improve (Khan et al., 2018; Preisel et al., 2017; Christensen, 2014).

4.2. The Role of Informal Local Financial Institutions in Post Harvest Self-Reliance

In post-harvest activities, farmers become bound by decisions of local informal financial institutions. This institution fully controls the pricing, quality of production, and the harvest marketing system. It is because local informal financial institutions have full control over information on prices, capital strength, and marketing networks, which are not shared with farmers. Therefore, farmers do not have the power to determine the things mentioned above, resulting in low bargaining power and the creation of faux post-harvest independence. It means that local informal financial institutions entirely regulate farmers' income.

Market price information circulating among farmers is limited to discussions between farmers. The actual market price is only known by local informal financial institutions due to their advantage in the marketing network and the capital strength to buy commodity farmers at any price level, according to the estimates of the local informal financial institution. Generally, the institution will buy commodities from farmers at a price level of 25-40 percent lower than the market price. The margin for the purchase is entirely the right of the local financial institution. Sometimes, farmers and local financial institutions bargain to set prices. It is not uncommon for farmers to only receive a predetermined amount. It is because each farmer has a contract with an informal local financial institution. The trust factor between informal financial institutions and farmers results in the formation of a patron-client relationship pattern, which in the long run leads to a pattern of the impoverishment of farmers.

Tables 1 and 2 show the price system used for citrus and sweet corn commodities at the research location. For the citrus commodity (Table 1), there are two price-fixing mechanisms by local financial institutions, namely using grade and average prices. The citrus products cultivated by farmers are the varieties of Baby Java, Pontianak Siem, and Batu 55. During the harvest season, the rate applied is the lowest price, while the highest price will depend on the offering value in the market. When the supply is low, the highest price will be applied because local financial institutions need a high supply to meet market needs before and after the main harvest. These local financial institutions usually supply to industrial markets and supermarkets.

Meanwhile, for sweet corn (Table 2), local informal financial institutions apply a partnership pattern by offering two assistance schemes. In the first scheme, the institution provides capital assistance for cultivation, which must

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be repaid by the farmer by selling his products only to the institution at a set price. Whereas the second scheme is that the institution directly buys commodities from farmers without providing prior assistance, but the purchase price is based on the quality of the merchandise.

Table 1. Citrus Commodity Price System

Commodity	Grade	Price (Rupiah)				Market
		Grade (Per 1 Kg)		Average (Per 1 Kg)		
		Highest	Lowest	Highest	Lowest	
Baby Java	A	6.500	5.000	6.000	5.500	Supermaket
	B	5.000	4.500			Antar Provinsi dan Pulau (Domestik)
	C	4.500	3.500			Antar Kota dan Dalam Kota (Lokal)
Pontianak Siem	A	13.000-12.000	10.000	12.000	10.000	Supermarket
	B	8.000	7.500			Domestic
	C	6.000	5.500			Local
Batu 55	A	8.000	7.000	6.500	5.500	Supermaket
	B	7.000	6.500			Domestic
	C	4.000	3.500			Lokal

Source: Research Findings, 2019

Table 2. Maize Commodity Price System

Commodity	Grade	Price				Market
		Grade (Per 15 Kg)		Price Per 1 Kg		
		Highest	Lowest	Highest	Lowest	
Sweet Corn	A	50.000	40.000	3.300	2.600	Supermarket
	B	35.000	25.000	2.300	1.600	Domestic
	C	25.000	15.000	1.600	1.000	Lokal

Source: Research Findings, 2019

In marketing their commodities, local financial institutions provide three options to farmers. The three options are the partnership system, the slash system (*sistem tebas*), and the crates system (sales per kilogram). The farmer has identified the advantages and disadvantages of each option. First, in a partnership system, local informal financial institutions and farmers work together from pre-production to post-production or work together only during post-production. In this system, financing and pricing are entirely controlled by local financial institutions. Second, the slash system is the process of selling agricultural commodities by farmers to local financial institutions. The local

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financial institution determines the price standard in this system. Furthermore, the agency will sort the products based on their quality and quantity for sale in different market segments. The quality of the commodities will, of course, result in different prices.

The third pattern, the crates pattern, is only applied to citrus commodities. In this system, plastic crates or baskets with a carrying capacity of 35 kg are used to weigh commodities. Of the commodities weighed in the crates, two kilograms of net weight will be deducted. One kilogram of empty containers will be borne by the farmer, while the institution will bear the price of one kilogram of rotten oranges. Thus, the average weight of oranges in the crate is 33 Kg. The crates pattern has two pricing systems based on grade and average, where the majority of farmers agree to use the average system to maintain the price level. Basically, the grading system is used to increase aggregate income.

Pricing, crop quality, and marketing systems that are entirely tied to local informal financial institutions show a pattern of farmer dependence on the role of local financial institutions in post-harvest independence. This dependence is understandable because the farmers are only trying to survive on their own to maintain agriculture. It seems that the policies and institutional systems formulated by the government weaken the bargaining power of farmers and reduce agricultural productivity. Subsidized fertilizers are often distributed late, and the price becomes expensive when farmers need it. Besides, the land conversion process is accelerating and does not take into account the availability of agricultural land for sustainable food sovereignty. Farmers have not enjoyed the method of ultra credit financing for farmers at the grassroots (Suyatna et al., 2016). In fact, post-harvest independence for farmers requires comprehensive information on the market in the form of price stability and farmer-market networks. The institution should be built and managed by farmers and a combination of farmer groups independently (Utama et al., 2019; Arsanti and Bohme, 2018; Flor et al., 2016)

4.3. Relationship of Post-Harvest Self-Reliance with Farmers Impoverishment

The domination of the role of local informal financial institutions in post-harvest activities can create a pattern of the impoverishment of farmers, either directly or indirectly. The deepening of these two patterns can be explored as recommendations for future research. The two patterns are in the form of (a) creating a sustainable dependence on the productivity and welfare of farmers; and (b) asymmetric information processing on prices. In general, farmers do not have a large capital capacity to exist and be productive. These two patterns have unwittingly created a structured and sustainable process of impoverishment of farmers.

The system of unwritten agreements between farmers and local informal financial institutions can lead to farmer dependence. As a result, farmers cannot enjoy real welfare that is proportional to the efforts they have made. Furthermore, the absence of social ties among farmer groups causes farmers to move away from the mutual cooperation system, which actually will strengthen sustainable farmer group independence. Currently, farmers are often apathetic and try their own way without thinking about the social attachments of farmers in the past Indonesian agricultural culture in the form of mutual cooperation (*gotong royong*). Structurally, it is necessary to improve the mutual cooperation system as a strong social bond to reduce farmers' dependence on local informal financial institutions. Basically, mutual cooperation is not only the responsibility of farmers but also the government to facilitate collaboration between farmers and related stakeholders in the business, industrial, and academic world.

Furthermore, the asymmetric information used by local informal financial institutions should be resolved. This information gap is in the form of marketing networks both in traditional markets, between islands and in retail,

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which have different price standards based on the quality and quantity of local commodities. Local informal financial institutions currently benefit from these price differences. Meanwhile, farmers can only get prices based on agreements that have been made with local informal financial institutions. Indirectly, this asymmetric information closes efforts to increase income and create sustainable farmer independence. Without clear price information and adequate capital, farmers will continue to be in the shadow of massive impoverishment by local informal financial institutions. For this reason, once again, facilitation from the government is needed in creating cross-stakeholder collaboration (Slamet et al., 2017; Besser et al., 2017). The collaboration aims to improve farmer welfare by providing access to market price information for farmers, increasing farmer empowerment-based partnership opportunities, and increasing the capacity and capability of farmers in general.

5. Conclusion

Currently, farmers can be said to have been independent in agricultural land processing activities as a result of Indonesia's strong agrarian culture. However, in post-harvest activities, farmers become dependent on the role of local informal financial institutions. This is due to the limited capital owned by farmers and limited information controlled by local informal financial institutions. With control of this information, financial institutions can create a marketing system that provides multiple benefits to the institution, thereby reducing farmer welfare.

Two patterns of post-harvest farmer self-reliance are (a) creating sustainable dependence on farmer productivity and welfare; and (b) robust pricing information asymmetric processes. For this reason, the government needs to intervene and make policies that integrate the process of empowering farmers with cooperation in the business and industrial world. These government intervention efforts can be supported by an approach to mutual collaboration and culture, as well as a reliable kinship system in agricultural culture in Indonesia. Without this approach, the negative impact of the domination of local informal financial institutions cannot be minimized in real terms.

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Attachment

a. Excerpts from The Interviews Listed in 4.1.

“Mas, karena jeruk (komoditas buah-buahan) waktunya panjang, mengakibatkan para petani itu makin guyub, ya terkadang kalau ada masalah batang (komoditas jeruk) gitu terkadang dibahas bersama antar petani, terus gawe pupuk lan mes (pestisida) opo seng tepat (lalu pakai pupuk dan pestisida apa yang tepat), bahkan soal harga upah buruh tani antar petani sudah saling bersepakat, pokok kalau tandur (pra-produksi sampai produksi) kami sangat saling membantu satu sama lainnya, ya begitu mas yang diajarkan bapak-bapak kami kepada kami, sehingga sampai sekarang masih tetap begitu”.

(Because oranges require a long planting period, the farmers get together. Sometimes, if there is a problem with the crop, we will discuss it together. The best use of fertilizers and pesticides, even the wages of farm laborers, the farmers will agree. The point is, in agricultural matters, we help each other because that is what our parents taught us, from the past until now) (Interview with KYI, 2019)

“Waduh mas, nek petani sayur iku saiki kyok dewe-dewe nek mulai tandur sampai nek ono masalah pas tandur, kyok angel mas gotong royong iku, pokok kepingin e oleh koyoh cepet mas terus, wes ora peduli ambik kancane (Aduh mas, kalau petani sayur-mayur sekarang suka sendiri-sendiri (individualistik) mulai pra produksi-produksi sampai kalau ada masalah dalam pra-produksi-produksi, sulit sekali mas untuk gotong royong, inginnya dapat pendapatan cepat terus, tanpa peduli sama teman (petani lainnya)”

(Unfortunately, the vegetable (maize) farmers now go their separate ways, both during the planting period and beyond. They hardly want to help each other. They want to get a lot of results immediately and don't care about their friends' problems.) (Interview with SPO, 2019).

“Mas, gotong royong petani itu masih kuat di Bocek, kalau soal nandur saja (budidaya) antar petani masih saling bantu mas, ya meskipun kalau kurang modal buat nandur (budidaya) banyak yang ngambil ke bakul (lembaga keuangan lokal), terkadang sama bakul dipengaruhi tapi petani punya cara sendiri dan pilihan sendiri buat nentukan bibitnya, ya pupuk, ya pestisida, ya berapa jumlah buruh taninya, yang penting dalam urusan nandur petani tetap berpegang teguh pada budaya gotong royong bapak-bapak kami dulu dalam bertani mas, meskipun petani gak punya modal besar tapi urusan nandur petani punya harga diri untuk tetap mandiri mas”

(Cooperation between farmers in Bocek is still strong, especially in terms of planting. As for the problem of capital, unfortunately, we also have difficulties so that we cannot help each other. They generally borrow money from the institutions. Sometimes, the institutions will influence what kind of commodity to be planted. Although farmers ultimately have their way of planting products. Starting from seeds, pesticides, to wages. What is important is that we farmers still stick to the methods our father taught us. Even though we as farmers do not have capital, at least we still have our pride to remain independent in agriculture) (Interview with MA, 2019)

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b. Excerpts from The Interviews Listed in 4.2.

“Petani itu sudah pasrah sama bakul (Lembaga Keuangan Lokal), harga kami tidak tau, yang kami tau ada grade dan rata-rata terus kami bisa pilih pakai kilonan dan tebas kalau jual ke mereka, kalau ada utang ke bakul wah malah kita diatur wes (Wah, pasti kita akan diatur sudah), pakai kiloan atau tebas, begitu pula harganya, petani cuma iya-iya, yang penting jeruk kita habis, utang kita gak ada dan kita dapat tanam lagi dan ada tabungan sedikit, gitu aja sudah kita syukuri mas” (Hasil Wawancara dengan PU, 2019).

(We farmers have surrendered to them (local informal financial institutions). We don't know the price. What we do know is the grade and average price, and we can choose the system to sell to them. If we owe them money, we will a lot of arrangements. Farmers can only accept. We are grateful enough if our oranges sold out, we have no debt, we can plant more, and have savings.) (Interview with PU, 2019)

“Kalau jagung manis ini mas, pasrah wes (menyerahkan kepada) sama bakulnya (lembaga keuangan lokal, walaupun kita bisa mandiri soal bibit, pupuk dan pestisida, masio (meskipun) belinya (bibit, pupuk, pestisida) dari berhutang ke bakulnya (lembaga keuangan lokal). Mas kalau panennya raya gitu bakulnya pinter harga terendah yang berikan ke petani, lah kalau gak panen raya baru harga tertinggi. Ya, kalau untung dapat harga tertinggi utang bisa lunas penuh dan dapat untung lumayan, tapi kalau rugi dapat harga terendah utang dicicil mas, panen lagi berdoa biar dapat harga tertinggi supaya nutup utang yang lalu, kalau gak ya pulih terikat sudah sama bakulnya (lembaga keuangan lokal) mas sampai utangnya lunas, jadi petani harus berhati-hati. Intinya mas, petani cuma bisa bersyukur, kalau bakulnya (lembaga keuangan lokal) makin (semakin) kaya-kaya mas”.

(We leave the sweet corn business to the seller (a local informal financial institution). Even though we can be independent, we still owe all of our farming equipment. When the big harvest arrives, the seller will give the lowest price to the farmers. When its not (big harvest time), we will get the highest price so that we will profit and be able to repay our debt. We can only pray for a good price so that we can pay our debts. The point is we can only be grateful for what we get, while they (local informal financial institutions) become getting richer) (Interview with HJ0, 2019)

“Bakul (lembaga keuangan lokal kalau di Beji sini biasanya petaninya suruh panen dulu, bakul bawa ke pasar, harganya petani gak tau, yang petani tau dapat berapa ton/kuintal yang dibawa ke pasar, terus nanti kalau dari pasar bakul (lembaga keuangan lokal) nyeritakno oleh rego sak mene koyo e sak mene (lembaga keuangan lokal menceritakan dapat harga di pasar berapa, kemudian dapat hasil berapa), terus dari hasil itu kalau petani utang yang dipotong tergantung kesepakatan sisanya ya jadi pendapatan buat petani, yang penting dapat berapa-pun disyukuri mas”

(In Beji, generally, the sellers (local informal financial institutions) will ask us, farmers, to harvest first. Then they bring to the market, where we don't know anything about the price. What the farmers know is how many tons we collected. Upon their return, the seller will tell us how much they got and how much our share is. From this result, if we have debt, it will be immediately deducted according to the agreement. Meanwhile, the rest is for our daily use. We can only be grateful no matter what we get)) (Interview with SPO, 2019).

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CUSTOMER ORIENTATED LEADER – CONTRIBUTION TO FUTURE RESEARCH*

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Abstract. Both leadership and customer orientation are widely described in management sciences. As independent cognitive categories, they are a frequent subject of research. Customer orientation is still evolving mainly due to the dynamics of changes in the company's environment. The perception of the company as a system and being at the same time a visionary, a strategist and a decision-maker and having an impact on the employees' subject is responsible for the client's benefits and the creation of its value resulting from building a relationship. This is the role of the leaders in enterprises. The assumption of such an assumption is justified, because in practice marketing orientation means creating a company mission based on values significant for the client, ensuring the participation of all employees in creating growing values for the client and including it in the process of creating value. Nowadays we can talk about a customer-oriented leader. The aim of the study is to identify types of customer-oriented leaders in the commercial and service sector, and to systematize knowledge in terms of leadership and customer orientation. The choice of the sector resulted from the often close and direct relationships that take place in the exchange process. Methods of the research: quantitative studies Computer Assisted Web Interviewing (CAWI), monographic/descriptive method, cluster analysis.

Keywords: leadership; customer orientation; trade and service sector; innovations

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1. Introduction

Acceptance of the customer's point of view as the basis for the company's operations in the environment is not only at the operational level, but above all, at the strategic level. Bearing the above in mind, a far-reaching simplification is that the relations with the client are decided by the personnel directly involved in its service and having direct contact with it. The perception of the company as a system and being at the same time a visionary, a strategist and a decision-maker and having an impact on the employees' subject is responsible for the client's benefits and the creation of its value resulting from building a relationship. This is the role of the leaders in enterprises. The assumption of such an assumption is justified because in practice marketing orientation means creating a company mission based on values significant for the client, ensuring the participation of all employees in creating growing values for the client and including it in the process of value creation (Mazurek-Łopacińska, 2011). For the purpose of this study, it was assumed that the leader is a top-level manager who is able to organize people and resources to effectively achieve the set goals and has the ability to lead the organization to long-term success (Karaszewski, 2006; Laužikas & Miliūtė, 2020). The subject of the research were the leaders managing innovative enterprises with a commercial and service profile located in North-Eastern Poland. The aim of the article is to identify types of customer-oriented leaders in the commercial and service sector as well as to systematize knowledge in terms of leadership and customer orientation. Focusing on this group of respondents is the result of previous research (Widelska & Jeseviciute-Ufartiene, 2018), according to which the identification of factors determining customer orientation may depend on the type of enterprise. In the case of service enterprises, there is a direct relationship, which significantly shortens the distance between the company and the customer and affects the scope of customer focus. The choice of the sector resulted from the often close and direct relationships that take place in the exchange process. Methods of the research: quantitative studies CAWI, monographic/descriptive method, cluster analysis.

2. Leadership and customer orientation in management sciences

Both leadership concepts and customer orientation have been widely described in the management sciences, but the relationships and dependencies that arise between those that still require further exploration. Leadership and customer orientation are the basic pillars on which the company's activity is based, and as the results of previous research show, their mutual interactions may affect its development and competitive position (Day, 1999; Kennedy et al. 2003, Kirca et al. 2005, Narver 1998, Palm, 2011). Customer orientation remains the basic and integral competence of the modern organization. Each enterprise is maintained by the client and interacts with it directly. It is the client and his needs that determine the basic directions of development and the client ultimately decides about the purchase and acceptance of the offer (Sheth et al., 2000). Therefore, it is necessary to combine both concepts and introduce them to the science of managing the category of customer-oriented leadership.

Research on the relationship between leadership and customer orientation raises some substantive and conceptual doubts. Both business leadership and customer orientation are the subject of many studies, but their definition and perception is diverse, which often makes these categories ambiguous and heterogeneous (including Alio, 2012, McDermott, et al 2011). The description of customer orientation as a subject of research is usually declarative. It justifies and explains the benefits of the company that result from focusing on customers and providing them with satisfaction. Customer orientation is presented as a superior orientation, the implementation of which has the greatest impact on building a competitive advantage. All company's efforts should focus on the profitable satisfaction of the client's needs. This means that it is necessary to look for factors determining customer orientation in the company. Leadership seems to be one of the key factors. Previous research confirms this

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(Kennedy et al 2003, Kirca et al. 2004), because regardless of the leader's approach, the top-level manager is directly involved in the process of its implementation in the company. Decisions regarding clients, regardless of the organizational structure and the adopted management model, are made at the highest level. Creating customer value is an activity based on strategic decisions that are the top managers' competence, not just personnel directly involved in the service process (including Sararijavi et al, 2014). The research results also indicate that the way of business management can be a barrier to developing market competences of the company (Harris & Ogbonna, 2001). The research also shows the leaders oriented to the needs of employees are also more aware of the expectations of clients (Pekovic, 2016, Boddy & Croft, 2016). Leadership promotes creativity, which has an impact on the development of innovation and the degree of customer orientation (Harris & Ogbonna, 2001). It should be emphasized that a customer-oriented enterprise has a customer management system - a business strategy based on building long-term relationships with clients, which aims to maximize the level of customer satisfaction while minimizing their outflow (Tracey & Tran, 2001). Orientation on the client's needs means cooperation at the inter-organizational level, contributing to building cooperation ties (Park et al., 2017). The scientific exploration of customer orientation also confirms the existence of relationships that exist between the concentration of the company on the needs of customers and the level of its innovation (including Esty & Porter, 2005, Roswening & Grinstein, 2015). Meeting ever new and more frequently changing needs requires a quick response from the company's thrones, in the form of innovative products, but also innovative methods of communicating with target roars. There are studies confirming that more customer-oriented enterprises are more open to innovation (Franbach and others, 2003; Ford & Paolio, 2013).



Fig. 3. Factors determining the leader's orientation to the client
Source: author's elaboration

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Summing up, it should be emphasized that a client-oriented leader, especially in a service enterprise (Fig. 3), focuses not on the client but on the service, integrates the organization's resources to achieve market objectives, invests in modern information exchange systems, solves problems (Wickham, 2007) and adapts the organizational structure to market requirements (Wickham, 2007). This is due to the specificity of the service as a product (Griffiths et al., 2001), its heterogeneity (Alzaydi, 2018). On the one hand, the specificity of the service as a product facilitates building long-term relationships, but on the other hand it strengthens the client's role and its bargaining power (Mickelsson, 2013). Therefore, there is a dilemma of who should be more responsible for relations (Cook & Macaulay, 2011, Swan et al 2002). It should be emphasized that the client is also a co-creator of creating the value of the service (Heinonen et al., 2010).

3. Research methodology

The conclusions were drawn on the basis of results of a quantitative study carried out using Computer Assisted Web Interviewing (CAWI) conducted with 204 business leaders from Podlasie Voivodeship. The research was carried out in November 2017 - October 2018 as a part of grant from the National Science Center entitled "Leadership and customer orientation in an innovative enterprise". According to the concept accepted by the study a leader was deemed to be a person who:

1. Is a manager from the highest level of management or is the owner of the business or, on account of being the founder of a company (first owner) still influences its development and has a part in making key decisions.
2. Runs an enterprise employing at least 3 workers.
3. Manages an innovative company which is implementing at least one type of innovation including product, process, technological or informational innovations.

For the purpose of the application, this paper uses the results of research conducted among the leaders representing the trade and service sector. A preliminary analysis of the research results indicated that there are differences in customer orientation between enterprises with different profiles (Fig. 4).

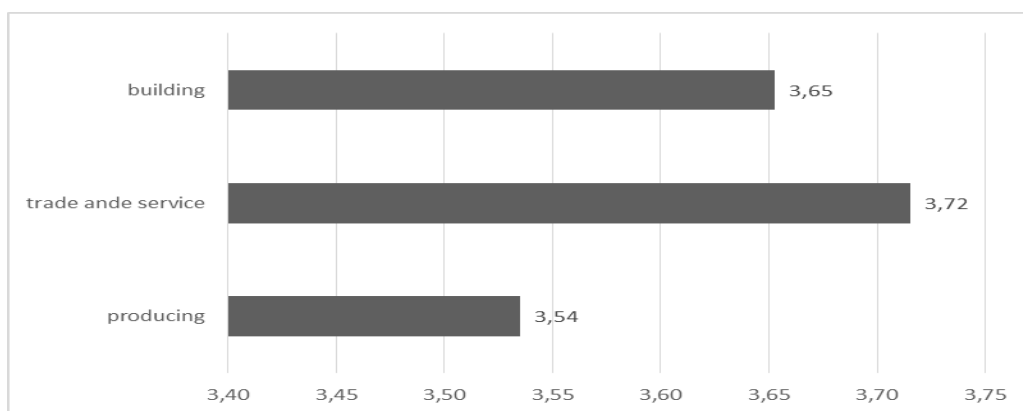


Fig. 4. Company's profile and customer orientation

Source: author's elaboration on the basis of results of the CAWI research

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The assumption of boundary conditions listed above was the consequence of the conceptual character of leadership. As has been mentioned previously leadership is a multidimensional category which functions within numerous concepts and theories (Kraszewski, Skrzypczynska, 2016). This fact was a certain limitation. The choice of study respondents was a certain type of a compromise and it is obvious that the accepted criteria do not fully define respondents as leaders. It is certainly disputable whether one's position always makes one a leader. Hence, the approach which identifies a leader as a complete manager who can manage people and available resources to effectively realize established goals and has the ability to lead an organization to long-term success, was established as the starting point (Kraszewski, 2006). Acceptance of this perspective allowed a preliminary identification of relations which occur between leadership and customer orientation. Inclusion in the study of managers from the highest level of management running innovative enterprises was intentional. Initial review of up-to-date scientific works concerning leadership and customer orientation shows that innovations are, as it were, an integral part of both of these concepts. Being oriented at innovation can be interpreted as being customer oriented. Introduced innovations are a reaction to the changing market conditions. On the other hand, leaders are the main tool for the improvement of an organization and influencing its success.

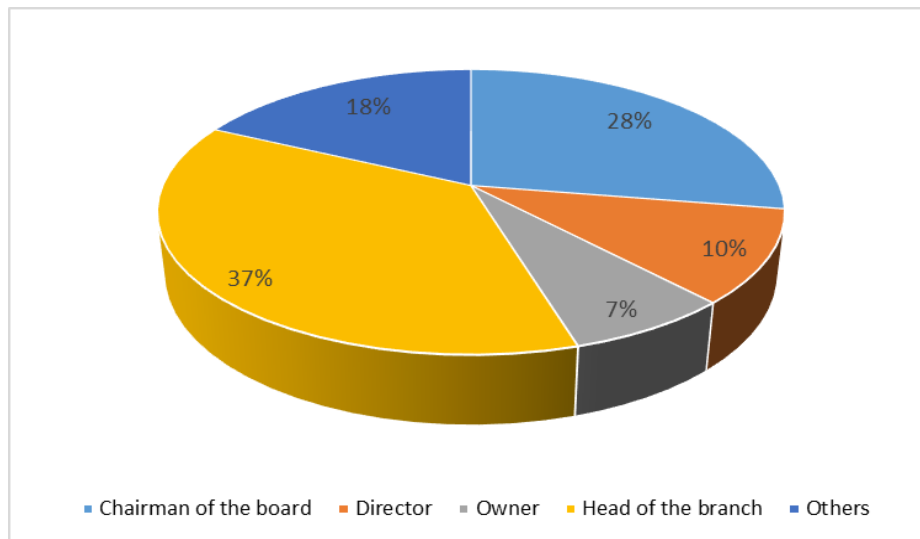


Fig. 5. Distribution of trade and service companies in relation to their position.

Source: author's elaboration on the basis of results of the CAWI research

The study included 152 leaders among whom 37% are directors, 37% are chairmen of the board, 7% are company owners and 28% are heads of the branch (Fig. 5).

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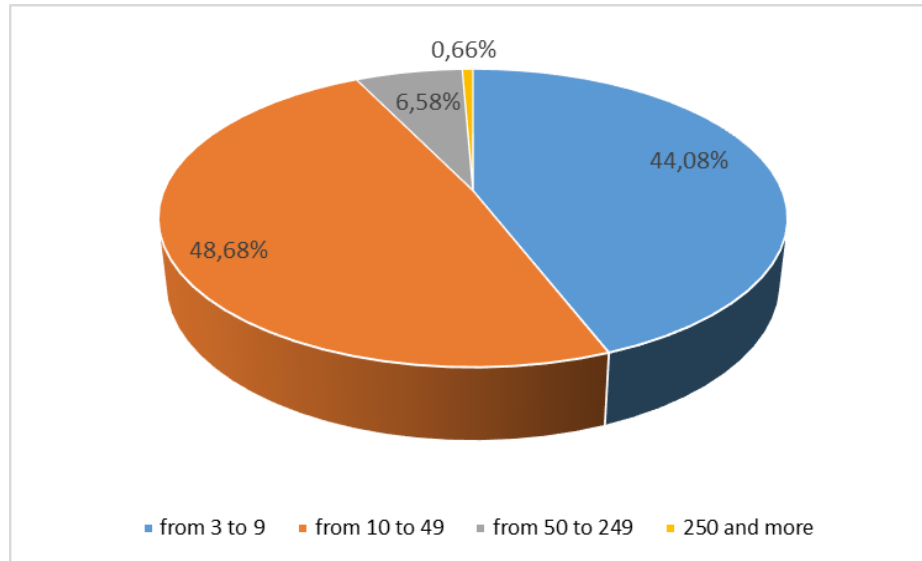


Fig. 6 Structure of trade and service enterprises according to the number of their employees

Source: author's elaboration on the basis of results of the CAWI research

The greatest number of respondents (48.7%) ran companies employing from 10 to 49 workers while 44,08% of participants managed businesses employing from 3 to 9 workers. Very large companies hiring more than 250 people had the smallest representation in the study. The distribution of respondents according to industry was also the same as the distribution within the Voivodeship.

Table 1. Structure of respondents according to the type of introduced innovations

No	Innovation type	Answer	
		Yes	No
1	a new or a significantly improved product has been introduced into the company's offer	84,2%	15,8%
2	the company's machine park has been expanded or modernized, new machines or devices have been purchased, the production process has been improved	62,5%	37,5%
3	the company has purchased, implemented new software or IT solutions such as, for example, CRM	69,7%	30,3%
4	the company has implemented new methods of marketing communication or modern promotion tools using, for example, social networks (FACEBOOK) or remarketing	82,2%	17,8%

Source: author's elaboration on the basis of results of the CAWI research

In relation to the scope of implemented innovations most study participants introduced product innovations (84,2%). Improvement of communication methods was carried out by 82,2% of respondents. Technological innovations were realized by 66.7% of participants while process innovations were done by 69,7% of them. The type of implemented innovations depended on the company's field of operation (Tab. 1).

The cluster analysis method was used for the purpose of the research. It is a set of methods of multidimensional statistical analysis, consisting in segmentation of data in order to identify homogeneous objects of the studied population. This method consists in dividing the set of data into groups, so as to obtain clusters in which the

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elements are similar to each other and at the same time different from the elements from other groups (Zalewska, 2017).

3. Analysis of test results

During the research process entrepreneurs (leaders) were asked to assess, on a scale of 1 to 5 where 1 was a full denial and 5 meant full approval, the veracity of statements relating to a market oriented company (Tab. 2). It presents the average values of the assessment of single statements indicated by all respondents participating in the survey. According to the leaders taking part in the study customers determine the directions in which the company develops and a rapid reaction to the needs of the market decides about its success. This manner of perceiving the success of an organization fully falls into the concept of customer orientation. Respondents agree as to the fact that an enterprise can be the creator of new needs and shape new trends.

Table 2. Assessment of statements arising from customer orientation by leaders

No	VARIABLE
P05_01	Rapid reaction to the needs of the market decides about the success of an enterprise
P05_02	Customers determine the enterprise's direction of development
P05_03	The customer is the most important stakeholder within the organization
P05_04	The customer is more than just a stakeholder – he is a resource of the enterprise
P05_05	Systematic monitoring of needs and expectations of customers is essential
P05_06	Maintaining relationships with return customers is more difficult than gaining new customers
P05_07	The ability to maintain relationships with return customers is more important than the ability to gain new customers
P05_08	An enterprise should be a creator of new needs and shape new trends
P05_09	A leader (manager from the highest level of management, company owner) should be in direct control of the marketing department
P05_10	The marketing department (sales department) is most responsible for building relationships with customers
P05_11	It is the customers and their needs who are the main source of inspiration in the creation of new products and services
P05_12	The customers are most of all partners and not a source of profit
P05_13	A leader should concentrate on building close relationships only with key customers
P05_14	Standards for customer service are a factor which determines successful sales
P05_15	Every product can be sold – everything depends on the skills of the salesman
P05_16	The customer is the co-creator of product value
P05_17	An enterprise should aspire to expand internationally

Source: author's elaboration on the basis of results of the CAWI research

The distribution of answers in the scope of question 5 (Fig. 7) Indicates that the leaders representing the trade and service sector agree that the response to customer needs influences the success of the company (36.8% indicated 4, and 42.1% - 5). The top manager assigns great importance to market monitoring (42.8% assesses this claim on 5) and sales skills (almost 40% of respondents fully agree that sales skills are key). Leaders do not differentiate customers into loyal and key ones (structure of answers to question P05_07 and P05_13).

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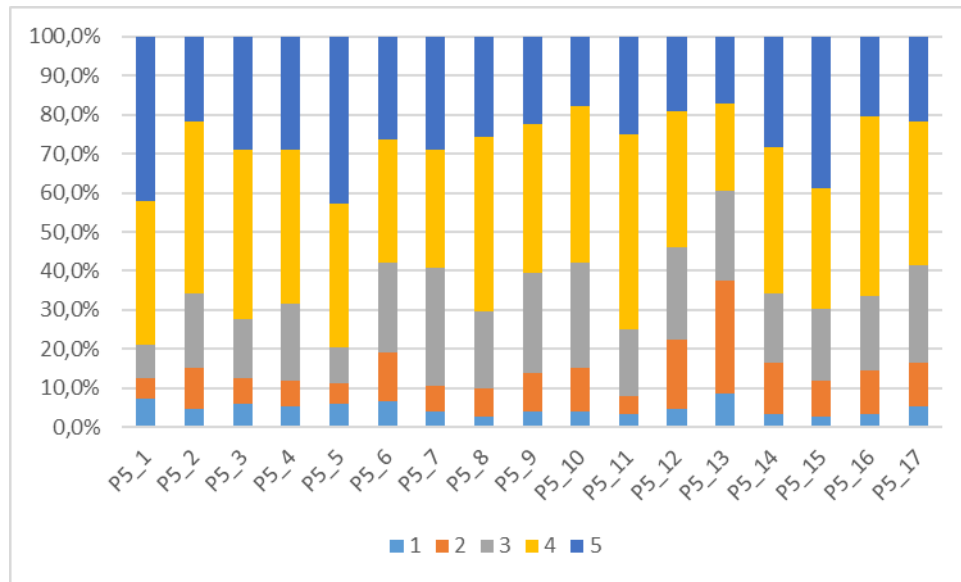


Fig. 7. Assessment of statements under question P05 (Table 2)
Source: author's elaboration on the basis of results of the CAWI research

Using one method of cluster analysis called Ward's method and analyzing the process of agglomeration allows for distinguishing three clusters of companies. In order to determine of number of similar companies in terms of customers orientation, cluster dendrogram was used (Fig. 8).

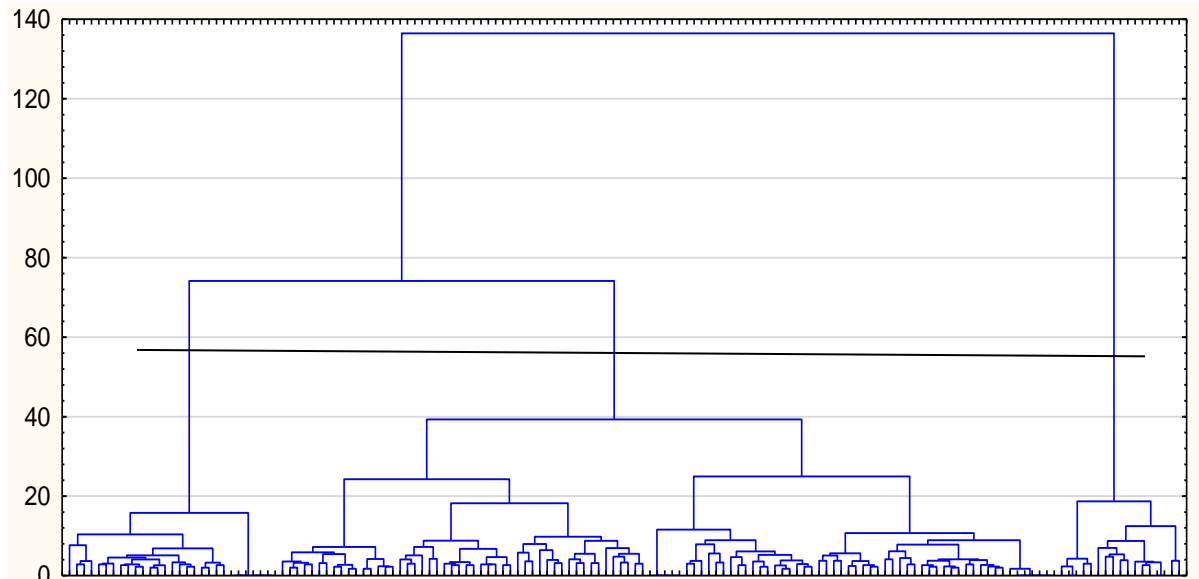


Fig. 8. Cluster dendrogram
Source: author's elaboration

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As the result of using k-means procedure three clusters of companies were singled out. Each cluster is characterized by different level of answers. One of the ways identifications of the cluster nature is the analysis of average values of answers for each cluster. In order to present the nature of each cluster, a figure of average values of particular indicators for each cluster is given (Fig. 9).

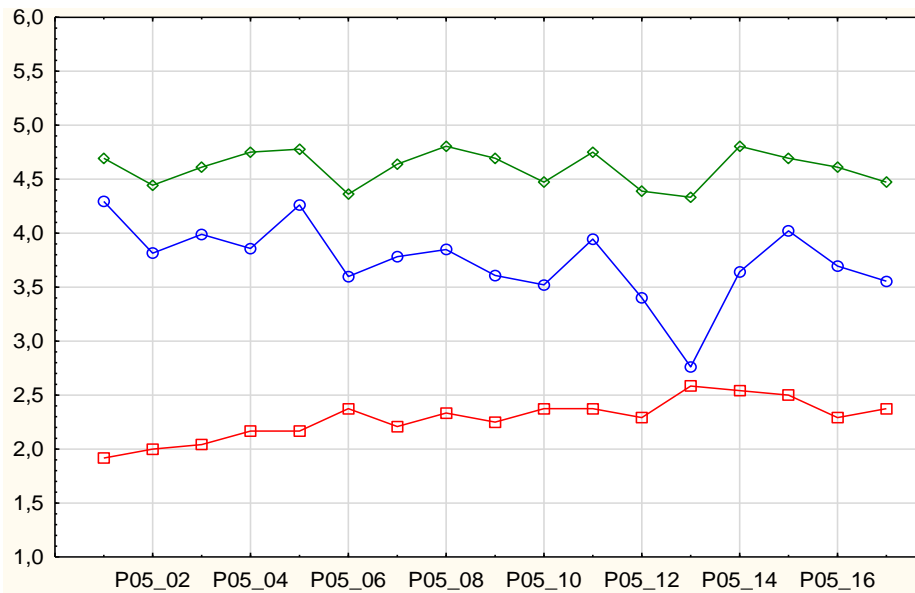


Fig. 9. Average scores for each cluster
Source: author's elaboration

In cluster 1 (blue line) there are 92 companies, in focus 2 (green line) - 24, while in focus 3 (red line) - 36 companies. Cluster analysis allowed to distinguish 3 types of customer-oriented leaders: strongly oriented, moderately oriented and poorly oriented. The most numerous group are moderately customer-oriented leaders. In their opinion, focusing on the needs of clients determines the success of the organization. Strong attention is focused on market monitoring and obtaining information about customers and trends. The clients' needs are their inspiration in the process of making changes. They pay a lot of attention to sales techniques - in their opinion, sales skills are crucial in building long-term relationships with clients. In their opinion, the leader should not differentiate clients and focus only on key clients. Client-focused leaders are the most customer-oriented 2. They see customer orientation in two ways - both strategically and operationally. They treat the client as a creator of success, but also pay attention to adjusting the organization to the needs of target markets. Particular attention is paid to customer service standards. The least customer-oriented leaders focus the most attention on service systems and improving sales skills. They do not perceive the client in a strategic dimension. It can be presumed that these are managers who are an intermediate link in the supply chain.

Conclusions

The issue of customer-oriented leaders requires further exploration. This is due to the fact that many factors determine this category of determinants. One of them is the sector. The inference article was supported by CAWI survey results conducted among the leaders of the trade and service sector. The preliminary epistemological analysis indicates that the client-oriented leader:

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- focuses on the client and not on the service;
- adapts the organizational structure to market requirements;
- integrates the organization's goals;
- provides information exchange;
- affects the creativity of employees;
- is focused on innovation;
- maximizes the value of the customer.

Conducted cluster analysis confirms the importance of customer orientation in the commercial and service sector. The separated groups point to a high degree of concentration, which is appropriate for enterprises of this type. However, there are leaders characterized by low level of orientation and focusing primarily on the operational sphere. The test results submitted should be regarded as preliminary.

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THE COVID-19 PANDEMIC AND RESILIENCE OF SMEs IN LITHUANIA*

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Abstract. The article focuses on a relevant scientific and practical problem of the present, i.e., the resilience of organisations in the face of the COVID-19 pandemic. The aim is, upon analysing the response of organisations to the threats related to the COVID-19-caused restrictions on economic activity, to identify the predominant behaviour of organisations that predetermines their resilience. The theoretical part discusses the leadership aspect of the heads of organisations and the ability of organisations to survive in the conditions of uncertainty. The findings of the research in small and medium-sized enterprises (SMEs) of Klaipėda Region are presented. The research methods chosen to deal with a scientific problem in the theoretical part include an analysis of literature sources, systematisation, synthesis, generalisation, and comparison. In the empirical research, quantitative research, i.e., a questionnaire survey and data processing methods, was applied. Due to the specificity of the region, the majority of the surveyed business entities (71.3%) are from the services sector, while the rest of the surveyed companies belong to the manufacturing (15%) and trade (13.7%) sectors. The research established that most of the organisations surveyed benefited from the government support. On assessing the survey data and summarising the response and efforts of organisations to deal with uncertainties, a conclusion was drawn that SMEs' response to uncertainties was mainly focused on the protection against threats and avoidance of risk, however, the organisations lacked preparedness and consistency when dealing with unforeseen circumstances.

Keywords: organisational resilience; small and medium-sized enterprise (SME); COVID 19 pandemic.

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JEL Classifications: M12, M21

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1. Introduction

Due to the COVID-19 pandemic, after the introduction of the first lockdown in Lithuania (16 March 2020), a large number of Lithuanian companies faced unprecedented challenges. The Government of Lithuania proposed state interventions aimed at reducing the negative economic impact on national businesses. The global pandemic outbreak (COVID-19) continues to pose serious challenges to executives at all levels in different size organisations. Emergency management at various levels is becoming a regular routine for the leaders of organisations. They realise the inevitability of changes, and therefore they improve strategies for dealing with unknown challenges; the behaviour of organisations is to be changed in order to adapt to new situations and changes. People have to accept change as a part of organisational life, which is a more convenient way for them to adapt to the situation, however, the challenges of leadership resilience to extreme conditions in organisations remain a pressing complex issue. Resilience is understood as the ability to regain strength, vitality in recovering from disasters, failures, and traumas, and recovery to a full-fledged life. Resilience in the context of leadership is perceived as an essential feature of high-energy leaders able to take responsibility for maintaining the energy of their team members. Resilience and leadership have so far been more often associated with a team's ability to restore high levels of energy in the face of conflicts, toxic professional situations, and employment relationships. In the face of a crisis, resilient leaders are first of all described in terms of who they are and what they do at different times, given different priorities. The resilience of the employees, described as the ability to continually adapt and prosper even in the face of challenges, is an individual-level design that also benefits organisations. Resilient leadership in the face of the pandemic takes on a broader context: adapting and responding to the current situation, recovering and strengthening, and ensuring continued, sustained, and coherent action. Small and medium enterprises are so sensitive in environment, that managers should keep strength to continue business in all circumstances (Bilan, Mishchuk, Roshchuk, Joshi, 2020; Chen, Liu, 2018). The scientific problem can be formulated by a problematic question: are the organisations under review resilient to emergencies such as the COVID 19 pandemic?

The aim of the research is, upon analysing the response of organisations to threats related to the COVID-19-caused restrictions on economic activities, to identify the predominant behaviour of organisations that predetermine their resilience.

Novelty of the research: assessment of the resilience of small and medium-sized enterprises (SMEs) in Klaipėda Region (Western Lithuania) in response to the impact of the economic restrictions imposed on SMEs by the COVID 19 lockdown.

Klaipėda Region in Western Lithuania with the population of 317,199 (11.3% of the Lithuanian population) includes seven municipalities: those of Klaipėda, Palanga, and Neringa Cities and Klaipėda, Kretinga, Skuodas, and Šilutė Districts. It is the only region in Lithuania on the seacoast: as many as four municipalities of the region are located on the Baltic Sea coast, boasting long-established traditions of maritime business and a developed tourism and recreation sector. Klaipėda Region is the third largest region in Lithuania, covering the area of 5,209 km² with the average density of population being 61 per km² (1). It produces 12% of the national GDP (EUR 4.29 bn.), EUR 1.11 bn Federal Direct Investments, and 48% share of exports of Lithuanian origin products.

The methods applied in the research include analysis of literature sources, systematisation, synthesis, generalisation, and comparison in the theoretical part, and quantitative research, i.e., a questionnaire survey and data processing methods, in the empirical research.

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2. Analysis of literature

In general, resilience is understood as the ability to regain strength, vitality in recovering from disasters, failures, and traumas, and recovery to a full-fledged life. In the context of leadership, resilience is perceived as an essential feature of high-energy leaders able to take responsibility for maintaining the energy of their team members. Resilience and leadership have so far been more commonly associated with a team's ability to restore high levels of energy in the face of conflicts, toxic professional situations, and employment relationships. In the face of a crisis, resilient leaders are first described in terms of who they are and what they do at different times, given different priorities. Employee resilience is described as the ability to continually adapt and prosper even in the face of challenges, i.e., an individual-level design that is also a benefit for organisations. Resilient leadership in the face of a pandemic takes on a broader context: adapting and responding to the current situation, recovering and strengthening, and ensuring further sustained and coherent action.

To survive in an uncertain environment and operate successfully in the future, organisations need to be able to operate in conditions of uncertainty. Companies need to develop resilience capabilities that allow them to respond appropriately to unexpected events that may threaten the survival of the organisation (Lengnick-Hall et al., 2011; Walker et al., 2003).

In performing the said function, resilience differs from other resilience-related constructs, such as flexibility, mobility, or strength. Although flexibility as an ability to adapt quickly to environmental changes (Golden and Powell, 2000) and mobility as an ability to quickly identify opportunities, change direction, and avoid collisions share several elements inherent in resilience, some specific accents of these constructs tend to be different (Duchek 2020). While flexibility and mobility are needed to address day-to-day challenges and change, resilience is an important success factor in coping with unexpected threats and crises (Lengnick-Hall et al. 2011). In addition, resilience is associated with adaptation and allows organisations to emerge from the crisis by "jumping" to a better position, a more advanced stage in the development process than it was before. This quality distinguishes resilience from strength, which is defined as the ability of a system to maintain its functions despite disturbances (Capano, Woo, 2016). Resilience is not the final state of being, but rather a process of progressive development in a risky (uncertain) environment throughout the lifetime (Southwick et al., 2017).

Organisational resilience is defined as the ability of an organisation to effectively master and develop responses to a specific situation and ultimately engage in transformational activities with the aim of taking advantage of uncertainties that threaten the survival of the organisation (Lengnick-Hall, Beck, Lengnick-Hall, 2011).

According to Linnenluecke (2017), research in resilience in the area of business and management is fragmented, broken down into several streams: organisational response to external threats, organisational reliability, employee strengths, adaptability of business models, and design principles that reduce supply chain vulnerabilities.

The findings of that kind of research resulted in the development of definitions, conceptualisations, and the measures of resilience. Denyer (2017), who summarised the development of thought on the topic of organisational resilience, examined it in five directions: (1) preventive control (risk management, removal of physical barriers, copying of operational systems, standardisation of procedures, etc.); (2) conscious action (detection of threats and efficient response to unfamiliar or challenging situations); (3) optimisation of productivity (improvement and extension of existing competencies, upgrading of working methods and technologies used, etc., to serve existing customers and markets); 4) application of innovation (development, invention, and exploration of unknown

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markets and new technologies); and (5) paradoxical thinking (combining the first four stages for a more comprehensive and precise adaptation in line with the character and needs of the specific organisation activity). Denyer (2017) also identified two main factors of organisational resilience, i.e. protective and progressive, and two main perspectives for building resilience, i.e. consistency and flexibility; all that was to be integrated into a holistic system that required integration, balance, and relevance (in accordance with the purpose).

Organisational resilience was defined as a multilevel concept related to an organisation's resources, routine, and process (Wang et al. 2017). Organisations built resilience through the complex interplay of many factors at the individual, group, and organisational levels (Xiao, Cao, 2017).

Those differences in attitudes and behaviours led to a lot of disagreement and misunderstandings in organisations, therefore, not surprisingly, the heads of an organisation who wanted to enhance its resilience received conflicting instructions. The role of the heads, i.e., controlling tension and balancing the four ways of building resilience, required paradoxical thinking. The shape of the "stress square" of an organisation's resilience depended on the nature of the organisation, its activity and its industry, and in particular on the level of uncertainty and the pace of the industry development (the pace of changes in technology, regulations, and market). Focusing on one specific aspect could create blind spots that might undermine an organisation's resilience.

When viewing an organisation's resilience from a procedural point of view, three stages of the resilience process could be identified (Duchek, 2020): (1) anticipation, (2) overcoming, and (3) adaptation; resilient organisations responded not only to the past (reactive action) or current problems (parallel action), but also to the future (active action). That temporary structure of the resilience process was associated with the crisis management approaches. Adaptation could help organisations avoid the negative effects of unexpected events or mitigate them in two ways: through reflection and learning and through making use of the opportunities for organisational change. On the one hand, organisations needed to be able to reflect on a crisis and incorporate the knowledge gained into their existing knowledge base. On the other hand, they had to act on that knowledge and to implement change. Promoting positive, strong employee relationships helped organisations adapt to change and maintain consistency. Greater sustainability potential helped organisations to more successfully address unknown problems and deal with future challenges. Also, entrepreneurs need not to forget about competitiveness and innovations in organizations (Decyk, 2020).

Researchers around the world had been actively involved in research into the implications of COVID-19. Some of them placed more emphasis on the importance of medical professionals' general condition (Greenberg, Docherty, Gnanapragasam, Wessely 2020; Flanagan, Chadwick, Goodrich, Ford, Wickens 2020), on psychosocial societal issues (Dubey, Biswas, Ghosh, Chatterjee, Dubey, Chatterjee, Lahiri, Lavie 2020; Al-Tammemi, Akour, Alfalah 2020), and the need for clear communication with the public in the event of the pandemic (Vaughan, Tinker 2009, Brooks, Webster, Smith, Woodland, Wessely, Greenberg, Rubin, 2020), on information and communication technologies empowerment in remote work (Pretorius, Davidavičienė, 2018; Davidavičienė, Al Majzoub, Meidute-Kavaliauskiene 2020) while other researchers modelled the scenarios of their countries' development during and after the pandemic (Rezk, Piccinetti, Radwan, Salem, Sakr, Khasawneh, 2020). Such researchers as Besenyő and Kármán (2020) examined effects of COVID-19 pandemy on a counry's health, political and economic strategy. State intervention in the operation of organisations by suspending their activity or providing support in the case of crises is not a new phenomenon (Maşca, Văidean, Golgut, 2011), however, it became a global phenomenon in the context of the global COVID-19 pandemic. Therefore, we will review the impact of COVID 19 on the organisations in Klaipėda Region.

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3. Methodology

According to the data of the Department of Statistics of the Republic of Lithuania, in 2020 January 1 there were 10427 business entities operating in Klaipėda region, of which 1041 in the manufacturing sector, 2913 in trade and 6473 in services. The participant SMEs came from seven municipalities of Klaipėda Region. The research questionnaire was designed, based on theoretical assumptions and the information on the Government aid packages to support small and medium-sized business enterprises.

The online questionnaire was submitted by the end of September 2020 and was composed of three parts. The target groups and economic areas were chosen for the research by SME type: manufacturing, trade, and services. *Stratified sampling* was applied (Forthofer, Lee, Hernandez, 2007). By the end of October, 77 questionnaires were received, 4 questionnaires were rejected as unsuitable for further data processing, i.e., incomplete, for total analysis used 73 questionnaires.

The aim of the research was to find out the views of the respondent organisations on the COVID-19-caused state restrictions on economic activity and the efficiency of the intervention measures to support SMEs introduced due to the lockdown. The questionnaire Cronbach α - 0.903 indicated a very high level of internal consistency and justified its reliability.

In order to assess the impact of COVID-19 on SMEs resilience, the results of the research were analysed through the prism of organisational resilience, by comparing how the organizations had managed to combine preventive control, conscious action, performance optimisation, and application of innovation. Conclusions were drawn on how the SMEs had managed to combine defensive and progressive as well as consistent and flexible behaviour in their action.

The majority of the respondents (71.3%) worked in the services sector, including almost half of them (46.6%) providing services that required contact with clients and 24.7% providing services that did not require contact with clients. The rest of the enterprises under survey belonged to the manufacturing (15.0%) and trade (13.7%) sectors.

In terms of activity duration, the largest number of the research participants represented business entities operating for over 10 years (68.8%), 13.7% of them, from 5 to 10 years, 11%, for 2 to 5 years, and 6.8%, for 1 to 2 years; the business entities operating for up to one year accounted for 2.7% of the business entities surveyed.

The largest share of the business entities surveyed (29.2%) had an annual turnover of EUR 100,000 to 300,000; another larger group of the business entities surveyed, whose annual turnover amounted to EUR 300,000 to one million, accounted for 20.8% of the survey participants. Other groups of the business entities that participated in the survey were as follows: 15.3% of them boasted an annual turnover of EUR 30,000 to 100,000, 12%, EUR 2 to 10 million, 8.31%, to 30,000, 8.3%, EUR 10 to 50 million, and 1.48%, over EUR 50 million.

Among the business entities participating in the survey, the majority (50.7%) were subject to the mandatory restriction on economic activities from 16 March 2020. 27.4% of the respondents stated that their activity was not suspended, and the work was organised remotely; 16.4% claimed that their activities did not change, and the work was organised in a routine way; 2.7% marked other than the above named consequences; and 2.7% indicated that their companies suspended their business activities.

During the Covid-19 lockdown from 16 March 2020, the turnover of 35,6% of the respondent business entities fell by more than 50%, of 19,2% of them, by between 20 and 50%, and of another 19,2%, by up to 20%. The turnover did not change in 24.7% of the business entities participating in the survey, while 1.4% of the business entities reported a 20% increase in turnover. The surveyed businesses performed differently due to COVID-19: they either 1) operated without major restrictions or had their economic activities 2) restricted or 3) suspended.

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4. Results

Assessment of the situation caused by the Covid-19 pandemic-related restrictions on economic activity. An analysis of the number of employees in January-February 2020, during the lockdown, and in August 2020 revealed that the number of the respondent business entities with up to 3 employees (2.7% of the survey participants) decreased during the lockdown period (to 1.4%), and in August, such numbers of employees were not reported at all (possibly due to suspension). The number of the business entities with 50 to 99 employees decreased during the first lockdown (from 9.6% to 8.2%), and after the lockdown, the number of such business entities returned to the previous position (9.6%). The most visible change was observed in the number of business entities with up to 10 employees (during the lockdown, their number increased from 47.9% to 49.3%, possibly due to staff reductions in other groups of business entities); the same trend was observed in the companies with 11 to 49 employees. In other groups of business entities with the number of employees from 100 to 249 and 250 and more, no changes were discovered.

We can presume that the most sensitive reaction to the lockdown restrictions was that of the businesses with up to 3, up to 10, and up to 100 employees. In the business entities with more than 100 employees, no changes in the employee turnover were identified (possibly as a result of state support for such business entities).

During the first wave of COVID-19, the majority (93.2%) of the respondents had no cases of diseases in the company, merely 2.7% had one case, and 4.1% reported having had several cases. Assessing the impact of the COVID-19 pandemic on the companies, we found out that, with the onset of the lockdown, the areas that changed the least during the lockdown could be identified. The introduced lockdown stopped the opening of new outlets (average 1.48, standard deviation (SD) 0.75); moreover, the surveyed business entities noted that they did not actively develop Ecommerce (average 1.59, SD 0.83). The respondents also argued that the changes in, or updates of, technology did not reduce the time of customer paying for goods / services (average of the answers to the item customer time of paying for goods or services decreased was 1.74 points, SD 0.88). The business entities did not observe an increase in consumer demand for the company's products (1.96, SD 1.18), or in the volumes of logistics services (1.89, SD 1.12), or in online sales (2.04, SD 1.20). The cost of renting business premises did not decrease (2.00, SD 1.20), nor did the business entities participating in the survey actively initiate technological changes and upgrades during the first lockdown (assessment average 2.15 points, SD 1.19). An analysis of the negative consequences of the lockdown on the activities of companies revealed that the lockdown increased the level of bureaucracy (the item scored 3.84 points, SD 1.18), the companies faced the problem of order cancellation (the item scored 3.75 points), and the demand for certain products dropped (the item scored 3.70 points, SD 1.75). The above statements suggested that the companies faced a decline in demand for their products during the lockdown.

Preventive action. When changing the nature of work organization due to the COVID-19 pandemic, the following measures were most often indicated by the respondents: distance work organised (58.9%), downtime introduced (50.7%), staffing suspended or canceled (31.5%), and working hours reduced (30.1%). More drastic measures were also named, such as a reduction in the number of working days (16.4%) or redundancies (13.7%), as well as a reduction in the number of shifts (8.2%) (Figure 1).

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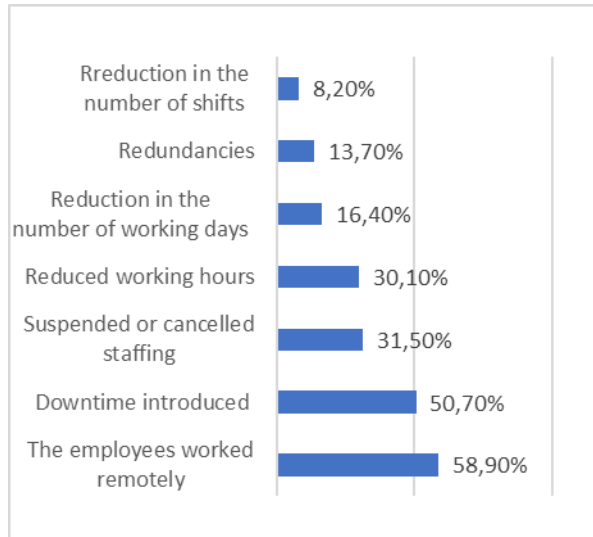


Figure 1. Changes in nature of work organization

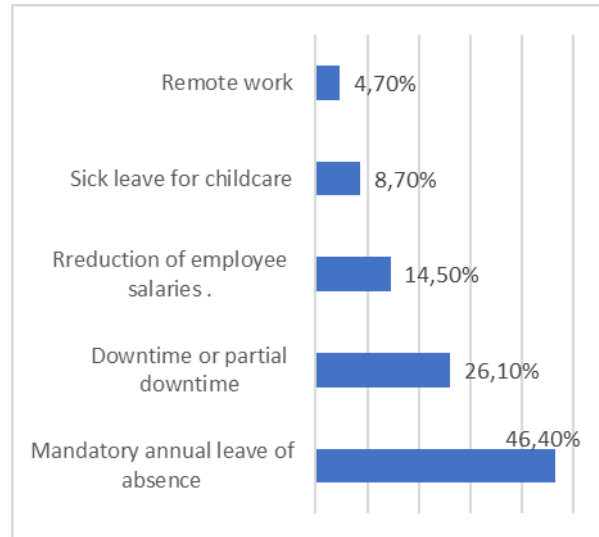


Figure 2. The most significant measures for retaining employees in the enterprises

16.4% of the respondents stated that the nature of work organisation had not changed. 5.5% of business entities hired more employees, while extended working hours and an increased number of shifts was reported by 2.7% and 1.4 % of the business entities, respectively. 6.8% of the business entities indicated that other measures had been taken to change the nature of work organisation.

Based on the survey data, we can argue that the business entities participating in the survey experienced business stagnation; those unable to organise work remotely were forced to declare downtime and/ or to reduce working hours and the number of shifts or working days, stop the staffing, or even lay off their employees.

The majority (89%) of the surveyed businesses managed to save jobs during the first Covid-19 pandemic: 6.8% of them reported having retained 51 to 75% of jobs, 2.7%, 26 to 30% of jobs, and 1.42% managed to retain merely up to 25% of jobs.

The most significant measure for retaining employees in the enterprises was making them take a mandatory annual leave of absence (46.4%) and declaring downtime or partial downtime (26.1%). The third most frequently used measure to retain employees was the reduction of employee salaries (14.5%). 8.7% of the respondents took a sick leave for childcare. Although the business entities were active in organising work remotely, that measure was identified as the least significant for employee retention (it accounted for only 4.3%) (Figure 2).

Conscious action. An analysis of the action taken by the surveyed businesses to cope with the COVID-19 pandemic revealed that the most frequently named measure was a change in the terms of the leases. The said measure was named by 30.1% of the respondents. The next most popular measure identified by the respondents was staff reductions (named by 24.7% of the respondents). Activity suspension was the third most popular measure taken by the respondents to overcome the effects of the pandemic. That measure was taken by 20.5% of the respondents. The respondents also identified the three actions least frequently taken by the companies to reduce the impact of the pandemic on their activities: transfer of employees to other companies (named only by 2.7% of the respondents); launching an online shop, which as a means of reducing the negative impact of the pandemic on the company's operations was named by 5.5%; and change in the terms of the bank credit agreements in response to the negative impact of the pandemic on the company's operations was named by 6.8% of the respondents.

A significant part of the respondents (39.7%) argued that their companies had been consistently accumulating contingency funds, which allowed them to continue operating in the conditions of the COVID-19 pandemic.

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However, the remaining respondents admitted that their companies did not have financial reserves to enable their activity during the pandemic. 32.9% of the respondents indicated that the accumulated reserve was sufficient to allow them operate for only one month. The remaining part of the respondents (27.3%) stated that the companies did not have any financial reserve, therefore they would be forced to suspend, or had already suspended, their activities.

In the assessment of the businesses continuity under the conditions of the COVID-19 pandemic, only 31.5% of the respondents reported having a business continuity plan in the event of a pandemic. 37% of the respondents indicated that such a plan was currently being prepared, while 31.5% of the respondents believed that their company did not need such a plan.

Performance optimisation. During the survey (mainly in October 2020), the respondents indicated that the priorities related to the improvement of employee productivity in their SMEs over the next three to six months included: the organisation of flexible work (41.6%), the improvement of the motivation system (35.1%), training for distance work (28.6%), application of alternative professional development models (19.5%), and cross-training through integrated learning, when the employee was trained to perform other functions in the organisation and knowledge transfer (18.2%). Only 9.1% of the respondents were thinking of the implementation of automation or AI, while 28.6% did not name any measures planned to optimise performance. The results of the research revealed indolent enagement of the SMEs in performance optimisation and the lack of consistency in strengthening, improving, and expanding the existing competencies, improving working methods, and using the existing ones for the organisations to build resilience.

Application of innovation. During the assessment of the state support for business in the context of the COVID-19 pandemic, the respondents were asked whether they used state support measures for their businesses. 58.9% of the respondents reported having used state support to mitigate the impact of the pandemic on their companies. Another part of the respondents (35.6%) said that their companies did not use such support, and part of the respondents (5.5%) stated that their companies planned to use such support.

The majority of the respondents (88%) indicated that the support was used for the retention of jobs, and 36% of the companies used the support for the preservation of business liquidity. The lowest number of the survey participants (14%) used the state support to preserve business investments.

In the assessment of the efficiency of the state support measures for business, based on the research findings, two measures were identified by the respondents as the most efficient: those were subsidies to micro-enterprises (estimated at 3.24 points, SD1.60) and rent compensation (estimated at 3.07 points, SD 1.51). The other measures listed were rated as less efficient.

Moreover, in the assessment of the SMEs' behaviour seeking to maintain the organisational resilience, a trend towards defensive reactive action was revealed, focusing on preventive control (3.51, SD 0.64), conscious action (3.85, SD 0.44), and performance optimisation (3.38, SD 0.82), however, there was a lack of innovation adaptation (1.93 SD0.74) and consistency between different actions, leading to a lack of consistency and flexibility in organizations in order to achieve resilience (see Table 1).

Table 1. SME actions for resilience during COVID-19

Actions	Min.	Max.	Average	Standard deviation SD
Preventive actions	2	5	3.51	0.64
Conscious actions	3	5	3.85	0.44
Performance optimisation	1	5	3.38	0.82
Application of innovations	1	4	1.93	0.74

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Based on the findings of the research, performance optimisation solutions were more relevant to the SMEs with a shorter duration of activity ($r=-0,318$; $p=0,142$) and lower annual turnover ($r=-0,380$; $p=0,001$). The SMEs whose turnover had significantly changed due to the COVID-19 lockdown stood out through their conscious actions ($r=-0,313$; $p=0,007$) (see Table 2).

Table 2. Correlations with sociodemographic characteristics

Sociodemographic characteristics	Values	Preventive actions	Conscious actions	Performance optimisation	Application of innovations
Duration of the SME activity	r	,049	-,173	-,318**	-,022
	p-value	,679	,142	,006	,851
Annual turnover	r	,222	-,045	-,380**	,157
	p-value	,061	,709	,001	,189
Change in the SME annual turnover during the COVID-19 lockdown	r	,024	-,313**	-,110	,258*
	p-value	,842	,007	,352	,027

The activity aimed at preventive control was typical of all types of the SMEs (see Table 3), to a lesser extent in the trade sector. The activity of all types of the SMEs was quite actively directed at conscious action. The SMEs that were most inclined towards business optimisation were those providing services where contact was not required (3.64, SD 0.84). More intense actions aimed towards innovation were observed in neither sector of activity (see Table 3).

Table 3. Comparison of SME behavior by type of activity

Actions	Type of activity	Average	Standard deviation SD
Preventive actions	Production	3,60	0,53
	Services where contact is required	3,56	0,72
	Services where contact is not required	3,56	0,53
	Trade	3,15	0,64
Conscious actions	Production	3,80	0,37
	Services where contact is required	3,92	0,48
	Services where contact is not required	3,80	0,44
	Trade	3,81	0,37
Performance optimisation	Production	3,22	0,94
	Services where contact is required	3,27	0,83
	Services where contact is not required	3,63	0,84
	Trade	3,45	0,57
Application of innovations	Production	2,05	0,92
	Services where contact is required	1,91	0,77
	Services where contact is not required	1,96	0,50
	Trade	1,81	0,83

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Discussion

In order to properly adapt to the market under difficult conditions, to take advantage of the changed situation, and to find new opportunities to modify the business, it is important to build organisational resilience and to ensure sustainable improvement. In the presence of COVID-19, it is important not only to survive at the current moment, but also to see opportunities for further activities, to adapt on time, and to change.

Despite the unprecedented economic recovery package in Lithuania during the coronavirus pandemic intended for the retention of jobs and the maintenance of enterprise liquidity and despite the optimistic mood after the first wave of coronavirus that left Lithuania as one of the countries least affected by the coronavirus, the view of business people on the situation differed from that of the media. The differences were especially noticeable in the analysis of the regional situation. The changes in consumer behaviour and habits and the structural changes in business were believed to affect a significant share of business activity even after the crisis. Small and medium-sized businesses were particularly sensitive to such changes. As revealed, the leap in the unemployment rate, associated with the restrictions on economic activities due to the COVID-19 pandemic, hit the hardest the most vulnerable segment of the workforce; similarly, in the business environment, COVID-19 tended to particularly hit small and medium-sized enterprises whose activity was based on self-employment. In that way, the group of the workforce regarded as vulnerable was expanded to include employees of small and medium-sized enterprises. The EU's approval of the new support package maintains expectations and optimism on the stock exchange. However, with the drastic acceleration of the second wave of coronavirus in Lithuania, the optimism of business entities facing restrictions on their activity fades, businesses are suspended, the range of business support measures is limited, or targeted support does not reach small and medium-sized businesses for various reasons: complex bureaucratic mechanisms; discriminatory treatment of support for different business entities; the business itself fears that the support received may adversely affect future trends in the business financing and development due to the potentially negative assessment of the business potential upon receiving state support; or hard-to-reach information due to chaotic activities of public bodies in the face of the pandemic.

The prevailing behaviour of the small and medium-sized enterprises under the conditions of uncertainty and the use of support for mitigation of the COVID-19 effects revealed that, in the current period, the enterprises were oriented towards survival. That was confirmed by the indolent behaviour of businesses in initiating change at the onset of the lockdown during the first wave of COVID-19.

On assessing the survey findings and summarising the response of the organisations and their efforts to cope with uncertainties, we can conclude that the response of the SMEs to the circumstances of uncertainty was mainly focused on protection against threats and avoidance of risk, while the organisations themselves lacked preparedness and consistency.

The indolent response of the SMEs to the challenges of the pandemic (e-shops, planning, standardisation of procedures, etc.) illustrated inconsistency in action, which weakened defense against emerging threats and reduced the resilience of organisations not only to recover after the economic restrictions but also to prosper in the future. Due to the concentration on the maintenance of the status quo and economic difficulties, the SMEs lacked consistent progress-oriented solutions for improving working methods, mastering new technologies, and developing competencies. Due to the lack of flexibility and progressiveness, the opportunities of adapting new technologies to enter or create new markets were neither observed nor sought.

Because of the concentration on preventive control, weak response to change (and lack of conscious action: unaccumulated financial reserves), as well as lack of determination to optimise activities through the expansion of competencies and the use of technology, no progressiveness was observed in the adaptation of recent technology, which resulted in the absence of a holistic approach to the balancing of preventive control, conscious action, efficiency optimisation, and adaptive innovations as well as to managing tensions in order to build organisational resilience.

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Conclusions

The resilience of organisations to unforeseen external influences is particularly important. Such resilience was also important in the past, but the heads of organisations especially need it today, in the face of the global COVID-19 pandemic. Therefore, it is important for the heads of companies not only to be able to generate that trait, but also to engage employees so that they do not lose optimism as well as the ability to collaborate; they have to spread ideas in order to help the organisation focus and find the best solutions together. That, of course, requires not only the qualities of determination and optimism, but also the planning of financial and human resources and the modelling of different scenarios under changing conditions. Therefore, the heads of organisations should rely not only on their innate or developed traits but also on scientist-developed models for coping with unforeseen conditions.

The results of the research in Klaipėda Region revealed that small and medium-sized businesses suffered significant losses during the pandemic. Losses also increased due to the specificity of the region. A large part of the regional small and medium-sized enterprises belonged to the services sector, providing accommodation, catering, and tourism services. The findings of the research revealed that only some organisations had contingency funds. It was gratifying to see that some businesses had been able to transform and transfer some of the services to the virtual space, and employees had been able to continue working remotely. However, to summarise all the findings of the research, we must conclude that the prevailing behaviour of small and medium-sized enterprises under the conditions of uncertainty and the ways of using support for mitigating the effects of COVID-19 revealed that, in the current period, enterprises were oriented towards survival. That was confirmed by the indolent behaviour of businesses in initiating change at the onset of the lockdown during the first wave of COVID-19.

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INPUT-OUTPUT ANALYSIS OF RECREATIONAL ASSETS WITHIN THE INCLUSIVE SUSTAINABLE DEVELOPMENT IN UKRAINE*

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Abstract. This paper aims to develop approaches to accounting for recreational assets in the input-output model based on the analysis of the dynamics of their structure, as well as the structure of intermediate consumption of recreational services, on the example of intersectoral balance of Ukraine during 2012-2018. Based on forecasting the dynamics of indicators such as gross value added, consumption of fixed capital, net operated surplus, etc., optimistic and pessimistic scenarios for the development of recreation (arts, sports, entertainment and leisure) in Ukraine are identified, taking into account the factors of natural asset and the coronavirus pandemic. In particular, the net export indicator is expected to increase due to the restriction of international tourist arrivals and the formation of the domestic market of recreational services on the basis of inclusive sustainable development. Herewith, recreational and tourist enterprises have the following guidelines: security, quality, comfort, effectiveness of asset use. The expediency of state support is seen in the redistribution of the share of accounted natural assets between agriculture, forestry, fisheries and recreation, as well as in changing the structure of assets and intermediate consumption by reducing the share of public administration and increasing the share of other sectors, especially healthcare. The proposed organizational and economic measures complement the Strategy for the development of tourism and resorts for the period up to 2026 in Ukraine.

Keywords: recreation; assets; input-output analysis; nature; inclusive development; sustainability; Ukraine

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1. Introduction

Activization and expansion of recreational activity is one of the promising areas of sustainable development: effectively organized recreation and wellness of the population perform economic, social and ecological functions, as well as contribute to the formation of a healthy nation and thus the well-being of future generations. The main socio-economic result of the functioning of the recreational sphere is the restoration of labor potential, which increases the cost of human capital and is a catalyst for other activities in the structure of the national economy. Herewith the relationship between recreation and the environment has a bilateral nature: on the one hand, effective recreation is impossible without quality ecosystem services and, on the other hand, ecologically oriented recreation has minimal impact on the environment compared to other types of socio-economic activities.

The level of development of recreation is one of the indicators of the growth of the country's economy. Thus, in the United States, one of the most developed economies in the world, the outdoor recreational product in 2017 was 2.2% of GDP (U.S. Bureau 2019). In the structure of GDP of Ukraine, that is a developing economy, recreational product for the specified period was 0.4% (State 2018). The structure of recreational services also differs significantly: such popular recreational activities in the USA as boating, fishing, RVing, camping, ATVing, hunting and equestrian tourism, are not in great demand in Ukraine. A developed market for recreational services also helps to support the protection of ecosystems that attract nature tourism (Hjerpe 2018; Singgalen et al. 2019).

The direct relationship between recreation and tourism, as well as resort treatment allows for the comprehensive implementation of the Sustainable Development Goals (UNWTO 2015; SDG 2017), namely: Goal 8 – inclusive growth of opportunities for employment and productivity, in the direction of promotion of sustainable tourism to create jobs and popularization of local culture, as well as ensure normal conditions for recreation for workers; Goal 12 – sustainable consumption and production, in the direction of rational use of natural resources in the field of sustainable tourism and recreation; Goal 14 – conservation of marine resources, in the direction of improving the safety and quality of recreation and the provision of maritime tourism services. Sustainable recreation (Selin 2017) complements sustainable tourism primarily in the context of inclusive development: in the ecological context – in providing equal opportunities and increasing access to a clean environment, which also serves as a tourist magnet, in particular, national nature parks; in the social context – to maintain at the state level social policy and preventive measures for mass wellness restoration of the population through the implementation of domestic tourism services; in the economic context – in the rational use of recreational assets to meet the broad needs of other sectors of the national economy and end consumers in recreation and health.

In conditions of a pandemic crisis, the role of recreation is significantly increased and transformed into a tool for activating the vital forces of the population to struggle with viral disease. Issues of social and environmental security increase attention to the conditions and measures of planning and organizing of recreation both within the green recreational areas and on the territory and in specialized premises of enterprises and institutions throughout the country. The priority of security is undisputed for the resumption of international tourism (UNWTO 2020). However, this process requires significant efforts and time, which shifts the orientation of the national tourism industry, at least until the end of 2020, in the plane of domestic tourism and its recreational function. Given the further lack of stability in the fight against the pandemic crisis, the shift to the domestic markets of tourism, recreation and resort business will become a strategic nature.

The relevance of the study of recreational assets of Ukraine is confirmed by current trends in the administration and development of tourism and recreation sphere in the country (Khumarova 2017) and, along with intra-

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regional and local strategies, the absence of a national program for the development of recreation as a full-fledged industry, rather than one of the additional functions of tourism or other areas of socio-economic activity. Thus, according to the Strategy for the development of tourism and resorts for the period up to 2026 (Strategy 2017), inter-sectoral, territorial and sectoral coordination of tourism and resorts in Ukraine focuses more on cognitive than recreational components, especially in combination with environmental factors. Moreover, the development indicators of tourism and resorts are focused exclusively on the tourist product without explanation of its recreational component, namely: the number of arrivals, the amount of revenues to local budgets from the payment of tourist tax, the number of jobs in tourism and etc. Along with this, the previous experience of Ukraine, namely the Crimea Development Program as a year-round national and international resort-recreational and tourist center (Crimea 2003) is a positive example of integrated development of recreation, tourism and resorts by creating a competitive recreational complex where the population in accordance with their needs is provided with sanatorium-resort and tourism services.

Despite the undeniable social and environmentally relevant importance of the field of organized recreation and wellness of the population, it is necessary to strengthen its economic justification, namely in the context of active use of its resources. The purpose of the study is to analyze the assets and economic results of operation of the recreational sphere in the structure of inter-sectoral relations of the national economy on the example of Ukraine, for identification of major challenges of accounting, use and distribution of recreational assets and substantiation of recommendations for solution of those issues at the national level.

2. Literature review

Input-output analysis of the assets of the recreation sphere, first of all, allows to identify its role and place in the structure of intersectoral linkages of the national economy. Herewith, the following features of the application of input-output modeling and analysis in relation to recreation, adjacent industries and its sub-sectors and aspects exist. Thus, the input-output analysis of the tourism sphere from a methodological standpoint (Briassoulis 1991) has limitations on data accounting, taking into account the impact of tourism on other industries, not only in economic but also in social and environmental contexts. The use of input-output analysis in the recreational sphere in the coastal zone (Pomeroy et al. 1988) is associated with the justification of management decisions that take into account the dynamics of output, income, and employment. In the approximate valuation of environmental assets the method selected survey was used (Weber et al. 2002), in particular, on the willingness of respondents to pay for the protection of forests, primarily for their aesthetic value. Herewith, the factors of leisure were studied in the context of the formation of programs of inclusive recreation (Devine 2004).

Daniels (2004) used input-output model to analyze the socio-economic consequences of sports tourism on the basis of employment in those industries that have experienced a positive effect from the activation of tourism-recreational assets. Watson et al. (2008) also has conducted an input-output analysis of sports recreation, namely golf as an economic area that has a significant positive impact on the development of Colorado. A comprehensive research of recreational activities types and their impact on the regional economy, in particular, in the field of taxation, based on input-output analysis (Munn et al. 2010) allows to state that due to the development of fishing and hunting increase taxes mainly at local and state levels, and from wildlife watching – at the federal level (on the example of the Southeast US).

Within input-output analysis can be applied multidisciplinary approaches that take into account not only economic, social and ecological factors (Cherchyk 2008), as well as biological factors (Eiswerth et al. 2005). Specifically, the impacts of weeds on the economy (biological shock) due to the reduction of the duration of

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recreational services are considered, namely: direct impacts on spheres that are straightly related to recreation (retail, service sectors); indirect impacts on the economy as a result of directing additional costs to spheres that are straightly related to recreation; induced impacts as a result of changes in the structure of consumption due to direct and indirect effects.

In the recreational sphere, conflicts can arise caused by limitation of space within which the range of services in leisure and nature sport is provided (Mann & Absher 2008). The resolution of such conflict situations depends on the potential of natural resources, the set of social and economic interests in its use, as well as the effectiveness of recreational conflict's management processes. With a high demand for various types of outdoor activities, and therefore a significant ecological pressure on the natural recreational territory, it is extremely important to avoid and prevent additional social burden. Herewith, information about recreation as an economic activity, its structure and reflection of social, ecological and other data in it, is no less important for management decisions than the role of people who make them (Obst & Vardon 2014). It is about an integrated information approach that provides the possibility to account for, plan and forecast the sustainable development processes at the level of the national economy.

In the study of recreation in the context of inclusive development, it is advisable to assume that it is a relatively new stage in the evolution of sustainable development. An inclusive approach focuses on the social aspects of sustainable development. The "socializing" of tourism is to increase the accessibility of tourist and recreational facilities while maintaining their focus on the diversity of needs and interests of the population (Michopoulou et al. 2015). The spotlight should remain on the most pressing issues of inclusive tourism development, which are related to respect for individual independence, ensuring equal opportunities, accessibility in its broadest sense, and so on. The key to solving these and other problems is the cooperation of all stakeholders in the inclusive development of tourism and recreation.

Inclusive well-being, which also includes the recreational component, is seen as a criterion of sustainable development (Polasky et al. 2015): the level of sustainability is directly dependent on the size of all forms of capital (not only manufactured and financial, but also natural, human and social), which constitute the welfare of the population. It is important, herewith, not only to measure capital, which is impossible to do exactly at least in relation to its social and natural forms, but also to monitor the relevant signals that indicate the inclusion of these forms during the integrated assessment of the level of inclusive sustainable development.

Analysis of equality and fairness in the provision of opportunities for recreation in different regions (Flores et al. 2018) has allowed to identify unused recreational resources and to recommend their direction not only on a territorial but also on social criteria. Public lands should be used on the principles of social and environmental justice, which in turn has a positive impact on indicators of economic efficiency in the recreation and tourism sectors. On the example of national nature parks, which is located on the territory of forest and other recreational resources, we can see the uneven use of them, on what should be directed the management decisions in the implementation of state and regional environmental and social policies. Herewith the author (Kattumuri 2018) takes into account the impact of climate change on the environment and natural resources.

Poudel et al. (2018) carried out an input-output analysis of fishing as an important component of recreational economic activity. In particular, it was concluded that the economic contribution of recreational fishing depends on the availability of this activity. Recommendations for the inclusive development of the studied type of recreation relate to public investment in it. Herewith the government ability to influence can be understated (Ziegler et al. 2019).

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Petrushenko et al. (2019a, 2019b) have studied the factors of investment in the inclusive recreation sphere at the regional level and at the level of national nature parks. In this context, in the structure of recreational assets an important place is occupied by natural resources or more broadly ecological assets, which, however, are almost not taken into account in the system of national accounts. In particular, it is advisable to project into the plane of the recreational sector an approach to the consideration of environmental assets as a sovereign wealth funds in order to macro-economically stabilize and promote the conservation of natural resources for future generations (Niles & Moore 2019).

In Ukraine, the problem of recreation has been studied in the context of implementing the concept of sustainable development at the level of different ecosystems: urbo- and agro-ecosystems (Shevchenko et al. 2016, 2020), for improvement of the management structures of wellness recreation and, accordingly, to address the economic issues of recreational land use; mountain ecosystems (Malovanyy et al. 2019) for substantiation of the need to increase the level of environmental safety by assessing the quality of water, air and soil in the recreational area of the national park; small-cities as complex ecosystems (Kupach & Mykhailenko 2019) for the development of such types of wellness recreation as climate therapy, landscape therapy, sports recreation, cognitive tourism, eco-tourism, etc. Herewith, along with the concepts of “recreation”, “wellness recreation”, “wellness tourism”, other terms are used, in particular, “health tourism” in the description of which the complex of such factors as environmental, sanatorium and resort treatment, recreational nature use is considered.

Samona-Arvela et al. (2020) have studied the possibilities of diversification of recreation and tourism by landscape units, namely the following alternatives to their use as health and wellness, gastronomy and wine, walking and orienteering, etc. In general, a sound search has been performed for the most successful combination of natural and cultural recreation and sustainable tourism.

Along with this, the input-output analysis of recreational assets within the inclusive sustainable development requires further research.

The purpose of the paper is to develop approaches to accounting for recreational assets in the input-output model in the context of inclusive sustainable development, on the example of intersectoral relations of Ukraine's economy. According to the purpose the objectives are the following:

- justification of the inclusive approach to the recreation within the concept of sustainable development;
- comprehensive input-output analysis of the recreational sphere interaction with other sectors of Ukrainian economy in aspects of the formation of recreational assets and the output of recreational products;
- development of organizational-economic approaches to taking into account the recreational natural assets in input-output model, depending on the dynamics of the structure of recreational assets, and to support the implementation of relevant measures in Ukraine.

3. Research Methodology and Data

Using the input-output model, the structural analysis of assets and services of the recreational industry was carried out in the paper in the context of its relationship with other sectors of the national economy, including consideration in the structure of recreational assets an environmental component (according to the classic input-output approach by Leontief (1986), taking into account the peculiarities of the transitive economy (Xu et al. 1992). The interrelation between the input-output model and the national income accounts also allows for an analysis of key macroeconomic indicators of the recreation industry and compare them with similar indicators of

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other sectors of the national economy, in particular, in accordance with official methodological provisions in Ukraine for input-output analysis (Methodological 2018), as well as (System 2017), as follows:

$$O_R = \sum_{j=1}^n IC_j^R + FU_R + NE_R,$$

$$I_R = \sum_{i=1}^n A_i^R + GVA_R,$$

where O_R – total output of recreational activity, at basic (current) prices;

I_R – total input of recreational activity;

A_R – assets of recreational activity (set from the input of other sectors on the formation of recreational product);

IC_R – intermediate consumption of recreational product;

FU_R – final consumption of recreational product;

NE_R – net export of recreational product;

GVA_R – gross value added of recreational activity.

Extrapolation analysis of these indicators allows predicting their dynamics for the short-term period 2020-2021. Herewith the forecast was carried out on two scenarios (optimistic and pessimistic), given the impact on recreation, on entire economy and on social sphere of the main factor during this period – the coronavirus pandemic.

Within the framework of the input-output model for the recreational sphere methods of structural and comparative analysis were applied: in the study of the balance sheet of recreational enterprises and comparison of the resulting structure of the balance of recreational enterprises with the economy as a whole; in the study of the dynamics of the structure of recreational product output (in the context of intersectoral interaction), and the dynamics of the structure of assets of the recreational sector (that is formed as a result of intersectoral interaction) and their comparison. Also, a statistical analysis of the dynamics of key indicators in the input-output model for the recreational sphere was conducted, namely: output at current prices, intermediate consumption, gross value added and others. The research scheme is shown in Figure 1.

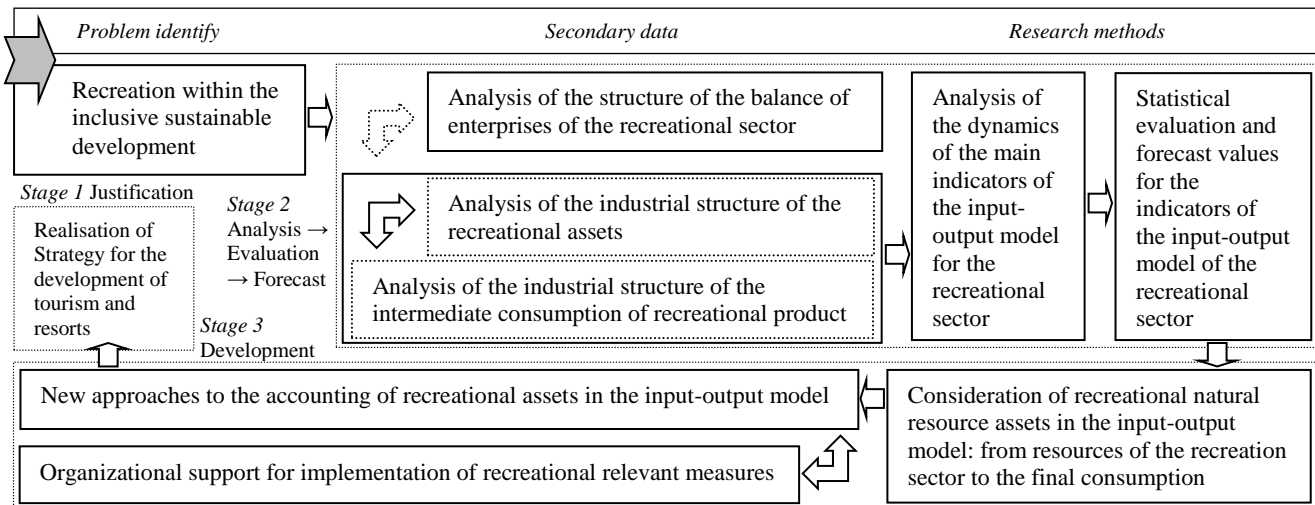


Fig. 1. Input-output analysis of recreational assets within the inclusive sustainable development in Ukraine: the research scheme

Source: Developed by the authors

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In the study input-output tables on a case of Ukraine's economy were used (State 2018, 2020b, 2020c). The focus of attention in the analysis of the tables was done to that data which describing the flow of assets and services between recreation and other sectors of the national economy during 2012-2018 years. The data for years previous to this period were summarized on a fundamentally different methodology and therefore cannot be taken into account in addition to the period 2012-2018. In the cells of tables that describe the data relevant to recreation, in the vertical direction assets of the recreational sector are presented, in the horizontal direction – the recreational services provided to other sectors of the economy and end users. To form a conceptual scheme for taking into account recreational natural resources in the input-output model, the practical implementation of which will allow the start of the realization of an optimistic scenario of forecasting the development of recreation in Ukraine in 2021, were used the materials of Crimean Development Program as a resort-recreational and tourist center (Crimea 2003), Tourism and Resort Development Strategies for the period up to 2026 (Strategy 2017), Association of Protected Areas of Ukraine (Association 2018) and U.S. Bureau of Economic Analysis (U.S. Bureau 2019), as well as the Ministry of Ecology and Natural Resources of Ukraine (Ministry 2020).

4. Results

In the context of inclusive sustainable development, the recreational sector has economic, environmental and social, as prioritized, targeted aspects, that requires further explanation: the needs of the population in health and recreation, which have increased under the influence of COVID-19, are of paramount importance for the state; the conceptual connection of recreation with nature components (so-called recreational nature management) is a prerequisite for increasing the role of environmental and natural-resource factors in the functioning and development of organized recreation; sustainability and support of recreation and tourism infrastructure is provided by the economic side of recreation as an important sector of the national economy. By analogy with the concept of sustainable development, inclusiveness is also multidimensional. In the context of this study, we were interested in economic inclusion as providing equal opportunities for those sectors of the national economy, the basis of the functioning and development of which, along with financial investment and human and social capital were natural resource assets; in particular, it was about recreational sector.

During the period 2019-2021 in the formation of recreational services in Ukraine, producers (recreational and tourism enterprises and organizations) have the following guidelines: security (especially important during a pandemic), quality (including the criterion of comfort, which is also actualized in the conditions of isolation under time of pandemic crisis), effectiveness (the essence of assets is to generate income that exceeds costs). The inclusive economic result of the recreational sphere and concomitant to it tourism and other sectors of the national economy is the total output of a recreational product that meets international standards of quality, environmental management and security. Changes in the structure of assets and liabilities of recreational enterprises (art, sports, entertainment, recreation) for the period 2012-2018 can be traced in Figure 2: on average, there is a decrease in the percentage of non-current assets (and, accordingly, an increase in the percentage of current assets), as well as a decrease in the percentage of long-term liabilities (and, accordingly, an increase in the percentage of current liabilities); the percentage of equity capital remains stable. Such trends indicate a gradual decline in the real estate fund in the recreational sector and general economic instability in the market of credit-financial services in Ukraine.

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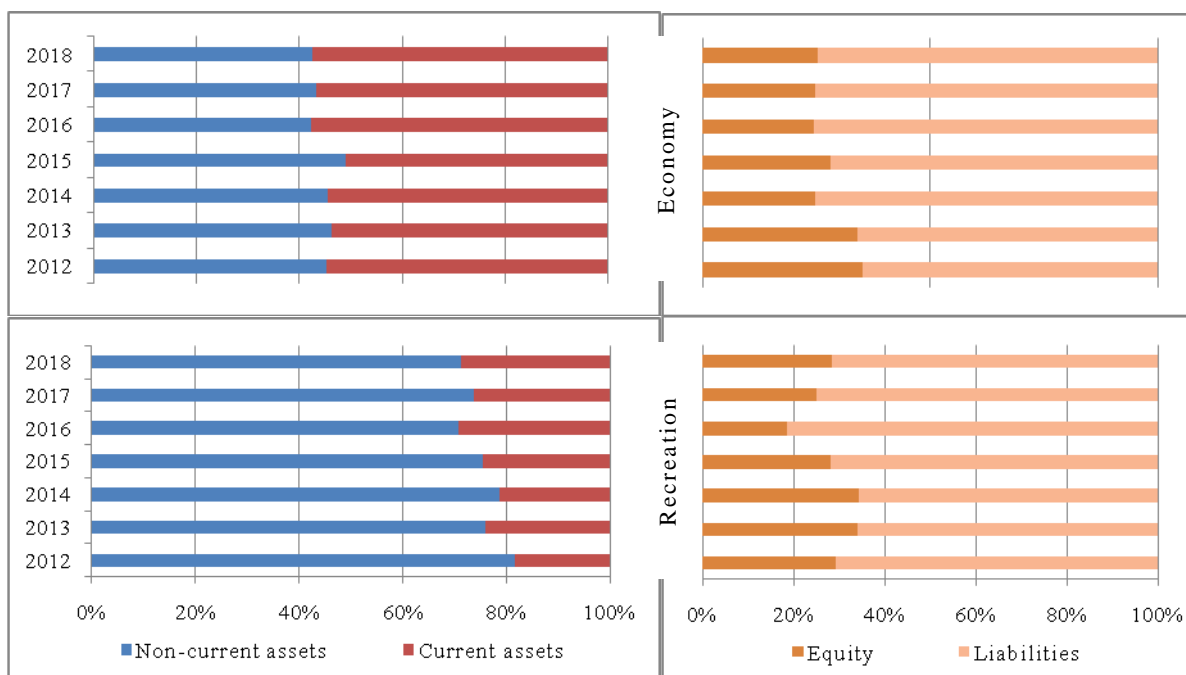


Fig. 2. The structure of the balance of enterprises is averaged over all types of economic activity and recreational sector, % at the end of the year

Source: Developed based State Statistics Service of Ukraine data (State 2020a)

Compared to the average profile of the structure of the balance of enterprises in all sectors of the economy (upper part of Figure 2), recreational enterprises have a much larger (approximately one and a half times) share of non-current assets, which indicates the availability of significant infrastructure and buildings as part of the recreational sector of Ukraine; however, the state of these assets is outdated. At the same time, the share of current assets is one and a half times smaller, which leads to an acute need for financial resources and, accordingly, affects the competitiveness of the recreation sphere. The structure of the balance of recreational enterprises is adequately reflected at the level of intersectoral balance. In particular, the share of assets formed from the input of processing industry, gas and electricity supply is quite significant (min – 10.19% in 2015; max – 19.58% in 2012; total recreational assets – 100%). The dynamics of assets distribution in the recreational sector in the input-output model during the period of 2012-2018 (Figure 3) indicates an increase in the share of services, in particular, professional, scientific activity, education (from 3.93% in 2012 to 8.95% in 2018), public administration, administrative services (from 3.94% in 2012 to 16.67% in 2018) and recreation directly (from 16.03% in 2012 to 16.41% in 2018). In general, there is an increase in total assets of the recreational sector in 1.7 times during the period 2014-2018 (from 7987 million UAH in 2012 to 13659 million UAH in 2018).

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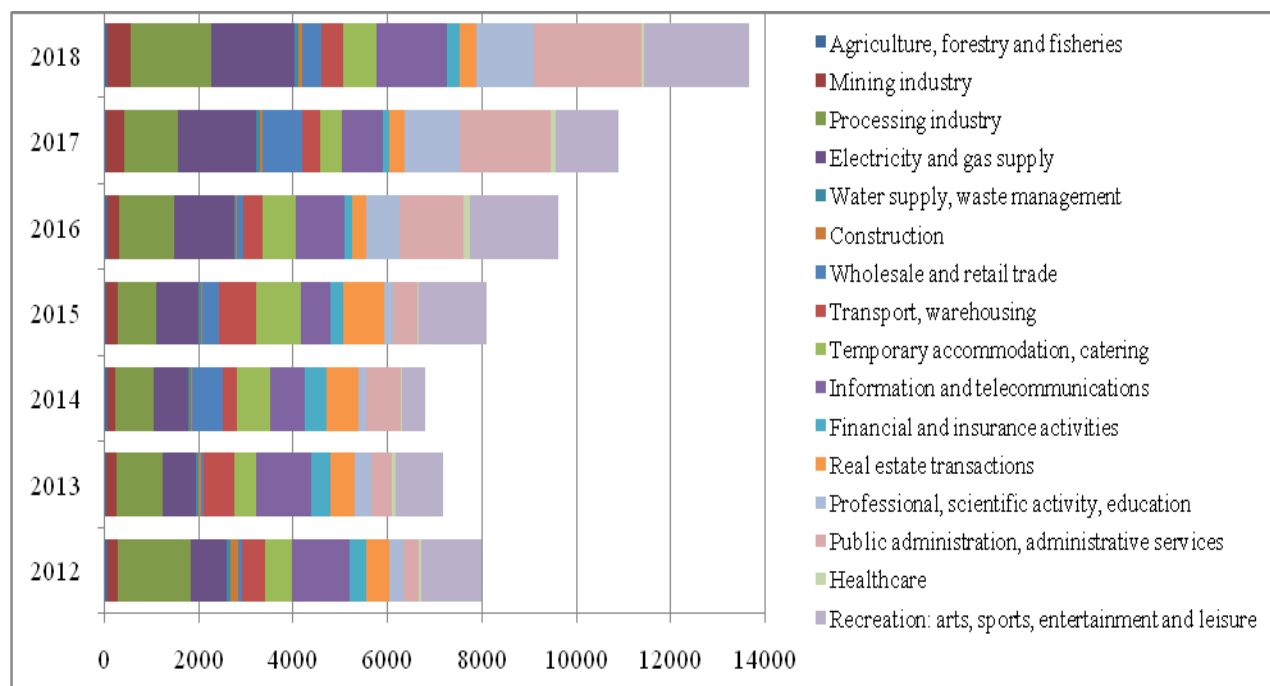


Fig. 3. Industrial structure of the recreational assets, million UAH

Source: Developed based on the State Statistics Service of Ukraine data (State 2018, 2020b, 2020c)

The total volume of intermediate consumption of recreational product (Figure 4) has the most value in 2018 – 12019 million UAH (5015 million UAH in 2012), also mainly due to professional, scientific activity and education (4553 million UAH), and also recreation (2241 million UAH), which together account for more than half of total intermediate consumption.

Combining the trends in the development of the recreational sector in Ukraine, presented in both figures (Figures 3 and 4), we note the following:

– relatively stable throughout all studied period is the trend of increasing assets and intermediate consumption for public administration and administrative services (4.23 times and 1.76 times, in 2018 compared to 2012, respectively), which simultaneously indicates about slowdown of development of the market of recreational services;

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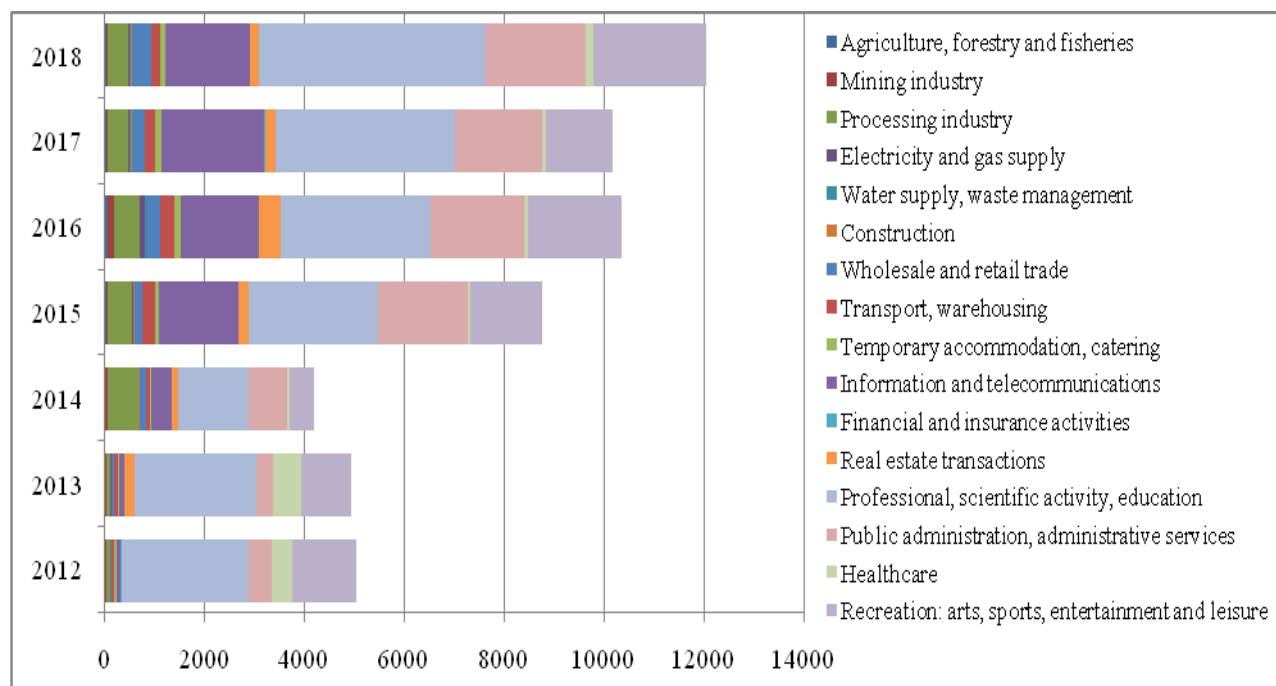


Fig. 4. Industrial structure of the intermediate consumption of recreational product, million UAH
 Source: Developed based on the State Statistics Service of Ukraine data (State 2018, 2020b, 2020c)

- the share of own assets of the recreational sector is almost unchanged (average value – 14.75%), while the level of its intermediate “self-consumption” is high (average value – 17.73%), which indicates a relatively significant government spending (absolute value of government spending on recreation or any other sphere of services in Ukraine, compared to the EU countries, is insignificant), however, the direction of which needs to be reconsidered: recreation should provide health restoration, wellness and recreation not “within itself”, but in other sectors of the national economy;
- the largest intermediate consumer of recreational product is the sphere of professional, scientific activity and education (average value – 37.95%), which again contradicts the principle of self-development of the recreational sector and focuses mainly on serving other social spheres that need significant state support. At the same time, assets generated as a result of reallocation of public expenditures spending from the scientific and educational sphere to the recreational sphere, although they tended to increase during 2016-2018, but are relatively insignificant (average value – 5.86%).

The overall economic indicators of the input-output model for the recreation sector (Figure 5) also show an upward trend: the output of the total recreational product grew more than tripled (from 9908 million UAH in 2010 to 34034 million UAH in 2018); similarly – gross value added (from 6074 million UAH in 2010 to 20375 million UAH in 2018) and salary of workers in the sector (from 4985 million UAH in 2010 to 17708 million UAH in 2018).

Unchanged is the tendency to decrease the indicator of net exports (–768 million UAH in 2012, –11133 million UAH in 2018). This is the only one of the presented indicators, the dynamics of which somewhat “mismanages” the overall picture of the sector. However, it reflects a much deeper problem: for Ukrainians the recreation is developing “outside the country”. To reverse this trend, the state should focus its efforts not on artificial

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redistribution of costs between sectors, but on supporting the development of the internal market of recreational services, increasing its competitiveness to the level of EU countries. And the situation of 2020 with the COVID-19 pandemic, paradoxically, can help to transform the imports into the growth of domestic recreational products.

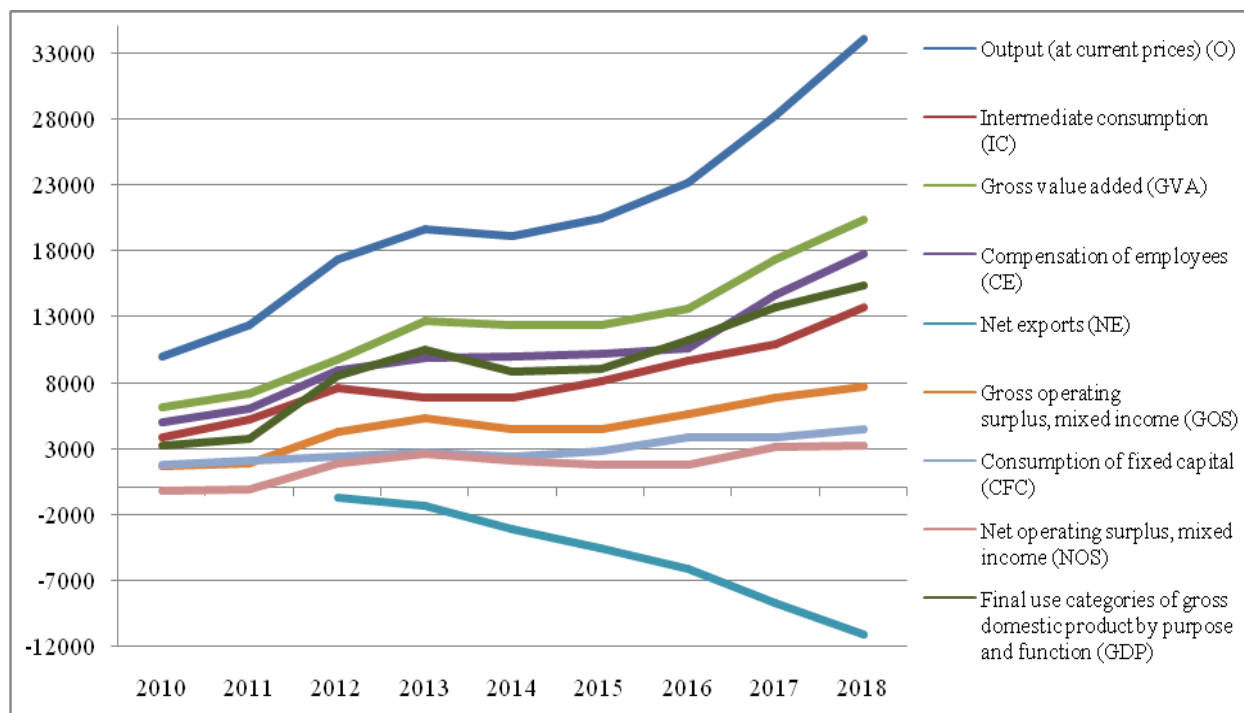


Fig. 5. Dynamics of the main indicators of the input-output model for the recreational sector in 2012-2018, million UAH

Source: Developed based on the State Statistics Service of Ukraine data (State 2018, 2020b, 2020c)

Based on the identification of trends in accordance with each indicator (function) in Figure 5, as well as the calculation of indicators for 2019, we identified optimistic and pessimistic scenarios for the recreation development in Ukraine (Table 1). The pessimistic scenario for the end of 2020 has been adjusted to take into account global negative trends in economic development, in particular, in Ukraine as a result due to the COVID-19 pandemic (International 2020). In this scenario, the output of a recreational product will decrease from 33530 million UAH in 2019 to 30948 million UAH in 2020; gross value added at the same time – from UAH 20337 million in 2019 to UAH 18771 million in 2020. According to the optimistic scenario, by the end of 2020, due to the development of the internal recreational market, despite the pandemic crisis, the trend presented in Figure 5 will continue. However, in both scenarios, given the forced uncompromising measures to isolate the territories, the same increase in net exports is expected: from –12115 million UAH in 2019 to –3635 million UAH in 2020.

The main disadvantage of the input-output model in the study of inclusive sustainable development of recreation is that it does not take into account recreational natural resource assets, which does not fully reflect the realistic situation regarding the state of the recreational sector as well as its impact on other sectors and the impact of other sectors of the national economy on it in the process of gross domestic product production. The main idea (based on the conceptual scheme of the input-output model on Figure 6) is that at the present stage of national accounts maintenance and compiling a cross-sectoral table in Ukraine, natural resource assets of recreation are not reflected in it; in the national accounts there are long-term biological assets, which in the input-output table are taken into

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account in the sectors of forestry, fisheries and agriculture. Herewith, recreational assets should be considered not only at the sectoral level (Shevchenko 2017) or territory level (Prokopenko & Petrushenko 2013), but at the integrated territorial-sectoral level.

Table 1. Functions, statistical evaluation and forecast values for the indicators of the input-output model of the recreational sector of Ukraine, 2012-2018

Function*	R ²	F-Statistic	t-statistic	2019**	2020***	2020****	2021***
$O = 2613.5x + 7394.6$	0.93	F=88.97>5.59***** FDIST(88.97;1;7;1)=0.99	t=2613.48/277.07 =9.43>2.36*****	33530	36143	30948	38757
$IC = 1027.6x + 2916.8$	0.89	F=57.11>5.59 FDIST(57.11;1;7;1)=0.99	t=1027.55/135.97 =7.56>2.36	13193	14220	12607	15248
$GVA = 1585.9x + 4477.8$	0.92	F=78.31>5.59 FDIST(78.31;1;7;1)=0.99	t=1585.93/179.22 =8.85>2.36	20337	21923	18771	23509
$CE = 1341.6x + 3601.6$	0.88	F=51.55>5.59 FDIST(51.55;1;7;1)=0.99	t=1341.63/186.86 =7.18>2.36	17018	18360	15708	19701
$NE = -1743.7x + 5322$	0.97	F=186.48>5.59 FDIST(186.48;1;7;1)=0.99	t=1743.71/127.69 =13.66>2.36	-12115	-3635	-3635	0
$GOS = 682x + 1259.3$	0.87	F=46.05>5.59 FDIST(46.05;1;7;1)=0.99	t=682.03/100.51= 6.79>2.36	8080	8762	7458	9444
$CFC = 315.8x + 1329.8$	0.90	F=59.68>5.59 FDIST(59.68;1;7;1)=0.99	t=315.85/40.89= 7.72>2.36	4488	4804	4142	5120
$NOS = 1467.6 \ln(x) - 327.1$	0.75	F=14.56>5.59 FDIST(14.56;1;7;1)=0.99	t=366.18/95.97= 3.82>2.36	3048	3180	2813	3313
$GDP = 1364.1x + 2518.6$	0.87	F=46.05>5.59 FDIST(46.05;1;7;1)=0.99	t=1364.07/201.01 =6.79>2.36	16159	17523	14915	18887

*Where O – Output (at current prices), IC – Intermediate consumption, GVA – Gross value added, CE – Compensation of employees, NE – Net exports, GOS – Gross operating surplus, mixed income, CFC – Consumption of fixed capital, NOS – Net operating surplus, mixed income, GDP – Final use categories of gross domestic product by purpose and function; **Realistic scenario: continuation of 2010-2018 trends, taking into account the stability on the market of recreational and tourism services; ***Optimistic scenario: continuation of 2010-2019 trends, but in contrast to the realistic scenario, the increase of the indicators mentioned above is explained by the projected development of the domestic market of recreational and tourism services in Ukraine, which is become possible as a result of emergence of such chances through isolation situation due to the coronavirus pandemic; ****Pessimistic scenario: violation of 2010-2019 trends, in contrast to the optimistic scenario, a decrease in the indicators mentioned above by an average of 7.2%, according to the IMF forecast for Ukraine's economy (International 2020), due to the coronavirus pandemic; *****F_{cv}(0.05;1;7)=5.59; *****TINV(0.05;7)=2.36

Source: Calculated based on the State Statistics Service of Ukraine data (State 2018, 2020b, 2020c)

It is clear, that impact assessment process of the consideration of natural resource assets on of the structure of the intersectoral balance is associated with methodological difficulties, in particular, the valuation of those assets and so on. There is also a potential conflict in the distribution of natural resources (Petrushenko & Shevchenko 2013), which in the intersectoral context may become particularly acute. So, if long-term biological assets are on the balance sheet and, accordingly, recorded in the input-output table by forestry, agriculture and fisheries sectors, the reallocation of their part in favor of the recreational sector can cause intersectoral conflict situations. If the active part of natural capital will be included to recreational assets, which, due to shortcomings in the accounting of land or natural resources had not been taken into account at all in the input-output table, then this situation can also cause a conflict in the sphere of management of natural resources.

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Due to the consideration and involvement of natural recreational resources in the implementation input-output model, under the optimistic scenario (Table 1) the output of recreational products in the domestic market will continue upward trend to 38757 billion USD by the end of 2021 (107% of the projected output at the end of 2020), when achieving zero value of net exports indicator (within the management of export-import potential of the region (Gryshchenko et al. 2015).

Successful implementation of the proposed incorporation of natural recreational assets in the intersectoral balance is possible under the condition of comprehensive organizational-economic measures (based on (Crimea 2003), taking into account the temporary “spatial transformation” of the center of socio-economic relations “resort – tourism – recreation” in Ukraine) in the context of adjusting the Strategy for the development of tourism and resorts for the period up to 2026 (Strategy 2017), namely:

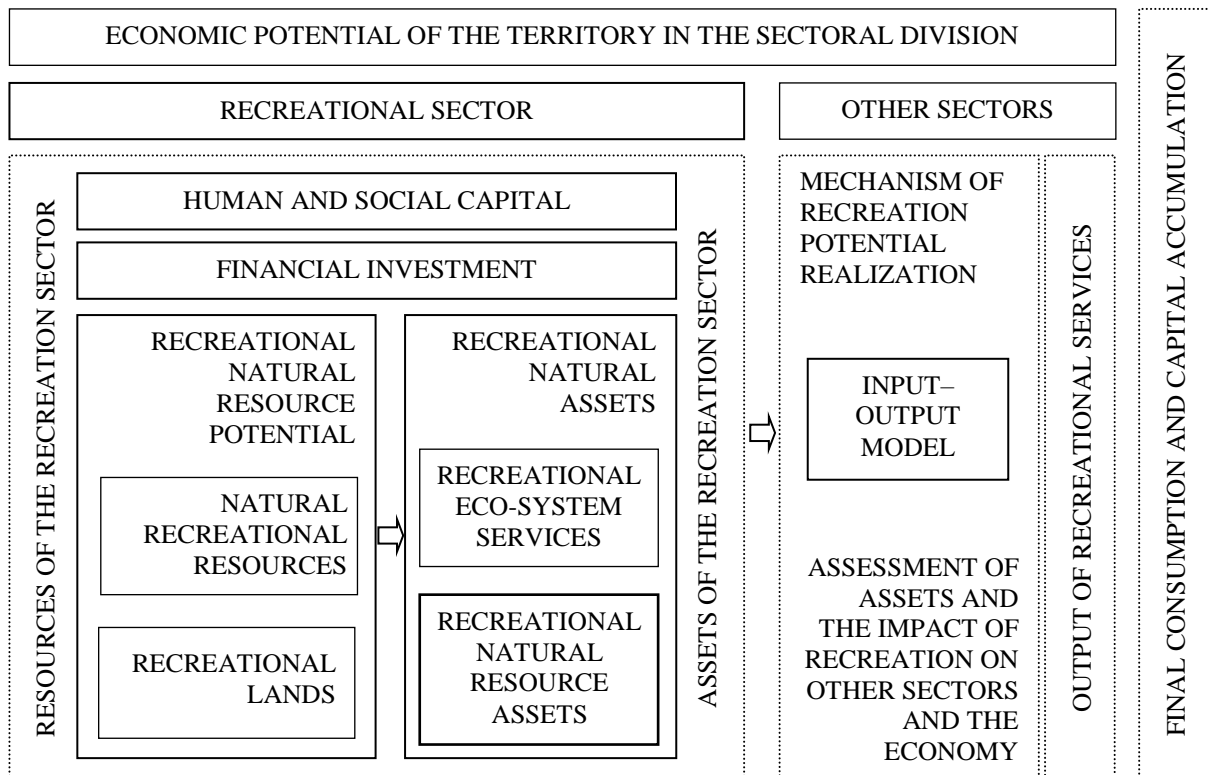


Fig. 6. Consideration of recreational natural resource assets in the input-output model

Source: Developed by the authors

- the creation of a positive image of the Ukrainian Black Sea region as a national and international resort-recreational and tourism center;
- the establishment of coordination relations between recreation, tourism and other sectors of the economy that will be affected by incentives for development, namely: transport, communications, trade, construction, agricultural industry;
- the clear definition of the status of resort and recreational areas; management of pricing for wellness-recreational services provided by sanatorium-resort facilities during the tourist season and off-season;

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- the creation of tax benefits for organizations of the recreational-tourism sphere, which use the profit for innovative and environmentally friendly development of material-technical base;
- the optimization of budgeting processes at the local level in order to develop the infrastructure of resorts, maintenance and arrangement of recreational areas, parks, beaches;
- state support to the arrival of cruise ships in Ukrainian seaports, development of sea and specialized types of tourism, winter recreation;
- the investment in the use of recreational-tourism potential of estuaries and areas around them, in particular, in increasing the number of resort-recreational facilities year-round operation (balneal and mud sanatoriums, aqua parks, swimming pools, fitness centers, etc.);
- the urgent construction of shore protection structures, implementation of anti-landslide and environmental protection measures, reconstruction of sewage treatment facilities.

Thus, we suggest the following new approaches to the accounting of recreational assets in the input-output model and organizational support for implementation of relevant measures in Ukraine:

- on taking into account in the structure of recreational assets the natural component (natural resources and ecosystem services) at a level that reflects the necessary socially significant contribution of the recreational sector to other sectors of the national economy and final consumption of recreational product. This level depends on the results of the analysis of the dynamics of the recreational assets structure, the intermediate consumption of recreational services structure, which are reflected in the intersectoral balance of the national economy, as well as the assessment of real use of natural assets for recreational purposes and their necessary use on the principle of inclusiveness;
- on the involvement of natural assets in the development of the domestic market of recreational and tourism services during the coronavirus pandemic, taking into account quality and comfort factors, within the proposed optimistic scenario (contrary to the pessimistic scenario, when organizational and economic measures fail to compensate for the negative effects of the pandemic crisis in the short term), according to which the positive dynamics of the recreational sector from 2010 to 2021 is maintained;
- on state support for the development of the recreational sphere, namely: declaring new rules of the game and organizational-economic measures in the Strategy for the development of tourism and resorts for the period up to 2026 in Ukraine, promoting engagement and accounting of inactive natural resources and redistribution of accounted natural assets in favor of the recreational sector, as well as increasing the assets of related sectors of the national economy, especially health care, to ensure inclusive sustainable development in Ukraine.

5. Discussion

Ukraine has a significant untapped potential of natural recreational resources, which is concentrated primarily in more than 50 national nature parks: like nature reserves, they are of national importance, serve for nature protection functions and at the same time perform functions of organized recreational, wellness and tourism activity and have a high level of attraction in context of expansion of recreational demand for ecological and aesthetic types of tourism and complex health restoration. The transformation of recreational resources into assets of national nature parks is impossible without regulating their activities in accordance with the Laws of Ukraine (Law 2018; Law 2020). However, in practice a nominal activity to be seen or, more precisely, the absence of any activity on nature protection in national parks and, moreover, on the organization of recreation in them (Open 2020). “Devastating destruction of protected areas” of national parks is taking place: illegal logging, poaching, havocking due to hostilities in eastern Ukraine, total corruption (UNIAN 2016). Therefore, in order to start systematic measures to account for the recreational assets of national nature parks, it is necessary to assess the environmental and economic losses and improve the procedure for the application of appropriate penalties. In

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other words, making adjustments in the input-output model to take into account natural assets in the recreational sector will contribute to the stopping of the destruction of natural-recreational areas, especially within national nature parks, as well as to the reduction of the pollution and recreational loading.

The processes of formation and use of recreational assets of national nature parks must correspond to an inclusive approach in the social context. It is necessary to provide an equal access to the recreation area and the whole complex of recreational-tourism services of parks for any recreant, as well as to disseminate information about the benefits and gains of health recovery and recreation within the country using its best natural potential; naturally, subject to compliance with the norms of recreational activity, i.e. within the concept of sustainable development. It is also expedient to start an accounting for natural recreational assets in national parks because there is no such practice in these objects of the nature-reserve fund of Ukraine. Conditions are favorable for holding preliminary scientific and applied research, in particular, in the framework of comprehensive organizational-economic measures for the formation of infrastructure and development of recreational and tourism facilities located on the territory of national nature parks. Some of them, in particular, Carpathian National Nature Park, Holy Mountains National Nature Park, Shatsk National Nature Park, etc. (Association 2018) annually receive large flows of vacationers, due to the following factors: traditions and, consequently, the recognizability and high level of awareness of potential tourists, the succession of generations; the presence of elements of the experience economy, first of all, attractions of the “wow-effect” level, which can serve not only as a supplement to outdoor recreation, but as a major factor in deciding in favor of a trip to a national park.

To make appropriate adjustments to the input-output model, it is necessary to establish work on accounting for recreational assets in the form of complex satellite accounting, in particular, by example of Outdoor recreation satellite account by the Bureau of Economic Analysis of the U.S. Department of Commerce (U.S. Bureau 2019). An experiment can be started within national nature parks, then move to the regional level to take into account the wide range of recreational and tourism services provided using natural recreational assets, such as fishing, hunting, mounting, equestrian, rafting, rural tourism and others. In addition to the natural resource component, the satellite account of the recreation sector should include information in accordance with the industry composition of economic activity, which is directly related to the provision of recreational services, namely: arts, entertainment, accommodation, food services; transportation and warehousing; other industries.

Conclusions

Recreation in its combination with the economy of natural resources requires an inclusive approach within the concept of sustainable development: social inclusion means the formation of recreational services within a recreational product available to all segments of the population, regardless of individual income; nature-ecological inclusion implies wide involvement of components of nature in the sphere of organized recreation and counteraction to various types of pollution of the recreational environment; economic inclusion means providing equal opportunities for those sectors of the national economy, the basis of the functioning and development of which, along with financial investment and human and social capital are natural resource assets.

Given the existence of a number of heterogeneous factors that affect the recreational sphere in Ukraine, a comprehensive input-output analysis of its interaction with other sectors of Ukrainian economy in two main aspects is needed: the formation of recreational assets and the output of recreational products. The results of the structure analysis of such interaction, as well as the dynamics of economic indicators of functioning of the recreational sector of Ukraine allows to state the following: along with financial and human assets, the natural assets of the sector are practically not taken into account; the sector is mainly subsidized and, accordingly, the

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market of recreational services is underdeveloped; intermediate consumption processes according to the traditions of the planned economy make the sector a “hostage” of the rest part of the public services sector, in particular, professional, scientific and educational activities, public administration and administrative services; during 2010-2018 there is a quantitative increase in indicators, but the quality of services and development of the sector compared to the best world experience is low. An inclusive economic approach, which involves the use of natural assets for the sustainable development of recreation, in the context of input-output analysis means the transformation of accounting for those assets in favour of the recreational sector, as well as accounting for previously unaccounted natural assets.

The novelty of the research is the development of organizational-economic approaches to: taking into account the recreational natural assets in input-output model depending on the dynamics of the structure of recreational assets, as well as assessing the necessary use of natural assets for recreational purposes on the principle of inclusiveness; involvement of natural assets in the development of the domestic market of recreational and tourism services during the coronavirus pandemic within the proposed optimistic scenario, which will maintain the positive dynamics of the recreational sector until 2021; state support for the development of the recreational sphere by promoting the involvement and accounting of inactive natural resources and redistribution of the share of accounted natural assets in favor of the recreational sector to ensure inclusive sustainable development in Ukraine. The research limitation is the lack of accurate data to assess the actual use of natural recreational assets, as well as the impossibility to improve the accuracy of the forecast for the development of the domestic market of recreational services in Ukraine due to the unpredictability of the scale and duration of the coronavirus pandemic effects.

The results of the study are of practical importance for decision-making on the development of the recreational sector in Ukraine, namely on the direction of short- and medium-term investments in the formation and use of natural recreational assets, both in optimistic and pessimistic scenarios given the consequences of the COVID-19 pandemic.

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MODERN TRENDS IN THE ECONOMIC DIFFERENCES BETWEEN COUNTRIES AND WITHIN THEM: COMPARISON OF THE WORLD AND THE EUROPEAN UNION

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Abstract. This article aims to test empirically two popular hypotheses about territorial economic differences in the modern world. According to the first hypothesis, economic differences between countries in the modern world are not as large as regions' differences within countries. According to the second hypothesis, the decline in the degree of economic differences between countries is due to the relatively faster economic development of capital regions. Investigation of the economic differences on various territorial levels realized applying the method of comparing the coefficient of variation of the income of the population. The source of the empirical data for this research is the Sub-national Human Development Index (SHDI) database created by the Netherlands Institute for Management Research of the Radboud University, which contains such indicator as Income index of SHDI in the inner regions of 161 countries in the world for the period from 2000 to 2017. A comparison of economic differences at different territorial levels revealed that in the 21st century, neither in the world as a whole nor in the EU regions' differences within countries are higher than differences between countries. However, starting with 2015 the economic differences between inner regions of the EU countries began to outweigh the economic differences between countries themselves, and this is the specifics of the European Union. In the 21st century, both inter-country and intra-country regional economic differences in the EU countries are significantly lower than in the world as a whole. The economic importance of non-capital regions is gradually increasing in the EU, although for the time being the EU (and probably the world as a whole) still characterized by the economic growth, which is based mainly at the expense of capital regions.

Keywords: economic differences; world; European Union; capital regions; coefficient of variation.

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1. Introduction

Almost all the contemporary researchers of territorial economic development peculiarities address the topic of economic differences in various aspects. The economic differences between territories – countries and regions – are studied not only by regional economists (Karwat-Wozniak 2011; Boronenko et al. 2014; Tvaronaviciene 2018; Rivza 2018; Prakash, R Garg, 2019; Okuneviciute-Neverauskienė et al. 2020 and many others). This topic – at least, in Latvia, – is elaborated also by geographers within regional and human geography (Krauklis 2000; Krisjane, Bauls 2007; Kule et al. 2010; Berzins 2011), that coincides with the common trends worldwide (Hua, Gu 2001; Kovacs 2004); this happens so because regional economics historically developed from the science of geography and continues closely interacting with it in the framework of regional science, because investigation of the spatial correspondences and mutual relatedness of nature and social processes brings out the common interest field of economic geography and regional economics (Ullman 1958; Isard 1960, 1975; Granberg 1997; Gibbons, Vignoles 2011; Chatterji 2014).

Regarding the economic differences on various territorial levels, some researchers and international organizations revealed that economic differences between countries (inter-country level) are often not so large as the economic differences between regions within these countries (intra-country regional level) (Kim 2008; OECD 2011, 2013, 2016). In many cases the reduction of the degree of economic differences between countries are rather connected with the development of the capital regions (OECD 2016), as the political and economic life of the whole country is concentrated in these regions; this is especially characteristic of Central and East Europe (Kuttar 2009).

Within this research, the authors provide the comparative empirical analysis of the modern trends in the degree of economic differences of the world and EU countries on various territorial levels by comparing coefficients of variation on the inter-country and intra-country regional level, as well as by comparing coefficients of variation between EU countries and their capital regions. The empirical analysis is limited to the beginning of the 21st century (2000-2017). The source of the empirical data for this research is the Sub-national Human Development Index (SHDI) database created by the Netherlands Institute for Management Research of the Radboud University (Radboud University 2020). This database is elaborated on the basis of Human Development Index (HDI) database created by United Nations Development Programme (UNDP) (UNDP 2020). SHDI database contains not only sub-indexes of HDI but also indicators of population's income, school education duration, and new-borns' life expectancy in the inner regions of 161 countries in the world.

2. Theoretical background

There is quite a lot of research in the scientific literature dedicated to the study and comparison of differences between countries and inner regions (more often – economic differences) in different spatial areas of the world and in different time periods (Sala-i-Martin 1995, 1996; Kanbur et al. 2006). According to the authors, systemic research – from the macro level to the meso level – in this field was carried out by X. Sala-i-Martin. For example, the analysis of the process of differentiation of economic performance indicators (by GDP per capita) in 110 countries of the world in the period from 1960 to 1990 showed that the degree of economic differences between these countries increased steadily during the studied period (Sala-i-Martin 1995). In Europe, X. Sala-i-Martin studied the differences between regions within each country and concluded that “the overall picture shows a decrease in differences between regions over time in each country” (Sala-i-Martin 1995). Nevertheless, the authors did not find in these results a comparison between the degree of differences at the inter-country and intra-country regional level. It means, that the results of abovementioned studies do not suggest precise proof of the

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thesis mentioned in the introduction to this article: economic differences between countries are often not so large as the economic differences between regions within these countries (Kim 2008; OECD 2011, 2013, 2016).

The authors believe that the Organization for Economic Co-operation and Development (OECD) in its analytical reports on regions “OECD Regions at a Glance” emphasizes the comparison of differences at the inter-country and intra-country regional level. For example, with regard to national and regional differences in educational attainment, the OECD notes that differences in the availability of high-educated workforce are mostly observed in different regions of the same country rather than between countries. The largest differences in the availability of workforce with higher education are in the Czech Republic, France, Spain and the United States. For example, in 2008, 16% of the workforce had completed higher education in West Virginia (United States), compared to 44% in the District of Columbia (or just Washington) (OECD 2011). Moreover, inequality in household disposable income between regions of Israel, Spain, Turkey and the United States is much higher than inequality between countries themselves (OECD 2016).

The analysis of studies of the differences at the inter-country and intra-country regional level described above shows that it is difficult to compile comparable inequality indicators in many countries and regions, and that there is no international cross-sectional analysis in the scientific literature on inequality issues (Kim 2008). As a result, studies of the economic differences between regions predominantly are comparative studies within some individual countries (Kim 1998; Rodriguez-Pose, Sanchez-Reaza 2005; Kanbur, Zhang 2005; Knight et al. 2006).

There are also attempts in the scientific literature to compare the economic differences at the inter-country and intra-country regional level in developed and developing countries (Kanbur, Venables 2005; Kim 2008). Due to the lack of reliable data in developing countries, population statistics is often based on survey data. The data tend to show a greater degree of regional differences in developing countries, and this could be due to low data quality or a large disproportion in the economic situation of developing countries. For developed countries, despite quite large differences in the degree of regional differentiation between countries, the patterns of industrial localization are quite similar (Kim 2008).

Most importantly, the data on developing countries suggest that the geographical and political factors specific to each developing country may play a significantly greater role in the process of regional differentiation than in developed countries. These differences in the process of intra-country regional differentiation create some difficulties in identifying the causes of territorial inequalities in developing countries. The United Nations University World Institute’s for Development Economics project “Spatial Disparities in Human Development”, led by R. Kanbur and A.J. Venables, included data on the degree of intra-country regional differences in more than 50 developing countries. Although the content of actual data varied considerably from country to country, it was argued that the degree of regional differences has increased in many developing countries in recent years (Kanbur, Venables 2005).

Data on the degree of intra-country regional differences in developed countries are much more reliable and valid. Despite significant differences, the main driver of regional differentiation in developed countries is geographical differences in industrial concentration. In general, geographical differences in the concentration of industries such as agriculture and mining increase regional differences, as natural resources are unevenly distributed, while most service sectors, especially those serving local markets, tend to reduce differences between regions (Kim 2008). For example, in the United States, traditional low-tech industries, such as textiles, clothing, and tobacco, were much more localized than medium- and high-tech industries, such as electricity, transportation, and so on. Thus, it

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can be argued that the gradual shift of production from low-tech to high-tech industries contributed to a greater dispersion of production over time (Kim 1998) and to decrease in intra-country regional differences.

According to the European Union, Eurostat Regional Yearbook identifies three main features of the process of regional differentiation in Europe, which are fully in line with the results of the above-analyzed studies on the economic differences at the inter-country and intra-country regional level in other parts of the world: 1) very high degree of intra-country regional economic differences by GDP per capita; 2) a geographical profile of the process of regional differentiation has the form of a “center-periphery” model; 3) the growing economic importance of the regions in which the capital cities of the EU Member States are located (Eurostat 2018).

3. Research objective and methodology

This article aims to test empirically two popular hypotheses about territorial economic differences in the modern world. According to the first hypothesis, economic differences between countries in the modern world are not as great as regions' differences within countries. According to the second hypothesis, the decline in the degree of economic differences between countries is due to the relatively faster economic development of capital regions, which are the centers of politically and economically highly centralized countries, especially in Central and Eastern Europe (Kuttor 2009).

Further on the authors provide empirical interpretation of the research subject – the economic differences of territories – in order to specify those indicators whereby the process of the economic differentiation of territories and its results could be empirically measured and studied. In the scientific literature, there are mainly two indicators, the differences in which can be considered as economic differences. Firstly, many studies of economic performance of regions and its differences (Dunford 2008; Stankevics et al. 2014; Boronenko et al. 2014; Kolarikova et al. 2018) use Gross Domestic Product (GDP) per capita indicator to assess the economic differences between territories. Secondly, several studies of the economic inequality among regions (Atkinson 1970; Lubrano 2017), as well as studies of the regional aspect of income differentiation (Lavrinovica, Lavrinenko 2011) use the income of the population for assessment of the economic differences between territories.

A relatively wide range of instruments can be used to measure the degree of territorial differences, such as the Tail index, the Atkinson index, the Gini coefficient, the coefficient of variation and the coefficient of asymmetry (Ruitebeek 1996; Styme, Jackson 2000; Paas, Schlitte 2006; Dunford 2008; Lavrinovich et al. 2012). Following S. Drobishevskiy and A. Iodchin, the authors will use the coefficient of variation in the further empirical analysis. Coefficient of variation as the indicator of the state of differentiation of territories is to be used as it does not depend on the unit of measure of the indicator under analysis (Drobishevskiy et al. 2005; Iodchin 2007).

Thus, in the course of empirical interpretation of the economic differences between territories, the authors separated the indicators of the economic activity per se (GDP per capita and the income of the population) from the indicator of the state of economic differentiation of regions (coefficient of variation). Comparing the coefficients of variation on inter-country and intra-country regional level, the authors will clarify on which territorial level the degree of economic differences is higher.

The Sub-national Human Development Index (SHDI) database for the period from 2000 to 2017 (Radboud University 2020) is used as the source of empirical data, as it contains indicators on the income of the population both in the countries of the world and in their inner regions. It will allow authors to compare the degree of inter-

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country and intra-country regional economic differences in the world as a whole and in the European Union. Inner regions of countries within this research are not the normative (e.g. NUTS in the European Union), but analytical or functional subnational regions (Radboud University 2020). In the SHDI database, functional subnational regions are included, and the authors consider it fully acceptable and even relatively more productive for understanding economic reality than comparing normative regions. Moreover, the authors believe that strictly according to the NUTS classification it is not possible to compare territories even within the EU. For example, in Latvia the NUTS1 level – it is a whole country, in Poland – these are 6 regions (and each of them is NUTS1 region) and in Germany there are 16 lands (each of which is a NUTS1 region) (European Commission 2011). Thus, the authors of this study believe that it is useful to use the so-called functional classification of regions in global comparative studies, which examine not only the situation in the EU (Howe, Stabler 1989).

4. Results and discussion

Analyzing the results of the empirical research, the authors will try to answer precisely the two central questions of this study: 1) where – in the world as a whole or in the European Union – economic differences between inner regions dominate (if dominate at all) over differences between countries? 2) is the reduction of the degree of economic differences between countries in the world as a whole and in the European Union determined primarily by the growth of capital regions? Data of Table 1, as well as Figures 1 and 2, allows to compare the degree of economic differences between the world and EU countries at the inter-country and intra-country regional levels at the beginning of the 21st century.

Table 1: Degree of economic differences of the world and EU countries on the inter-country and intra-country regional level, coefficient of variation, 2000-2017

Year	World countries, n = 132		EU countries, n = 26	
	Degree of economic differences on the inter-country level	Mean value of the degree of economic differences on the intra-country regional level	Degree of economic differences on the inter-country level	Mean value of the degree of economic differences on the intra-country regional level
2000	0.287	0.079	0.089	0.053
2001	0.285	0.079	0.085	0.053
2002	0.285	0.078	0.080	0.053
2003	0.286	0.078	0.077	0.053
2004	0.282	0.078	0.073	0.052
2005	0.280	0.077	0.068	0.053
2006	0.279	0.076	0.066	0.053
2007	0.274	0.075	0.062	0.053
2008	0.271	0.074	0.058	0.052
2009	0.267	0.074	0.058	0.054
2010	0.265	0.073	0.060	0.054
2011	0.262	0.073	0.058	0.053
2012	0.258	0.072	0.057	0.053
2013	0.258	0.072	0.055	0.053
2014	0.255	0.071	0.054	0.053
2015	0.256	0.071	0.053	0.053
2016	0.256	0.070	0.051	0.053
2017	0.255	0.070	0.049	0.052

Source: calculated and drawn by the authors according to the data of Radboud University 2020

Note: the name of the indicator under analysis in the data source is: Income index of Subnational Human Development Index (Radboud University 2020)

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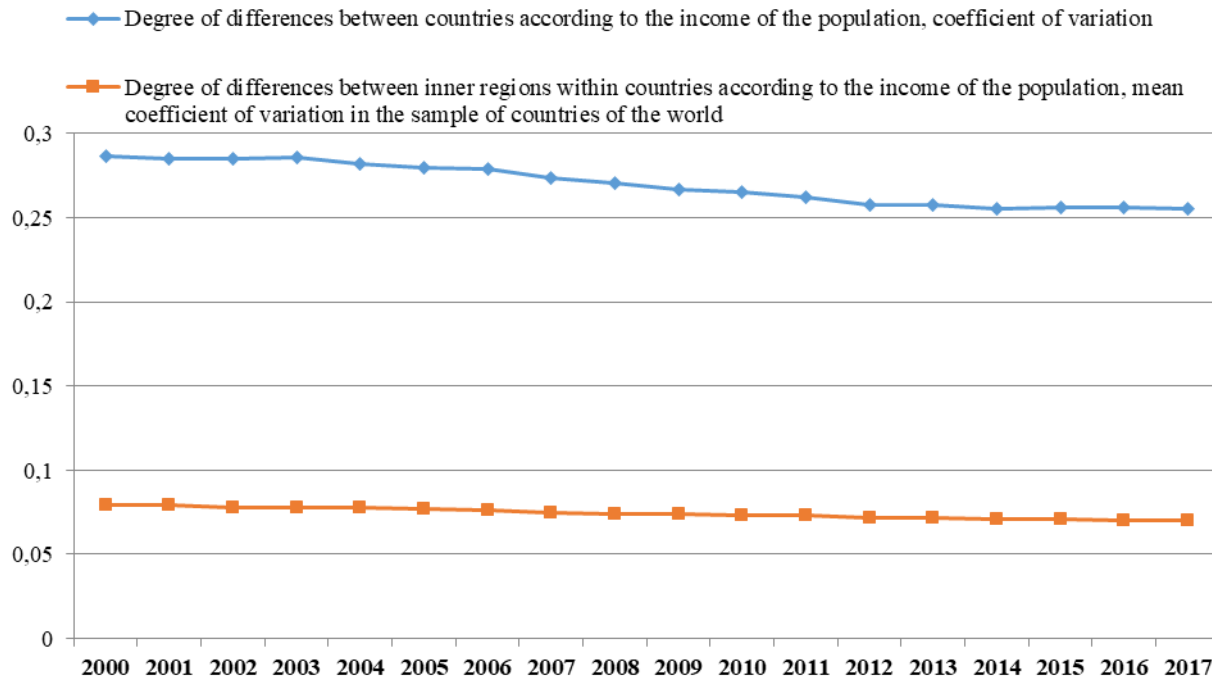


Figure 1. Comparison of the degree of economic differences in the world on the inter-country and the intra-country regional level, n = 132 countries, 2000-2017

Source: elaborated by the authors according to the data of Table 1

Note: the name of the indicator under analysis in the data source is: Income index of Subnational Human Development Index (Radboud University 2020)

As the data of Table 1 and Figure 1 and 2 show, at the beginning of the 21st century neither in the world generally nor in the European Union economic differences on the intra-country regional level were dominant above the inter-country differences. Though after 2015 in the EU the degree of economic differences on the intra-country regional level rose above the degree of economic differences on the inter-country level, i.e. inner regions within each individual EU country started differing in average from each other more than the EU countries between themselves. Yet, before 2015 the EU intra-country regional economic differences were also relatively high as compared to the inter-country economic differentiation – hence, this is the specific feature of the European Union. Besides, both the inter-country and intra-country regional economic differences in the EU countries are significantly lower than generally in the world (see Table 1, Figure 1 and 2).

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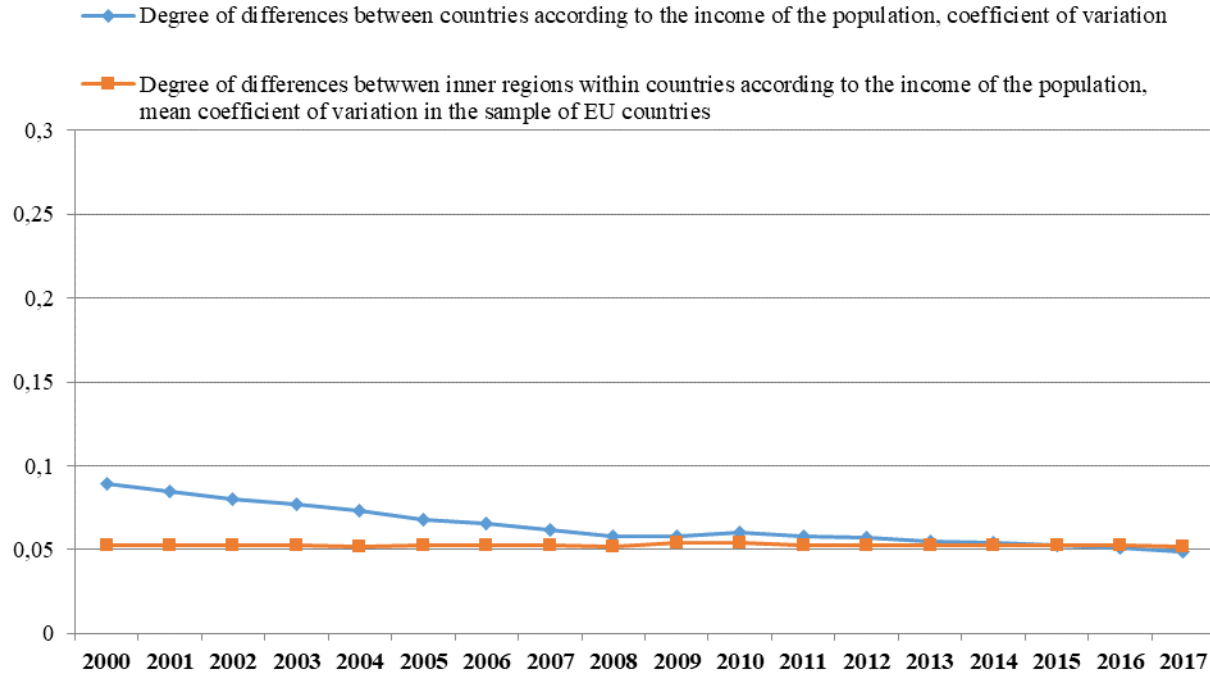


Figure 2. Comparison of the degree of economic differences in the European Union on the inter-country and the intra-country regional level, n = 26 countries, 2000-2017

Source: elaborated by the authors according to the data of Table 1

Notes: 1) the name of the indicator under analysis in the data source is: Income index of Subnational Human Development Index (Radboud University 2020); 2) the sample of European Union countries includes those countries that were EU Member States in 2017 (except Luxembourg and Cyprus, which have no inner regions)

At the beginning of the analyzed period, the largest economic differences between regions within the country were observed in China – the coefficient of intra-country regional variation of the income of its population in 2000 was equal to 0.208, but in 2017 it decreased significantly to 0.095. In 2017, the “leader” of intra-country regional economic differences in the world was the Democratic Republic of Congo – the value of the coefficient of intra-country regional variation of the income of its population was equal to 0.196 (in 2000 this indicator was also relatively high for the Democratic Republic of Congo – 0.186). Regarding the opposite pole of intra-country regional economic differences, it should be noted that in 2000, the “intra-country regional equality leader” was Barbados, with an inner regional variation coefficient of 0.011 according to the income of its population. In 2017, Serbia and Uruguay became the leaders: the coefficient of intra-country regional variation there was 0.005 – the lowest in the sample of countries of the world.

Within the European Union, the “leader” of intra-country regional economic inequality is Slovakia, with a value of 0.100 of the inner regional coefficient of variation of the income of its population (in 2000 this indicator was also the highest in Slovakia – 0.102). In Slovakia, the capital region of Bratislava dominates strongly and stably, and the eastern region of the country lags stably too (Radboud University 2020). Sweden is the “leader” of intra-country regional economic equality in the European Union. Despite the fact that the capital region in Sweden also

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dominates economically (Global Data Lab 2013-2019), the coefficient of intra-country regional variation of the income of the population in this country in 2017 was the lowest in EU – 0.030 (0.028 in 2000).

In search for the answer to the second research question, whether the decrease in the degree of economic differences on the inter-country level is determined by mainly the growth of capital regions, the authors further analyse empirical data just on the EU countries and their capital regions in the time period from 2000 to 2017.

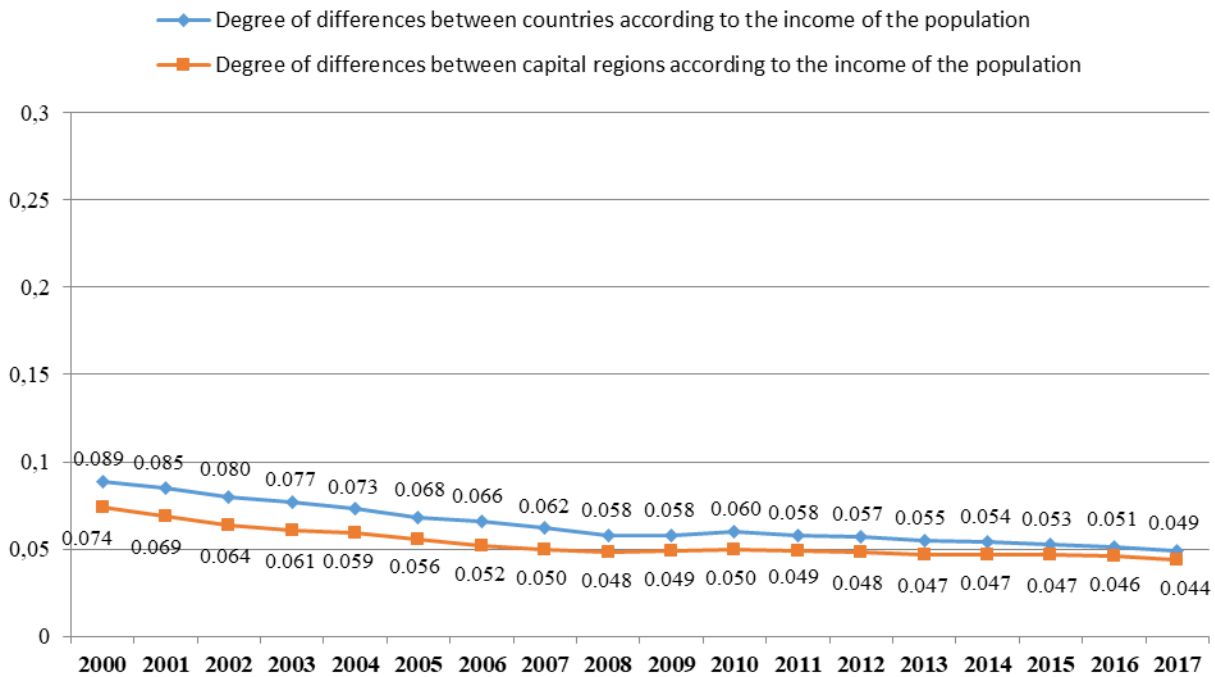


Figure 3. Comparison of the degree of economic differences in the EU on the inter-country and capital regions' level, coefficient of variation, n = 26 countries, 2000-2017

Source: calculated by the author and drawn according to the data of Radboud University 2020

Figure 3 shows the dynamics of economic differences between EU countries and their capital regions at the beginning of the 21st century. Empirically and statistically appropriate answer to the question, whether (at least in the European Union) the differentiation process on the inter-country level is determined by growth exactly in the capital regions, is affirmative. The dynamics of the coefficient of variation shows that the degree of economic differences between EU capital regions during the period of 2000-2017 has been lower than between the EU countries. It means that, for instance, in the economic aspect, Latvia in general differs from Germany or Poland more than Riga from Berlin or Warsaw. However, this difference in the course of the 21st century is diminishing (see Figure 3), indicating that in the present-day Europe there is gradually growing significance of non-capital regions, though the economic dominance and faster growth of capital regions in the European Union (supposedly in the world in general) is still prevalent (see also OECD 2016).

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5. Conclusions

A comparison of the inter-country and intra-country regional economic differences in the world and European Union allowed the authors to conclude, that at the beginning of the 21st century, neither the world nor the EU economic differences between countries' inner regions dominated over the inter-country economic differences. This allows the author to reject the first tested hypothesis, according to which economic differences between countries are often not so large as the economic differences between regions within these countries. However after 2015, the degree of the economic differences between inner regions of countries in the EU started exceeding inter-country economic differences, i.e., the inner regions within each individual EU country began to differ on average more than the EU countries themselves. However, even until 2015, the economic differences of the inner regions of the EU countries was relatively high in comparison with the economic differences between the whole countries, which is the specifics of the European Union. At the same time, both inter-country and intra-country regional economic differences in EU countries are significantly lower than in the world as a whole.

Empirically justified answer to the question whether the decrease in inter-country economic differences in the European Union is determined by mostly the growth of capital regions is affirmative. It is supported by the dynamics of the coefficient of variation in the time period from 2000 to 2017, which shows that the degree of economic differences between the EU countries' capital regions is lower than between the EU countries in general. This difference gradually decreases, indicating that at the beginning of the 21st century in the European Union there is growth of the economic significance of non-capital regions.

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**SOCIAL DETERMINANTS OF DIGITAL EXCLUSION IN AN AGEING SOCIETY.
THE CASE OF POLAND**

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Abstract. The aim of the article is to identify and analyze the social determinants of digital exclusion in an ageing society on the example of Poland. The ageing of societies is nowadays a process recognized as a common trend in the world. Demographic changes cause serious socio-economic transformations. Contemporary social and economic systems are dependent on new technologies. Full participation in a technical environment is possible only for individuals with specific technical, social and psychological competences. The ability to use new information and communication technologies becomes a life necessity. In this context questions about the endogenous and exogenous determinants of digital exclusion in ageing societies, as well as about the impact of the digital technology on the emergence of new dimensions of digital exclusion have been raised. The methodological basis of the study are the theories of social and digital exclusion, as well as science and technology studies. The information bases for the study were the GUS (Central Statistical Office in Poland) reports, Eurostat data base and several statistic reports of non-government organizations in Poland. The analyzed period includes 2015-2019 years in cases where the development trends are discussed and 2019 to show the implications of new technologies impact on Polish society. The forecasts reach up to 2060. The theoretical study is based on the analytical and semantic method. It has been shown that the analysis of the effects of digital exclusion in an ageing society should cover a much wider range of factors causing negative consequences. Exogenous factors, i.e. barriers preventing Internet use combined with lack of access to new technologies and lack of digital competence should be treated equally to endogenous factors. Motivation to develop and acquire new skills related to individual life strategies of the elderly plays an equally important role in the process of social self-exclusion. Authors also identify the main dimensions of digital exclusion and presents them as a multi-factor model: Market - trust - economy; Information policy; Marketing - information - knowledge; Electronic democracy; Quality of life - health. The article provides a theoretical framework for the analysis of new dimensions of digital exclusion in ageing societies. It situates the assessment of new technologies in the social context of the progressing demographic changes implications. It points to new categories of social divides in technologically developed societies.

Keywords: ageing society; digital divide; digital exclusion; new technologies; sustainable development

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JEL Classifications: A14, B55

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1. Introduction

There is a general consensus among researchers dealing with the problems of an ageing society that modern demographic processes imply many negative social and economic effects. Transformations of elementary social structures, which seem to undermine the classical assumptions about the natural rights of social development, force us to reflect on the challenges faced by societies in the XXI century (Kozubikova, Kotaskova, 2019; Niemczyk, Trzaska, Borowski, Karolczak, 2019, Korauš, Dobrovič, Polák, Backa, 2019; Borimdesouza, Zaroni, Janchiba, Borinelli, 2019; Ślusarczyk, Tvaronavičienė, Ul Haque, Oláh, 2020; Tvaronavičienė, Burinskas, 2020).

One of the most serious is the widening scope of digital exclusion of the elderly. The mechanism of social exclusion is closely connected with structural analysis - the structural configuration influences: the way knowledge is exchanged, access to material and non-material resources in the society, the possibilities of expansion of social communities, or the probability of stagnation and decline of certain social entities. The most stressed dimensions of social exclusion in contemporary concepts are: economic, political and social ones. The effects of social divides are primarily diverse opportunities for people to participate in social and economic life (Menshikov, Lavrinenko, Sinica, Simakhova, 2017; Korauš, Dobrovič, Rajnoha, Brezina, 2017; Javaria, Masood, Garcia, 2020; Androniceanu et al., 2020). Limited participation in consumption, unemployment, reduction of social contacts, disappearance of elementary social bonds connecting an individual with the social environment, limited participation in public life, inability to define social and economic reality by means of changing meaning systems, and finally loss of ability to recognize and understand market game rules are the most frequently mentioned practical consequences of social stratification.

The set of very well known problems of ageing societies should be accompanied by new issues, such as the question of threats to the practical implementation of sustainable development principles. Developmental disparities are becoming apparent in a situation of increasing the percentage of elderly people (aged 60/65 and over), while reducing the number of young ones. The implications of this situation are the processes that may lead to a demographic disorder of the system. Sustainability development refers to the case when it meets the needs of the present without compromising the ability of future societies to meet their own needs. The unbalanced proportions of society result in the unsustainability of society. From the point of view of the relationship between the implementation of sustainable development objectives and the processes of ageing, apart from life expectancy and health, the way of functioning in society, i.e. the degree of social integration is also important (Adamczyk, 2017; Androniceanu, Tvaronavičienė, 2019). Social enterprises have an important role in social integration as well (Rey-Martí et al. 2020).

The analysis of the notion of old age can refer to many aspects, which results from the very way a person is perceived from the perspective of different areas of his/her life. The central position in the considerations conducted on the basis of various theories is the relationship of an individual to the natural world, the social world, the world of culture, as well as to technological development. The global expansion of new technologies makes them an indispensable element of everyday life, including the elderly. The development of information and communication technologies, Internet of Things, artificial intelligence systems can be one of the most serious factors of social disintegration of the elderly in this context. Many social reports and forecasts also highlight the positive impact of market developments in new technologies on the top-down stimulated inclusion of excluded people in society. In the EU debates, the potential of new technologies in eliminating traditional social divisions is stressed. The works of futurologists and technoenthusiasts have repeatedly referred to the technological theme of the equality society. It is definitely more frequently confirmed that the fast pace of development of the new

technologies market and the progressing processes of ageing societies will lead to the crystallization of new social divides, whose scale and scope of impact will be incomparable to the known, sociological categories mentioned before.

In these considerations context have been raised important questions: What are the endogenous and exogenous social determinants of digital exclusion in ageing societies? What social challenges are caused by the development of new technologies in ageing societies?

2. Literature Review

The literature on the subject refers to the concepts of digital divide and digital exclusion. The first term was promoted by the American journalist Gary Andrew Poole in 1996 (Pool, 1996). In the 1990s, the issue of access to new technologies was a major interest. Being connected, having a computer or being able to use it at school, in the workplace, etc., was supposed to determine an individual's position in the structure of chances in the labour, educational and business markets (Dutton, Reisdorf, 2019; Androniceanu, 2019). In the literature conceptual divides into information rich and information poor began to appear. The concepts of informational and telecommunications poverty became popular. Digital exclusion is defined as a result of elimination of an individual, a social group from the mainstream of social activity, caused by lack of access and/or inability to use new technologies (Helsper, Van Deursen, 2017). The technological gap between different interactive contexts of social activity, offline and online is the source of the most difficult to overcome developmental disproportions in ageing societies. Sources of digital inequalities are sought at many levels of human activity (Kryszczuk, Green, 2015; Haseeb et al., 2019):

- an unequal access to information and communication technologies and the Internet;
- differences in the quality of used information and communication technologies;
- a speed of adaptation to new technologies;
- an amount and quality of time spent on using the network;
- IT skills and abilities of particular categories of users;
- a degree of adaptability to change and the users' willingness to take risks;
- differences in the knowledge resources needed to skillfully using network resulting directly from the level of education, income, place of residence, age of users;
- an individual differences in the ability to search and evaluate information on the network, degree of network control.

Digital competences could be analysed as the abilities to use information and communication technologies (or more broadly digital). They include skills in operating hardware and software, searching and processing information in different sources. The term therefore refers to IT, information, communication and relational skills in the digital environment (Kačerauskas, 2015). However, there are significant differences in the American and European understanding of this problem. In the United States the phenomenon of digital exclusion is primarily analysed as digital divide - systematic differences in access to and use of computers and the Internet between people of different socio-economic status (education, income, occupation) at different stages of life, sex and different regions. In Europe the term e-inclusion is more popular. The European approach takes into account two extremely important areas of this phenomenon. The first one is the domain of activities that build digital cohesion by delivering the benefits of the Internet and other technologies to all groups of society. The second is based on the recognition that digital exclusion is more than just a digital divide and that it is not only about differences in access, skills or usage, but about all that lead to social and economic exclusion (Betlej, 2017). E-inclusion refers to the effective participation of individuals and communities in all dimensions of the knowledge-based society and economy through access (also understood as removing barriers and facilitating use) and use of information

and communication technologies (ICT). Moreover, e-inclusion also refers to the extent to which ICTs contribute to equalize and promote participation in different spheres of social life (Wenzel, Kryszczuk, 2019). If we accept the definition of digital exclusion which assumes that the notion of digital exclusion refers to the differences between those who have regular access to digital and information technologies and are able to use it effectively and those who do not (Adamczyk, 2017) and take into account a number of factors that influence the occurrence of this phenomenon, then digital exclusion of elderly people turns out to be a phenomenon conditioned not only by exogenous factors but also by endogenous ones. We can therefore analyse many dimensions of digital exclusion of elderly people. The definitions of digital exclusion become the same way of explicating social exclusion. The rationale for this are similar social, economic and psychological effects of these phenomena. However, e-exclusion seems to cover a wider range of problems, as it is composed of more diverse factors that determine the inclusion of people at risk (Androniceanu A.-M et al, 2020). Not only physical access to the Internet, but also many other psychological and social factors determine individual strategies of new technologies usage (see the Table 1). Complexity marks customers affection excluding buyer's willingness to accept a drain in their attention having impact on digital exclusion as well (Phillips, 2020). Labor integration, particularly in young population in risk of social exclusion, is an important determinant of social divides (Aránega et al. 2020).

Table 1. Social divides in developed societies. Traditional variant

Social divides - traditional variant	
Connection to the network: - access to new technologies, - technical competence, - social competence, - technological education, - The pace of adaptation to changes, - age of users, - individual abilities.	Unconnected to the network: - novelty and type of technology used, - low technical competence, - slow adaptation to changes, - low income, - place of residence, - a number of users, - individual abilities.

Source: Authors, based on Betlej, 2020, p. 235.

The performative potential of individuals seems to be this key factor for future social change. Technological development does not eliminate classical social divides. It rather gives them new content or as a result introduces new principles of social stratification. The role of cultural factors in these processes is increasing. In new concepts of digital exclusion different ways of interpreting human relations with new technologies appear. They include the concept of the connected excluded - the users of new technologies who have the appropriate technical competences but their social competences and knowledge of the challenges and risks of participation in the network is very low (Betlej, 2014; Gondek, 2017), see the Table 2. The problem of new power elites in the network is also being addressed.

Table 2. Excluded connected

Digital exclusion - ambivalent variant	
Excluded connected: - alternative exchange of information resources, - informal cultural circles, - cyberactivity, - alternative network spaces, - individual, - social groups, - social networks, - of society, - naive cyber-consumers.	Elites - Unconnected to the network: - networks of knowledge, - power networks, - classic change actors (e.g. mafia-oligarchic), - creators of new technologies, - individuals, - new social movements, - arrangements, - the digital fugitives.

Source: Authors, based on Betlej, 2020, p. 235.

These problems considering the pace of ageing of modern societies in the near future will affect more and more groups of people. However, there are visible divides of societies in the European Union, resulting from the cultural and socio-economic conditions of countries' development (Helsper, Reisdorf, 2017; Mazzanti, Mazzarano, Pronti, Quatrosi, 2020). Radicalization in youth population, as is the case in Bosnia and Hercegovina, also appears to be an important determinant of social exclusion (Oruc, Obradović, 2020).

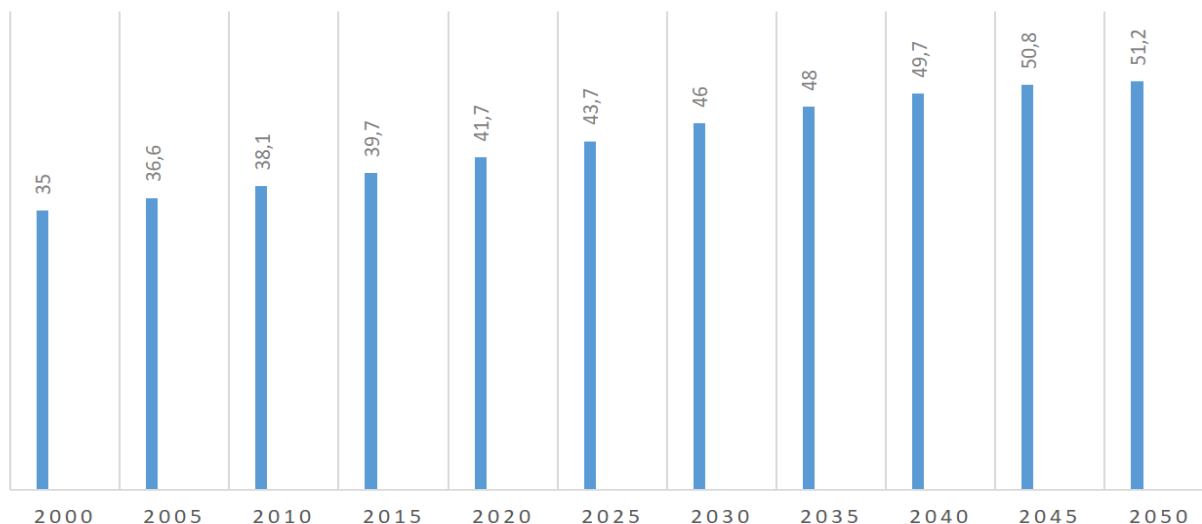
Nowadays more importance is attached to the development of social competences, cultural adaptation of new technologies to the needs of recipients, sustainable development of the new technologies market, digital inclusion, intelligent technologies used to create a sustainable digital environment to meet social needs and improve the quality of life (Adamczyk, 2017, Bernardi 2019). The ageing of modern societies is an important social, political, economic and business challenge. The effects of social disintegration make it necessary to search for ways to eliminate the adverse implications by introducing changes in the form and quality of e-services (Korczak, 2019). The economy responding to the needs of an ageing society should be defined in terms of an impulse for appropriate direction of development (Betlej, Leśniak- Moczuk, 2017). The change in the structure of the population's needs as well as the increase in their activity should become the sources of progress and sustainable economic growth. These aspects have been presented in many strategic documents in Poland, especially in those that referred directly to the concept of smart, sustainable and inclusive growth. This is indicated by the names of its main priorities: development of an economy based on knowledge and innovation, sustainable development, inclusive development.

3. Ageing society in Poland

The demographic ageing of the population of Europe and some highly developed countries is a global process (Betlej, Leśniak-Moczuk, 2017). It is predicted that this trend will intensify over the next 4 decades and consequently will lead to significant changes in the proportions between the elderly and the young. As demographers emphasize, Poland is one of the countries where this change will be particularly severe. According to forecasts from one of the youngest countries of the European Union, it will become one of the oldest in 2060. According to the forecasts, Poland is the country in which the increase in the share of the elderly will be the fastest among all the European Union countries (Jedlińska, 2018). According to the projections, by 2050 there will be significant changes in the population size and demographic structure. In 2019 the population of Poland was over 37 887 771 people and is expected to decrease in 30 years by nearly 4 million people.

In 2050, it is estimated to be about 33 950 000 people. From the point of view of demographic changes, it is also important to note that there will be a decline of over 23 percentage points in the working age population. Interestingly, the population of mobile working age is projected to decrease while the number of people of non-mobile working age will increase. The ageing of the population results in many consequences for the implementation of sustainable development objectives in Poland (shrinking labour resources, increasing number of inactive people). In 2050 the number of seniors in the so-called fourth age will increase among nearly 40% of people aged 60 and more, as illustrates the Graph 1 below.

POLAND: AVERAGE AGE OF THE POPULATION FROM 2000 TO 2050 (MEDIAN AGE IN YEARS)



Graph 1. Poland: Average age of the population from 2000 to 2050 (median age in years).

Source: Authors, based on: Eurostat data base

https://ec.europa.eu/eurostat/statisticsexplained/index.php/Digital_economy_and_digital_society_statistics_at_regional

The aforementioned double ageing will be based on a faster than general rate of growth of the percentage of population aged 80 and over. In cities the projected number of people aged 80+ will be 2 143 087, 9 which will already constitute 6.3% of the Polish population. In the countryside, in 2050 the number of people in this age group will be 1 394 411, or 4.1% of the population. The elderly will therefore constitute a very numerous and important group of recipients of new technical solutions (Gacka, 2017). In the context of the discussion on the challenges of social integration in a sustainable society, that commonly uses new technologies in everyday life, the problem of e-services becomes an important issue. Elderly people seem to be an overlooked group of recipients by enterprises and public administration implementing new forms of mobile services. The expansion of e-services market brings new challenges for sustainable social participation of all age categories of recipients.

In 2019, 78.3% of people aged 16-74 used the Internet at least once a week in Poland. In 2018 in the European Union this percentage was 83%. Poland's distance to the EU average remained at 8 percentage points. In 2019 in Poland 97.3% of those who have used the Internet in the last 3 months used it regularly. The percentage of people who connected to the Internet every day or almost every day was 84.8%, and 2.7% using the Internet less frequently than once a week.

Taking into account the type of professional activity in 2019 the highest percentage of regular users was among schoolchildren and students (99.6%), the self-employed (95.5%) and the lowest among retired and other inactive persons (48.3%). The share of regular Internet users increased in all age groups. In 2019, compared to 2018, the largest increase in the share of regular Internet users occurred in the group of people aged 55-64 by 9.5 percentage points (see Table 3 below).

Table 3. Regular Internet users by age groups

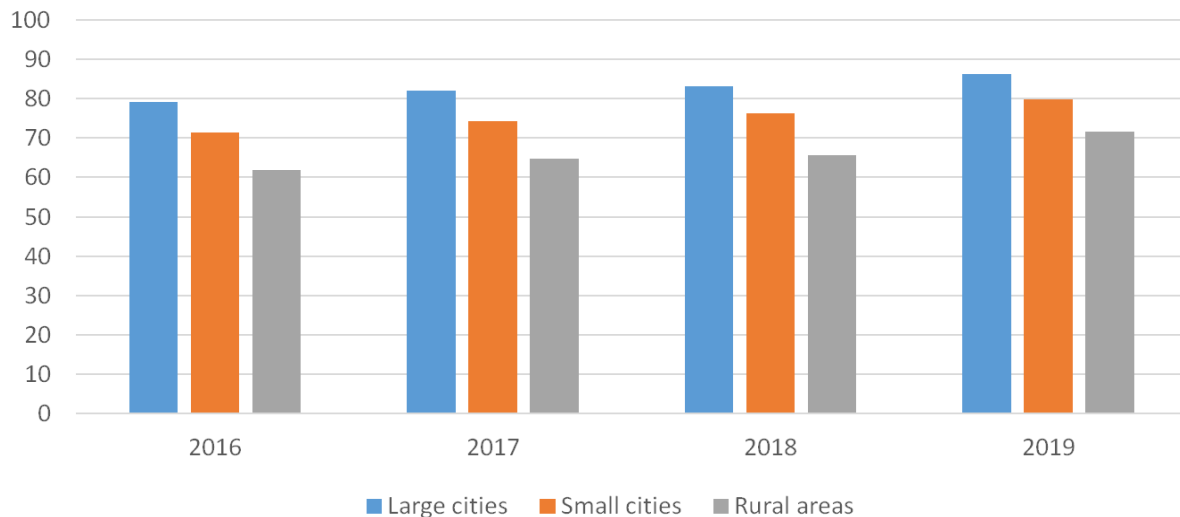
Specification	2015	2016	2017	2018	2019
Regular Internet users by age groups in % of total individuals in a group					
16–24 years	97,1	97,7	99,0	98,8	99,3
25–34 years	91,3	92,3	94,5	96,5	97,0
35–44 years	79,6	84,1	87,5	90,6	94,5
45–54 years	61,2	62,9	67,7	73,4	78,1
55–64 years	41,5	45,4	47,5	50,4	59,9
65–74 years	19,5	23,1	26,0	29,8	33,3

Source: Authors, based on GUS data base (GUS, 2019: 185)

<http://stat.gov.pl/en/topics/science-and-technology/science-and-technology>

The most common reason for no Internet access at home was the lack of need to use it (68%). A smartphone is becoming a much more popular tool for using the Internet. The research shows that elderly people in Poland have low digital competences (Garwol, 2020, pp. 47-68). In the 45-54 age group the share of people with low digital competences oscillates around 39%. Similar situation is observed among 55-65 aged where 31.2% people also have such low IT skills. The highest percentage of people using the Internet on a regular basis was recorded among inhabitants of large cities, while the lowest percentage was in rural areas. In recent years this indicator has been increasing regardless of the place of residence. In the last five years the highest increase in the percentage of people using the Internet regularly was observed in rural areas (by 15.5 percentage points), see Graph 2.

Regular Internet users by domicile



Graph 2. Regular Internet users by domicile in Poland

Source: Authors, based on: Eurostat data base

https://ec.europa.eu/eurostat/statisticsexplained/index.php/Digital_economy_and_digital_society_statistics_at_regional

Among people with higher education there is the highest share of people using the Internet regularly (in 2019 - 97.5%). In the group of people with primary or secondary education, this indicator remains at the lowest level, despite the fact that over the last five years it has increased by 13.6 percentage points.

Among Poles aged 55-64 there are 40% of Internet users, and only 11% in the group of 65 years and more. Only 16% of pensioners are network users (Garwol, 2020, pp. 47-68). In terms of Internet use by elderly people, Poland ranks last in the European Union. The spatial diversity of rural and urban municipalities in terms of the number of Internet users is also visible. The main reasons for this phenomenon can be seen in the differences in access to ICT infrastructure and the Internet, the wealth of the municipalities, the level of education of the inhabitants (Adamczyk, 2016, pp.5-13). The size of the place of residence has a large impact on the degree of computer and Internet use. This indicator also influences the way computers are used. 47% of inhabitants of the largest cities use computers primarily for work. The smaller the town, the more often the computer is used for entertainment.

In examining the level of e-exclusion in Poland, the Central Statistical Office adopted four basic indicators - total e-exclusion (persons aged 16 and over who have never personally used a computer); - e-exclusion to a significant extent (persons aged 16 and over who have personally used a computer but are not Internet users); - e-exclusion to a moderate degree (persons aged 16 and over who have personally used a computer and the Internet, but the scope of this use was relatively small); - e-exclusion to a limited extent (persons aged 16 and over who have used the Internet at work and elsewhere, but not at home). According to the GUS and Eurostat data, the phenomenon of digital exclusion mainly concerns the elderly, pensioners, disabled people, farmers and residents of rural areas, as well as poorly educated people. The main dimension of digital exclusion in Poland is age.

4. Discussion

The phenomenon of digital exclusion of elderly people in Poland is very often addressed in public documents as well as in scientific works. It is confirmed that elderly people do not use the Internet as often as young or very young people. However, we are dealing here with a cultural phenomenon. When writing about digital exclusion of elderly people, it should be remembered that this social group is characterized by the high degree of inhomogeneity (Adamczyk, 2016). A very important factor influencing the attitude to new technologies, including remote-controlled services, is the fact at what stage of old age the individual is. The process of human ageing is a sum of changes taking place in three fundamental spheres of human life: biological, psychological and social. The change within one of these spheres entails changes in the other two, but the process of ageing does not affect individuals in the same way.

Ageing is not a homogeneous process, there is a fundamental difference in health, intellectual and physical fitness between people aged 60-75 and the group of people aged 75-85 and the oldest, i.e. over 85 (Gonzales, Ems, Suri, 2016). For conscious and effective use of modern technologies, the so called third (60-75 years old) and fourth age (75-85 years old) is important. This results from changes in the human body, the need to provide care and support especially in old age. It is connected with deepening symptoms of physiological and mental ageing: gradual reduction of psychophysical fitness and independence, reduction of the possibility of social adaptation - so-called social ageing, intensification of dependence on others. The age between 60 and 75 (the so-called third age) is a period characterized by much greater activity, independence and efficiency than the fourth age (75-85), in which dependency on others and the need for care appear much more often (Adamczyk, 2017). In the fourth age, the incidence of various somatic and mental illnesses increases significantly. The risk of dementia with its' rich and at the same time burdensome symptomatology is growing (Adamczyk, 2017, pp.66-77)). Therefore, it should be remembered that seniors do not constitute a homogeneous group (Wenzel, Kryszczuk, 2019) and there is a difference of one generation between people aged 60 and 80, although they all fall into the category of seniors. As a consequence, there is also a significant difference in health and fitness, and thus in the

area of needs and activity (Wachowicz, Kossecki, 2012). We can therefore consider many dimensions of digital exclusion.

The basic issue in the case study of digital exclusion is the motivation to use new technologies. It is the motivation to buy a computer, a network connection and to acquire the necessary skills to use the right applications. Another issue is an access to computers and the Internet at home, at work, at school or in any other place, as access does not have to mean the real use (especially if there is no motivation). According to GUS data, 22.2 million people in Poland in 2019 used a computer (1.6% more than a year ago and 12.5% more than in 2015), 21.3 million of whom used it regularly (2.5% more than the previous year). In 2019, 78.3% of people aged 16-74 used the Internet regularly (GUS, 2019: 25). However, according to the analyses contained in the report, there are differences in Internet use depending on age, economic activity, level of education and place of residence.

The highest percentage of regular users was recorded among pupils and students (99.6%), self-employed (95.5%), people with higher education (97.5%), and residents of large cities (86.3%). In central Poland the share of regular Internet users was higher than in other parts of the country (GUS, 2019: 25). Are we dealing here only with exogenous factors that make it impossible to use the Internet or on the contrary with endogenous factors related for example to motivation? In order to identify endo and exogenous barriers to the use of new technologies, different attitudes towards them must be traced (Gitlow, L. 2014, pp. 271–280). In the literature there could be found references to four levels of access to new media:

- motivation to use new technologies,
- physical access (computer ownership, Internet access),
- skills (strategic, informational, operational),
- usage (different ways of using) (van Dijk, 2006).

If we look at these attitudes, it turns out that in the case of older people there is the necessity to deal with other attitudes resulting not necessarily from a physical lack of a computer or a problem with access to the Internet, but with weakening skills and weakening motivation. This state of affairs seems to be confirmed by the Central Statistical Office (GUS) data from the report "Information Society in Poland" in which the most common reason for no Internet access at home given by households is lack of such need and in 2019 it amounted to 67.6%. Only the second most frequently mentioned reason for no Internet access at home was the lack of appropriate skills - 52.0%.

In recent years the percentage of households with no Internet claiming the Internet aversion as the reason has been increasing. The high access costs are not pointed at the main factors of the exclusion (GUS, 2019: 152). Of course, if we analyze the data of the Internet use, it turns out that younger people are the main new technologies users. In the context of the conducted deliberations, the new problem has emerged. How to deal with the process of self-exclusion progressing along with moving to the next older age groups? This is confirmed by data from the above mentioned GUS report. Comparing for example the level of Internet shopping in 2019 in two age groups: 55-64 and 65-74, it turns out that 27.3% of people from the younger group in general made such purchases and only 13.2% of the older ones (GUS, 2019: 176). Even greater differences can be observed in more advanced new technologies use, as illustrates the Table 4 below.

Table 4. Persons who performed selected software activities in the last 12 months in 2019

Data in %	Total	Age 55-64	Age 65-74
Copying or moving a file or folder	51,3	26,8	12,7
Use of word processors	39,2	18,9	8,6
Creating presentations or documents combining text, images, tables, charts	23,6	7,9	3,1
Use of spreadsheets	27,9	12,2	5,3
Using advanced spreadsheet functions	13	4,6	1,4
Using photo, video or audio editing software	25,6	4,5	0

Source: Authors, based on GUS data (GUS, 2019: 185)

<http://stat.gov.pl/en/topics/science-and-technology/science-and-technology>

Data from the Central Statistical Office or Eurostat clearly indicate a close relationship between age and access to the global network and the level of Internet skills. However in-depth research allows us to learn about older people's behaviour on the new technology market from a different perspective. The subjectively perceived usefulness of new technologies, their degree of adaptation to the lifestyle of an elderly person, as well as the influence of the nearest environment and self- image shaping (based on identity) are also very important. The new technologies market in the senior citizens' segment does not differ much from other market segments in this respect. It is internally differentiated. The age criterion is one but not the only distinguishing feature of the market.

We can also consider e-services in a broader problem context as important elements in information society, knowledge society or network society development. These are new forms of service delivery through new technologies, reflecting the global social changes brought about by technological development. The digital transformations of modern countries have a micro-scale effect on the change of certain business models, the way of communication and democratic processes. In public administration we have been observing a tendency to increase the share of e-services in relation to traditional services. In Poland the importance of introducing standards of e-services in terms of their simplicity of use (ease and intuitiveness), originality, personalization, mobility, openness, socialization is emphasized. The social effects of digital exclusion in ageing societies seem to broaden the range of individual problems of excluded people. However the effects of technological changes not adapted to social needs seem to reach much further and concern the entire economy (Helsper; Van Deursen, 2017). The effects of digital exclusion cause many negative phenomena, among which could be mentioned for example unsustainable economic development. Participation in social life, civic activity, access to health care requires the ability to use new digital tools (Adamczyk, 2016).

Conclusions

Age is only one of the possible categories of social determinants taken into account in analyses of the causes of digital exclusion. People can be threatened with digital exclusion both 45+ and 60+. New technologies can be applied in everyday life practice of older people at several levels of their activity referring to pre-defined levels of digital exclusion. Advanced information and communication technologies, especially social technologies, should be adapted to the special needs of older people, among which they should be mentioned:

- a possibility of contacting medical and social assistance by means of special applications,
- a possibility to use system solutions (detailed instructions for specific situations) dedicated to activities related to bank accounts, electronic offices, electronic services commonly available on the market,

-a possibility of supporting social activation, maintaining ties with family, friends, other social media user groups can help eliminate the feeling of alienation, exclusion, lack of contact with other people on a daily basis.

Modern developed societies are constituted by such factors as: universal access to computers, ability to use them effectively, developed and relatively common knowledge of information and communication technologies. A very important factor is also the positive assessment of these factors by conscious and not accidental users. Technology has never before been as human friendly as it is today. Technological novelties such as new phones and computers are becoming easier to use for the elderly. The tools are more and more adapted to the needs of the recipients, however, due to the growing reluctance towards technological innovations older people often exclude themselves from society. What are the reasons for this situation? The answers can be sought by analyzing the dimensions of digital exclusion of older people:

Market - trust - economy: The digital exclusion of older people is very often due to a lack of trust in new services such as e-banking. Despite the ability to use technical tools (phone, computer), many people do not want to adapt to the changing economic environment (Wachowicz; Kossecki, 2012). There are many reasons for this, including concerns about the lack of privacy and security of online transactions. On a national scale, the losses to the economy associated with the expansion of this area of exclusion are very high. The financial aspects of digital exclusion and its importance for the further development of a sustainable economy are less and less frequently discussed today. This is an extremely important problem area.

Marketing - information - knowledge: Digital exclusion resulting from a lack of knowledge and competence makes older people a category of people who are particularly exposed to the techniques of marketing propaganda. The thoughtless treatment of information appearing on the Internet, as well as information transmitted through new technologies, exposes elderly people to material, psychological and social losses.

Information policy: A separate range of new quality services creates another area of contemporary digital exclusion of older people - limited access to public services: electronic offices, electronic libraries, e-footprint, virtual deans.

Electronic Democracy: A consequence of and at the same time an area of digital exclusion are also limited rights of elderly people to key civic information, as well as a reduced scope of political exercise and civil rights.

Quality of life - health: New technologies, such as cell phones, are becoming tools in the fight for the health and life of the elderly. Health monitoring applications, fast localization, robotization of medical services, electronic tools supporting the work of human organs are only selected examples of solutions for improving the quality of life in the ageing European societies. Lack of willingness to use these solutions by elderly people, despite their knowledge and technical competence, may constitute another area and factor of digital exclusion.

How to design solutions that can be dedicated to many age categories of people? The key to understanding the problem is to know the essence of the needs of digitally excluded people. It seems reasonable to say that the defined new areas of digital exclusion of older people will be a great challenge for social economy entities in the near future. The most effective programs in the fight against digital divides will be those dedicated to shaping attitudes and motivation of older people, which will be able to effectively counteract emotional, psychological and motivational barriers through group education - through experience and interaction. Socio-economic changes related to the progressive process of ageing of modern societies require a new approach to the use of digital technologies and innovative actions. Technology assessment should become a key factor of the assistance system for elderly people. The needs of activation and social integration of the excluded or threatened by digital exclusion require in-depth research. A quantitative analytical approach prevails in statistical studies. Digital exclusion is analysed through a global set of similar factors which do not always take cultural differences into account. This is well illustrated by the example of Poland. Older people are not a homogenous social category. The analysis of social trends shows that in the future, smart cities will be the main service functions for the population. The inclusion of rural areas in regional smart networks is also being discussed. New technologies will therefore be easily accessible. Another issue that needs discussion is the assessment of digital and social competences. Younger recipients of new technologies also become excluded if one considers new threats, such

as dependence on electronic gadgets, inability to evaluate the e-information, vulnerability to marketing and propaganda messages and, finally, inability to use increasingly advanced mobile devices. Technological progress seems to be ahead of social development. Therefore, the assessment of internal determinants of social exclusion in ageing societies should include an analysis of changes in older people's lifestyles and their expectations of technological devices. The main problem still seems to be the lack of knowledge about the social potential of new technologies.

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MAPPING COOPERATIVES IN ITALY*

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Abstract. The purpose of this contribution is to photograph and describe, with reasonable accuracy and beginning from the territorial, time and sectoral distribution, the Italian cooperative universe in all its main economic, size and qualitative variables. In the light of the economic crisis triggered by the present epidemic, the mapping work also takes on a further importance in outlining a perspective of analyses on the future impacts of the recession, on the resilience of the cooperative movement and on the role it will be able to play in counteracting the decline in industry and employment.

Keywords: Cooperatives; Mapping; Italy

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JEL Classifications: J54, P13, Q13

1. Introduction

Since the post-second world war, the academic debate has gradually confined the discussions and research on the cooperative movement to a residual space in the economic literature and in books on enterprise management (Kalmi, 2016). Moreover, up to now, the difficulty in gathering data and the fragmentary nature of the local sources (Bernardi, Treu, Tridico, 2011), as well as the lack of a clear and universally shared definition of a cooperative, have hindered the creation of a comprehensive global database that would allow for a full-scale

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reading of the cooperative movement under its manifold aspects. An internationally recognised definition of a cooperative enterprise was only reached in 1995 (ICA, 1995), during the International Co-operative Alliance (ICA) Centenary, after a lengthy consultation involving thousands of co-operatives from around the world.

From then on, over the last decade, some important steps have been made in recognising and taking into consideration the value of the cooperative world, both at international and national level. The valuable work carried out in recent years by ICA-Euricse (2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019) has to be seen in this context. According to ICA data (2019a, 2019b), cooperatives now play a key role in the world's economic system. The approximate 2,000 billion dollars in turnover generated by the top 300 cooperative enterprises in the world out of the 3 million cooperatives registered in 156 countries, in addition to the more than one billion members and 280 million employees, are important indicators of the scale of this phenomenon.

In Italy, especially starting from the first decade of the century, there is no lack of important contributions in the work of mapping and measuring the Italian cooperative movement (Borzaga, 2017; Borzaga, C. Carini, C. Carpita, M., Lori, M., 2016; Borzaga, C. Calzaroni, M., Lori M., 2016; Costa, E., Carini, C., Borzaga, C., 2013; Euricse 2011, 2013, 2015; ISTAT, 2017; ISTAT-Euricse, 2019; Mazzoli, E., Zamagni, S. 2005; Zamagni S., Zamagni V. 2011, 2019; Zamagni, V. 2006). In this scenario, the purpose of this contribution is to photograph and describe, with reasonable accuracy and beginning from the territorial, time and sectoral distribution, the Italian cooperative universe in all its main economic, size and qualitative variables. In the light of the economic crisis triggered by the present epidemic, the mapping work also takes on a further importance in outlining a perspective of analyses on the future impacts of the recession, on the resilience of the cooperative movement (Berranger, C. Monni S, Realini, A., 2020; Bernardi and Monni, 2016; Bernardi and Monni, 2019; Demartini, P., Monni, S. eds., 2017; Zamagni and Zamagni, 2019; Zamagni, V., 2020; Mazzanti, M., Mazzarano, M., Pronti, A., Quatrosi, M. 2020) and on the role it will be able to play in counteracting the decline in industry and employment. The rate of survival and average lifespan of the worker buyouts carried out in Italy under a cooperative model (Demartini, P., Monni, S., 2017; Monni et al., 2017a; Monni et al., 2017b; Monni et al., 2017c; Area Studi Legacoop, 2020a; Vieta, 2015, 2016), are the proof of this, showing the economic and social success of this type of management opportunity as a response to company crises.

In the opening section, the numbers and general aspects of the Italian cooperative system as a whole will be presented. Subsequently, the territorial distribution of Italian cooperatives will be analysed under the three main aspects: numbers, production and employment. In the third sub-section, the descriptive analysis will focus on the size classes of cooperative enterprises. The Italian peculiarity, the distinction between prevailing and non-prevailing mutuality (better specified in the reference sub-section), will be dealt with in the fourth sub-section. In the fifth, the new start-up and 100 year old cooperatives, the Italian cooperative enterprises will be classified on the basis of the years of activity. Finally, the numerical, productive and employment aspects of the Italian cooperatives will be redistributed on the basis of the sectors of their economic activity.

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2. The aspects of the Italian cooperative world

The analysis is the result of tapping into a combination of different data banks. Specifically, the economic and employment data, taken from the Aida-Bureau Van Dijk databank (2020), was integrated with the information taken from the Cooperative Register of the Ministry of Economic Development (2020) and Legacoop's Area Studi data bank. The level of coverage for the cooperative universe does not coincide in the different sources used, both as regards the number and typology of the data. As far as the sample selection and the main classifications adopted are concerned, information can be found in the methodological note.

It should be mentioned that what emerges from the analysis of the balance and employee data (Aida-Bureau Van Dijk databank, 2020) does not take into account the actual magnitude of the cooperative sector. This is due to the fact that the universe considered is limited only to enterprises that, at the time of data extraction, had presented their balances to the Chamber of Commerce. Therefore, as far as the economic and financial data is concerned, it is impossible to include, because of discrepancies in the adopted balance framework, the credit unions, the cooperative banks, the financial intermediaries, the smaller credit consortia, the credit guarantee consortia and cooperatives and the insurance companies.

The total of the cooperative enterprises and consortia that we can consider active[†] numbers 61,274 which are quite evenly distributed across the main business sectors (Fig. 1). However, a higher representativeness can be seen in the sectors of company support services, construction and real estate, healthcare and social assistance, logistics and agriculture.

[†] Cooperatives considered active are all those enrolled on the Company Register which, at the time of reference, did not have any insolvency procedures underway and which, except for companies set up after 1/1/2016, had lodged at least one financial balance with the Chamber of Commerce between 1/1/2017 and 31/12/2019.

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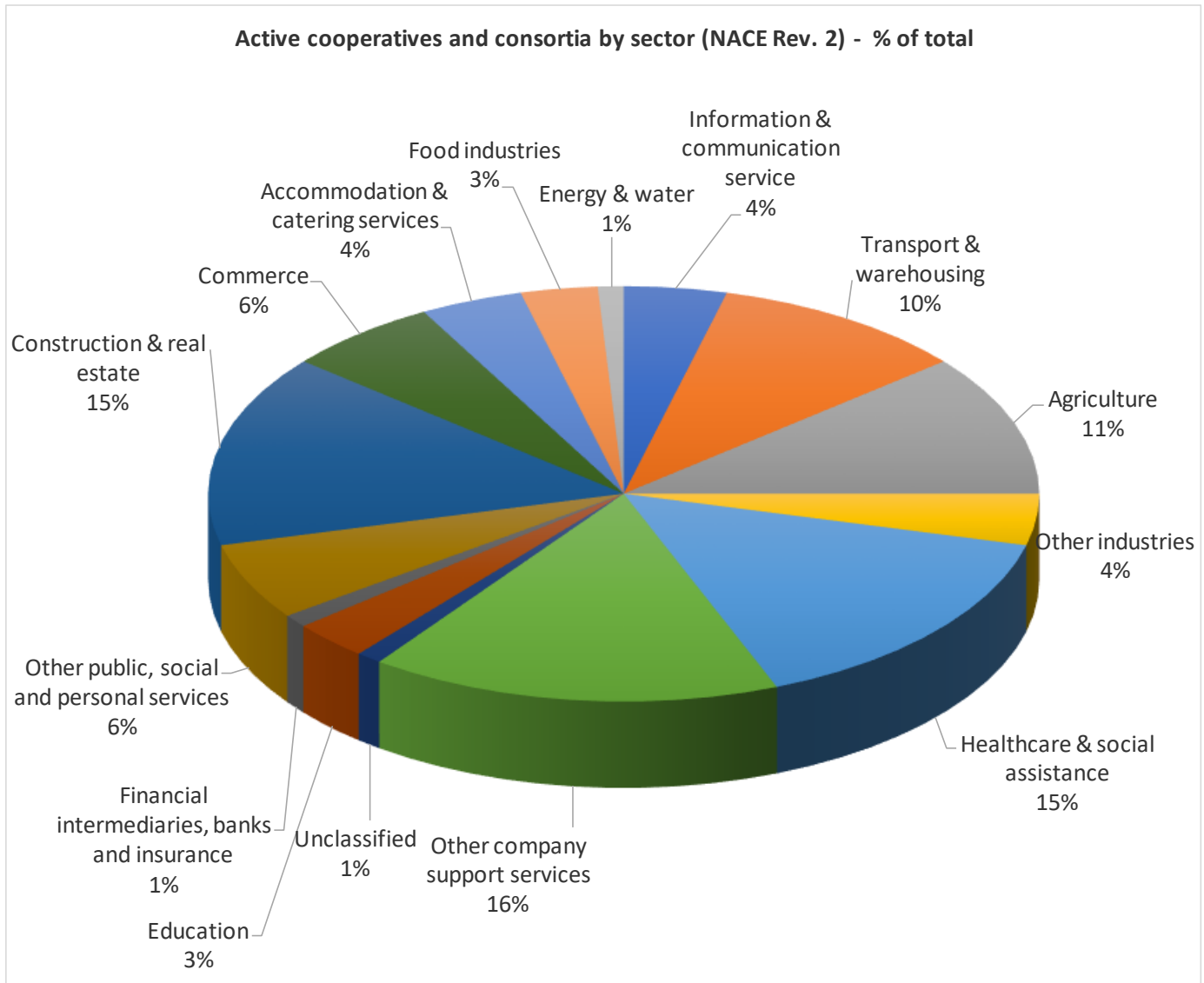


Fig. 1. Active cooperatives and consortia by sector

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

Out of the total of cooperatives considered active at the date of data elaboration, 0.3 % was not enrolled on the Cooperative Register (Fig. 2). The Italian Cooperative Register shows that more than 42 % of that enrolled fall into the Production and Worker Cooperatives group, while 26.6 % accounts for the Social Cooperatives, followed by “Other Cooperatives”, Agricultural cooperatives for production and marketing and Construction and Housing Cooperatives.

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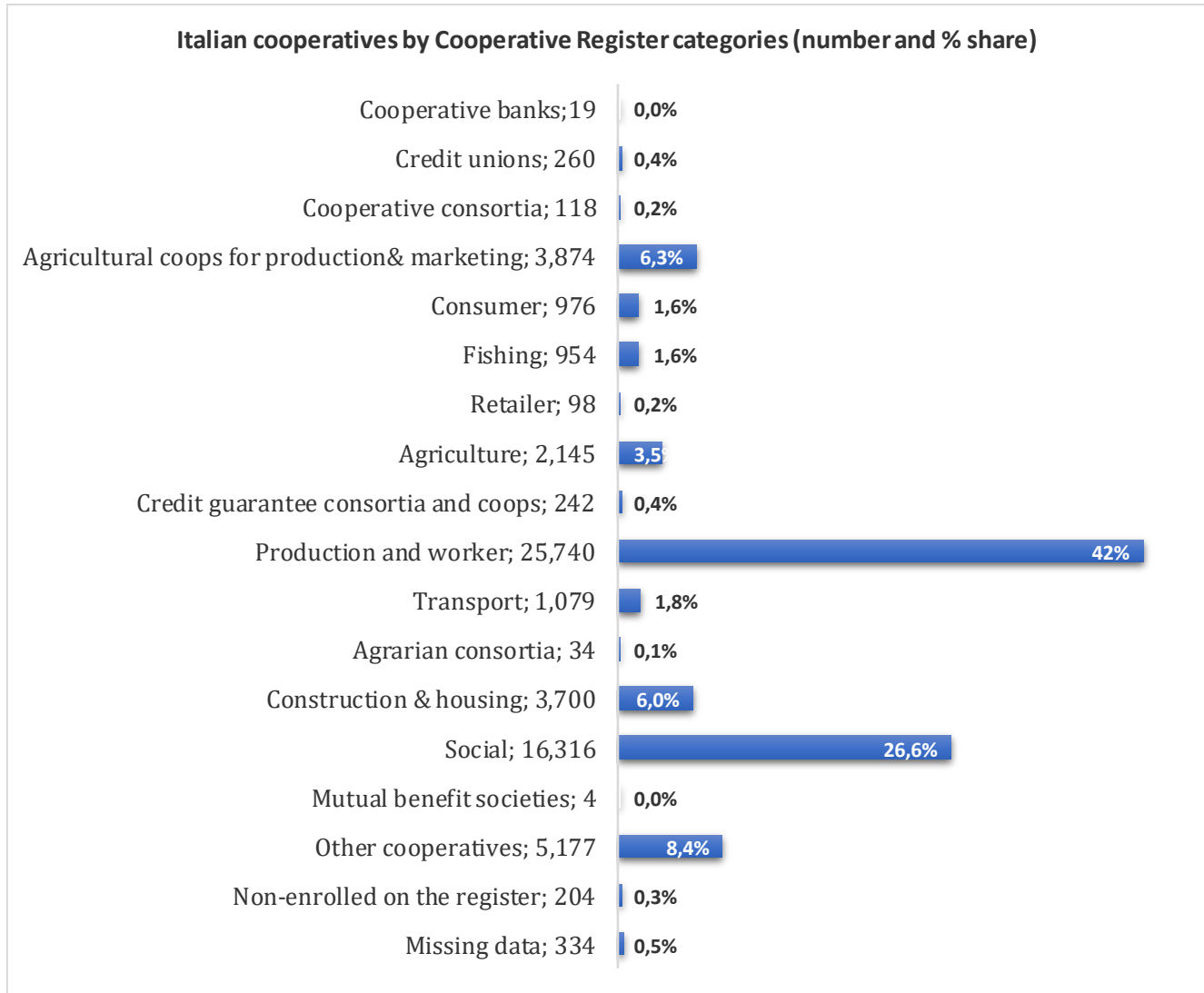


Fig. 2 Italian cooperatives by sector (Cooperative Register categories)

Source: Ministry of Economic Development (MISE) – Italian Cooperative Register (2020)

Instead, out of the total enterprises considered active, it was possible to find employment data on 53,675 cooperatives and consortia and financial balance data on 50,733 cooperatives for 2017. The lack of balance data for 2017 for a significant part of the active cooperatives can be mainly explained by the presence of 9,449 cooperatives and consortia set up from 2016 (Fig. 3) and which did not present a financial report in 2017 and, as previously mentioned, by the choice to exclude the finance, banking and insurance sectors. Nevertheless, the data available accounts for more than 83% of the active enterprises in the Italian cooperative sector (Fig. 4) and, therefore, allows for drawing the quite accurate perimeters.

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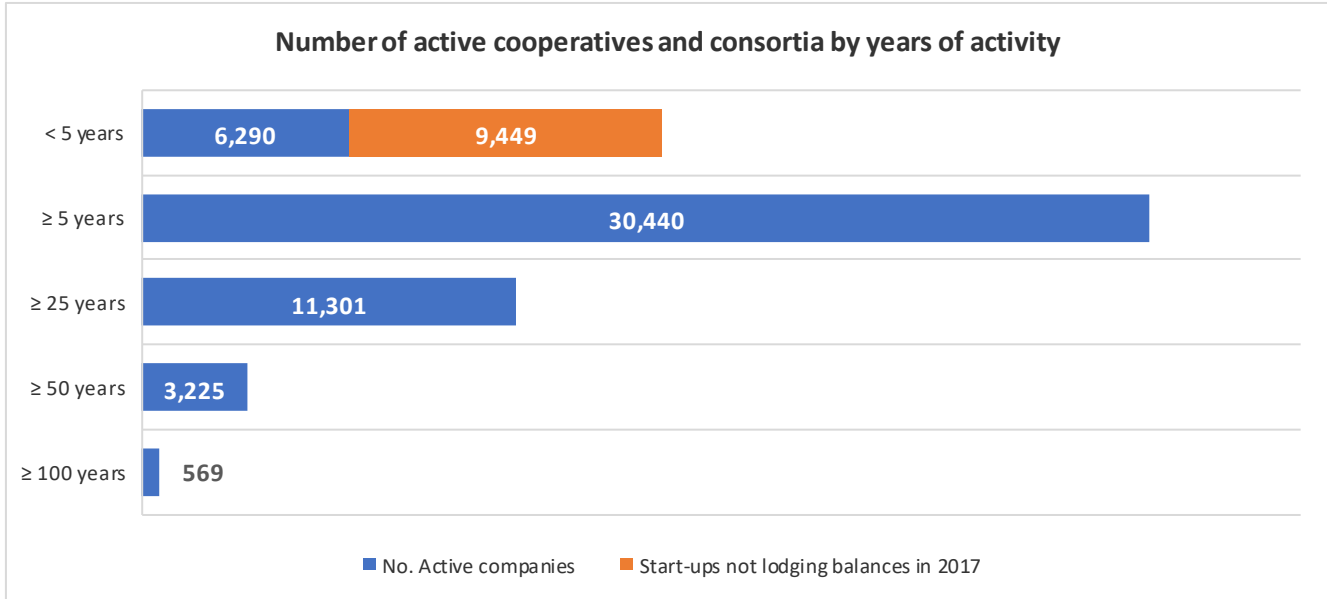


Fig. 3. Number of active cooperatives and consortia by years of activity

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

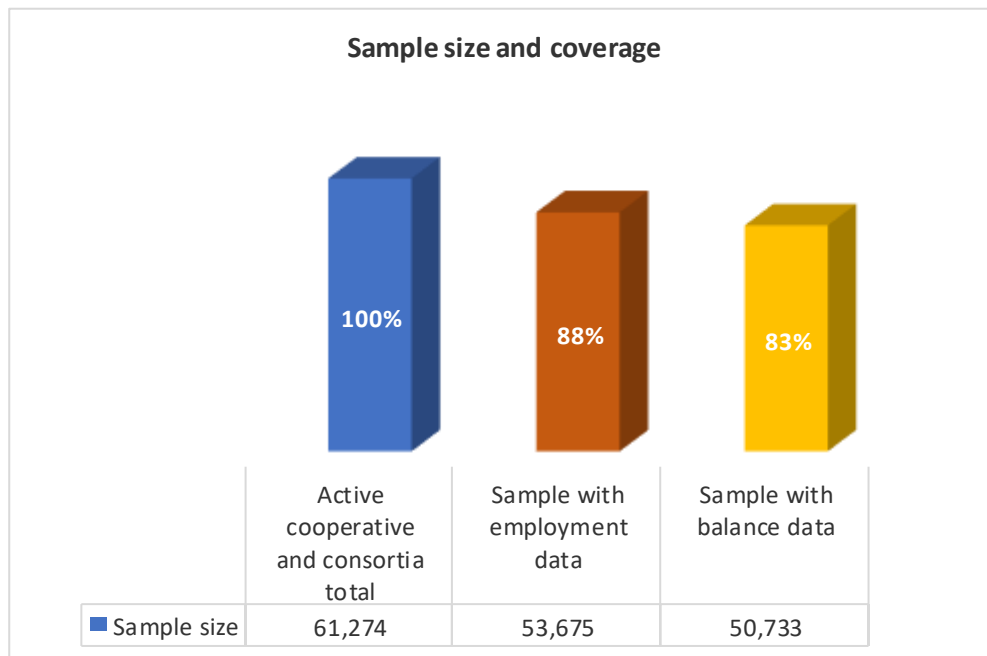


Fig. 4. Sample size and coverage

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

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Finally, to establish how many cooperative enterprises operate within the Italian productive and social fabric, two precise indicators were chosen on a provincial basis[‡] - the economic density index (ED) and the number of workers per 1,000 residents. The ED index expresses, in numerical terms, the percentage of cooperatives in each territorial unit (province) compared to the national total of active cooperatives, while the latter renders the 1/1,000 share of workers out of the total number of residents per territorial unit.

The average ED value per province, Italy-wide, is 0.93, while the median value is 0.63. From a macro-territorial viewpoint, the value revealed in the provinces of Southern Italy and the Islands, is on an average higher than those observed for the Centre-North provinces. In the southern provinces, the share of enterprises set up as cooperatives is on average 1.2 % compared to the national total, while in the centre-northern provinces, the average ED value is 0.70. The data for the more densely populated provinces – Rome, Milan and Naples – is quite comprehensible, where the cooperative ED values are well above the average. For example, the Rome province headquarters 8.6% of Italian cooperative enterprises.

Where employment is concerned, on average, for every 1,000 residents, 18.6 are employed in cooperatives. 30 provinces, involving 107 second level government bodies have been considered, all situated in the Centre-North of the country and with a population of 21,974,275 inhabitants, with more than 20 employees for every 1,000 residents. From a macro-territorial point of view, the values revealed highlight a picture diametrically opposite to what emerged from the observation of the median ED values. The median value of the provinces in the Centre-North is 22.3 (24.7 in the northern provinces) cooperative employees per 1,000 inhabitants, while in the southern and island provinces the same median coefficient drops to 11.9. It can also be noted that in the Bologna and Reggio Emilia provinces, approximately 9% of inhabitants are employed in cooperatives.

[‡] 100 second level government bodies (80 provinces, 14 metropolitan cities, and 6 autonomous municipal consortia in Sicily); 2 autonomous provinces in Trentino-Alto-Adige; 5 cancelled provinces in Friuli-Venezia Giulia and Valle d'Aosta, are considered here for statistical and information organisation purposes.

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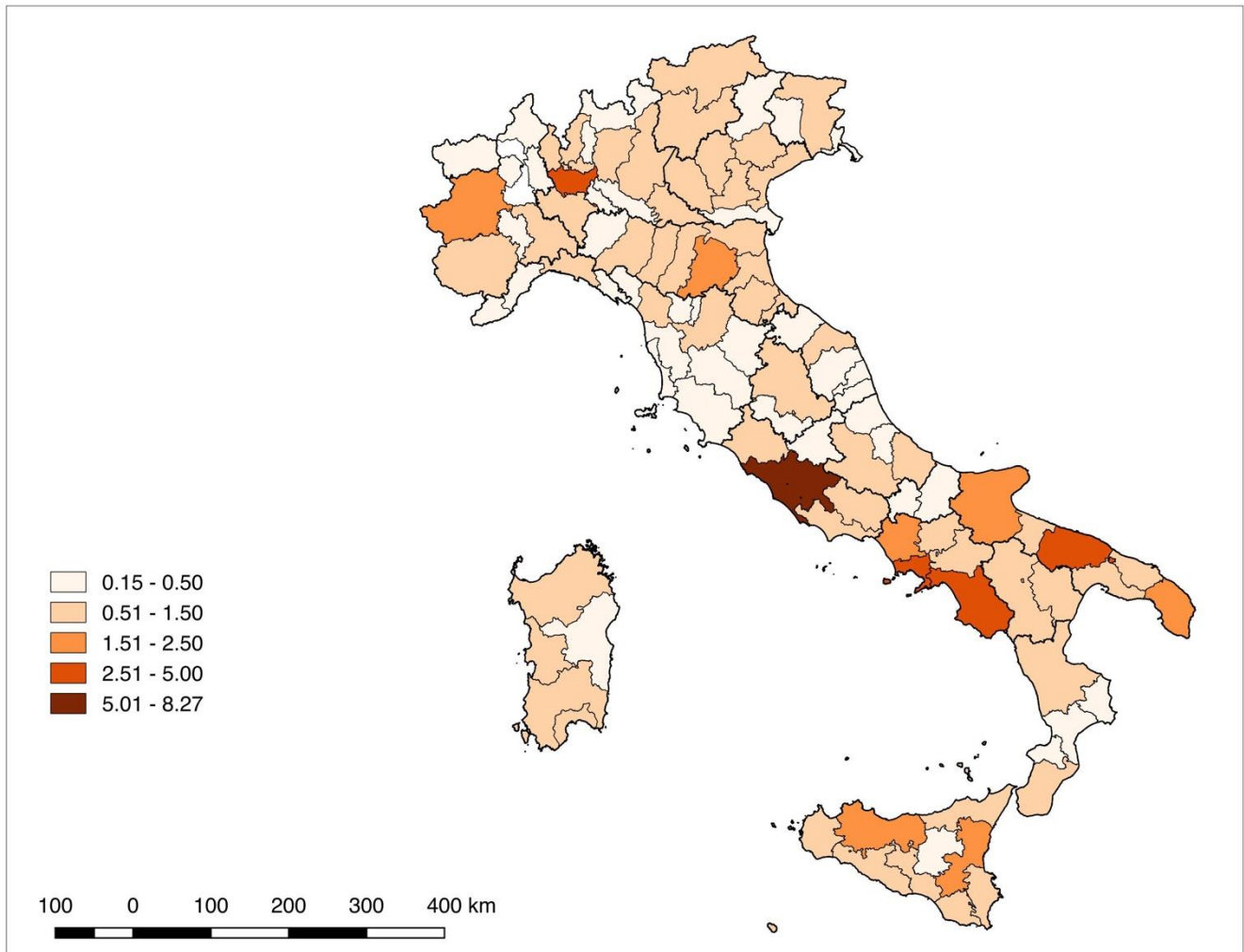


Fig. 5. Economic density of cooperative enterprises at the provincial level, 2017 (%)

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

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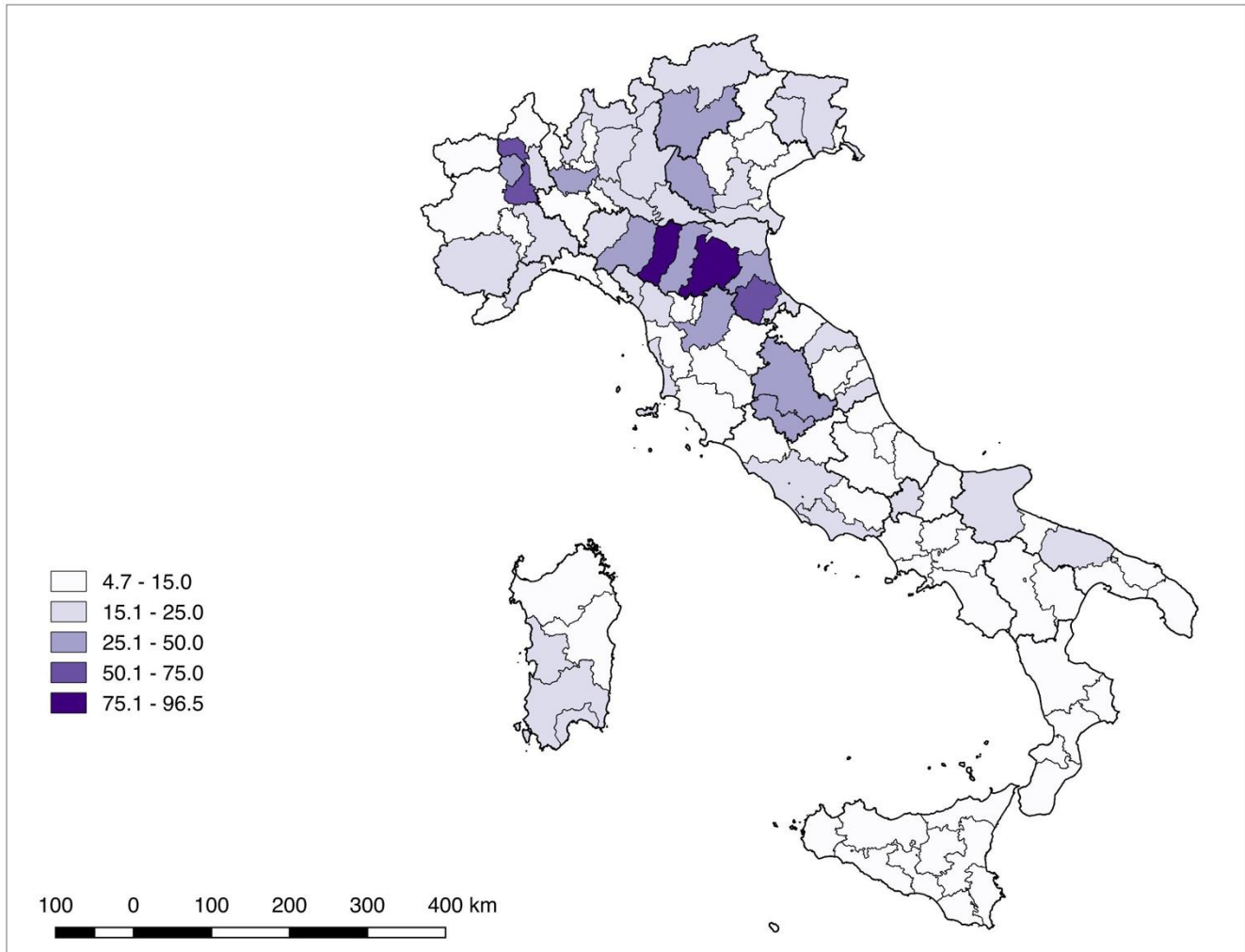


Fig. 6. No. employees per 1,000 inhabitants at the provincial level, 2019

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

2.1. Italian territorial distribution

Based on the financial balances and the employment data available for 2017, the Italian cooperative sector generated a total turnover[§] of more than 122 billion euros, equal to 4 % of the turnover of private Italian

[§] There is a discrepancy in the cooperative universe coverage between the sample analysed for the economic and financial analysis and the sample used for employment data gathering. The main economic and financial variables take into account 50,733 companies with data available for 2017, and do not include the credit unions and cooperative banks (279 in total), the financial intermediaries and smaller credit consortia (29 in total), the credit guarantee consortia and cooperatives (282) and the insurance companies. Employment takes into account a wider sample of 53,675 enterprises, which includes, besides the companies analysed for the economic and financial aspects, the credit

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companies (ISTAT, 2017), and employs 1.18 million workers accounting for more than 7% of total employment for Italian private companies (ISTAT, 2017).

Approximately 60 % of employees can be found in the cooperatives and consortia with headquarters in the northern regions, despite 66 % of the companies being, instead, distributed in the central southern and island areas (Table 1).

Table 1. Regional distribution of Italian cooperatives – no. of employees (members and non-members)

AREA/REGION	No.	%	EMPLOYEES	%
North West	9,953	18.5%	308,739	26.1%
Valle d'Aosta	159	0.3%	1,964	0.2%
Piedmont	2,396	4.5%	80,086	6.8%
Lombardy	6,381	11.9%	203,673	17.2%
Liguria	1,017	1.9%	23,016	1.9%
North East	8,346	15.5%	395,207	33.4%
Veneto	2,644	4.9%	90,827	7.7%
Trentino-Alto Adige	1,257	2.3%	30,636	2.6%
Friuli-Venezia Giulia	737	1.4%	24,916	2.1%
Emilia-Romagna	3,708	6.9%	248,828	21.0%
Centre	11,228	20.9%	240,077	20.3%
Umbria	663	1.2%	25,253	2.1%
Tuscany	2,692	5.0%	78,645	6.6%
Marche	1,310	2.4%	23,758	2.0%
Lazio	6,563	12.2%	112,421	9.5%
South	15,503	28.9%	158,445	13.4%
Apulia	5,394	10.0%	63,621	5.4%
Molise	349	0.7%	3,688	0.3%
Campania	5,958	11.1%	52,792	4.5%
Calabria	1,737	3.2%	14,539	1.2%
Basilicata	951	1.8%	7,376	0.6%
Abruzzo	1,114	2.1%	16,429	1.4%
The Islands	8,645	16.1%	80,476	6.8%
Sicily	6,206	11.6%	53,502	4.5%
Sardinia	2,439	4.5%	26,974	2.3%
TOTAL	53,675	100%	1,182,944	100%

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

Therefore, where the employment data is concerned, it is not surprising that 70% of the total turnover is generated by companies in the North of Italy (Table 2), clearly led by the North-East, and followed by Emilia-Romagna, that produced 50% of the total turnover with an average capitalisation ten times greater than that recorded for the companies in the South and the Islands.

unions, the cooperative banks, the financial intermediaries, the smaller credit consortia, the credit guarantee consortia and cooperatives, the insurance companies, and 2,641 enterprises where it was possible to integrate the data missing for 2017 (see methodology note).

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Table 2. Regional distribution of Italian cooperatives – main economic/financial balance items

AREA/REGION	No.	PRODUCTION VALUE 2017	AVG. PRODUCTION VALUE	OPERATING INCOME 2017	COMPANY CAPITAL 2017	AVG. CAPITAL	NET WORTH 2017
North West	9,419	26,634,820,836	2,827,776	83,867,763	778,389,382	82,640	6,857,202,118
Valle d'Aosta	155	121,529,583	784,062	1,003,585	7,023,293	45,312	53,420,905
Piedmont	2,289	7,334,205,759	3,204,109	66,519,255	206,912,324	90,394	2,248,136,306
Lombardia	5,990	17,362,427,166	2,898,569	58,686,913	517,173,275	86,339	3,746,960,162
Liguria	985	1,816,658,328	1,844,323	-42,341,990	47,280,490	48,000	808,684,745
North East	7,876	59,053,044,347	7,497,847	366,059,967	2,012,728,404	255,552	16,119,580,544
Veneto	2,473	9,688,874,636	3,917,863	53,657,145	279,700,818	113,102	1,586,764,450
Trentino-Alto Adige	1,158	6,186,829,029	5,342,685	63,155,202	240,765,631	207,915	2,115,456,926
Friuli-Venezia Giulia	710	1,619,740,810	2,281,325	19,780,139	62,107,830	87,476	347,727,532
Emilia-Romagna	3,535	41,557,599,872	11,756,040	229,467,481	1,430,154,125	404,570	12,069,631,636
Centre	10,580	22,014,041,480	2,080,722	141,057,707	762,052,209	72,028	4,355,045,531
Umbria	621	5,537,375,448	8,916,869	87,543,208	123,777,612	199,320	1,262,018,108
Tuscany	2,579	7,910,320,459	3,067,205	1,792,894	299,623,831	116,178	2,901,168,356
Marche	1,225	2,985,242,737	2,436,933	31,622,620	120,022,331	97,977	611,165,321
Lazio	6,155	5,581,102,836	906,759	20,098,985	218,628,435	35,520	-419,306,254
South	14,694	9,337,448,461	635,460	47,052,131	309,836,078	21,086	1,592,814,864
Apulia	5,128	3,162,229,266	616,659	12,599,751	92,182,634	17,976	523,431,780
Molise	338	202,522,709	599,180	627,517	7,806,748	23,097	30,194,285
Campania	5,658	3,312,265,007	585,413	29,526,795	72,540,055	12,821	520,827,396
Calabria	1,639	799,134,600	487,574	3,703,974	20,804,007	12,693	134,959,388
Basilicata	901	596,629,663	662,186	1,596,265	20,488,663	22,740	118,267,665
Abruzzo	1,030	1,264,667,216	1,227,832	-1,002,171	96,013,971	93,217	265,134,350
The Islands	8,164	5,217,468,048	639,082	-1,494,489	217,036,005	26,585	944,180,692
Sicily	5,901	3,629,449,396	615,057	11,061,314	140,532,640	23,815	589,399,929
Sardinia	2,263	1,588,018,652	701,732	-12,555,803	76,503,365	33,806	354,780,763
TOTAL	50,733	122,256,823,172	2,409,809	636,543,079	4,080,042,078	80,422	29,868,823,749

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

On a provincial level, the companies with headquarters in the Bologna province generated approximately 17% (€ 22 bn.) of Italian cooperative turnover and more than 50% of that generated by companies with headquarters in the Emilia-Romagna region. Other than Bologna, the other provinces registering a total turnover of more than 5 billion euros can be found in the Centre-North and, in order of turnover generated, Milan, Forlì-Cesena, Perugia and Reggio Emilia.

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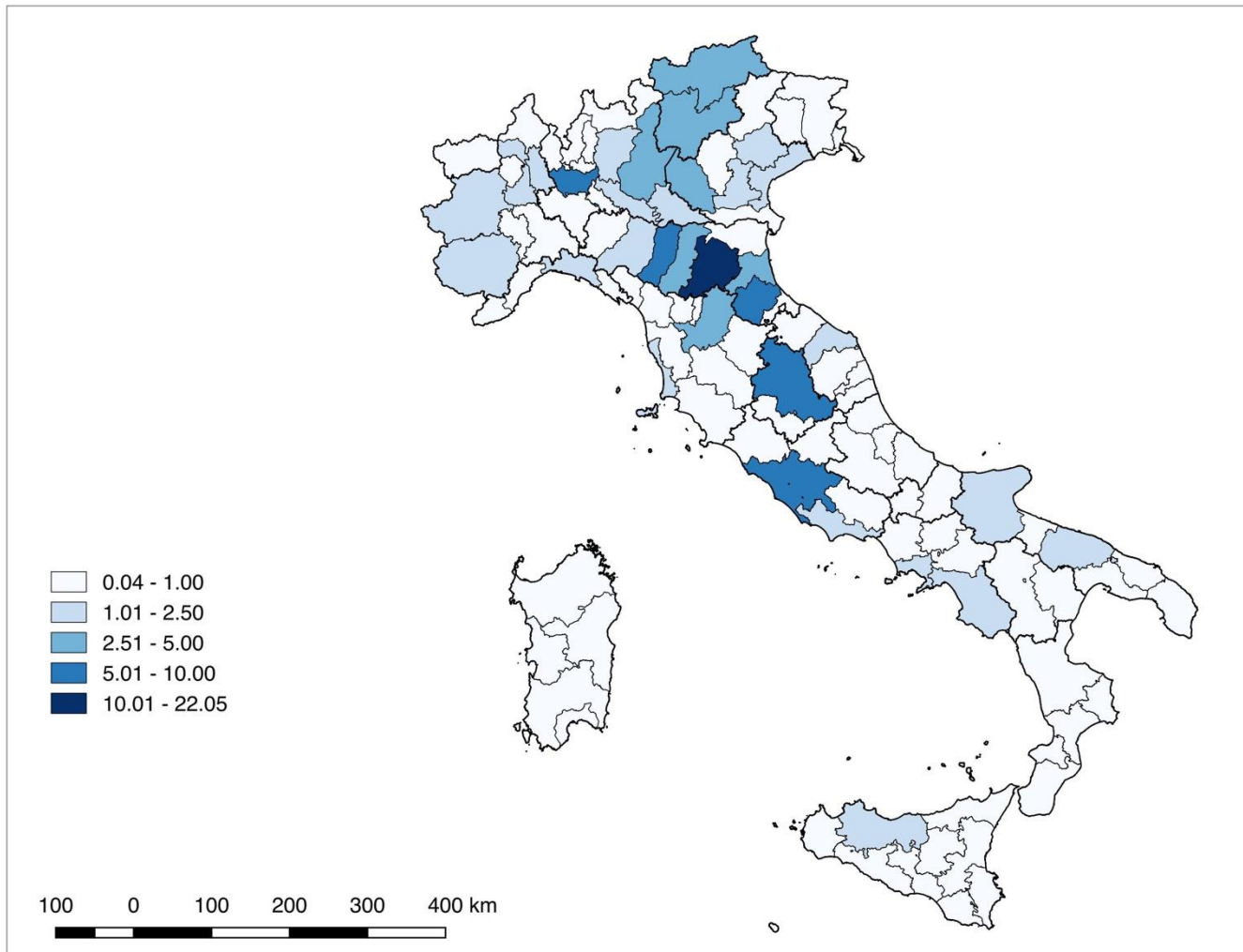


Fig. 7. Production value at the provincial level, 2017 (bn. Euro)

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

2.3. The size classes

As previously mentioned in the EURICSE updated third report on the cooperative economy (Euricse. 2015), 57 % of the more than 122 bn. in total production value of Italian cooperatives can be attributed to 242 companies with a turnover of more than 50 million euros (Table 3), while almost 90 % has a production value of less than 2 million resulting in a yearly loss of 20 million euros and 11 % of total turnover.

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Table 1. Numbers, production value and operating income of Italian cooperatives by turnover class

TURNOVER CLASS	No.	%	PRODUCTION VALUE 2017	%	OPERATING INCOME 2017	%
≤ 2 mln	44,921	89%	13,792,433,162	11%	- 19,776,433	-3%
≤ 10 mln	4,567	9%	19,431,996,384	16%	105,840,151	17%
≤ 50 mln	1,004	2%	19,401,042,377	16%	118,376,707	19%
> 50 mln	241	0%	69,631,351,249	57%	432,102,654	68%
TOTAL	50,733	100%	122,256,823,172	100%	636,543,079	100%

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

According to the parameters currently used by the institutions and found in the European Commission Recommendation 2003/361/Ce of 6 May 2003, almost all cooperatives are classified as SMEs, while large cooperatives number only 116. The latter are all situated in 43 (40%) of the 107 second level government units considered. Only 5 large companies have registered their head offices in the South. Specifically, 46 % of the total of large cooperatives is to be found in Emilia Romagna and 16 % in the Bologna province. As can clearly be seen in the map below, the provinces where there are the highest number of large companies out of the total number of cooperatives per province** are almost all exclusively located in the North – specifically, in Emilia Romagna, Lombardy and Piedmont. The Vercelli province registers the highest density of large-sized companies (2.2 %) which account for 93 % of total turnover of the province and employ 83 % of the workforce.

** There is a discrepancy in the cooperative universe coverage between the sample analysed for the economic and financial analysis and the sample used for employment data gathering. The main economic and financial variables take into account 50,733 companies with data available for 2017, and do not include the credit unions and cooperative banks (279 in total), the financial intermediaries and smaller credit consortia (29 in total), the credit guarantee consortia and cooperatives (282) and the insurance companies. Employment takes into account a wider sample of 53,675 enterprises, which includes, besides the companies analysed for the economic and financial aspects, the credit unions, the cooperative banks, the financial intermediaries, the smaller credit consortia, the credit guarantee consortia and cooperatives, the insurance companies, and 2,641 enterprises where it was possible to integrate the data missing for 2017 (see methodology note).

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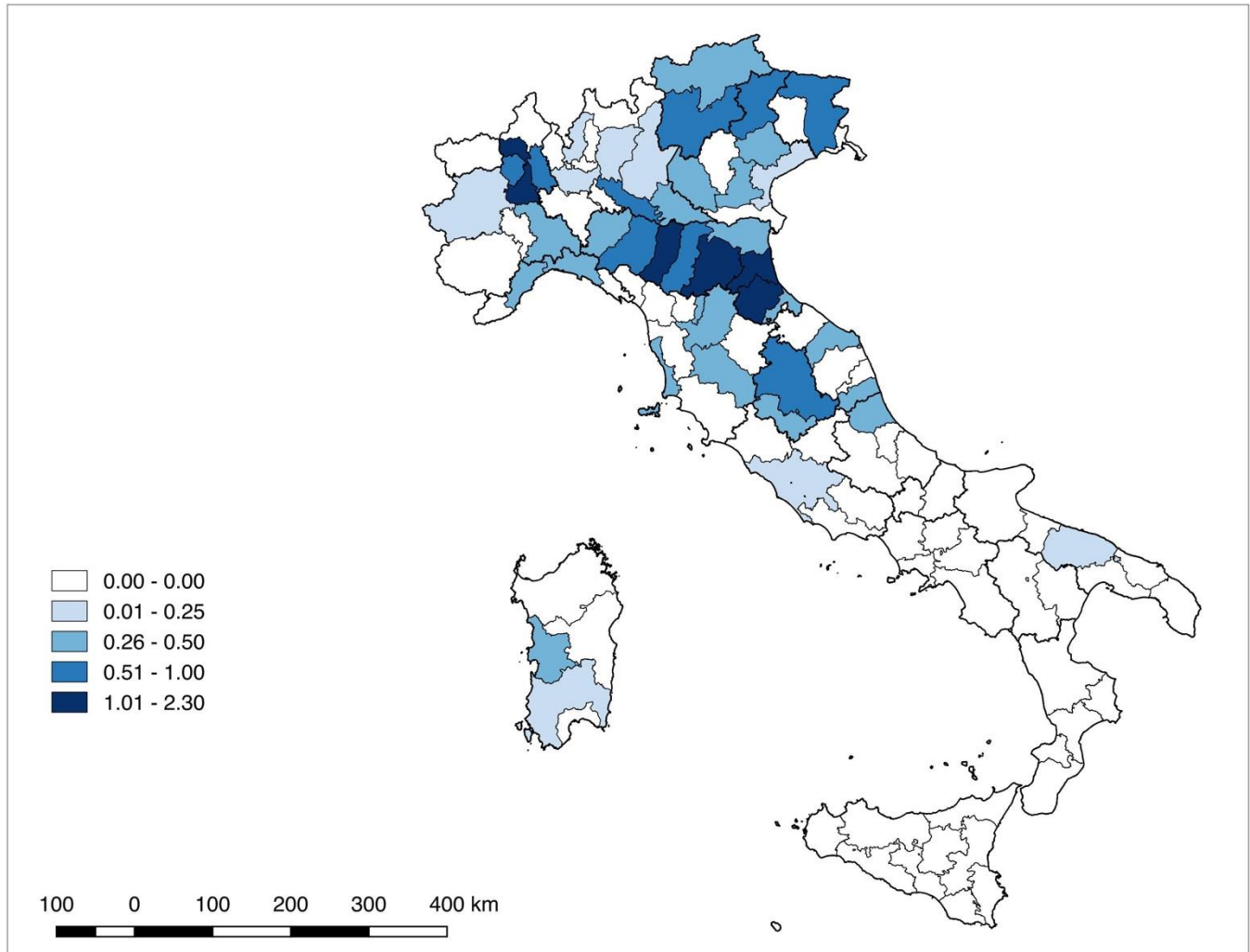


Fig. 8. Share of large companies out of cooperative companies total at the provincial level, 2017 (%)

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

The large cooperatives account for, on an average in the relative provinces, 39 % of total turnover and 29 % of employment registered with the different local government bodies.

The incidence rates for turnover^{††} and number of employees^{‡‡} broadly reflect what was previously observed in terms of quantitative importance. The large cooperatives accounting for more than 60 % of total local turnover are found in 11 provinces out of the 43 where these cooperatives have their registered head offices. While in only 4 of

^{††} The share of turnover generated by large cooperatives by province was calculated on the total turnover produced by the sample made up of 50,733 active companies with balance data.

^{‡‡} The share of large cooperative employees by province was calculated on the total of employees from the sample made up of 50,733 active companies with balance data.

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these - Vercelli, Novara, Bologna and Reggio Emilia – the large cooperatives account for more than 60 % of the number of local cooperative employees.

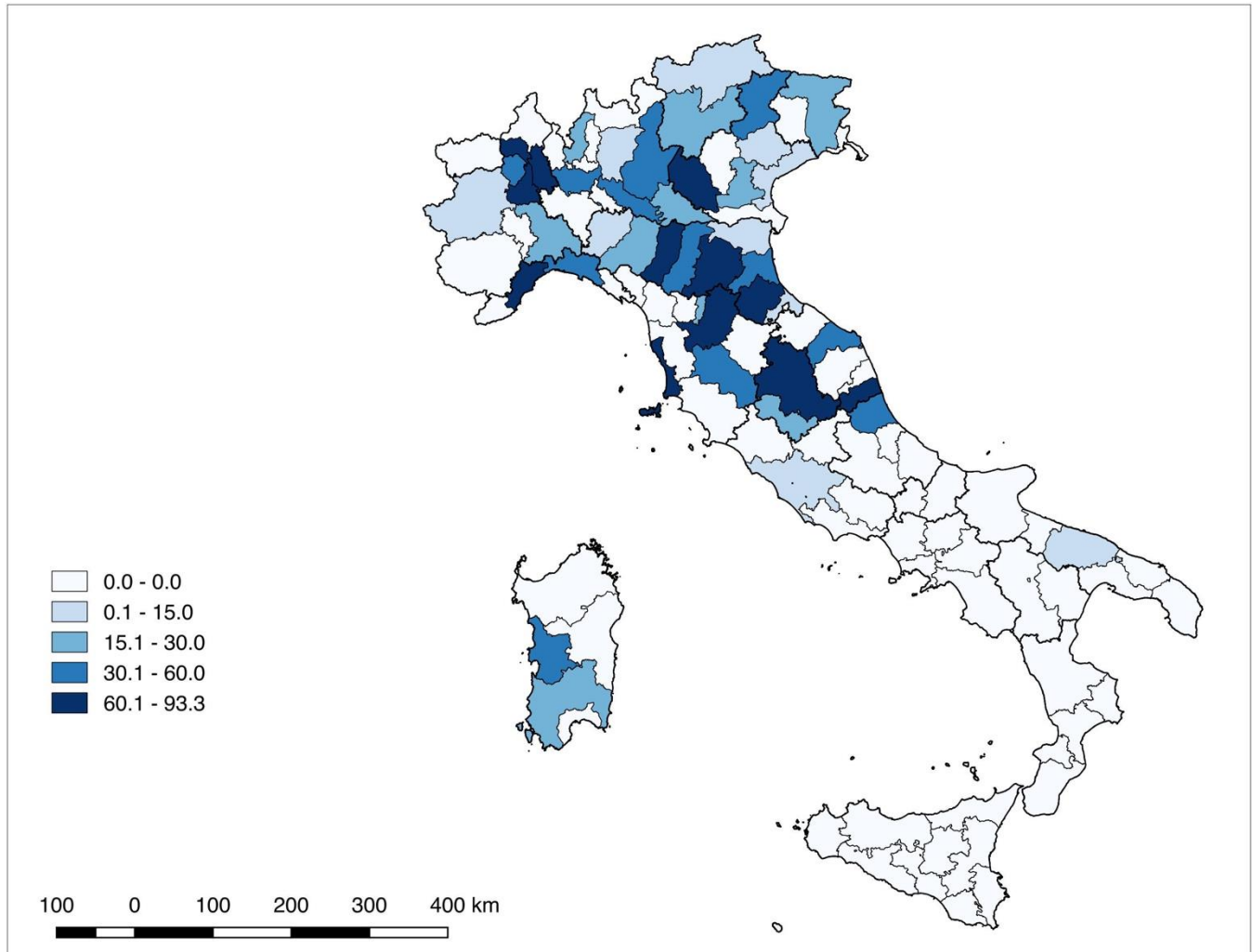


Fig. 9. Turnover share of large companies out of total cooperative turnover at the provincial level, 2017 (%)

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

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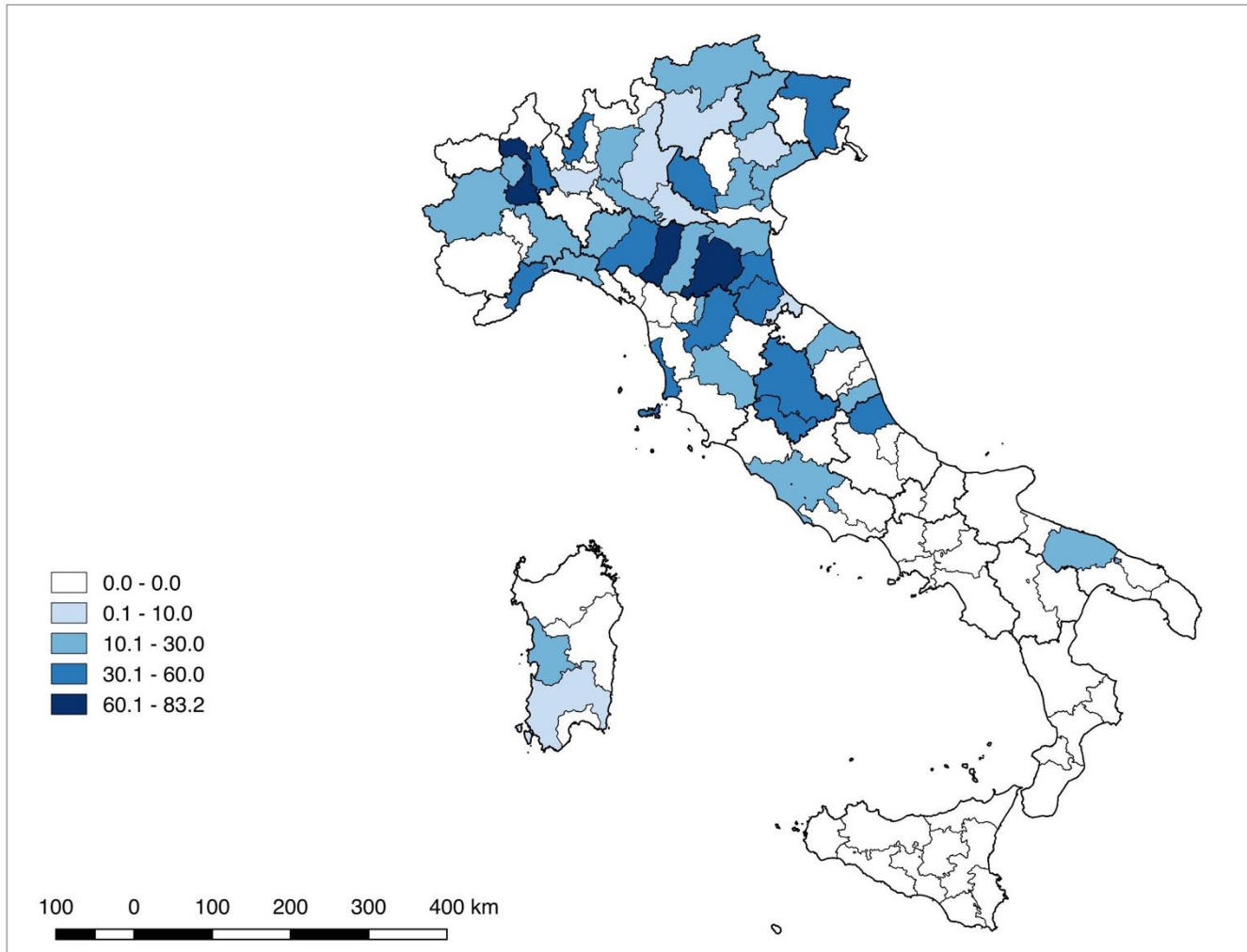


Fig. 10. Employee share of large companies out of total cooperative employees at the provincial level, 2017 (%)

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

2.4. Mutually prevalent cooperatives^{§§}

Out of all the active cooperatives and consortia whose financial balance data is available, 93 % are enrolled on the Cooperative Register of the Ministry of Economic Development under the section of mutually prevalent

^{§§} Italian Law nr. 366, 2001, introduced the so-called mutually prevalent cooperatives, which have the key features of a limited profit distribution and indivisible capital reserves. Regarding their mutual exchange, mutually prevalent cooperatives (art. 2512 Italian civil code) primarily conduct their activity in favour of members and/or consumers or users of goods or services primarily relying on the work of their members to carry out their activities. The criteria for determining whether a cooperative is mutually prevalent or not are contained within the Civil Code, which also fixes statutory limitations they must adopt (art. 2513, 2514 Italian civil code). Instead, social cooperatives are considered mutually prevalent by law (Bruni and Zamagni, 2009).

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cooperatives (Table 4). Approximately 5 % of the cooperative total do not meet the prerequisites to be mutually prevalent, while 0.3 % of the sample are not on the register.

Table 4. Level of mutualistic exchange

COOPERATIVE REGISTER SECTION	NO.	%	EMPLOYEES	PRODUCTION VALUE 2017	OPERATING INCOME 2017	COMPANY CAPITAL 2017	NET WORTH 2017
MUTUALLY PREVALENT	47,259	93.2%	1,058,086	113,681,356,723	3,802,873,456	567,594,288	29,141,850,887
NON- MUTUALLY PREVALENT	2,602	5.1%	36,827	5,810,361,342	223,248,073	70,087,384	1,798,024,230
MUTUAL BENEFIT SOCIETIES	1	0.0%	0	214,337	6,770	1,042	8,051
MISSING DATA	2	0.0%	36	1,694,244	26,100	19,743	78,248
OTHER TYPOLOGIES	697	1.4%	4,420	503,526,303	45,631,223	-1,157,576	-1,084,436,216
NOT PRESENT	172	0.3%	1,181	2,259,670,223	8,256,456	-1,802	13,298,549
TOTAL	50,733	100%	1,100,550	122,256,823,172	4,080,042,078	636,543,079	29,868,823,749

Source: Our elaboration on data from Aida and the Ministry of Economic Development – Italian Cooperative Register (2020)

With the exclusion of the cooperatives not enrolled on the register, regarding the other typologies and the mutual benefit societies, on a provincial basis we can see the percentage of enterprises that display the prevalence requisites. On an average, in the southern and island provinces we find higher values, with 96.6 % of mutually prevalent cooperatives, while in the Centre-North the average percentage of those mutually prevalent is 92.5 %. In general, in 21 % of the Italian provinces, the share of mutually prevalent cooperatives is more than 97 %. The highest percentage of non-mutually prevalent cooperatives can be found among the Lombardy provinces, at 10.5 %. At the same time, in the provinces of Belluno and Sondrio, there is the highest percentage of non-mutually prevalent cooperatives, at 26.9 % and 20.1 %, respectively.

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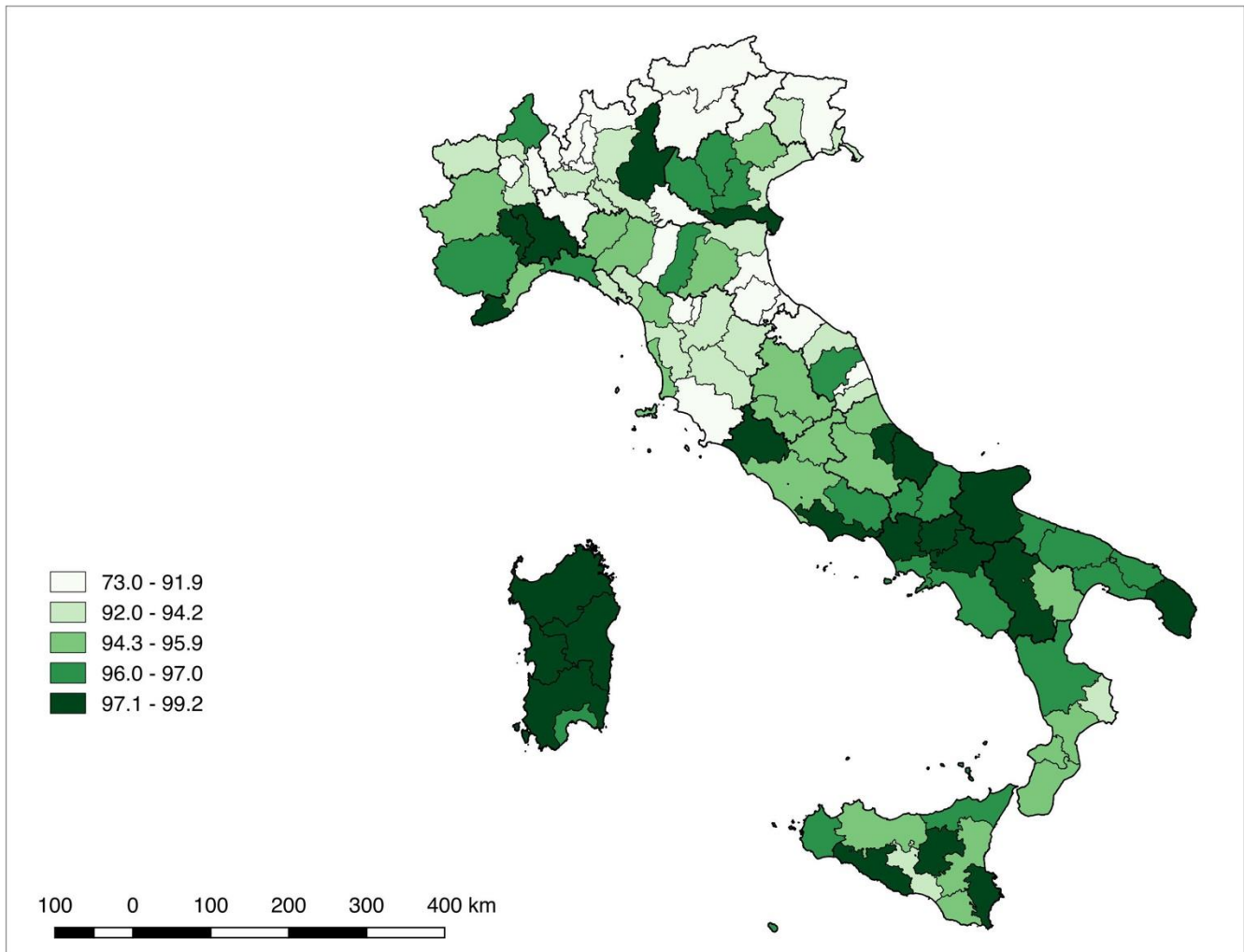


Fig. 11. Share of mutually prevalent companies at the provincial level, 2017 (%)

Source: Our elaboration on Ministry of Economic Development data – Italian Cooperative Register (2020)

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2.5. The new start-up and 100 year old cooperatives

In Table 5, one of the principles underpinning the cooperative movement is revealed - that is, the principle of inter-generationality (Area Studi Legacoop, 2020b). The table shows that 7 % of enterprises have been active for more than 50 years, generating about 32 % of the production value. Instead, the highest number of companies are found in the groups with life spans of between 5 and 25 years. Cooperatives in the sample lasting more than 100 years, number 568 and, of these, 448 register a balance with a turnover of more than 7 billion euros.

Table 5. Numbers, employment and production value for years of activity

YEARS IN ACTIVITY	No.	%	EMPLOYEES	%	PRODUCTION VALUE 2017	%
≥ 100	448	1%	21,474	2%	7,375,826,335	6%
≥ 50	3,079	6%	112,794	10%	31,671,188,835	26%
≥ 25	10,922	22%	427,975	39%	38,679,214,299	32%
≥ 5	29,994	59%	483,036	44%	41,489,889,962	34%
< 5	6,290	12%	55,271	5%	3,040,703,741	2%
TOTAL	50,733	100%	1,100,550	100%	122,256,823,172	100%

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

Most of the cooperatives with a lifespan of more than 100 years are situated in the north of the country, especially in Lombardy and Trentino. The map below shows the share of 100+ year-old enterprises out of the total of companies in the relevant province. There is a higher density of 100+ year-old companies in the provinces of Trento, Belluno, Varese, Sondrio and Como. In Trento, the 100+ year-old companies number 81 out of the total of 568, while in the South there are 31, 19 being found in the Islands^{***}.

*** The share of 100+ year-old companies is calculated on the total of the sample, also including the cooperatives whose 2017-2018 balances are unavailable.

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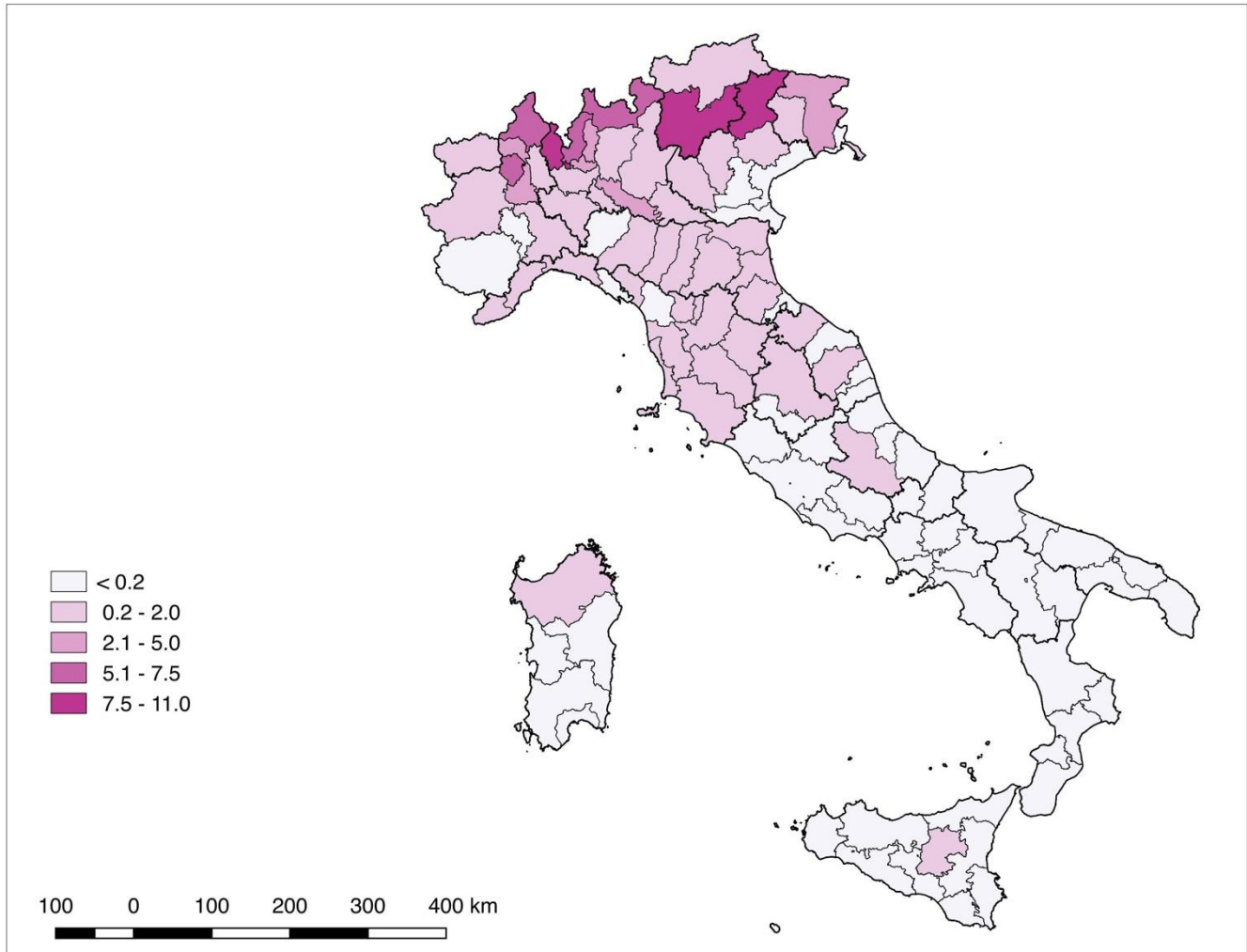


Fig. 12. Company share of 100+ year-olds out of the cooperative companies total at the provincial level, 2017 (%)

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

Instead, the distribution of the cooperatives set up from 2016 is relatively balanced between the Centre-North (53%) and the South (47%), albeit, in this case, the southern and island provinces register a higher density of new cooperatives (Area Studi Legacoop, 2020c). New cooperatives number 15,739 (Fig. 3^{†††}), 6,290 with balance data. The provinces with the highest number of cooperatives set up beginning from 2016 are Rome, followed by Milan, Naples and Salerno. Instead, the provinces of Benevento, Trapani, Sassari and Milan record the highest share of new cooperatives out of the cooperative total per province. For example, in Benevento province the percentage of new cooperatives amounts to 39 % of the total, while in the provinces of Lecco, Trento, Sondrio, Gorizia and Belluno, the share is less than 10%. Instead, in the Rome province, where the highest number of cooperatives is registered, the total of new cooperatives is 34 %.

^{†††} The share of new cooperatives is calculated on the sample total, also including those where the 2017-2018 balance data is unavailable.

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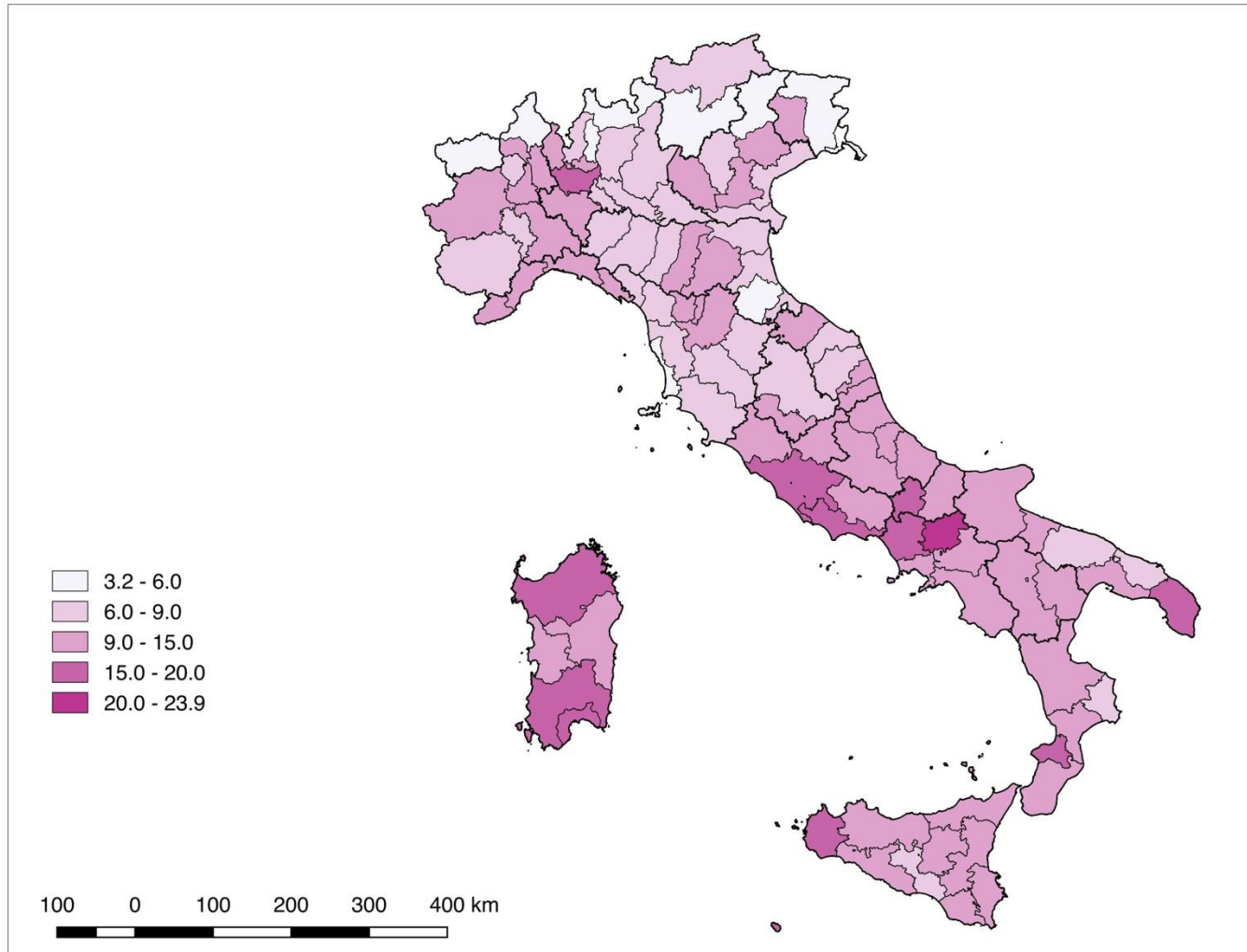


Fig. 13. Share of cooperatives set up in 2016 at the provincial level (%)

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

2.6. The Italian cooperative sectors

The sectoral analysis (Table 6) is based on the NACE Rev. 2 code groupings communicated to the Chamber of Commerce by the companies and available on the Aida databank. Consistent with the last report on the cooperative economy drawn up by EURISCE (2017), a distinction was made between the manufacturing industry and the food industry, in order to bring to light a key characteristic of Italian cooperative production.

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Table 6. Sector distribution of Italian cooperatives

SECTOR	NO.	EMPLOYEES	PRODUCTION VALUE 2017 (K. EUR)	OPERATING INCOME 2017 (K. EUR)	COMPANY CAPITAL 2017 (K. EUR)	NET WORTH 2017 (K. EUR)
Agriculture	5,902	61,328	14,929,643	52,202	627,365	3,114,506
Food industry	1,344	46,570	15,734,731	77,566	629,522	2,974,116
Other industries	1,962	29,747	3,893,969	87,702	177,604	1,809,535
Energy & water	448	11,285	1,000,936	25,758	73,399	503,924
Construction & real estate	8,000	29,725	6,321,775	-112,756	362,234	4,446,305
Commerce	3,352	86,836	44,272,676	231,853	783,646	10,016,513
Transport & warehousing	4,816	162,609	9,016,582	-24,179	247,752	729,469
Accommodation & catering	2,005	51,747	2,360,795	12,636	125,234	567,551
Communications/information services	1,900	15,581	864,837	5,411	65,359	241,042
Other company support services	7,969	226,260	10,750,600	96,333	463,837	2,623,998
Education	1,858	22,295	810,755	8,926	32,973	150,130
Healthcare & social assistance	8,118	313,978	11,000,630	171,902	413,192	2,385,913
Other public, social, personal services	3,055	42,587	1,298,889	3,192	77,919	305,791
Unclassified	4	2	6	-3	6	31
TOTAL	50,733	1,100,550	122,256,823	636,543	4,080,042	29,868,824

Source: Our elaboration on Aida-Bureau Van Dijk data (2020)

Among the leading sectors we find commerce, with a sample representation of 9%, and generating 36 % of total turnover and profits, capitalising 34 % of resources. The healthcare and social assistance sector, the most representative in terms of numbers, employs 29 % of total workers. However, company capital is mainly concentrated in the commerce, agriculture and food industry sectors. The ratio between employees and company capital in the different sectors shows that the most labour intensive sectors are healthcare and social assistance, education, and transport and warehousing. In general, it can be confirmed that approximately 60% of the active

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cooperatives, with balance data available, is concentrated in the sectors of construction and real estate, company support services, healthcare and social assistance and agriculture.

3. Conclusions

This paper which, as mentioned in the introduction, emerged from the objective to outline and analyse the major aspects of the Italian cooperative movement referring to the most authoritative databanks available, has also taken on a further meaning in light of the current situation arising from the Covid-19 emergency. The original intent was to photograph the final situation of what has occurred over the last decade beginning from 2007-2008, however, with the emergence of this new and still dramatic crisis, it will become the springboard for an analysis on the future impacts of which, today, we can only vaguely divine the consequences.

In the weeks of the lockdown, the cooperative associations confronted the emergency prioritising job security, guaranteeing the survival of the cooperatives (liquidity, financial reorganisation support, maintaining services and product orders, cost-cutting, and so on) and defending jobs. At the same time, it began a constant monitoring of the immediate repercussions of the legislative measures that froze entire sectors with still unquantifiable consequences and, as well, of the rapid evolution, at the moment full of uncertainties, of the relevant sector and market conditions which, in all likelihood, will require a thorough restructuring.

From the very start, an important compass was the certainty, quite widely shared, that the imminent crisis – that will soon unfold the economic, as well as social and political consequences – must push the economic actors, among others, to question themselves about the underlying choices and meaning of their actions where the market is concerned. The cooperative associations along with all the institutional bodies have pointed out the need to restart, but with the aim to build a different economy, where individuals, the common good, wellbeing, the health of citizens and the safety of our planet, must always come before individual interests. Otherwise, after this crisis, we will end up with a fragile and vulnerable world.

Undoubtedly, the different aspects of the Italian cooperative experience outlined here are a force on which future actions can be hinged. However, it requires a full awareness of the features of the cooperative entrepreneurial base, as well as appropriate key preparations that take into account the changing context of today.

Italian cooperation emerged from the decade of the crisis seeing some historical strong points consolidated, such as widespread sector presence, inter-generational solidarity, an instinct for resilience and especially safeguarding employment, and a capability to adapt and regenerate before social and market changes. On the other hand, the decade of the great crisis also exacerbated some shadowy areas. These include, for example, a tendency towards territorial, sectoral and size concentrations in traditional comfort zones; a decrease in numbers that, although being compensated for by the setting up of new companies, also confirmed some weaknesses in the model, overall among the micro and small cooperatives; and a difficulty to adapt to the democratic workings of companies in a context of rapid evolution.

Nevertheless, even throughout the contentious situation of the past decade, while entire sectors were undergoing restructuring, at times being drastically reduced, the Italian cooperatives also revealed themselves to be resourceful and energetic in renewing themselves, coming up with new needs, trends, experiences, new market responses and solutions in an associative, democratic and cooperative form.

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This is certainly the case for the WBOs where the Italian experience has provided an original contribution to existing practices at an international level, as well as for the community cooperatives. They provide a new response for the many different needs that challenge the idea itself of mutualistic exchange and how it has been shaped and dealt with over decades of cooperative theory and practice, innovatively interpreting the need to manage public goods, also through a widespread reallocation of ownership rights. The crisis resulted in being a catalyst for change and, moreover, in recent years has generated productive cross-sectoral collaborations where the objective of inclusion, often through turning to new technologies to come up with new products or services, has led to practices in economic, social and cultural innovation whose transformative force we will increasingly see the results of in the coming years.

Of course, many of these innovations, because they are so widespread, spontaneous and experimental, also display characteristics of entrepreneurial fragility, albeit in the light of a large-scale added value. One of the essential aspects of the future cooperative development strategies will be in knowing how to find, recognise, shape and sustain the sprouting seeds of these innovative practices. After all, accumulating and reproducing knowledge and entrepreneurial capability, especially if inspired by cooperative values, and linked to local communities and areas, are per se a “common good” (Berranger, Monni, Realini, 2020; Giovannetti, E: (2001)) to be cultivated and preserved with care.

4. Methodological Note

As of 20/01/2020, 146,396 cooperative, cooperative consortia and cooperative consortium company enterprises were present in the Aida databank. 85,597 of these were active, numbering 84,944 cooperatives and 653 consortia and cooperative consortium companies.

From the 85,597 active enterprises, all those set up before 11/1/2016 and not lodging a balance with the Chamber of Commerce from 31/12/2016 were then eliminated. An analysis then followed of the consolidated balances that brought the total of eliminated companies from the sample to 195. Resulting from the provisions taken in selecting the sample, the total of cooperative companies and consortia that can be considered active is made up of 61,274 enterprises. Therefore, out of the total of those enterprises considered active, according to what was previously presented, there are 53,675 cooperatives and consortia for which it was possible to obtain data on employment. For 3,048 enterprises, the missing data for the number of employees at 31/12/2017 was integrated with the manual entry of the data from the balance, with the data from cooperative audit minutes in the Area Studi Legacoop databank or, alternatively, with the corresponding data at 31/12/2018. Instead, as far as the main economic aspects are concerned, due to the impossibility to compare the balance data, the credit unions and cooperative banks (279), the financial intermediaries and the smaller credit consortia (29), the credit guarantee cooperatives and consortia (282) and the insurance companies^{***} (4) were excluded from the sample.

^{***} The credit unions and cooperative banks (279), the financial intermediaries, the smaller credit companies, the credit guarantee cooperatives and consortia (287) and the insurance companies, were identified based on the information provided by the cooperative register, the financial intermediary register of the Bank of Italy, and on the balance classification data from the Aida-Bureau Van Dijk databank (those identified were companies which draw up a balance according to that foreseen in the civil code for banks, financial intermediaries and insurance companies).

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A STUDY OF ONLINE ENTREPRENEURSHIP EDUCATION UNDER CONDITIONS OF A PANDEMIC*

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Abstract. The purpose of this paper is to investigate the methods and measures of online entrepreneurship education of the Lithuanian population under pandemic conditions. The methodological framework used in the investigation is based on theoretical descriptive, comparative, and analytical methods. Application of a quantitative method is based on an online survey designed specifically for the purposes of the study. The paper analyzes scientific literature of entrepreneurship and related topics, then it discusses the possibilities of online entrepreneurship education under pandemic conditions, the study also determines the expression of respondents' entrepreneurial qualities and abilities. The quantitative study is the main novelty of the research and it is intended in order to produce recommendations for improving the entrepreneurship education of the Lithuanian population under the conditions of a pandemic. The conclusions and recommendations of the research are focused on practical value. Those practical implications could be useful for higher education institutions in order to improve the entrepreneurship education of the Lithuanian population under the conditions of a pandemic by defining teaching methods that promote entrepreneurship in higher education and measures that help develop entrepreneurship.

Keywords: entrepreneurship, entrepreneurship education, electronic business.

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JEL Classifications: M12, M21

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1. Introduction

Currently, various countries in the world are counting losses in connection with the spread of the COVID-19 pandemic. The situation encourages entrepreneurs not to stand still but to start online businesses. The intensive development of youth entrepreneurship, especially its innovativeness, is the key determinant of the modernization

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of the country's economy. New and improved offers, entrepreneurs' products, or technologies allow entrepreneurs to develop new markets and create new wealth. This leads to improving the quality of life as well as creating greater moral and economic freedom; therefore, governments' interest in entrepreneurial development is entirely justifiable. However, global practice shows that there are significant differences between different countries, which include not only the characteristics of the regional mentality, but also numerous other factors that can promote and hinder development of entrepreneurship.

By assessing the importance of entrepreneurship, this article reveals the possibilities of online entrepreneurship education under the conditions of a pandemic and explores the ways of developing the entrepreneurial abilities and skills of the Lithuanian population.

Scientific issue. Pandemic circumstances encourage entrepreneurs not to stand still but to start online businesses; therefore, there is a need to determine online entrepreneurship education, which would assist entrepreneurs in moving their businesses online. Thus, the current situation causes a problem because the concept of the entrepreneurship education under pandemic conditions is not established in scientific literature as well as in practice, which makes it difficult to determine the opportunities and importance of the entrepreneurship education.

The aim of the research is to investigate the methods and measures of online entrepreneurship education of the Lithuanian population under pandemic conditions.

Objectives of the study:

1. To substantiate theoretically the possibilities of online entrepreneurship education under pandemic conditions by analyzing scientific literature related to entrepreneurial education.
2. To determine the expression of respondents' entrepreneurial qualities and abilities.
3. To create recommendations based on the result of the research in order to improve the entrepreneurship education of the Lithuanian population under the conditions of a pandemic.

Methodology. The paper relies on scientific literature analysis and the quantitative research. Application of a quantitative method is based on an online survey designed specifically for the purposes of the study. The study encompasses theoretical literature analysis as well as systematic and comparative analysis of data obtained with quantitative research.

2. Theoretical background of the entrepreneurship education

Entrepreneurship is the ability to create new products, services, and ideas, realize them and make a profit. Both foreign and Lithuanian researchers study the topic of entrepreneurship. Turner (2004) relates entrepreneurship to business skills, whereas Wicham (2006) and Skulskis (2012) connect it with personal skills. Stripeikis (2008) links entrepreneurship to organizational skills, Čiburienė, Guščinskienė (2009) emphasize its connection to both personal and business skills, and Žibėnienė (2014) pinpoints that educational and personal skills are closely related to entrepreneurship. Entrepreneurs are considered as one of the growth factors for countries due to the latest industrial, organizational, and technical developments from the global environment countries (Gaddam, 2008). Eroğlu, Piçak (2011) argue that entrepreneurs in different countries usually have some universal features as well as specific ones that are based on their own culture. Schmitt, Husson (2017) define an entrepreneur as a person capable of managing a large database of information and making decisions. De Sordi et al. (2020) present a longitudinal study, where entrepreneurs are characterized by development methods that involve little

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commercial and technological uncertainty, followed by some more complex and unclear initiatives but always safer innovation.

Chowdhury et al. (2019) suggest that entrepreneurship actively contributes to economic growth. As Bruton et al. (2018) argue the growing recognition of entrepreneurship around the world has drawn attention to its cultural ideological foundations. In order to create a business in another country, it is necessary to know in which cultural environment that business will be developed and to know the culture of the other country. Regional cultural differences should be taken into account when analysing entrepreneurial failure (Kuckertz et al, 2020). The discussion emphasizes that entrepreneurship is a multifaceted phenomenon that varies depending on the context, the level of innovation, and its impact on society. Al Issa (2020) states that entrepreneurship needs to be resilient enough to face many challenges. In their articles Kowo et al. (2019) and Al-Hawary, Al-Syasneh (2020) mention that strategic entrepreneurship is the key indicator of economic, technological, and social development.

Shyra et al. (2020) define the need to create secure conditions for the development of entrepreneurship in general. The current global situation, with the prevalence of the coronavirus COVID-19, provides an opportunity to develop and build businesses online and adapt their Key Performance Indicators (KPIs) (Girdzijauskaitė et al., 2019).

According to Lascaux, Kolesnikova (2020), entrepreneurial companies need to build trust in their business projects, especially among customers and employees. Bouncken et al. (2020) argue that areas for cooperation are important in the development of entrepreneurship. Küttim et al. (2011) mention that entrepreneurship acquire acceleration of support innovation, creativity and economic growth.

Mahrous et al. (2020) present the characteristics of the organisation's internal environment that support the development of emerging and growing entrepreneurship: collaborative excellence, a deep focus on planning and institutional support. Muñoz-Castro (2019) suggests that while government institutions are of significant importance to multinational entrepreneurs, human capital and motivation are crucial. Raposo et al. (2020) argue that those countries that implement higher level national entrepreneurship systems perform better in terms of their sustainability.

The entrepreneurship education has been the key factor in establishing a necessary link between entrepreneurship and education (Galloway, Kelly, 2009). It is generally defined as a never-ending practice of skill acquisition and idea generation which helps identify and develop business opportunities that are often overlooked because of other appropriate insights and self-esteem. Jones and English (2004) describe entrepreneurship in education as the ability to recognize commercial opportunities and insight, self-esteem, knowledge, and skills to act on them. Gautam, Singh (2015) claim that the entrepreneurship education is the exploration of the source of opportunities and the process of discovery in which a person strives for creativity, takes risks, and turns ideas into action. According to Ayed (2020), entrepreneurial education and innovativeness can evoke entrepreneurial intention. Miranda et al. (2020) analyze the entrepreneurship education in the context of multidisciplinary collaboration: sociology, psychology, philosophy, business, and engineering education. Johann et al. (2020) argue that design thinking is a relatively new methodology in the context of the entrepreneurship education but nonetheless a very important tool for developing entrepreneurial skills when incorporated into the education system.

According to Karimi et al. (2012), the entrepreneurship education is important because it increases economic efficiency, brings innovation to the market, creates new jobs, and raises employment rates. Popularity of entrepreneurship courses has grown significantly among both graduates and undergraduate students. But

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Griffiths et al. (2012) argue that more experimentation and government support for research is needed to improve the teaching of innovative entrepreneurship, as there is little evidence of what works and what does not. Kim et al. (2020) define the special attention to social entrepreneurship education programs, which cultivate social entrepreneurs' abilities to enhance connectivity with all relevant entities of the social enterprise ecosystem.

Chien-Chi et al. (2020) analyze entrepreneurship education from social entrepreneurship dimension and suggest that social-emotional competence and self-efficacy have a positive effect on entrepreneurial intention. A research based on survey responses from a sample of 740 students of economics, communications, and education, carried out by Rodriguez-Gutierrez et al. (2020), suggests that personal attitudes and perceived behavioural control are positively related to students' entrepreneurial intention. Peña-Ayala, Villegas-Berumen (2020) indicate well-being of the city wherein the institution is located, students' inner concerns related to entrepreneurship, and formal entrepreneurial education taught by the institution as important factors in entrepreneurial affairs. Otache et al. (2020) analyze self-employment intentions as well as paid-employment intentions and define a particularly positive link between both intentions.

Mani (2015) states that the need for entrepreneurship education has been well established in recent research. However, there is a debate about how education should be provided, what should be the students' attitudes towards the entrepreneurship education. There is an ongoing debate on the role of universities and the contribution of business schools to entrepreneurship education (Kirby, 2004). Peric et al. (2020) highlights that not just universities but vocational education should also focus on entrepreneurship background. In the case of COVID-19, higher education institutions have opportunities to contribute to the change by organizing entrepreneurial events. In their research Bacq et al. (2020) state the value of the time-compressed virtual idea blitz in accelerating social entrepreneurial action. Experiential education bridges the gap between theory and practice (Androniceanu, Tvaronavičienė, 2019; Liguori et al., 2020; Androniceanu, 2020; Androniceanu et al. 2020). Artificial intelligence can be an important factor in entrepreneurship education, and the need of interdisciplinary cooperation between computer science, statistics, education, cognition, and robotics can be seen (Yu, 2020).

It should be stated that there is no single definition of entrepreneurship and the entrepreneurship education. There are, however, several common characteristics amongst different entrepreneurship concepts presented in this literature review: personal initiative, ability to mobilise resources, management skills, desire for autonomy, and risk-taking.

Despite the analysis of previous research, the characteristics of the worrying factors of building a business during a pandemic, teaching methods that promote entrepreneurship in higher education, and the measures that help to develop entrepreneurship in higher education are not sufficiently detailed. This study aim is to investigate the methods and measures of online entrepreneurship education of the Lithuanian population under the conditions of a pandemic. Research questions are formulated based on the aim of the study: how to estimate which teaching methods and measures help to develop entrepreneurship in higher education under the conditions of a pandemic?

3. Online entrepreneurship education during a pandemic research objective and methodology.

The research employed a quantitative method in a form of an online survey. Questions were based on theoretical analysis and the aim of the research. The questions sought to distinguish how respondents can define entrepreneurship (entrepreneurship definition is analysed in the studies of Turner (2004); Wicham (2006); Skulskis (2012); Stripeikis (2008); Čiburienė, Guščinskienė (2009); Žibėnienė (2014)), which factors are

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important in making the decision to start a business (question is based on the studies by Shyra et al. (2020); Muñoz-Castro (2019); Gutierrez et al. (2020); Peña-Ayala, Villegas-Berumen (2020); Otache et al. (2020)), which are the worrying factors of building a business during a pandemic (Kuckertz et al, 2020; Al Issa (2020)), which teaching methods promote entrepreneurship in higher education (Johann et al. (2020); Kim et al. (2020); Bacq et al. (2020); Yu, 2020), which measures can help develop entrepreneurship in higher education (Muñoz-Castro (2019); Gautam, Singh (2015); Ayed (2020)). The binary scales method consisting of binary items that assume one of the two possible values was used.

Quantitative research in respondents' entrepreneurship education was conducted on the basis of quantitative research methods. In this research questionnaire was used as the main data collection tool. This research is practical in nature, and the goal was to conduct an extensive analysis; thus, due to its approach, the research was descriptive and exploratory. Participation in this research was voluntary. Survey had been conducted in September–November, 2020.

Sampling Method. The questionnaire was distributed to Lithuanian residents, and the respondents were selected using probability sampling. Required sample was calculated by using <http://www.surveysystem.com/sscalc.htm> website. The calculation of the sample indicated that the confidence level is 95 per cent, 5 per cent confidence interval, population: 2,669 million (the number of people in Lithuania on 2020 years). The estimated sample was 384. The survey involved 437 respondents. The calculations demonstrated that 437 respondents are a sufficient sample for conducting a reliable research. The samples selected for this study are the male and female genders. The survey involved 437 respondents, of whom 14% were men and 86% were women. As the Table 2 indicates, having analysed the demographic characteristics of participants in this survey, most of them were in the age group of over 35 years old (67%), 23% of the respondents were in the age range of 19–25. The analysis of the activity of the respondents shows that 66% of the respondents are working, 19% of the respondents are working and studying, and 15% just studying. The vast majority (75%) of the respondents work in the public sector.

Table 2. The demographic characteristics of the sample

	Frequency	Percentage
<i>Gender</i>		
Female	377	86
Male	60	14
Total	437	100
<i>Age</i>		
Under 18	10	2
19–25	101	23
26–30	10	2
31–34	17	5
35 and more	299	67
Total	437	100
<i>Status</i>		
Working student	80	19
Employee	293	66
Student	64	15
Total	437	100

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2 hypotheses were introduced:

1. Respondents' worrying factors of building a business during a pandemic depend on whether the respondent is planning to start business during pandemic.
2. Respondents' evaluation of measures that help develop entrepreneurship in higher education depends on their status (studying, working, or both).

The Spearman's correlation coefficient was calculated using SPSS software in order to determine the interdependence between the two variables to identify and test hypotheses.

4. Online entrepreneurship education in a pandemic environment research result analysis.

The respondents were asked, what is entrepreneurship (see Table 3). The respondents had the opportunity to choose from several answer options. 22.3% of the respondents said it is the ability to create and manage, 14.8% stated that entrepreneurship is the ability to innovate, 16.3% stated that entrepreneurship is the ability to create added value, 14% of the respondents said it was the ability to realize themselves, 15.6% stated that it is a person's way of thinking as well as personal social, managerial, and personal competencies, 16.7% of the respondents described entrepreneurship as the ability to make money.

Table 3. Entrepreneurship definition according respondent opinion

Answer options	Number	Proportion
Ability to create and manage a business	340	22.3%
Ability to innovate	226	14.8%
Ability to create added value	248	16.3%
Ability to realize yourself	213	14.0%
Individual way of thinking and personal social, managerial and personal competencies	238	15.6%
Ability to make money	255	16.7%
Other (please specify)	3	0.2%

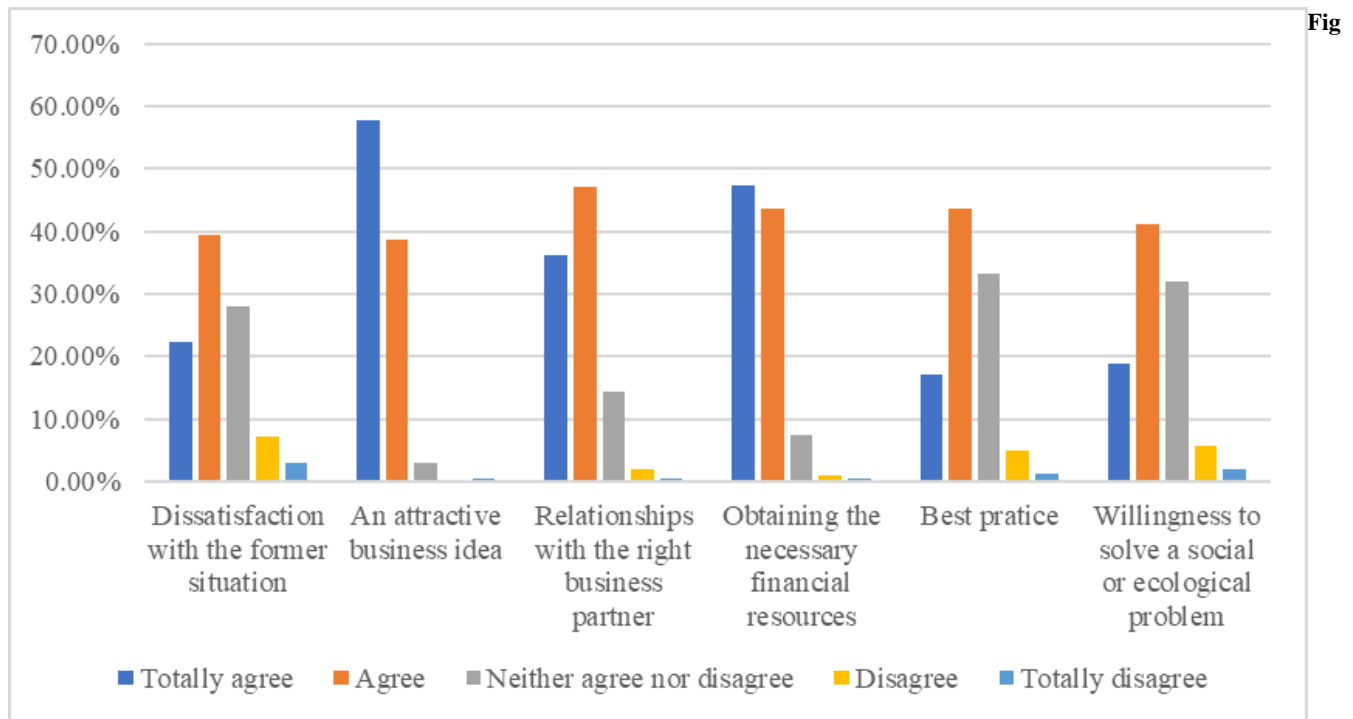
In the next question the respondents were asked, what habits they developed during the pandemic. 23.3% of the respondents said that they started to take more care of their hygiene, 23.1% said they started buying goods online, 19% of the respondents started working remotely, 14.4% of the respondents started spending more time with their families (see Table 4).

Table 4. Respondents' habits under pandemic conditions

Answer options	Number	Proportion
Enhanced care for hygiene	102	23.3%
More time to spend with family	63	14.4%
Buy online	101	23.1%
Opt for virtual communication, book reading and online media use	49	11.2%
Focus on a healthier diet and your personal development	26	5.9%
Choose distance job	83	19.0%
Cook according to new recipes	7	1.6%
Other	5	1.1%
Did not answer the question	1	0.2%

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The respondents were asked, what factors are important in making the decision to start a business. The results of the survey (see Figure 1) show that 57.8% of the respondents fully agree that an attractive business idea is very important, 47.4% of the respondents fully agree that obtaining necessary financial resources is of most importance, 18.9% fully agree that a desire to address a social or environmental issue is the most important factor in making the decision to start a business. 47% of the respondents agree with the statement that relationships with the right business partner are important in making a decision to start a business, 44% agree that obtaining the necessary financial resources and best practices are important.



1. Factors that are important in making the decision to start a business

Source: authors

The survey sought to find out what would be the worrying factors of building a business in a pandemic. 47.2% of the respondents fully agree that being unaware of the income is the most prominent worrying factor. 42.4% of the respondents fully agree that worrying factors are associated with the risk of losing property, 42.2% fully agree that it would be the risk of losing money and/or time due to business failure and 37.2% of the respondents fully agree that it would be connected with the absence of a permanent job (see Figure 2).

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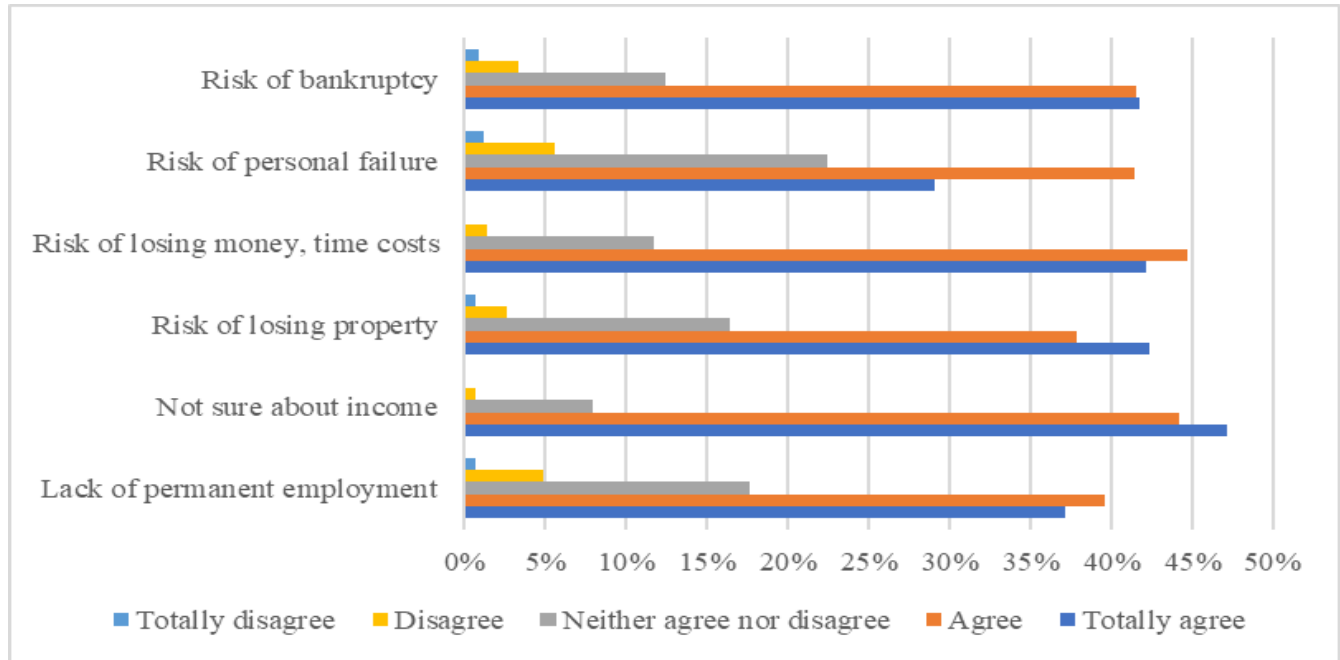


Fig 2. Worrying factors of building a business during a pandemic
Source: authors

After the analysis of the worrying factors of building a business during a pandemic, the first hypothesis can be checked. Respondents' worrying factors of building a business during a pandemic depend on whether the respondent is planning to start a business during a pandemic. This hypothesis was selected because in the survey respondents were also asked if they were thinking of setting up a business on the Internet under pandemic conditions. As the results of the survey show, as many as 89% of the respondents do not intend to start a business during a pandemic, 10.8% intend to do so.

In order to test the hypothesis, Spearman R - Spearman ordinal correlation coefficient was calculated. In this case it was 0,403236—a weak positive correlation close to the average. The H_0 and H_a were formulated. H_0 —the correlation coefficient is equal to zero, or the relationship between the variables is not available, the H_a —the correlation coefficient is not zero, then the relationship between the variables exists. The significance level $\alpha = 0,05$ (five per cent error) had been selected. In this case P-level—observational significance level ($p\text{-level} = 0,00000 < \alpha = 0,05$) refers to prove alternative hypothesis H_a and Spearman correlation coefficient is significantly different from zero. Respondents' worrying factors of building a business during a pandemic depend on whether the respondent is planning to start business under the pandemic conditions.

The study aimed to explore what methods would promote entrepreneurship in higher education. 69.6% of the respondents fully agree or agree that it would be a presentation of content, 56.9% of respondents fully agree or agree what it would be a lecture, 69.2% of the respondents fully agree or agree that it would be a seminar, 78.2% of the respondents fully agree or agree that it would be a task solving. 86.9% of the respondents strongly agree or agree that this would be a case study. The results of the study show that many teaching methods are important and promote entrepreneurship. All separate evaluations can be seen in Figure 3.

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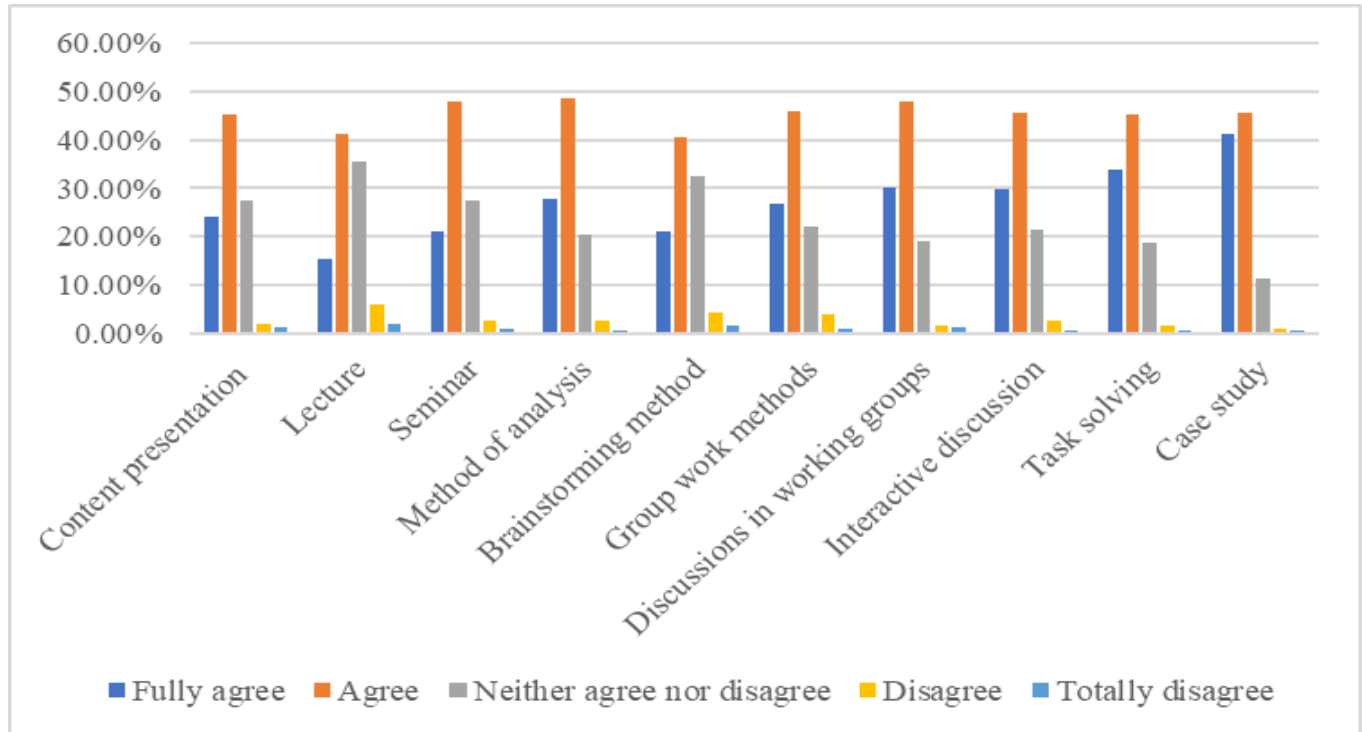


Fig 3. Teaching methods that promote entrepreneurship in higher education
Source: authors

Another aim of the study was to find out what are the measures that help to develop entrepreneurship in higher education. 94.2% of the respondents fully agree or agree that it would be internship in business enterprises, 89.4% of the respondents fully agree or agree that participation in project activities would be an effective tool, 90.4% fully agree or agree that it would be communication with experienced entrepreneurs, 83.9% think that seminars with practical tasks would be a helpful. 83.2% of the respondents fully agree or agree that opportunity to adopt good practice would be a good way to develop entrepreneurship in higher education. All separate evaluations can be seen in Figure 4.

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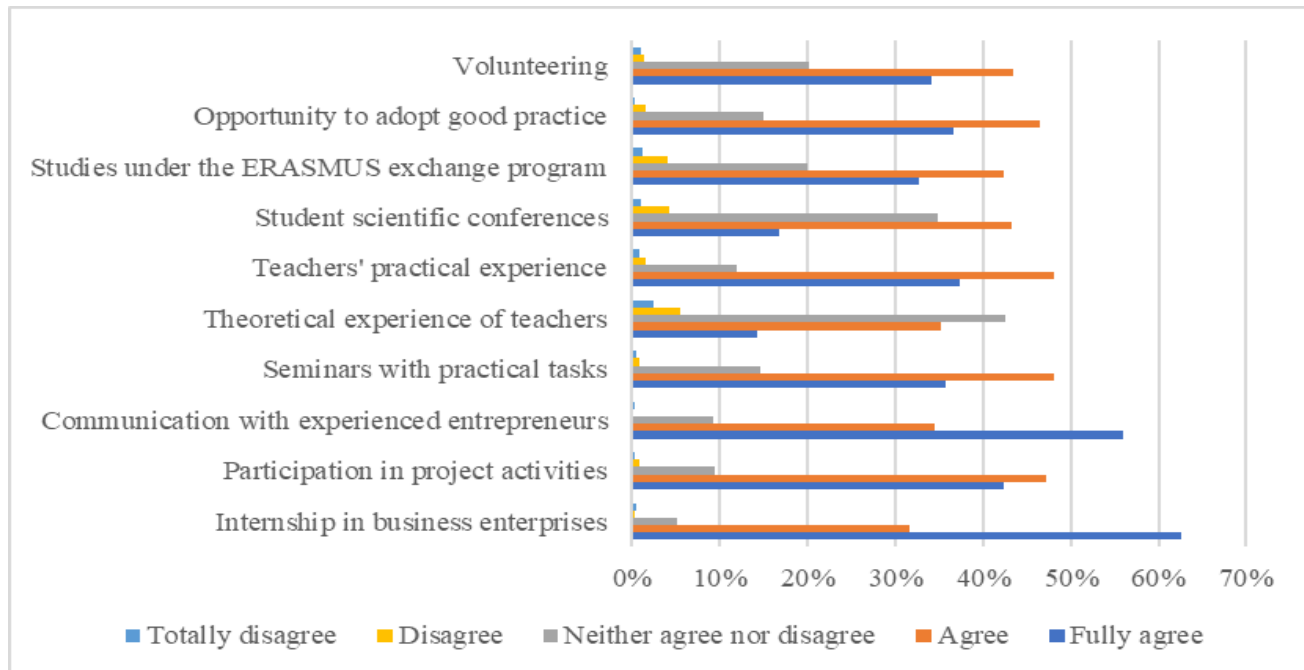


Fig 4. Measures that help develop entrepreneurship in higher education
Source: authors

After analyzing the data it was important to approve or to deny the second hypothesis. Respondents' evaluation of measures that help develop entrepreneurship in higher education depends on their status (studying, working or both). In order to test the hypothesis, Spearman R - Spearman ordinal correlation coefficient was calculated. In this case it was 0,602372—medium positive correlation. The H_0 and H_a were formulated. H_0 —the correlation coefficient is equal to zero, or the relationship between the variables is not available, the H_a —the correlation coefficient is not zero, then the relationship between the variables exists. The significance level $\alpha = 0,05$ (five percent error) has been selected. In this case P-level—observational significance level ($p\text{-level} = 0,00000 < \alpha = 0,05$) refers to prove alternative hypothesis H_a and Spearman correlation coefficient is significantly different from zero. It can be concluded, that respondents' evaluation of measures that help develop entrepreneurship in higher education depends on their status (studying, working or both).

Conclusions

1. After analyzing the scientific literature of online entrepreneurship education under the conditions of a pandemic it can be stated that there is no single definition of entrepreneurship and of the entrepreneurship education. Personal initiative, the ability to mobilize resources, management skills, the desire for autonomy, and risk-taking are the aspects connected to the concept of entrepreneurship. The entrepreneurship education helps to identify and to develop business opportunities that are often overlooked, to recognize commercial opportunities and insights, to explore the source of opportunities and the process of discovery, to increase economic efficiency, to bring innovation to the market, to create new jobs, and to raise employment rates.

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2. Expression of entrepreneurial qualities and abilities can be defined by factors that are important in making a decision to start a business. An attractive business idea, obtaining necessary financial resources, the desire to solve a social or environmental issue, relationships with the right business partner can be stated as quality measures in making a decision to start a business. Also, entrepreneurial abilities can be connected with approved hypothesis that respondents' worrying factors of building a business during a pandemic depends on whether the respondent is planning to start business under a pandemic. The uncertainty about the income, the risk of losing property, money and/or time costs due to business failure, and the absence of permanent job can suppress entrepreneurship abilities.
3. After application of a quantitative study, which was based on an online survey, recommendations in order to improve the entrepreneurship education of the Lithuanian population under the conditions of a pandemic can be prepared by defining teaching methods and measures that promote entrepreneurship in higher education and help develop entrepreneurship in higher education institutions. Case study, task solving, and presentation of content can be defined as the most recommended teaching methods. In order to encourage entrepreneurship, internship in business enterprises, participation in project activities, communication with experienced entrepreneurs are highly recommended to higher education institutions.

Novelty and research limitations. Novelty of the research is based on identifying practical implications which reflect on attributes and factors of teaching methods that promote entrepreneurship in higher education. Also, the entrepreneurship education of the Lithuanian population is analyzed in the context of the COVID-19 pandemic which creates totally new conditions. Research limitations—the study examined the entrepreneurship education under pandemic conditions only in general terms, and the findings cannot necessarily be applicable to a particular higher education institution. Also, it includes just the population of Lithuania, the scope of further research could include more countries.

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THE EFFICIENCY EVALUATION OF PUBLIC PROCUREMENT OF MEDICAL EQUIPMENT*

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Abstract. At present, the health systems of many countries face complex challenges even if their priority objectives remain the same - to provide sustainable health systems at the current and the prognostic demographic changes and requirements in a health system. The quality and the efficiency of healthcare delivery and their mutual conformity have been brought to public attention. Similarly, the quality and the efficiency of an entire process depends on the instrumentation and its procurement that represents a significant economic and procedural issue in the healthcare systems for a long time. Many reports of the public procurement processes and research studies declare this fact. The primary aim of this study is to evaluate the public procurement efficiency in the health system by means of the valuation approach, or savings' estimates that are achieved by the public procurement. The savings were defined as a percentage difference between the estimated

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and the final contract price. The secondary objective is to examine an influence of selected variables on a creation of savings in the public procurement process by means of a regression analysis. The researched variables are as follows: time, method, procurement, NUTS level of procurement, Common Procurement Vocabulary Code, number of offers. The analysis results showed interesting findings. The number of offers has a significantly positive impact on the savings. It means that if the number of offers increases by one unit, the savings will increase by 15.6%. Also, time variable (year) has a positive impact on the savings. Consequently, it may be assumed that the public procurement process is improving from a time perspective. It may be partially caused by the fact that a new public procurement legislative has been valid since 2015. The NUTS level has also an impact on the savings in relation to the public procurement. The public procurements which took place at the level of a state were more beneficial as the public procurements at the regional level. Also, the procurement method was statistically significant parameter of a regression analysis. The competition actions together with a negotiation process created higher savings in comparison to tenders. In case of the CPV codes, the most significant savings were achieved in the group of 'various medicinal products'. The study's results provide a valuable knowledge for the creators of policies and a realization of the national strategic plans within the health system. Also, these results support a creation of national and international benchmarks in this area and a networking of international partnerships in the area of a public procurement that focus on a development of methodologies and comparative platforms creation.

Keywords: Public Procurement; Public Procurement Efficiency; Medical Equipment; Patients' Satisfaction; Public Procurement Efficiency Determinants; Savings

JEL Classifications: D20, H32

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Additional disciplines: political sciences

1. Introduction

In the last decades, the health systems of many countries have solved plenty of complex tasks. The demographic ageing process that is evident in many countries requires proper setting of various active policies in order to sustain the health systems. The ageing European population is more susceptible to numerous chronic diseases that result in an increase of a healthcare demand. Delivering quality health services creates strong fiscal pressures in the economy (Breandle & Colombier, 2016). Its main reason is a strong technological development and an implementation of innovations into diagnostic and treatment processes. Many international institutions draw attention to significant and constant differences in a health among the countries. Similarly, the differences in a health, that are caused by a different healthcare availability and also various socio-economic factors, systems of the healthcare financing, deployment of health workers, etc., are identified within the particular countries (Ucieklak-Jez & Bem, 2020; Megyesiova & Lieskovska, 2018, 2019).

The public sector plays an important role in the processes of the healthcare services' financing. In the two thirds of the EU member states, the public sector finances more than 70% of the healthcare costs. Consequently, the ageing population creates serious concerns of the sustainability of public finances. The public healthcare expenditures are the largest part, which increases the most when considering the public expenditures. In the future, it is expected that the public healthcare expenditures rate will increase on the GDP. It is also confirmed by the population ageing prognoses by 2060. The main factors that cause this increasing process are as follows: demand for high-quality health services, increasing expectations, and strong technological progress (European Commission, 2020; Briestenský & Ključnikov, 2019; Kočíšová & Sopko, 2019).

In recent years, there have been evident as fiscal issues, so healthcare efficiency issues within the health systems (Bem et al. 2019). All of the areas of healthcare spending search for the means that would use the resources more effectively (Ucieklak-Jez et al. 2018). As some of the WHO reports state, almost one-fifth of healthcare spending does not contribute to any improvement of population's health, and/or to a minimum extent. Unfortunately, such a

spending leads to worse health results in some of the cases (European Commission, 2020; Predkiewicz et al. 2019; Stefko et al. 2018).

Therefore, many countries deal with the following issues for a longer period of time – a search for more effective use of resources, or setting the processes in the health systems in such a way that less resources are spent, while a performance of the health systems or health results will not worsen (Stefko et al. 2016). In the European countries, there exist other serious issues of the health systems, such as unequal access to healthcare, fiscal pressures of different departments, corruption, frequent changes of political priorities, lack of information of investments' efficiency into health systems, etc.

One of the key factors of public finance system is an increase of public procurement processes' efficiency. Many countries of the European Union intensively work on a reform of public procurement processes. The main aim of a public procurement is to create an open competition in order to achieve the most effective use of public resources. The Slovak health system belongs to those systems that declare the long-term financial difficulties. The Slovak hospitals represent the weakest segment of the healthcare system. Similarly, the public hospitals still suffer from major losses in spite of the fact that many reforms have been made on cost-effectiveness increase.

The competition rate significantly lags behind the majority of the EU countries even many positive changes have been recently done in the public procurement of the Slovak health system. In Slovakia, a low efficiency of the public procurement processes is influenced by other factors, such as an excessive use of the lowest price criterion in the selection process, a preparation of public procurements without any necessary ex-ante analysis of a purchase planning efficiency, etc. (Nemec et al. 2020). On the other hand, the public procurement processes in the Slovak health system may be improved and more efficient by using the diagnostic and the treatment processes in the health system. Consequently, a higher patient's value may be created from public resources that would also provide the sustainability of public finances and the Slovak health system (Huculová, 2018).

The submitted study, whose aim is to verify the public procurement efficiency in the health system by means of the valuation approach, and/or savings' estimates which are achieved by public procurement, reflects on these facts. The savings are defined as a percentage difference between the estimated and the fiscal contract price. The secondary objective was to examine an influence of selected variables on a creation of savings in the public procurement process by means of a regression analysis. The variables are as follows: time, method, procurement, NUTS level of procurement, Common Procurement Vocabulary Code, number of offers. The analysis's results provide a space for the creation of national and international benchmarking indicators and also for a realization of comparative analyses that are required for the processes of efficiency increase (Triantafyllou, 2007).

The study is structured as follows: Introduction focuses on the public finances sustainability and the health systems, which are impacted by the global processes of the demographic ageing. The Research Review (Background of the Study) pays attention to the research studies that deal with the public procurement efficiency, and also their determinants, which are declared in the national and international research studies. The research part of this study is divided into methodological and analytical parts. The methodological part describes the data base and all of the methodological procedures that were used. The analytical part provides the results visualised in the form of the graphs and tables. Both, Discussion and Conclusion of this study, are linked to these results.

2. Theoretical background

Many foreign research teams deal with the public procurement efficiency. Their primary aim is to examine the determinants of the public procurement, and also to search for the possibilities that would make these processes more effective. Generally, the contents of these research studies are very heterogenous. However, these studies bring valuable knowledge for the creation of a discussion platform and for the setting of the comparative

researches. Most of the research studies analyse such factors as corruption, competitiveness and transaction costs that influence the efficiency of public procurement (e.g. Huculová, 2018; Baldi & Vannoni, 2017; Borowiec, 2017; Ochrana & Maaytová, 2012; Ochrana & Pavel, 2013; Vasconcelos, 2021). Other group of studies analyse only particular factors, while there are also such studies that more complexly evaluate the public procurement efficiency. Similarly, such research studies differ from each other depending on the implication type into relevant policies, and/or they bring suggestions for an improvement of existing data bases, or they open new data registers. Grega et al. (2019) verify the main factors that have an impact on the public procurement efficiency in Slovakia, while the authors use the interview method and questionnaires. The questionnaires were created for contracting authorities/entities and suppliers, while 13571 of suppliers and 4300 of contracting authorities participated in the research. Both, suppliers and contracting authorities, explicitly confirmed that the most important factors, which cause non-efficiency in the public procurement are: excessive bureaucracy and corruption or other ethical shortcomings. The results also show that the insufficient competition and the excessive use of the lowest price criterion for selecting winning bids add further inefficiencies. The largest savings were achieved between 6 and 8 bidders. In conclusion, the authors state that the e-auctions generally produce larger savings than more traditional methods, but the Slovak procurement procedures are costly, compared to most other EU states. The study provides valuable subjects for the policies' creators that focus on the improvement of the public procurement processes in order to achieve their higher efficiency.

There are also studies that present new collaborations and partnership networks as the tools for efficient public procurement processes, and simultaneously, improving efficiency of investment processes that are linked to the projects of the public procurement. Many studies examine programs of green public procurement. These topics are related to the global trends of environmental protection that need to be interconnected with the efficiency processes. In the study of Berezin et al. (2018), the authors state that the implementation of the public-private partnership (PPP) improves public and municipal property in the EU countries. The study aims at the classification outline of the countries according to the probability of success in the PPP implementation. The study presents a significance of a new method that should be based on the indicators' system by means of which it should evaluate a quality of the institutional environment, experiences with the project realization, state's preparedness, and also institutional sphere on the efficient implementation of the PPP projects. The authors also suggest that the role of a state plays an important role in the strengthening of the PPP projects' realization by means of the financial sphere. It will also support a creation of various mechanisms that would attract private investments to socially significant public projects. Similarly, Nemec et al. (2020) indicate an insufficient level of a competitiveness as the primary factor of an insufficient efficiency of the public procurement. In the study, the authors declare that the level of a competitiveness in Slovakia significantly lags behind the majority of the EU countries. Low level of a competitiveness has a direct impact on the public procurement efficiency, which is frequently evaluated by comparing the estimated value to the competitive pricing. The authors analysed data from 2141 public procurements in the period 2014 – 2019. In conclusion, the authors confirm that a higher number of offers in the Slovak health system generates a lower final price. In average, the number of offers is two, but almost in one third of the competitions, the health facilities received only one offer. Grega (2018) identifies and analyses in detail the main factors that determine the public procurement efficiency in Slovakia by performing a vast primary and secondary research. The author determines bureaucracy as the most important factor of the efficiency in the public procurement processes on the basis of the research. The second factor is a frequent change of a legislative, and the third factor is an insufficient ethics and morality on the awarding authorities and/or the contracting authorities' sides. Both, corruption and insufficient competitiveness, that are presented by joining a small number of suppliers into the public procurement, represent the fourth most important factor.

Thematically similar studies were realized in abroad, and their results create an interesting discussion platform for this team of authors. For instance, Grzyl et al. (2018) performed their research in order to verify to what extent the Polish contracting authorities use a selection option of many criteria to evaluate the offers. The authors analysed 500 notices on work procedures conducted in open and restricted tenders in Poland and 500 tenders in open and

restricted proceedings in five selected EU countries. The results of the comparative analysis show many interesting conclusions. The price, as a decisive criterion in selecting an offer, has both, advantages and disadvantages. The following may be supported by using the price criteria and others: increase in the efficiency of public spending, a better definition of the basic characteristics of a product and a better preparation of contract's subject description, granting the particular characteristics of a product in the context of innovations, a limited impact on the environment, etc. However, the authors confront the use of many criteria in the public procurement with increasing costs of a company, a complex procedure for offers' evaluation and other risks.

Kozik and Karasińska-Jaśkowiec (2016) focus on the evaluation of the public procurement processes in the context of environmental protection. The subject of the public procurement is infrastructure in the selected Polish municipalities. In the analyses, the authors use the following criteria: time of the public procurement realization (2009-2015) and co-financing of the contract from the EU funds. Similarly, the authors examined the environmental aspects of planned investments in the contracts by detailed analysis of the environmental criteria, and also legislative acts adopted in Poland and Europe. In conclusion, the authors declare that the legislative acts do not represent any obstacle in the awarding process that has an impact on the environment. The authors also emphasize a consistency of the legislative acts at both, national and international levels.

The study by Fuentes-Bargues et al. (2018) has a sector orientation to education system. As the authors confirm the universities have a significant role for the public institutions as they make plenty of purchases and financial procedures on daily basis. The study presents the research results which reflect the analysis of 316 procedures that were collected and analysed from the calls for tenders made by the Spanish public universities between 2016 and 2017. Also, the environmental criteria, which were analysed according to the sub-sectors, the geographic scope, and the project's budget, have an important role. The study's results clearly declare a low use of environmental criteria in the contracts that are awarded by the Spanish public universities. The conclusions of the study provide multiple implications for the policies' creation, such as the fact that the environmental policies of the universities should be a part of their institutional policies.

The research study by Grzyl and Siemaszko (2018) is linked to the Europe 2020 strategy, which also emphasizes an effective use of natural and ecological resources. Both analyses, Life Cycle Assessment and Life Cycle Cost, should form a basis of the decision-making by awarding entities according to the authors. Thus, the authors present the advantages of their use. The authors analysed 350 of selected public procurement procedures that were realized in 2017 in Poland. In the analytical processes, there were examined the types, the average weights and a frequency of application of non-price criteria for the selection of the best offer in practice. In conclusion, the authors expressly declare a convenience of using the following analyses, Life Cycle Assessment and Life Cycle Cost. Both analyses are considered as the tools for determining a real value of the contracts' subject. However, the environmental requirements are obligatory in most of the cases of the contracts' realization. The use of non-price criteria further remains a difficult task in the public procurement processes and their importance will even increase in the future.

Grzeszczyk and Czajkowski (2017) draw attention to different specificities of the projects that are co-financed from the EU funds and commercial projects. The projects that are co-financed from the EU sources are oriented to the environmental economic and social advantages for a society. Therefore, it is important to research numerous factors that influence the public procurement processes of the EU projects. Also, the authors use the European projects observation, comparative study, literature and documentary analysis in order to highlight the structure and the seriousness of the problems in these types of projects. The project management and the pressures on the development of methods that would eliminate the risks of the mistakes in these projects are brought to the attention. However, one serious mistake may lead to the loss of all of the subsidies and subsequently, it may threaten a realization of an entire project. Consequently, the authors emphasize a necessity of the processes' improvement for the purchases and the implementation of co-ordinated purchase activities.

The study by Weszl et al. (2019) examines an importance of incorporating new criteria in purchasing the medical devices. The Patient Reported Outcome Measures (PROMs) may serve as a significant value instrument for the producers, which also complete safety and performance metrics. The PROMs also represent a competitive instrument. The authors examined the PROMs within 12 selected groups of instruments within many developed countries. The analyses' results show that the use of the PROMs increases. It may be caused by a demand of the buyers who prove the value of the device. However, this trend differs in other EU countries.

The authors, Šumpíková and Ďurčková (2019) realized an interesting comparative analysis that aims at researching the extent of the use of external law services in the public-procurement review process by procuring authorities and proposers in the Slovak Republic and the Czech Republic. The study's results show that while the use of the external law firm may lead to a higher success rate of the review process on the side of a procuring authority, the same does not apply to proposers. The same results are confirmed by the study of the Czech authors, Ochraňa and Maaytová (2012). The study by these authors focuses on the public procurement efficiency in the Czech Republic. Also, it identifies a low transparency and an insufficient resistance to a corruption as the main issues. In general, the study provides multiple implications into the policies' creation that refer to a formation of a transparent public procurement system without any corruption. Similar findings may be found in the study by Ochraňa and Pavel (2013).

The corruption in the public procurement is examined in more details in the studies by Fazekas and Toth (2016) and Fervarda et al. (2017). Both studies prove that accurate and profoundly structured data are necessary for a creation of the quality analytical framework. It is also confirmed in the study by Coviello and Mariniello [33] that aims at verifying how publicizing of a public procurement auction causally affects an entry and the costs of a procurement. The authors run a regression discontinuity design analysis on a large database of the Italian procurement auctions.

Oruezabala and Rico (2012) also point to the importance of compliance with new sustainable regulations and to look for suppliers who are able to provide a sustainable offering. They carried out research in the 15 French hospitals through semi-structured interviews. The results of the research enabled the authors to formulate an interesting process trajectory: the sustainable expectations of public buyers from global key providers and the fact that sustainable procurement impacts the relationship by creating new rules. Building on these results, managerial implications are suggested. In addition to the "sustainable public procurement" term, also the responsible public procurement term is often mentioned. The "responsible public procurement" term is a part of the good governance which is a process whereby organizations meet their needs for goods, service, works, and utilities in a way that achieves value. It is stated in the study by Plaček et al. (2020) who describe the basic elements of modern public procurement in detail: value for money, transparency, fairness, and good governance.

Mudyarabikwa et al. (2017) examined the potential of public-private partnership (PPP) activities and their importance in improving the procurement processes of physicians in primary healthcare. The main goal of PPP was to improve the quality of healthcare and patient satisfaction. The authors carried out the qualitative analysis based on the 25 interviews with public sector staff and private sector managers. Results of the analyses clearly confirm that PPP bring the expected health benefits. Fuentes-Bargues et al. (2019) dealt with the issue of green public procurement at the regional level too. The development of green public procurement also makes it possible to summarise experiences and to design areas that are possible to improve. The authors focused on the selected Spanish region and they analysed a total of 957 procedures in the period of the years 2016 to 2017. The results of the study show the following facts: the use of environmental criteria is 19.7 % and the average weight is 4.1 out of 100. The differences in the use of environmental criteria are also determined by the sectors.

The results have several implications for policy-making as well as suggestions how to improve the environment public procurement through the creation of targeted plans.

In addition to the research teams, several institutions have examined the effectiveness of public procurement processes in Slovakia dealing with system efficiency and transparency. For instance, Dančíková and Zachar (2012) analysed the public procurement of hospitals in the years 2009 to 2012. The authors found that public procurement of hospitals is characterised by a low number of tenders submitted. In a 54.6 % share of tenders, only one bidder submitted a bid. Average number of bids in hospital tenders is 1.7, while in other sectors in the same period there were almost 3 bids per tender. This means that the health sector is exposed to lower competition in public procurement between suppliers. More than a half of the procured volume of hospitals was provided by only the 13 companies. And just a 21 % share of 2,771 public procurements were announced by an electronic auction. E-auctions are used in healthcare especially for contracts with lower contracted price. These findings suggest that a space to increase efficiency in healthcare of the Slovak Republic is large and therefore, the preparation of active policies and extensive institutional collaboration will be important in economic as well as legal field.

Materials and Methodology

Our dataset consists of public procurements that took place in healthcare sector from 2014 to 2019. Data was downloaded from registers of the Office for Public Procurement of Slovak Republic. For every public procurement, we were able to collect data about:

- Year when public procurement took place,
- Procurement method,
- NUTS level of the procurement,
- Common procurement vocabulary code,
- Number of bids,
- Estimated value of the contract,
- Competitive price.

Year when public procurement took place is a categorical variable which indicate the date of the public procurement. Dataset comprises 6 years and the distribution on observations is following: year 2014 – 431, year 2015 – 332, year 2016 – 383, year 2017 – 209, 2018 – 287 and year 2019 – 499.

Procurement method is the categorical variable which tell us how public procurement was done. There were only two types of procurement in the dataset. Tender was used in 223 cases, thus 10.4 % of the total cases and the competitive procedure with negotiation which was used in 1918 cases, thus 89.6 % of total cases.

The NUTS code is the categorical variable capturing the level of common classification of territorial units on which the public procurement took place. According to Eurostat NUTS 1 represents the major socio-economic regions, thus national level. NUTS 2 represent basic regions for the application of regional policies, in case of Slovakia it is Eastern Slovakia, Central Slovakia and Western Slovakia. NUTS 3 represent small regions for specific diagnoses, in case of Slovakia we distinguish eight self-governing regions. In our dataset, 1.5% of the public procurements took place at the NUTS 1 level, 15.5 % at the NUTS 2 level and 83% at the NUTS 3 level.

Common procurement vocabulary code is the classification system for public procurement that enables to standardize the references used by contracting authorities and entities to describe procurement contracts. We use CPV codes four digits structure, thus distribution among classes. The distribution of the number of public procurement for the whole period depending on the common procurement vocabulary code is shown on figure 1.

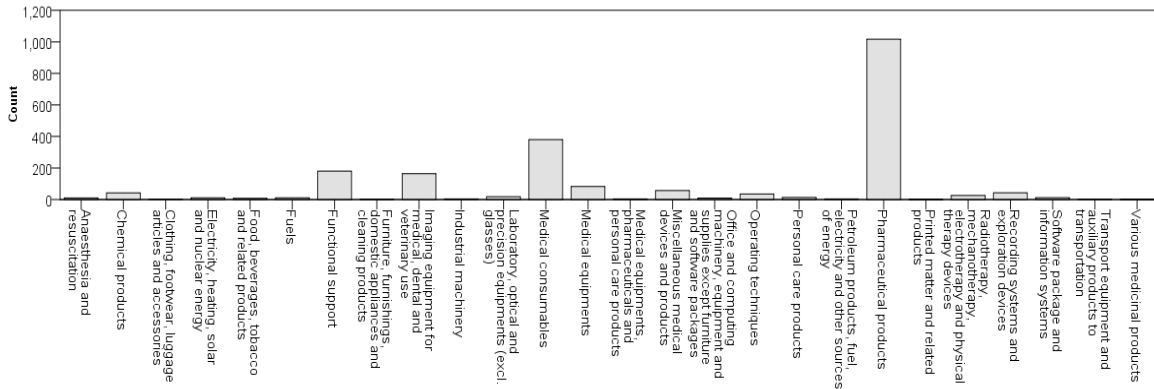


Figure 1: Distribution of the number of public procurements

Number of bids is the scale variable indicating how many bids were received during the bidding process. Number of bids distribution is shown in figure 2. Most public procurements, 36.5%, were done with only one bid. Public procurements with two and three bids were observed in 24.8%, respectively in 24 % of cases.

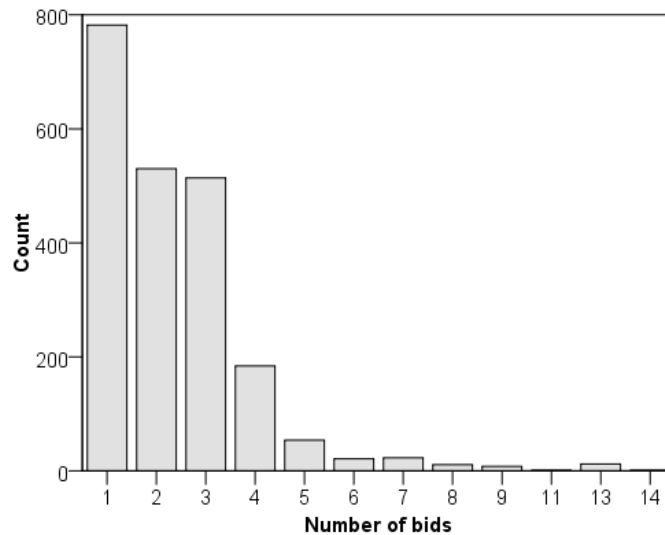


Figure 2: Number of bids per public procurement

Estimated value of the contract is the price of the contract estimated by entity that launches competition, respectively create a query. Competitive price is the bid that won the public procurement competition, thus final price of the public procurement competition.

Methodology

In presented research we use the most commonly used approach for measuring the efficiency of public procurement, thus the difference between estimated value of the contract and the competitive price. This approach seems to be the most transparent and fastest way to evaluate the efficiency of public procurement. The inconvenience of this approach is the estimation of the estimated value of the contract. For this reason, some opinions favours to compare the competitive price of the contract with the market price of the purchased products.

But use of market price has also its limits. The biggest counterargument the market price use is fact, that market price not always available and clearly determinable, especially in case of information systems, legal and advisory services, large construction project and last but not least, services as such. Because of abovementioned facts and with respect to fact that our dataset includes 2141 observation, we have accepted to use the difference between estimated value of the contract and competitive price, as this approach is widely used in case of large datasets.

While comparing the estimated value of the contract and its final competitive price, three possible outcomes are possible. Savings are positive if the estimated value of the contract is higher than the final price of the competitive price of the purchased goods. Savings are null if the estimated value of the contract is equal to the final price of the goods being purchased. Savings are negative if the estimated value of the contract is less than the competitive price of the goods being purchased. All prices were without VAT. Saving expressed in percentage are calculated as follows:

$$Saving = 100 - \left\{ \left(\frac{Final\ price}{Estimated\ price} \right) \times 100 \right\}$$

To determine the main effect of abovementioned variables on achieved savings we run generalized linear model with following equation:

$$Saving = \beta_0 + \beta_1 Procurement\ method_i + \beta_2 NUTS_i + \beta_3 CPV\ code_i + \beta_4 Number\ of\ offers_i + \beta_5 Year_i + \varepsilon_i,$$

where Saving is the continuous variable indicating the size of the saving/loss achieved by public procurement. Procurement method is the categorical variable which indicates the method the public procurement was done: tender or competitive procedure with negotiation. NUTS code is categorical variable indicating the level on which the public procurement took place – national, or regional. CPV code is categorical variable indicating the class of common procurement vocabulary that public procurement concerned. Number of offers is scale variable which indicated how many offers was bidders entered the process of public procurement. Year is variable that indicates the year in which the public procurement took place.

Analysis

The distribution of saving is shown on the figure 3. We note from the figure 3 that savings are normally distributed around zero and right skewed.

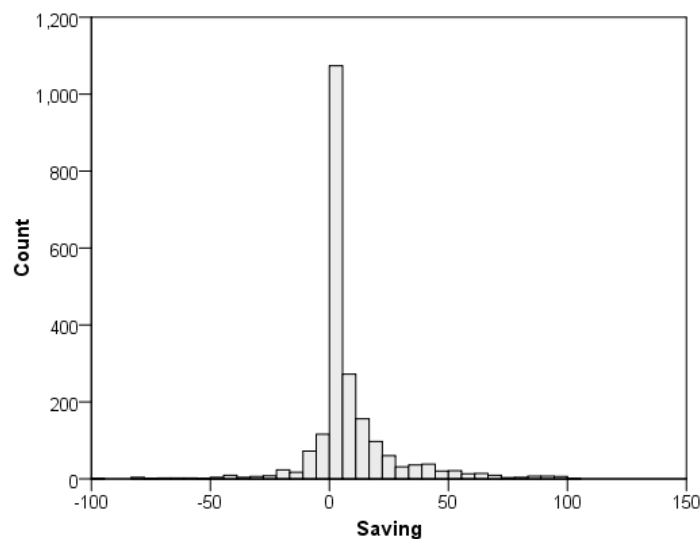


Figure 3: Distribution of saving

Average saving by CPV class is shown on the figure 4. We note that highest average savings in healthcare sector can be find in the class of Various medical products, Printed matters and related products, Furniture, furnishing, domestic appliances and cleaning products, Food, beverages, tobacco and related products, Chemical products and Medical equipments. On the other hand, lowest, resp. negative savings are observed in classes of Fuels, Clothing, footwear, luggage articles and accessories, Functional support, Medical equipments, pharmaceuticals and personal care products.

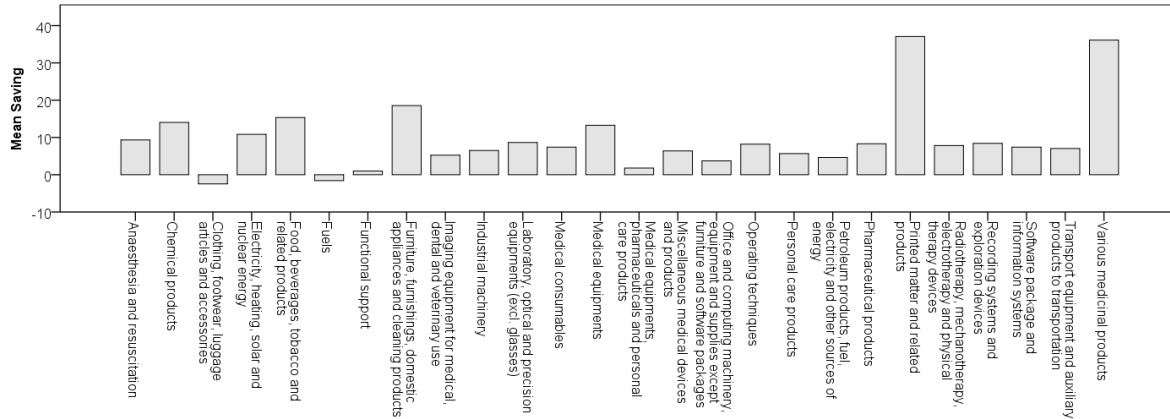


Figure 4: Distribution on savings by CPV class

Test of model effects for regression analysis is shown in table 1. We note that all considered variables have some discernible effect on the dependent variable, as, according to p values, we are able to reject null hypothesis of zero effect significance of explanatory variables.

Table 1: Tests of Model Effects

	Wald Chi-Square	df	Sig.
(Intercept)	7.887	1	.005
Procurement method	2.805	1	.094
NUTS code	5.996	2	.050
CPV Code	42.799	25	.015
Number of offers	128.492	1	.000
Year	7.888	1	.005

Dependent Variable: Saving

Model: (Intercept), Procurement method, NUTS code, CPV code, Number of offers, Year

Subsequently we run Omnibus test, where hypotheses are following.

H₀: Suggested model is not significantly suitable to the data.

H₁: Suggested model is significantly suitable to the data.

Omnibus test Likelihood Ratio Chi-Square is 195.445 on 30 degrees of freedom, with p value <.001, thus we reject null hypothesis that involve the idea that explained variance in a set of data is significantly smaller than the unexplained variance.

Regression analysis results are in table 2. In case of CPV code, we present only classes where regression coefficients are statistically significant. Number of offers has positive impact of savings. It means, that with augmentation of number of offers, saving are significantly rising. Time, thus year has also positive impact on savings. We can outline the finding that public procurement process has improved over time. It can be also partially caused by the fact, that in 2015, the new public procurement legislative was established. NUTS level has

also impact on savings in context of the public procurement. The conclusion here is that the lower level of territorial administration, the significantly higher saving is. Contrary, if the public procurement is done on national level, the savings are significantly lower. Procurement method is also statistically significant parameter of the regression analysis. The conclusion here is that Competitive procedure with negotiation create higher savings if compared to Tenders. In case of CPV code analysis we have chosen the class of Various medicinal products as a contrast variable, whereas in this class the highest average savings are observed (see figure 4). As written above, we present results only for statistically significant CPV classes. We note that in contrast to Various medicinal products, the lowest savings are achieved in class of Fuels, Petroleum products, fuel, electricity and other sources of energy and Clothing, footwear, luggage articles and accessories, Functional support, Pharmaceutical products and Electricity, heating, solar and nuclear energy.

Table 2: Parameter Estimates

Parameter	B	Std. Error	99% Confidence Interval		Wald Hypothesis Test			Exp(B)
			Lower	Upper	Wald Chi-Square	df	Sig.	
(Intercept)	-1205.3	429.5644	-2047.265	-363.403	7.873	1	.005	.000
Number of offers	2.749	.2425	2.273	3.224	128.492	1	.000	15.622
Year	.598	.2130	.181	1.016	7.888	1	.005	1.819
NUTS level								
NUTS 1	-4.990	3.2150	-11.291	1.311	2.409	1	.121	.007
NUTS 2	-1.905	1.1343	-4.128	.319	2.819	1	.093	.149
NUTS 3	0 ^a	.	.	.	.	.	.	1
Procurement method								
Competitive procedure with negotiation	2.152	1.2852	-.367	4.671	2.805	1	.094	8.606
Tender	0 ^a	.	.	.	.	.	.	1
CPV code								
Clothing, footwear, luggage articles and accessories	-37.048	20.5034	-77.234	3.138	3.265	1	.071	8.133E-17
Electricity, heating, solar and nuclear energy	-27.252	18.5578	-75.054	20.549	2.157	1	.142	
Fuels	-37.426	18.5567	-73.796	-1.055	4.068	1	.044	5.575E-17
Functional support	-30.375	17.8049	-65.272	4.522	2.910	1	.088	6.429E-14
Office and computing machinery and software	-33.299	18.7212	-69.992	3.394	3.164	1	.075	3.456E-15
Petroleum products, fuel, electricity and other sources of energy	-34.228	19.8565	-73.146	4.690	2.971	1	.085	1.364E-15
Pharmaceutical products	-29.241	17.7571	-64.044	5.562	2.712	1	.100	1.999E-13
Various medicinal products	0 ^a	.	.	.	.	.	.	1
(Scale)	314.590 ^b	9.6151	290.773	340.358				

a. Set to zero because this parameter is redundant.

b. Maximum likelihood estimate.

4. Discussion

Health is a fundamental value in life of every one person. The basic determinants of health include access to healthcare, quality of healthcare, quality of the environment and physiological-psychological preconditions of an individual. A government can influence the quality and availability of healthcare through an active health policy. It creates a system of laws, standards, regulations and cooperation of the health system institutions to ensure all necessary healthcare-related processes. A provision of healthcare is one of the specific services within which healthcare staff and non-medical staff provides medical services to the patient. As healthcare represents a dynamic

process which the demands and expectations of patients change in, its management requires ensuring compliance in several medical, technical and economic dimensions (Predkiewicz et al. 2019; Stefko et al. 2018). The provision of health care is carried out within the framework of the legislation of each country and the restrictions caused by the economic capabilities of the healthcare provider. There is often a disproportion between patient requirements for the service and financial resources that hospitals do not have and they cannot obtain them. Hence, in the recent years, health systems have been cover a search for opportunities for savings throughout the healthcare system and transparency of resources spent on service performed (Triantafillou, 2015; Borowiec, 2017; Grega et al. 2019).

Public procurement plays an important role in this process. It is a strategic tool that every European Union member state possesses in the system of the economic policy tools. The basis of public procurement is open competition in order to achieve the most efficient use of public financial resources. Many countries have implemented several reforms to improve public procurement processes in recent years [38]. Despite the positive results, there is still a much room for enhancement. Available research studies declare insufficient use of strategic procurement opportunities. As many as a 55 % share of procurement procedures use the lowest price as the sole criterion for evaluating tenders (European Commission, 2017).

The most economically advantageous offers are selected on the basis of principles and cost-effectiveness criteria, which it is also possible to take into account social, environmental and innovative criteria within. Availability criteria or various qualitative criteria are still not sufficiently applied (Nemec et al. 2020a; Grega et al. 2019; Nemec et al. 2020b). Procurement processes are often considered to be rather an administrative procedure, which public authorities purchase the products, works or services necessary for their activities through. Clear and consolidated data on public procurement are not yet available and there is also no consensus within the European Union on which data to collect and for what purpose (European Commission, 2017).

The European Commission also criticises the position of some European Union member states that their central authorities are unable to indicate the exact amount of public procurement expenditure in their country despite the large financial amounts involved in this process (European Commission, 2017). This puts pressure on improvement of public revision and the development of effective data-based policies as well as improved budgetary revision. Innovation is a very important aspect of public procurement processes and thus, it is an important determinant in improving the quality and efficiency of treatment and diagnostic processes in the healthcare system. There are also many barriers to innovation as evidenced by several studies (Nemec et al. 2020a; Berezin et al. 2018; Šumpíková & Ďurčeková, 2019).

A creation of innovative partnerships can solve this problem too (Berezin et al. 2018; Mudzarabikwa et al. 2017). Also, the digital transformation of public procurement, which is currently assessed as slow and insufficient, is important. Despite the simplification of the European Union rules in the year 2014, many countries criticise the persistence of overly complex public procurement procedures and excessive administrative burdens. This consistent fact affects the standardization of procedures and the professionalization of public procurement (European Commission, 2017).

Many healthcare institutions also have a critical view of the current situation in a field of public procurement in Slovakia, as for instance SK-MED Association, based on the real practice of the medical institutions and their suppliers. As stated in their study, public procurement generalizes patients' clinical status and it does not take into account its specific attributes (SK+MED, 2020).

For patients with a clinical condition, where the use of standard medical devices is not possible, the acquired devices has to be usable and suitable for specific medical purposes. Providers often tend to use inappropriate material for the purpose of financial disputes and the elimination of special administrative procedures required by

the health insurance companies. Therefore, for a certain group of patients, such a healthcare service is more expensive and hence, it may be unavailable due this fact. Public procurement can also indirectly prevent the use of innovative methods in the treatment process (SK+MED, 2020).

Patients' needs should not be considered in a standardised way. Public procurement as a process in the current or proposed legislative form does not allow to assess the price of treatment in terms of total costs, but it only takes into account the price of the material used. At the present time, the main evaluation criterion in public procurement is price usually (Grega et al. 2019; Nemec et al. 2020).

Neither the current law nor its proposed amendment defines price as a parameter in more detail. Given the importance of the quality criterion, which is very closely linked to the price parameter, it is significantly important that the price in healthcare is assessed as a parameter in terms of total costs in the long term and not as a partial cost in a single procurement. Only then, it is possible to evaluate the effectiveness of the healthcare provided in the diagnostic or treatment process. If only the price is applied in public procurement processes in healthcare, there is a risk that in the end, the total costs may be even higher as they may increase due to various shortcomings of the procured goods. If the healthcare provider procures medical devices through public procurement that can only be used in standard treatment, then the treatment of patients will not be in a line with the latest medical science knowledge in the particular field (SK+MED, 2020).

In order to determine the real state of the efficiency of public procurement processes for medical devices for the period of the years 2014 to 2019, we performed an analysis of the data obtained from the national registers of the Public Procurement Office of Slovakia. We focused on the use of so-called value approach through an estimation of the savings achieved by public procurement. We examined the impact of the selected variables on the creation of savings in the public procurement process through regression analysis. The variables examined are: time, procurement method, NUTS level of procurement, common procurement vocabulary code, and number of tenders. The results of the analyses revealed the interesting findings. The number of offers had a significant positive impact on savings. This means that with an increase in the number of bids by one unit, the savings are increased by 15.6 %. The time variable (year) also had a positive effect on the savings. It can be stated that the public procurement process has been improving in the recent period. This may be partly due to the fact that the new public procurement legislation was introduced in 2015. The NUTS level also has an impact on the savings in public procurement. Public procurement at the state level is more advantageous than one at the regional level. The procurement method is also a statistically significant parameter of the regression analysis. The competitive negotiated procedures create the significantly higher savings compared to the tenders. In the case of CPV codes, the most significant savings are achieved for "different drugs". The limitation of our research is caused by an inaccurate input of public procurements parameters by authorities' which are in charge of public procurements information disclosure.

These evaluations represent the valuable findings for policymakers and to ensure a transparent public procurement system as well as for increasing its efficiency. It is also important to confront these results with many institutions that cover suppliers of medical devices and equipment and thus, to create innovative partnerships not only in public procurement processes but also in technological development as manufacturing innovators can provide valuable information for health technology assessment that should be closely linked to public procurement processes in the healthcare sector (Huculová, 2018; Kiselova Bilekova et al. 2018; Zavadil et al. 2020; Petruželka & Barták, 2019).

The absence of this link can result in many negative facts, which will be related to the preferred use of price as the most important criterion in the entry stages of public procurement in healthcare. If we would like to ensure the effectiveness of public procurement processes in order to gain more value for the patient and at the same time to ensure the quality and safety of treatment and a higher quality of life of the patient, individual parameters entering

public procurement are needed to be evaluated by the specific approaches and methodologies. We will be able to ensure the sustainability of the healthcare system in the context of demographic aging processes in a line with the sustainability of public finances only in this way.

5. Conclusions

The processes of demographic aging and the associated changes in the mortality and morbidity structure of the diagnoses in the individual countries place ever-increasing demands on the healthcare systems. Fulfilling satisfaction of the health needs of the population is also closely related to the funding processes, an innovative and technological development as well as the overall setting of the healthcare policies in the individual countries. In the recent years, the health systems have been looking for savings and transparency of resources spent on the services performed. Public procurement plays an important role in this process. It is a strategic tool that every European Union member state possesses in the system of economic policy instruments. The basis of public procurement is an open competition in order to achieve the most efficient use of the public funds. Public procurement in the Slovak healthcare system has long been one of the most criticised processes by national as well as international institutions. In particular, an insufficient coordination between the involved institutions, an incorrectly set procedures, the inefficient public procurement processes and a poor applicability of the law are criticised often. The parameter "lowest price" results in the procurement of the products that are often of very low quality, which in turn causes a low quality of treatment. Successively, the low quality of treatment can also endanger the patient's health. The aim of our study was to evaluate the efficiency of the public procurement processes for medical equipment in Slovakia for the period of the years 2014 to 2019. The results of our study clearly pointed out that the number of offers has positive impact on creation of savings in public procurement process. We also document the evidence of amelioration of the procurement process over time in the context of savings generation. According to our results, NUTS level has also impact on savings in context of the public procurement. We document that public procurements done on the lower level of territorial administration reach higher savings. Contrary, if the public procurement is done on national level, the savings are significantly lower. Our study also points out that procurement method used in public procurement process influence the savings. Competitive procedure with negotiation create higher savings if compared to Tenders. The results of the analyses represent a valuable platform for the creators of strategic national healthcare plans as well as for the creation of concepts and methodologies enabling the improvement of public procurement processes in the healthcare system. The efficient public procurement processes in the healthcare system have to guarantee a higher quality of healthcare provided. Public procurement in the healthcare system should increase patient value and ensure the sustainability of the healthcare system as well as public finances from a macroeconomic point of view.

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CHARACTERISTICS OF DISTANCE WORK ORGANIZATION IN SMES DURING THE COVID-19 LOCKDOWN: CASE OF WESTERN LITHUANIA REGION*

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Abstract: The article is based on the findings of the applied research project *Assessment of the Effectiveness of COVID-19-Related Restrictions on Economic Activity and the Impact of State Intervention Measures on Enterprises in the Klaipėda Region* (No. P-COV-20-51). The aim of the research is to reveal the characteristics of distance work in small and medium business enterprises of Klaipėda Region in the context of COVID-19. The main research question focuses on how the variety of work activities be realized in distance way and to what extent is it effective? To identify the situation, a mixed research methodology, quantitative (questionnaire) and qualitative (focus group) research methods were used. 73 business entities participated in the survey, and 7 focus group discussions were organised remotely in 7 municipalities, with the participation of 61 respondents (on average, 8 in each group). The research findings revealed that the problems of distance work in SME's were generally an under-researched topic, and the definition and concept of distance work varied. Problems emerged that could be divided into two subgroups: the first related to the IT infrastructure (a shortage of equipment, Internet disruption and the resulting increased costs), while the second subgroup concerned mainly human factors (the issues of employees' communication skills and attitudes or emotions when working remotely, lack of methodology for organising distance work, etc.). It is worth adding that, in the course of the current research, identification of a broader field of problems and discussions of their causes were possible due to the cooperation of researchers-representatives of various scientific areas.

Keywords: distance work; COVID-19; small and medium enterprise (SME)

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1. Introduction

The idea of distance-work (referred to also as e-work; telework, remote work) is closely related to the development of the knowledge society in Europe. The Lisbon Strategy (2000) highlighted the importance of creating "to become the most dynamic and competitive knowledge-based economy in the world by 2010 capable of sustainable economic growth with more and better jobs and greater social cohesion and respect for the environment". Burbules and Callister (2000) argued that the Internet had been increasingly becoming a working space where common tasks could be developed and simulation and visualisation-based information could be designed, able to show interaction in a complicated situation.

In the early 21st century, about 27% of new jobs were created using flexible forms of employment in the United States (about 18% in the EU), and the role of such forms has been steadily growing (Gruževskis, 2001). Typical forms of such a type of employment are usually characterised by non-standard working time, specific employment contracts, or other less common employment and/or labour relations; they appear to be the least popular in Bulgaria, Estonia, and Latvia (accounting for approximately 13-15%) (Miežienė, Gruževskis, 2016). According to Nakrošienė and E. Butkevičienė's (2016) survey performed in 2015, 12,5 % of the respondents tried to combine distance and face-to-face work, while part of them (9,3%) spent most of the working day either in their offices or other workplaces that were not at home. The research data proved that, in Lithuania, only 2% of the respondents worked fully from home. In accordance with Eurostat results, employees that usually worked from home accounted for approximately 0.9% of all employees in 2015. That type of employment had insignificantly decreased in Lithuania over the past years. As demonstrated by Eurostat figures, working from home was much more widespread in other EU countries (in 2015, the EU-28 average was 2.5%). The highest prevalence of working from home was found in the Netherlands (with 8.4% employees regularly working from home in 2015), Finland (7.5%), Austria, and Denmark (5.9%), whereas Bulgaria, Romania, and Latvia reported the lowest prevalence of that type of employment (0.2%, 0.4%, and 0.5%, respectively) (Miežienė, Gruževskis, 2016). The draft LLC (the Lithuanian Labour Code) approved on 21 June 2016 contained, in addition to other novelties, certain amendments to the types of employment contracts (Miežienė, Gruževskis, 2016).

With the onset of the COVID-19 pandemic and lockdown, the sudden increase in the number of distance workers in various companies and institutions became a serious test. Research in distance work proved that in Lithuania, similarly to Europe about 40% of people on average worked remotely during the pandemic. It must be agreed that the COVID-19 pandemic made it possible to quickly and to a large extent reveal the advantages and disadvantages of distance work in the Lithuanian labour market. Kwon and Jeon (2020) researched that for successful implementation of telework programs, leaders, managers, and supervisors should provide consistent and substantive support for telework programs. For instance, they can develop appropriate legal and policy guidelines to facilitate tools that encourage cooperation, collaboration, and virtual interactions with and among teleworkers who may easily feel isolated due to a lack of interaction with coworkers.

One of the main issues of the contemporary distance work is being aware of requirements of constantly changing life and work, understanding trends of ICT development and managing to apply them for distance work in order to improve working quality. It is often discussed whether distance work keep up with ICT development and make opportunities offered by them? Another important question is, can the variety of work activities be realized in distance way and to what extent is it effective?

The above circumstances make it possible to argue that distance work in SMEs, as the object of research, is specific. On the one hand, the inadequacy of such research is due to the diversity of the concept of distance work, still prevalent in social sciences (distance work, e-work; telework, remote work), on the other hand, the research is encumbered by the fact that the COVID-19 pandemic has not ended and that economic restrictions are still in

place. Moreover, there is a shortage of specific and tested diagnostic tools (research instruments) to assess the changes in distance work and the impact on SMEs in the context of the COVID-19 economic constraints.

The aim of the research is to reveal the characteristics of distance work in small and medium business enterprises of Klaipėda Region in the context of COVID-19.

In order to achieve the goal, the following objectives have been set:

- To specify the concept of distance work;
- To analyse the changes in the nature of distance work under the COVID -19 circumstances;
- To define the specificity of distance work organisation by sector of activity (production, trade, or services);
- To highlight the advantages and disadvantages of distance work and its prospects.

2. Review of phenomenon of distance work

Distance work is a complicated and complex social phenomenon. The practices of recent years as well as research testified to a slow transition from the traditional to distance work organisation. The transition to distance work indicates also profound social and cultural changes that fundamentally modify not only the concept of work organisation but also of work itself. An essential trait of distance work is openness and provision of opportunities to work from different places and at different times. In order to analyse distance work, first of all, we need to look into a range of terms that are used to describe working from various other places than office. *Telework*, as a form of virtual work, involves working away from the office using computer technology to interact and communicate with others. Although the duration of teleworking time can vary, it generally involves working from home or another alternate location for part of a working week, spending the rest of the time in the corporate office. While telework often entails working from home, it also includes working from other remote locations such as a client office, airport, telework centre, or hotel (Golden, 2009). A number of various terms are currently in use to describe e-working, including: *e-worker* (mostly used in the UK), *teleworking* or *teleworker* and *telecommuting* (which originated in North America). All of these refer to the ability to work flexibly using remote technology to communicate with the workplace. Lately, *agile working* has been added to the terminology (Gillies, 2011). Telecommuting involves working solely from home instead of commuting to the office place (Golden, 2009). As defined by Grant et al. (2013), the term *remote e-worker* is used to describe individuals who use technology to work remotely from the main group office at any time or place. The terms like *virtual teamwork*, or *telework*, are most commonly operationalised as the dispersion of workers from their coworkers or teammates, including dispersion across locations, time, and/or organizational boundaries (Gilson, 2015). The term *distance work* refers to paid work that is done outside the actual workplace, such as at home or when travelling on the train, and generally involves use of information technology. By its nature, distance work can also be performed at the workplace. Sullivan (2003) states that homebased telework refers specifically to telework carried out from home and is further categorized based on frequency into regular, alternate and occasional.

The opportunity of working from nearly anywhere and at any time was enabled by an increased reliance upon technology to conduct work activities (Golden, 2009). Arvola et al. (2017) state that on the one hand, telework suits better to experienced employees as working alone is easier compared to less experienced employees and they need less help from the colleagues regarding their job-related issues on the other hand, older people have more challenges with using ICT. Technology has developed to such a degree that a large amount of work can be completed at any time of day or place, thus the terminology may not be quite as important as the actual working practices (Grant et al. 2019). Golden (2009) notes that teleworking and telecommuting involve computers with job-specific software, phones, and other handheld electronic devices as well as and high-speed remote access to corporate databases. Bathini and Kandathil (2019) argue that although as per the dominant discourse telework provides flexibility to employees, often, it is not effective in practice. On the contrary, for firms, telework

provides flexibility in practice; yet, this employer benefit does not figure in the dominant discourse. Distant work can be kind of a tool to solve general unemployment problems. Hunton at al. (2010) after their research reported a positive association between organizational commitment and task performance across the treatment conditions and found that organizational commitment mediates the relationship between the telework arrangements and task performance. Fleetwood (2007) states that one causal factor that has received attention relates to working women. The (slight) changes in social attitudes and recent government attempts to “help” women back into work (driven as much by labour market shortages as a conversion to feminism) have encouraged millions of women to enter mainly part-time paid work. Both organizational adoption and employee participation in telework have a positive relationship with job satisfaction, and these results support the social exchange theory (Kwang at al., 2016). Kwang at al. (2016) also observe that the effects of decoupling of telework on job satisfaction are more significant for female public employees than for male public employees. Mas-Machuca at al. (2016) research findings suggest fostering organizational pride to increase job satisfaction and for companies to have the same proportion of women and men in high levels of responsibility due to problems related with work-life balance.

Remote e-working or distance working is usually associated with the positive effects of improved productivity, flexible approaches to work, a reduction in work-life conflict, and an increase in job satisfaction, many of these being mediated by a reduction in commuting aiding a better balance between work and non-working lives (Grant at all., 2013). Morganson at all. (2010) performed research that showed that main office and home-based workers had similar high levels of work-life balance (WLB) support and job satisfaction. Additionally, main office workers reported the highest levels of workplace inclusion (Morganson at al., 2010). Vitola at al. (2013) performed research in Latvia and research shows that the majority of working age people in cities as well as in rural areas is willing to be involved in telework and people in less populated areas are interested in socializing and networking activities. According to Vitola at al. (2013) smart work remains to be largely urban phenomena.

In Gallancherand and Hossain's (2020) estimation, 41% of jobs in Canada can be done from home and, when weighted by wages, the percentage increases to 51%; Dingel and Neiman (2020) estimate the percentage of jobs that can be done from home in the United States at 37 percent. Vrchota at al. (2019) analyzing telework in Czech companies found out that telework is more used in foreign companies (not specified whether it is a minority or majority share), for instance German companies.

3. Research methodology

The methodological paradigm was based on mixed-method research Creswell, John & Plano Clark, Vicki (2011):

- Paradigm of quantitative research. Quantitative research is characterised by a large bulk of statistical data and employment of standardised procedures; numerical values are assigned to the research objects or their relationships. Quantitative research was applied to verify and confirm the essential features of the research and to substantiate causal connections of the phenomena statistically.
- Paradigm of qualitative research. Qualitative research was used with the purpose of describing the object, obtaining as many as possible diverse data and, based on them, generating ideas and highlighting problems.

The following methods were chosen to solve the research objectives:

- An analysis of scientific literature was performed to reveal the theoretical basis of the research problem; for the purpose, economic and sociological articles and publications on distance work in international scientific journals, databases, and the EU and the Republic of Lithuania documents on distance work regulation were analysed.
- A survey in writing (questionnaire) was used to interview representatives of business entities (SMEs managers and executives) to identify the situation and changes in distance work during the COVID-19 pandemic. (Authors' note: The total questionnaire was composed of four blocks of questions in order to find out: the

information about the company and the changes in its economic activity and work organisation during the COVID-19 pandemic (March to July), the use of business support measures during the pandemic, and the impact of the state aid measures on business. Altogether, 48 structured- type questions were presented, two of them open-ended (including questions about the specific characteristics of distance work, the social- emotional climate in the workplace, etc.).

- The focus group approach (Denscombe, 2007) was used to reveal the diversity of concepts, attitudes, and opinions of the research participants (SME representatives, business association leaders, municipal representatives, and economic experts), reflecting on experiences of distance work. The topics of the focus group discussion were divided into 3 sub-themes, raising key questions: what concerns and difficulties of distance work were faced in the context of the COVID-19 pandemic; what changes had already taken place and what problems still needed to be addressed in order for the situation to change; which aspects of distance work should be given more attention and why; and what priorities could be anticipated in the future. The said topics made it possible to hear the participants' problems and needs as well as to have an in-depth glance and understand the differences in attitudes and opinions of the participants working in different business sectors.

- *Statistical data analysis.* Statistical analysis of the quantitative research data was performed using Rstudio and MsExcel software for statistical data processing.

Research sample, characteristics, and organisation. The sample for the research was selected by a cluster sampling method.

The subgroups of the sample were defined in accordance to:

1. The location of SMEs in terms of municipality (seven municipalities: Klaipėda City, Klaipėda District, Kretinga District, Neringa City, Palanga City, and Skuodas and Šilutė Districts).
2. SME activity sector (manufacturing, trade, or services).

In accordance with the data of the Lithuanian Department of Statistics (*Statistics Lithuania*), on 1 January 2020, 10,427 business entities operated in Klaipėda Region, including 1,041 in the manufacturing, 2,913 in trade, and 6,473 in services sectors.

In terms of the business structure in Western Lithuania, large business enterprises are concentrated in Klaipėda City, Klaipėda Free Economic Zone, and Klaipėda port territory. Somewhat larger concentration of SMEs in Klaipėda City can be accounted for by the fact that Klaipėda is the largest city in the region, the third largest city in Lithuania, and the only national port city, and therefore it provides more business opportunities for companies working with international trade and logistics. Businesses in some individual areas, such as Palanga City and Neringa City, mainly concentrate on tourism and accommodation services and are characterized by seasonality.

The empirical research (a written survey and focus group) was conducted in October-November 2020. The questionnaire was posted on the online platform at: <https://forms.gle/tiyLRhyuteb4F6478> the survey lasted 5 weeks. Focus groups were organised using the Zoom platform.

73 business entities participated in the research (written survey), and seven focus group discussions were held (Klaipėda City, Klaipėda District, Palanga City, Šilutė District, Skuodas District, Kretinga District, and Palanga City) with 61 participants (on average, eight participants in each group). The discussions were recorded; the total recording time was 6 hours. 17 min In the analysis of the data, the recording was listened to several times, transcribed in parts, and the data were systematised in accordance to meaningful units and summarised. The report presented the opinion of the informants and quoted their statements (the language style of the informants had been adjusted, given the norms of the standard language).

The organisation of the research, data analysis, and presentation of the research findings were performed in accordance with the ethical principles of qualitative research recommended by the ICC / ESOMAR (International Code on Market, Opinion and Social Research and Data Analytics) and the Code of Ethics of the Lithuanian Sociological Society.

4. Results

Based on the survey findings (see Fig. 1), the vast majority of business entities had to change their way of operating and work organisation and to adapt to the current situation in one way or another; only a small part (16.4%) of the surveyed companies indicated that they worked as usual, no changes took place, and the work was organised in a routine way.

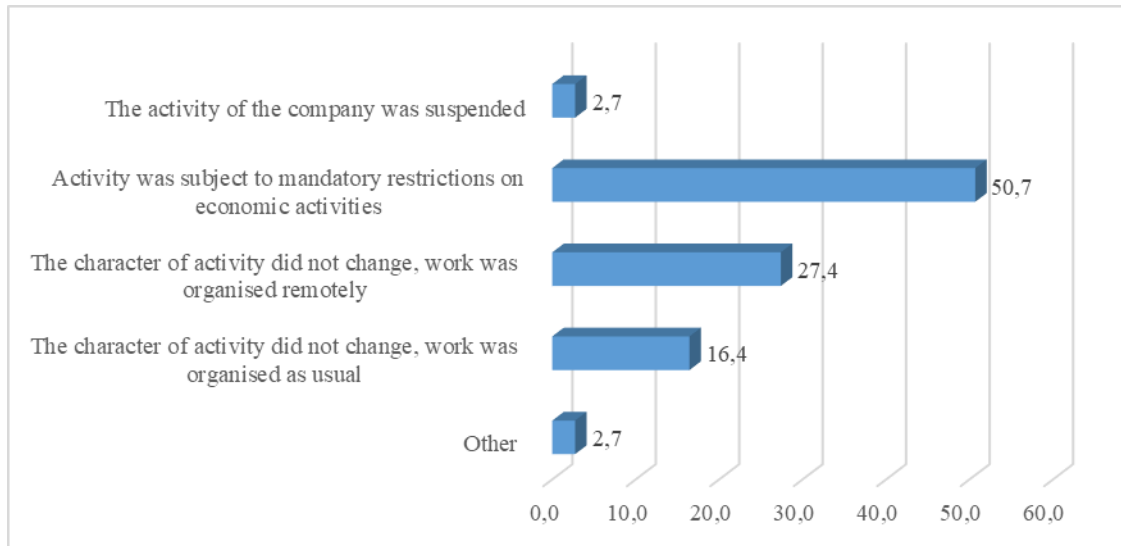


Figure 1. Company's operating situation after the announcement of the COVID-19 pandemic-related lockdown (per cent)

According to slightly more than half (50.7%) of the surveyed respondents, during the pandemic, mandatory temporary restrictions on economic activity were introduced in companies from 16 March, i.e. downtime was declared, some employees were given leave of absence, and some were laid off. However, almost a third (27.4%) of the respondents noted that, during the period in question, the personnel of the company worked completely remotely.

The non-parametric Kruskal-Wallis test (see Table 1) indicated statistically significant distance work-related differences between the sectors of manufacturing, of services where physical contact was required, of services where no physical contact was required, and of trade. Based on the median ranks, we concluded that, in enterprises where physical contact was not required for the provision of services (Mean rank-52.53), more work was done remotely. Interestingly, the workers of the manufacturing company (Mean rank-40.91) also worked remotely quite a lot of time. Since the respondents of the survey were managers or executives of the companies, we presume that they spoke on behalf of the administration, who were probably not directly involved in the production process and for whom the contact with customers / suppliers was not relevant. A similar situation was found in the case of services where physical contact was required: the findings evidenced that the lowest percentage of the personnel working remotely belonged to small and medium-sized trading companies.

Meanwhile, discussions in focus groups revealed that the personnel in the (non-contact) service sector worked remotely more often than those in the trade sector; and in the manufacturing sector, more workers remained in their regular workplaces during the lockdown period and worked remotely the least.

Table 1. Differences in the extent of distance work, depending on business sector

Sector	N	Mean rank	Kruskal-Wallis H	P-value
Production	11	40,91	18,16	0,000
Services where contact is required	34	32,18		
Services where contact is not required	18	52,53		
Trade	10	21,15		

In terms of changes in the nature of work organisation in the surveyed companies, almost 59% of the respondents stated that they all worked remotely to a greater or lesser extent; therefore, we can presume that distance work methods were used not only by the business entities that stated having applied distance work in the company during the Covid-19 pandemic, but also by those that claimed that their work organisation had not changed or that the company had been subject to economic restrictions.

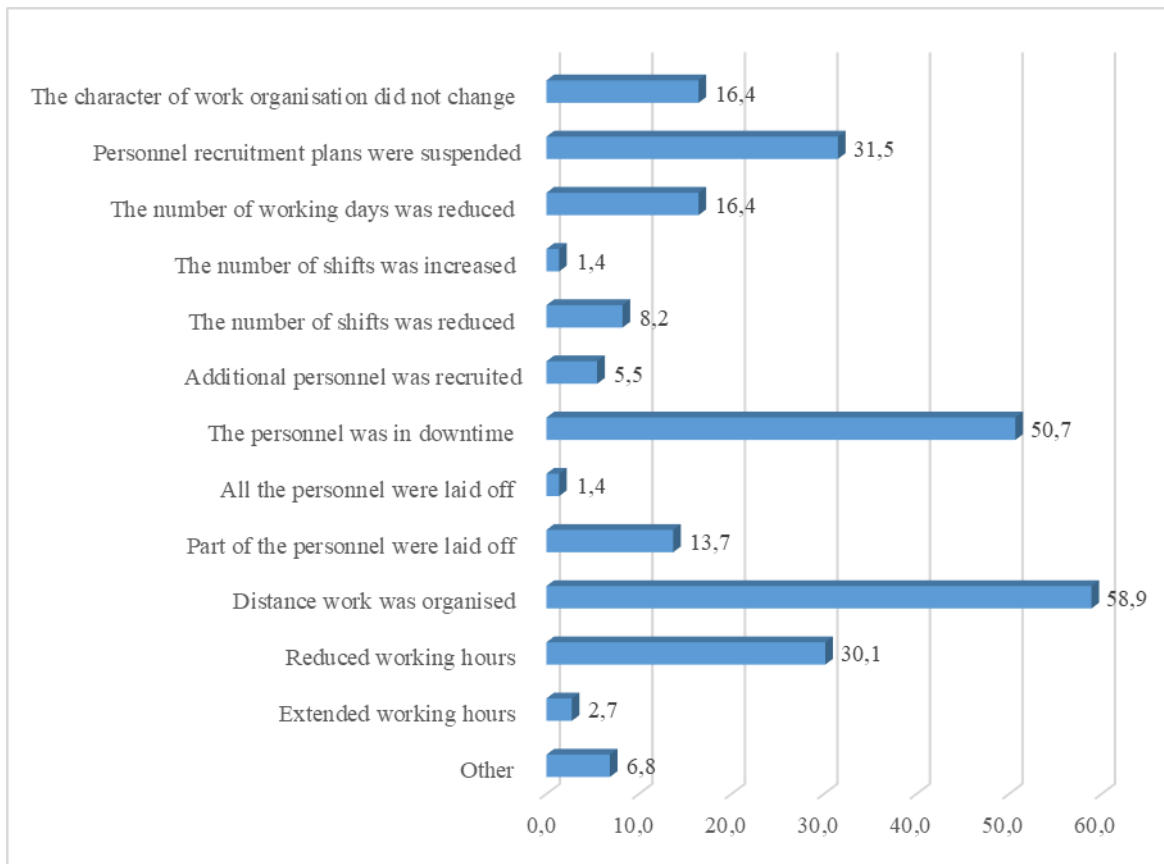


Figure 2. Nature of work organisation in company during the COVID-19 pandemic (per cent).

As indicated by the findings, in order to ensure employee retention and simultaneously to maintain the business, small and medium-sized enterprises used various individual distance work solutions (one third (30.1%) of the business entities reduced contact working hours by changing them to work remotely, 16.4% reduced the number of working days by 4% (i.e. an employee worked remotely for one or more days per week), moreover, the personnel were provided with the necessary technical equipment and trained to use it.

4.1. Advantages and challenges of distance work

Upon introduction of distance work organisation and/or mixed type of work, businesses encountered problems which, according to the participants of the discussions, were twofold: technical / practical and social / emotional. The focus groups interviews revealed that the main difficulties in distance work were related to insufficient / poor competencies required to use IT equipment and software efficiently as well as a lack of necessary equipment. That can be accounted for by the novelty of the elements of the virtual environment for the personnel and by their insufficient knowledge. The second problem in distance work and communication was related to emotional or psychological difficulties, overcoming the fear of ignorance, identification of real and virtual space, and an unusual work environment (i.e. when work moved to a home/family environment).

Table 2. Assessment of the personnel ability to work remotely (per cent)

	Percent
Positive	42,3
More positive	29,6
More negative	14,1
Negative	14,1

Even though most of the representatives of the business entities participating in the quantitative survey evaluated the ability of the personnel to work remotely under changed conditions as generally good and very good (42.3% and 29.6%, respectively), one third of the respondents noted certain shortcomings and assessed it rather poor (14.1%) or poor (14.1%), respectively. The focus group discussions revealed that the personnel often/ more often named the advantages rather than the disadvantages of distance work. The more frequently identified advantages of distance work included: more flexible planning of work and rest time, a greater opportunity to pay attention to family, household, and housework, and the improved quality of life in general. In addition, the participants indicated records of meetings / conversations online (referring to the ZOOM platform) as a useful practice. We can presume that the possibility to view / listen to recordings at any time and as many times as desired (which is convenient because there is no need to take notes) makes the organisation of work activities more efficient. The difficulty in contacting the speaker during a video conference was also named, but that should be treated with caution, as a respondent may not have had sufficient courage to admit failure in dealing with a difficulty. The disadvantages named included the following: some people found it difficult to work from home due to the inability to plan time independently or a lack of self-motivation; it was often difficult to concentrate due to a lack of space in a small apartment, family distraction, the need to adjust to family members, etc. Several participants named work organisation-related problems (the indefiniteness of tasks and deadlines or a lack of activity regulation and coordination).

Table 3. Distance work challenges in small and medium sized enterprises (per cent)

Activity sector	Difficulty in controlling personnel work and performance in remote working	Lack of computer equipment, Internet quality issues, lack of software	Additional costs for training personnel to work from home	Difficulty in personnel communication and cooperation	Difficulties caused by flexible schedules
Production	0%	0%	40,0%	40,0%	20,0%
Services where contact is required	19,4%	9,7%	29,0%	32,3%	9,7%
Services where contact is not required	22,2%	16,7%	22,2%	33,3%	5,6%
Trade	20,0%	0%	40,0%	20,0%	20,0%

Individual discussion participants believed that distance work was sometimes hampered by the individual negative attitudes, emotions, psychological resistance to the current reality, inability to adapt to the current situation, or even the age (older people found it more difficult to master technology). Still others mentioned communication difficulties when working remotely: a lack of consistent / matter-of-fact speaking skills (deviating to emotions), sometimes it was difficult to coordinate the conversation (several people speaking at the same time caused a commotion and made it difficult to hear), it was difficult to intervene, turn taking in discussion was disturbed, etc.).

The analysis of the quantitative survey data by sector of activity revealed that the representatives of the production sector experienced difficulties in communication and cooperation when working remotely (40%); moreover, additional costs were incurred due to training the personnel to work from home (40%); the same figure was indicated by the entrepreneurs from the trade sector (for more details, see Table 2). The situation was the opposite with IT equipment; according to the respondents, there was no shortage of computer hardware or software in all sectors of activity (production, trade, and services), and the Internet network worked well enough / efficiently. Only a small percentage of the business entities in the service sector noted such shortcomings (16.7% of the respondents from contact services and 9.7% from non-contact services). No statistically significant differences were found after applying the variable independence (Chi-square) test (Chi-square = 8.743; $p = 0.725$).

Table 4. Averages in the assessment of changes in distance work in enterprises

To what extent do you agree with the statements on the COVID-19 impact on your company's operation?	Average	St. deviation
Changed/ updated technology	2,15	1,19
Improved skills to use IT equipment/ software	2,38	1,25

The responses about the changes in distance work (medians of assessment) testified to no significant updates and / or changes in technology in SMEs during the COVID-19 pandemic (A-2.15) (see Table 3 and Table 4). When assessing the ability of the personnel to use IT equipment and software (A-2.38), company executives did not notice any significant improvement, they assessed it with reservation (A-2.38).

The research also sought to reveal the correlation between variables, cf. Table 5. No statistically significant correlation was found between the updating of technology and the duration of the company's activity and the company's annual turnover.

Table 5. Correlation between distance work in an enterprise and the duration of the company's activity and the annual turnover.

	Duration of company's activity	Annual turnover
Updated technology	0,036	0,120
Increase in online sales	0,139	,348**
Improved skills of IT equipment/ software use	0,140	,247*

* correlation significant with 0.05 level of significance

** correlation significant with 0.01 level of significance

A statistically significant and direct correlation was established between the improved skills of the personnel to use IT tools / software, the annual turnover of the company, and the increase in online sales and the annual turnover. In other words, the higher the company's annual turnover, the more their online sales grew and the better the personnel's skills in using IT equipment and software were. No correlation existed between the skills of distance work and online sales and the duration of the company's activity.

Importance of social contacts in company was also evidenced by the results of the quantitative research. The median of the assessment of the fear to lose social contacts as a threat to business was rather low (A-4,12), i.e. in

the fourth place after the assessment of the impact of the global economic downturn (A-4.26), the negative effects of the pandemic in general (A-4.23), and the threat of a new wave of COVID-19 (A-4, 14) (see Table 6).

Table 6. COVID-19-caused threats to the business environment

To what extent do you agree with the statements on the COVID-19 impact on your company's operation?	Average	St. deviation
Negative financial impact of the pandemic	4,23	0,72
Impact of the global economic downturn	4,26	0,69
Decrease in labour productivity	3,77	0,99
Decrease in consumption	3,85	0,95
Fear of losing social contact	4,12	0,88
Supply chain disruptions	3,81	0,94
Fear of infection	3,97	0,93
A new wave of COVID-19	4,14	0,80
Cyber security risks	3,60	0,88
Ability to efficiently work remotely	3,23	0,99
Increased business costs due to the adjustment of workplaces	3,90	0,96
Lack of prompt information	3,70	1,00
Lack of state aid measures for business	3,64	1,23
Inefficiency of state aid measures for business	3,62	1,11

Regarding the lack of social communication (in other words, social exclusion), which negatively affected the personnel emotions and general condition, the findings of the research revealed that the company executives and administration made a great effort to compensate for it (see Table 7).

Table 7. Action of the company executives / administration to support the personnel in the context of changed working conditions

To what extent do you agree with the statements on informing the personnel about the changes in working conditions?	Average	St. deviation
We explained to the personnel the possibilities of state support and measures and the mechanism of their operation	3,59	0,97
We consulted and trained the personnel to work remotely	3,11	1,25
We reminded the personnel of the rules of hygiene to prevent infection	4,34	0,80
We informed about travel restrictions (changes in business trips and / or work in another country)	3,90	1,17
We shared information about the current situation and possible business change plans	4,01	0,96
We tried to maintain a positive emotional work climate	4,27	0,79

The managers and executives of the SMEs argued that not only did they take care of the health of the personnel (regarding hygiene rules, keeping a safe distance, use of protective equipment, etc.), but also regularly shared information about the current situation and possible business change plans with them (A-4.01). Accordingly, a large number of business entities tried to maintain a positive emotional climate in workplaces (A-4.27); the executives were concerned about the psychological state and mood of the personnel. The qualitative research, i.e. the focus group participants, confirmed the statistical facts that it was important for the executives and administration to share information with the personnel, to maintain their emotional stability, to manage or, in other words, to reduce the resulting psychological stress in companies, etc. Thus, a business representative in the catering sector said: "It was scary because of the drop in the income, we had to readjust promptly, and that period in our catering company was associated with emotional stress. We communicated with the personnel, and first of all tried to overcome the emotional and psychological difficulties". According to another respondent, "The people experienced fear about the future, income security, fear of losing a job, and fear of getting sick." Efforts to maintain a positive emotional climate in the workplace were significantly more important (A-4.27) than, e.g.,

training the personnel to work remotely (A-3.11), explaining state support measures (A-3.59), or sharing information about possible changes in business plans (A-4.01) (for more detail, see Table 7).

The analysis of the correlations and the application of the Kruskal-Wallis criterion did not reveal any significant differences between the measures taken to inform the personnel and the company's sector of activity (see Table 8).

Table 8. Personnel information dependence on/ differences in by company's sector of activity

	Sector	N	Mean ranks	Kruskal-Wallis H	P-value
We explained to the personnel about the opportunities of the state support and measures and the mechanism of their operation	Production	11	27,86	3,44	0,33
	Services where contact is required	34	39,07		
	Services where contact is non-required	18	40,31		
	Trade	10	34,05		
We consulted and trained the personnel to work remotely	Production	11	39,64	6,86	0,07
	Services where contact is required	34	33,91		
	Services where contact is non-required	18	46,42		
	Trade	10	27,65		
We reminded employees of the rules of hygiene to prevent infection	Production	11	33,23	1,64	0,65
	Services where contact is required	34	40,00		
	Services where contact is non-required	18	34,33		
	Trade	10	35,75		
We informed about travel restrictions (changes in business trips and / or work in another country)	Production	11	40,77	0,46	0,92
	Services where contact is required	34	36,46		
	Services where contact is non-required	18	36,33		
	Trade	10	35,90		
We shared information about the current situation and possible business change plans	Production	11	32,14	2,63	0,45
	Services where contact is required	34	40,78		
	Services where contact is non-required	18	34,36		
	Trade	10	34,25		
We tried to maintain a positive emotional work climate	Production	11	29,27	5,45	0,14
	Services where contact is required	34	41,76		
	Services where contact is non-required	18	36,78		
	Trade	10	29,70		

4.2. Distance work as a priority area in the future

The research testified to most small and medium-sized businesses having been quite successful in overcoming technological difficulties that had seemed serious from the outset. During the focus group discussion, some business representatives indicated that they would prefer to work remotely in the future, while others were willing to combine distance and face-to-face work (mixed work organization) (note: more representatives from the services than from the business sector were willing to work remotely).

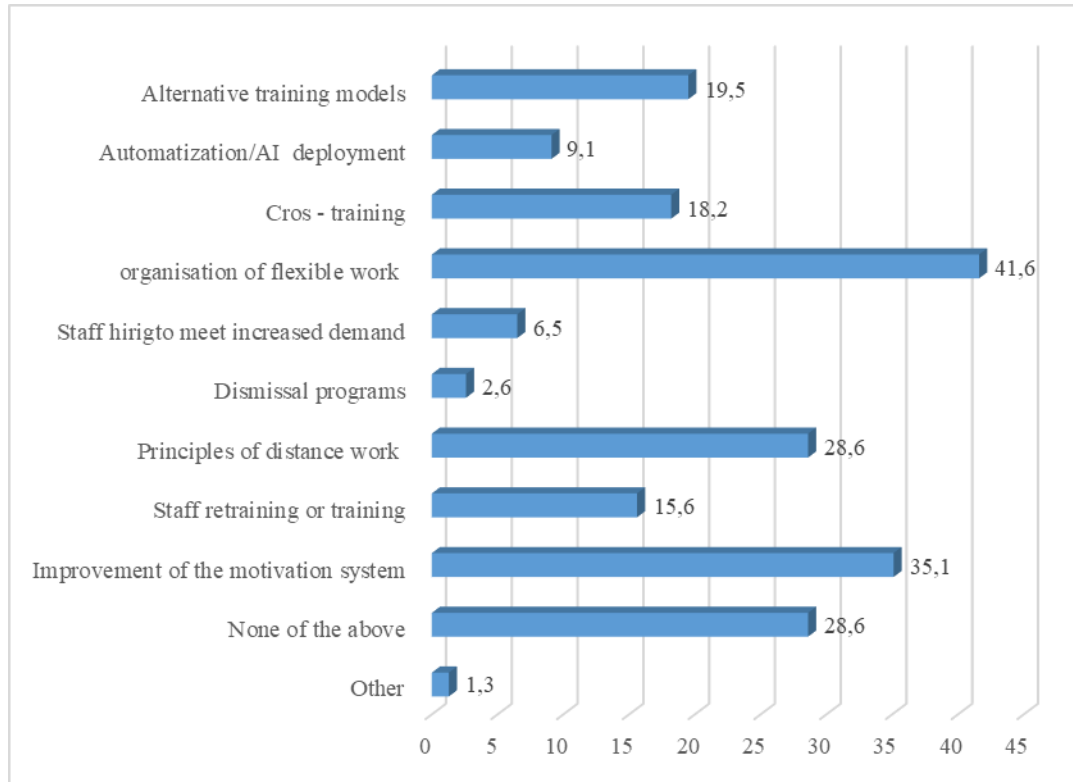


Figure 3. Priorities set by companies for the period of the next three to six months

The quantitative research revealed (see Figure 3) that the executives of business entities identified the following priority areas for the next three to six months: organisation of flexible work (41.6%), improvement of the motivation system at work (35.1%), and introduction of distance work principles (28.6%). The organisation of flexible work was closely linked to the enabling of distance work in companies, and one of the components of the motivation system was likely to be flexible working practices.

Moreover, focus group discussions highlighted the importance of investment (with the state providing support in the area as well) in new IT tools focused on the business of the future: "to invest in tools that allow distance work and to offer new innovative services". It should be added that the development of new and innovative services is also impossible without new IT technology. As priority areas for business support, the participants of the focus groups identified the enabling of distance work: "It is not known how long the second lockdown will last and what its impact on the company's operations will be, therefore, support for the creation of distance workplaces is important (i.e. computer mobile workstations – the equipment and coverage of the Internet services). In addition, the representatives of the businesses believed that the development of the personnel's IT knowledge and skills created proper preconditions for distance work: that would contribute to opening up new opportunities through a variety of online work organisation media. The choice of the most suitable distance work methods, the ability to combine work and leisure, to control the work independently, and to increase the internal motivation created preconditions for more efficient distance work in the future.

Discussion and conclusions

Distance work can be evaluated in very different ways. Working from home or anywhere may cause various problems, and not all the personnel will react to the same situation in the same way. Leonardi et al. (2010) found

out that individuals using the same communication tool may experience different degrees of perceived distance. Eckhardt et al. (2019) in their research established that quite a few companies did not appear to fully appreciate the consequences of the operation of virtual workers, especially the blurring of the boundaries between their professional and private lives. Moreover, in other studies, distance work associated with poor general condition, workplace pressure, and communication overload, all of which might lead to over-working able to subsequently affect job performance and effectiveness (Barber, Santuzzi, 2015). Suci (2020) noted that the emergence of COVID 19 had created new challenges for cybersecurity and information security risk management.

Due to the COVID-19 pandemic, many teams who had enjoyed the benefits of working in the same physical space became virtual teams overnight. Teams dealing with an unplanned transition to distance work needed help, especially with accomplishing work that required interdependent, coordinated effort (Bendaly, 2020). Sanjeewa (2020) argued that team leaders needed to understand how trust and psychological safety were fostered and maintained in their teams. They needed to take care not to stifle the informal aspects of teamwork. Burrell (2020) believed that managers needed to keep reminding members of the team of the need to adapt and change roles and responsibilities. According to Sanjeewa (2020), team leaders had to ensure the possibility for team members to approach them with proposals or concerns. Teams usually had preferences about how quickly members had to respond and which modes of communication should be used (Bendaly, 2020).

Dixon and Panteli (2010) observed that teams could actually use technology-mediated communication to bridge discontinuities (e.g. internal or organisational differences) among team members. Brown et al. (2020) stated that, unlike prior experimental studies that focused on the detrimental effects of computer-mediated communication, modern technologies were often used to enable team functioning. The technology used for communication in a virtual team needed to provide as many types of media as possible to facilitate timely communication and foster bonds within the team to allow for work to be done effectively and with positive participation (Sanjeewa, 2020). Bunce, Wright and Scott (2018) indicated that quite a few workplaces had adopted new technological tools designed to facilitate communication among team members, such as Slack or Microsoft Teams. According to Laitinen and Valo (2018), those tools, along with other traditional means of communication (e.g. e-mail or instant message), allowed teams with an equivalent degree of objective dispersion to vary greatly in the ways in which their members interacted. Thus, two teams performing the same task with members who were equally dispersed could use a different combination of tools and experience dramatically different levels of virtuality.

The expectations of business executives in Western Lithuania and Klaipėda Region regarding distance work were basically in line with the traditions of the developed European countries and were justified, especially in the context of the EU Digital Agenda and the European Green Deal. The personnel who had tried to work remotely saw more of its advantages than disadvantages. In addition, the advantages of distance work were essential: it enabled working people to pay more attention to their families and household chores and improved the quality of life. Meanwhile, most of the negative aspects of distance work were related to the issues of communication, organisation, and technology and could be easily addressed by providing the personnel with appropriate tools and paying sufficient attention to communication and the methodology and organisation of distance work.

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THE SUSTAINABLE DEVELOPMENT OF TRANSPORT ENTERPRISES IN THE CONTEXT OF MACROECONOMIC CONDITIONS. THE CASE OF CENTRAL AND EASTERN EUROPEAN COUNTRIES

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Abstract. The issue of sustainable development is critical in globalization, the rapid growth of the industry, technological progress, and climate change. Sustainable development is the realization of economic, social, and environmental goals. It requires all actors of socio-economic life, including enterprises, organizations, institutions, and countries. Sustainable development of an enterprise means improving the financial and property situation while taking care of employees and local communities' health and development and taking action to protect the natural environment. This paper aims to assess the impact of macroeconomic conditions on the sustainable development of transport enterprises in Central and Eastern European Countries (CEECs) in the period from 2008 to 2018. The selection of transport enterprises for the research sample is related to their high impact on economies in the analyzed countries, their significant negative impact on the natural environment. Moreover, transport enterprises play a vital role in the development of other economic sectors. The authors discuss the fundamental theoretical issues related to enterprises' sustainable development and the research result conducted in CEECs. The study results indicate a statistically significant relationship between the indicator of sustainable development and the hand of the macroeconomic condition in all analyzed countries. The highest correlation was observed in Romania, Hungary, and Slovenia, while the lowest in Croatia. The story of socio-economic development in surveyed countries plays a fundamental role in achieving sustainable development of transport enterprises.

Keywords: macroeconomic conditions; sustainable development; transport enterprises

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JEL Classifications: D22, E10, Q56

Additional disciplines ecology and environment

1. Introduction

The concept of sustainable development of enterprises, based on a triad of economic, social, and environmental objectives - with particular emphasis on a long-term approach to protecting natural resources - seems crucial in all branches of the modern economy. Also, in the case of the transport industry, which is the fastest-growing sector from the perspective of the consumption of energy and the production of greenhouse gases (GHGs) in the European Union, competing enterprises must face the challenge to behave in an environmentally sustainable and socially responsive manner while creating and increasing shareholder's wealth. The sustainable development of transport enterprises depends on several factors, external and internal. External factors include macroeconomic conditions, implemented environmental policy, climate and economic trends, the level of social and ecological awareness, technical and technological infrastructure. The internal states have the enterprise's financial and property situation, environmental awareness, implemented environmental policy.

This paper is theoretical and empirical. The theoretical part describes selected problems of sustainable development of enterprises. The practical piece of this paper contains the results of the research (an econometric model of the influence of macroeconomic conditions on the sustainable development of enterprises, estimated by the Least Square Method). This paper aims to assess the impact of macroeconomic conditions on the sustainable development of transport enterprises in Central and Eastern European Countries (CEECs) in the period from 2008 to 2018.

The authors focus on a sample of transport enterprises from CEECs, which are also members of the European Union (EU). These countries share a common history, location, and similar level of socio-economic development. Macroeconomic conditions are associated with a political transformation, integration with the EU, and the development of the global economic system.

The selection of transport enterprises for the research sample is related to their high impact on economies in the analyzed countries and significant negative impact on the natural environment. Moreover, transport enterprises play a vital role in the development of other economic sectors.

2. Sustainable development of enterprise - theoretical background

The term "sustainable development" comes from the concept of "sustained yield" – the seventeenth doctrine that postulated to hand woodlands undiminished to future generations (Duerr 1975). As noticed Grober (2007), in 1713, Hanns Carl von Carlowitz, head of the Royal Mining Office in the Kingdom of Saxony, introduces the expression "nachhaltig" to meet the challenge of a predicted shortage of timber, the critical resource of the time. Afterward, the concept of sustainable development has evolved considerably, expanding its scope to environmental protection and socio-economic matters.

In 1980, the International Union for the Conservation of Nature, under the UN-General Secretary's patronage, published the declaration entitled "Living Resource Conservation for Sustainable Development." It was the first international document on living resource conservation produced with inputs from governments, non-governmental organizations, and other experts (IUCN 1980). In 1987 the term "sustainable development" gained prominence in the report "Our Common Future," published by the World Commission on Environment and Development (that is also commonly known as the Brundtland Report). According to the Brundtland Commission, sustainable development "meets the needs of the present without compromising future generations' ability to meet their own needs" (World Commission on Environment and Development 1987). Five years later, modern optics for mentioned issues entered the global stage during the 1992 "Earth Summit" in Rio de Janeiro, with the idea of – among other things - saving "blue planet." Another international organization - OECD -

identifies this phenomenon as "seeks to balance the economic, environmental, and social dimensions of development in a long-term and global perspective. It implies a broad view of human welfare, long term perspective about the consequences of today's activities, and the full involvement of civil society to reach viable solutions" (OECD 2000).

Over the last quarter of a century, a wide range of theoretical approach to sustainable development has evolved - with several meanings (Gatto 1995; Paehlke 2005; Blewitt 2008; Ciegis 2009; Barbosa et al. 2014; Moore 2019) and no consensus on its purpose, undertaken activities and the effects of these activities. The idea of sustainable development is still flexible and open to interpretation (Prugh, Assadourian 2003; Pieloch et al. 2020).

Regardless of whether researchers are more focused on ecological roots or the prism of economic or social issues, sustainable development based on three crucial components: economic growth, social equity for meeting the needs of today's generation, and environmental protection for the ability to meet today's and future generation's needs (Behrends et al. 2008; Pieloch et al. 2020; Verga Matos et al. 2020). Fig. 1 shows the general concept and the principles of a modern view on sustainable development.

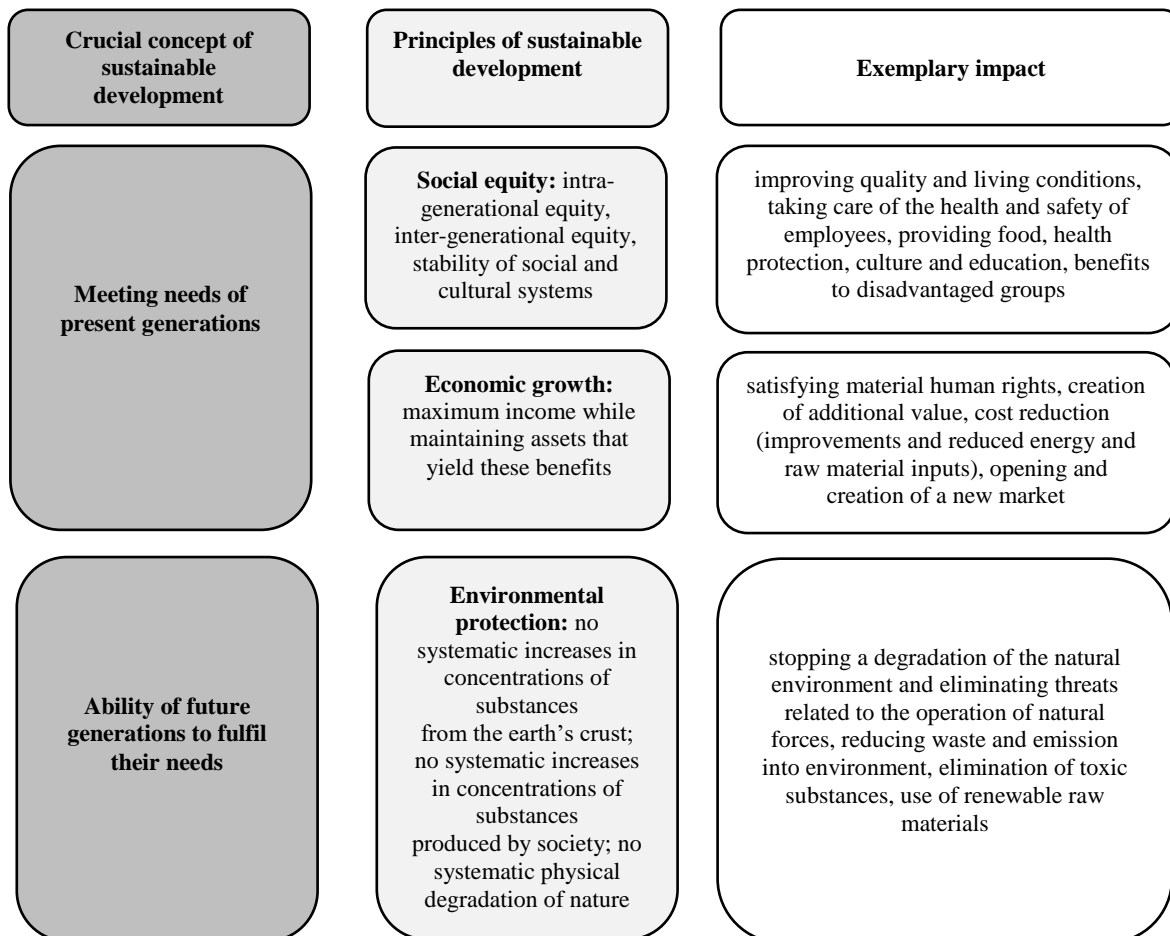


Fig. 1. The general concept and the principles of modern view on sustainable development.

Source: own study based on: Behrends et al. (2008); Ciegis, Zeleniute (2008); Gonzalez-Cabezas et al. (2018).

Sustainable development is one of the critical challenges for modern enterprises. As stressed Weidinger (2014), "without sustainable organizations, there is no sustainable development; thus, no future." The forces behind sustainable development influence the strategic playing field for business, including rapid technology development, new economic life in formerly stagnant political systems, or and rampant globalization in many industries (Hedstrom et al. 1998). International Institute for Sustainable Development (1992) takes the view that "if sustainable development is to achieve its potential, it must be integrated into the planning and measurement systems of business enterprises."

Considerations as to whether firms have social or environmental responsibility beyond shareholder wealth maximization have a long history (Joshi, Lee 2016), starting with Bowen (1953), Davis (1960), Friedman (1970). The concept of sustainable development has become an important driving force in how business operations are carried out on capital markets and a determination emphasizing the pro-social sense and nature of an enterprise's activity. Because the direct motive for establishing an economic entity is the desire to meet broadly understood social needs, the managerial staff, striving to achieve a satisfactory level of productivity, profitability, product quality, economic growth, value-added, return on investment, cannot forget about: welfare, respect of human rights, health protection, social security, employee satisfaction and, on the other hand, reduction of emissions and pollution, smart use of resources, biodiversity, security ecosystems, protection of natural resources, recycling, the use of environmentally friendly production (Grudzewski et al. 2010; Grabara et al. 2015; Andryashina, et al. 2020; Abdi et al. 2020).

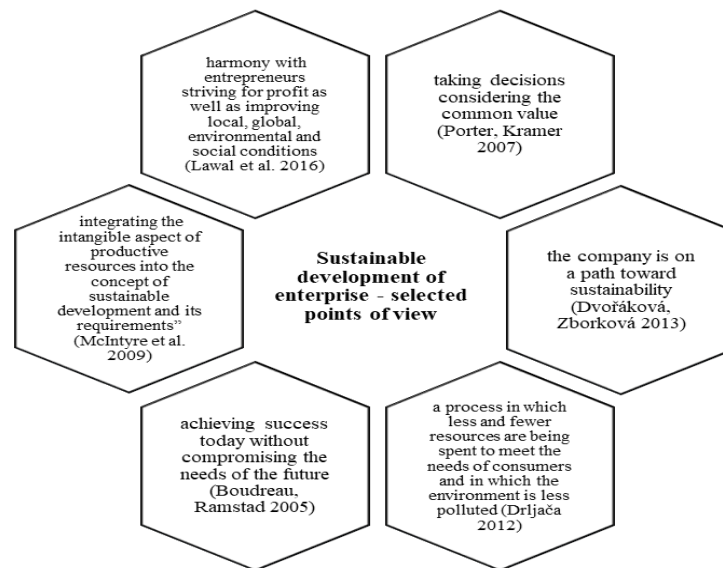


Fig. 2. Selected approaches to enterprise sustainable development defining

Source: own study based on: Porter, Kramer (2007); Dvořáková, Zborková (2013); Drljača (2012); Boudreau, Ramstad (2005); McIntyre et al. (2009), Lawal et al. (2016).

There is no universally accepted definition of sustainable development of enterprise (Fig. 2). What is more, researchers often link this concept with terms of: "corporate sustainability," "sustainability-driven entrepreneurship," or "sustainable-minded entrepreneurship" (Majid et al. 2012; Gagnon 2012; Del Giudice et al. 2020). According to the International Institute for Sustainable Development, it "means adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing the human and natural resources that will be needed in the future."

Oželienė (2017) defines this category as “a holistic approach of thinking of business which seeks to integrate consideration of the three aspects of sustainability – social, environmental and economical.” However, individual researchers incorporate all sustainability dimensions (social, economic, ecological) into the subject matter with different emphasis. Crals and Vereeck (2004) underline that a fundamental principle of sustainable entrepreneurship involves businesses inculcating the consciousness to continually demonstrate ethical behavior and contribute to economic development while simultaneously ushering an era of improvement in the overall well-being of employees, their families, and the society at large. On the contrary, Witkowski (2010) points out that the environmental aspect seems to be the most important, probably because the non-renewable resources are the most substantial barrier to sustainable development.

The sustainable development of enterprises depends on several factors. Research results indicate the importance of external and internal conditions (Misztal, Kowalska 2020). External conditions include the level of socio-economic development, legal, environmental regulations, membership of countries in international organizations related to environment conservation, financial and institutional support for pro-ecological activities, and ecological awareness. Internal conditions include financial and property situation of enterprises, profitability, financial liquidity, productivity, environmental awareness of the management staff, type of business activity, accumulated human capital, innovation (Lorenc, Sorokina, 2015; Misztal, 2019).

Macroeconomic conditions create opportunities for enterprises and set requirements and restrictions for them. A higher level of macroeconomic development is associated with greater access to knowledge, a better-educated society, and a higher awareness of the negative impact of economic activity on the natural environment. It seems to us that the more economically and socially developed countries are, the more significant pressure on companies to comply with standards in the care of the social environment and social issues.

3. Sustainable development of transport enterprises – selected problems

Concerning the more empirical studies focused on sustainable development of enterprises conducting activities in the transport sector, it is noticeable that investigators analyze the mentioned issues from a different context. As evidenced by Gudmundsson (2004), two major approaches to sustainable development in transport can be distinguished: the first one, that deal with sustainability (with concerns only for the future generations), and the second one - which tackle sustainable development (with concerns for both present and future generations). In this paper, special attention has been focused primarily on the results of research from recent years.

Generally, it is worth emphasizing the lack of broader research on macroeconomic conditions of the sustainable development of transport enterprises, such as the country's economic development, macroeconomic stability, the stability of legal regulations, and support for pro-ecological activities, ecological awareness of people. From this perspective, mainly interest seems to be research carried by Mihai et al. (2019), who test holistically whether the transport sector is heading away from or towards sustainability in a panel of 35 countries in the reference period 1994-2014. They add to the literature new insights concerning the relationship between gross domestic product and various aspects of transport sustainability (such as carbon footprint, carbon intensity, or transport safety). Misztal (2019) devotes her research to the statistical analysis of Polish transport companies' sustainable development. The study results made it possible to assess that the sustainable development of transport companies in 2009-2015 takes place, and – what is more – this development is more rapid compared to the average development of the entire enterprise sector.

One of the biggest problems and the most important things is measuring sustainable development because indicators are crucial to understanding the complexity of environmental, economic, and social actions undertaken to achieve development goals (White et al. 2019; Fried 2020; Winter, Stephan 2020). Thus, there are noticeable numerous empirical studies on transport sustainability indicators (Gudmundsson 2004; Litman 2009; Castillo,

Pitfield 2010; Andersson, Forslund 2018; Kochov et al. 2020; Nazam et al. 2020). Oberhofer and Fürst (2013), using their model based on an extensive literature review, gather evidence that although decision-makers' attitudes have a significant influence on the companies' actual environmental performance, firm size, and sector affiliation show a more significant contribution. Moreover, they prove that attitude and environmental behavior scored slightly lower among transport companies than in other industries. Next year, Oberhofer and Dieplinger (2014) prove that many companies in the transport sector seem to lack environmental measures. They explained it in two ways: firstly, transport companies seldom face direct end-user contact and are lagging with implement and communicate sustainable behavior; secondly – many enterprises realize that sustainable performance is not always a "necessary evil" but can result in an added value in the long run.

Various studies focus their attention on the narrow "sub-areas" of the transport sector. For example, Behrends et al. (2008) present a definition of sustainable urban freight transport and develop a spectrum of measures detailing it, consisting of two levels of indicators: impact ratios that describe how the urban freight transport violates the principles of sustainability and, on the other hand, performance ratios which provide specific different categories determining the characteristics and performance of the urban transport system. Rai et al. (2018) propose a comprehensive indicator approach to manage sustainable urban freight transport from a local authority perspective. The underlined set of factors develop not only the three conventional pillars of sustainable development (which include: social, environmental, and economic considerations) (Arvidson et al., 2013). Eventually, Bask et al. (2018) examine the role of environmental sustainability in transport operations in Shipper-Logistics Service Provider. Their findings indicate that globally-operating transport companies are particularly interested in environmental issues, and it is caused partly due to the external pressures and partly because they see the greening of transport as a potential source of competitive advantage. On the other side, on account of the lack of widely accepted methods for measuring the environmental impact of transports, these enterprises cannot easily share the costs and benefits of environmental initiatives between supply chain members nor use such initiatives as marketing arguments to differentiate their offerings.

3. Methodology of the research

The research has been conducted on a sample of transport enterprises from Central and Eastern European Countries (data come from Eurostat), which are members of the European Union. Considering this, we focus on the eleven countries, including Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, and Slovenia. These countries have a similar geographical location, a shared history, and a similar socio-economic development level.

The authors focus on transport enterprises for the research sample due to their immense importance for analyzing countries' enterprise and economic development. Not without significance is the fact that transport companies harm the environment. Moreover, transport enterprises play a vital role in the development of other economic sectors.

The research's main aim is to assess the impact of macroeconomic conditions on the sustainable development of transport enterprises in Central and Eastern European Countries (CEECs) in the period from 2008 to 2018. In connection with this, the hypothesis is formulated as follows:

"Macroeconomic conditions have a statistically significant impact on the sustainable development of transport enterprises in Central and Eastern Europe in the period from 2008 to 2018".

Assumption:

- macroeconomic condition is one of the critical factors influencing the social and ecological investments of transport enterprises,
- macroeconomic conditions play a vital role in the development of enterprises in developing economies,

- the analysis discusses the impact of one factor; it should be noted that sustainable development depends on several internal and qualitative variables (this is a fundamental limitation of the study).

We also formulate the sub hypotheses as follows:

- H_1 : “The indicator of sustainable development of enterprises (SD_{TE}) in the Central and Eastern European countries shows the positive dynamics in the period from 2008 to 2018.”

Justification for the H_1 hypothesis: the positive trend of sustainable development of transport companies is the result of actions and legal regulations in the field of nature protection, increased customer awareness, and the development of new technologies,

- H_2 : “The indicator of macroeconomic conditions (M_i) in the Central and Eastern European countries shows the positive dynamics in the period from 2008 to 2018.”

Justification for the H_2 hypothesis: the improvement in macroeconomic conditions is mainly due to the recovery from the economic slowdown and the global economic upturn,

- H_3 : “The highest average value of the indicator of sustainable development of transport enterprises (SD_{TE}) shows in countries with the highest average value of macroeconomic conditions (M_i).”

Justification for the H_3 hypothesis: a higher level of socio-economic development leads to enterprises' faster sustainable development.

To verify our research hypothesis, we use the Pearson correlation coefficient and Ordinary Least Squares (OLS) because it is the most common estimation method for linear models (our model satisfies the OLS assumptions for linear regression). Our research consists of four stages (Fig. 3).

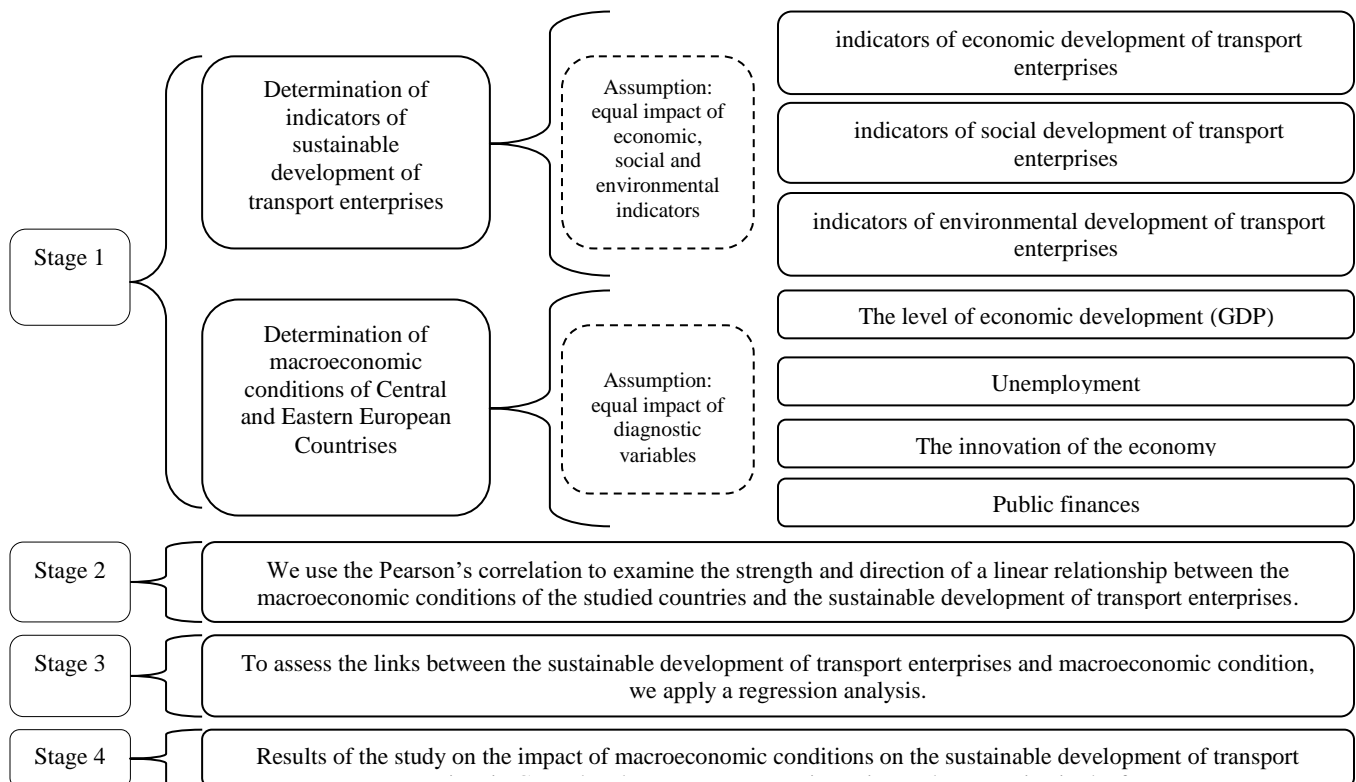


Fig. 3. Research methodology

Source: own study.

First, we form a indicator of sustainable development of transport enterprises and a indicator of the macroeconomic condition in Central and Eastern European Countries, a sum of standardized sub-indices. We conduct the preliminary analysis of variables in terms of the degree of correlation to eliminate those containing

repeated information. As the threshold value, we adopt the Pearson correlation coefficient at $|0,75|$ (Dziekański, 2017). The selection of variables base on the literature, as well as results from the data availability.

To calculate the indicators of economic, social, and environmental development of transport enterprises (SDTE), we use 25 explanatory variables, which have met the statistical, substantial, and formal criteria (Table 1). To calculate SDTE, we use the following formula:

$$SD_{TE} = ED_{TE} + SOD_{TE} + ENVD_{TE} = y_1 + \dots + y_8 + y_9 + \dots + y_{18} + y_{19} + \dots + y_{25}$$

where: ED_{TE} is the indicator of economic development of transport enterprises; SOD_{TE} means the indicator of social development; $ENVD_{TE}$ is the indicator of environmental development; y_1, \dots, y_{25} - diagnostic variables

Table 1. Diagnostic variables used in the indicator of sustainable development of transport enterprises (SD_{TE})

index	Diagnostic	Description of the variable	Stimulant	Destimulant
index of economic development (ED_{TE})	y1	Transport enterprises- number	x	
	y2	Turnover or gross premiums [million euro]	x	
	y3	Production value [million euro]	x	
	y4	Value added at factor cost [million euro]	x	
	y5	Gross operating surplus [million euro]	x	
	y6	Total purchases of goods and services [million euro]	x	
	y7	Gross investment in tangible goods [million euro]	x	
	y8	Investment rate (investment/value added at factors cost) [%]	x	
index of social development (SOD_{TE})	y9	Personnel costs - million euro		x
	y10	Wages and Salaries [million euro]	x	
	y11	Social security costs [million euro]	x	
	y12	Employee- number	x	
	y13	Turnover per person employed [thousand euro]	x	
	y14	Apparent labour productivity [thousand euro]	x	
	y15	Gross value added per employee [thousand euro]	x	
	y16	Share of personnel costs in production - percentage		x
	y17	Growth rate of employment [%]	x	
	y18	Investment per person employed [thousands euro]	x	
index of environmental development ($ENVD_{TE}$)	y19	Carbon dioxide emission [tons]		x
	y20	Methane emission [tons]		x
	y21	Nitrous oxide emission [tons]		x
	y22	Sulphur oxides emission [tons]		x
	y23	Carbon monoxide emission [tons]		x
	y24	Nitrogen oxides emission [tons]		x
	y25	Amonia emissions [tons]		x

Source: own study based on Eurostat [<https://ec.europa.eu/Eurostat>], access: 02.05.2020.

To calculate the indicators of macroeconomic conditions (M_i) in the Central and Eastern European Countries we use the following formula with 12 explanatory variables:

$$M_i = x_1 + \dots + x_{12}$$

where x_1, \dots, x_{12} are diagnostic variables.

We want to create a simple and transparent measure that refers to such key areas as the level of economic development, the level of unemployment, the innovation of the economy, and public finances (Table 2).

Table 2. Diagnostic variables used in the indicator of macroeconomics condition (M_i) in the Central and Eastern European Countries

index	Diagnostic	Description of the variable	Stimulant	Destimulant
index of macroeconomic conditions	x ₁	GDP [million euro]	x	
	x ₂	Production [%]	x	
	x ₃	Unemployment rate [%]		x
	x ₄	HICP [%]		x
	x ₅	Government deficit/surplus		x
	x ₆	Current account balance percentage of GDP	x	
	x ₇	Labour productivity and unit labour costs	x	
	x ₈	Final consumption expenditure of households and non-profit	x	
	x ₉	Exports of goods and services	x	
	x ₁₀	Imports of goods and services		x
	x ₁₁	External balance of goods and services	x	
	x ₁₂	R&D expenditure	x	

Source: own study based on Eurostat [<https://ec.europa.eu/Eurostat>], access: 02.05.2020.

Then, we transform the explanatory variables to unify their measuring scales using the following formulas (Szandula 2014):

— for the stimulants:

— for the enterprise sustainable development indicator:

$$z_{ij} = \frac{y_{ij} - \min_i\{y_{ij}\}}{\max_i\{y_{ij}\} - \min_i\{y_{ij}\}}, z_{ij} \in [0; 1];$$

— for the macroeconomic indicator:

$$z_{ij} = \frac{x_{ij} - \min_i\{x_{ij}\}}{\max_i\{x_{ij}\} - \min_i\{x_{ij}\}}, z_{ij} \in [0; 1];$$

— for the destimulants:

— for the enterprise sustainable development indicator:

$$z_{ij} = \frac{\max_i\{y_{ij}\} - y_{ij}}{\max_i\{y_{ij}\} - \min_i\{y_{ij}\}}, z_{ij} \in [0; 1].$$

— for the macroeconomic indicator:

$$z_{ij} = \frac{\max_i\{x_{ij}\} - x_{ij}}{\max_i\{x_{ij}\} - \min_i\{x_{ij}\}}, z_{ij} \in [0; 1].$$

where: z_{ij} stands for the normalized value of the j -th variable in the i -th year; x_{ij} is the value of the j -th variable in the i -th year; $\min_i\{x_{ij}\} / \min_i\{y_{ij}\}$ is the lowest value of the j -th variable in the i -th year; $\max_i\{x_{ij}\} / \max_i\{y_{ij}\}$ is the highest value of the j -th variable in the i -th year.

To calculate the indicator of sustainable development of transport enterprises (SD_{TE}), as well as its sub-indices (ED_{TE} , SOD_{TE} , and $ENVD_{TE}$), and the macroeconomic condition indicator (M_i) we assume the same impact of different indices on the aggregate measure. We use the following formula:

$$SI_i = \frac{1}{n} \sum_{j=1}^n z_{ij}, (i = 1, 2, \dots, n)$$

where: SI_i stands for the indicator in the i -year; n is the number of metrics; others as above.

In the next step, we examine the strength and direction of a linear relationship between the macroeconomic conditions of the studied countries (M_i) and the sustainable development of transport enterprises (SD_{TE}). To do this, we use the Pearson's correlation coefficient given by the formula (Ahlgren et al. 2003; Asuero et al. 2006; Engle 2009):

$$r_{xy} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}}, \quad r_{xy} \in [-1; 1]$$

where: r_{xy} stands for the Pearson's correlation coefficient; n is the sample size; x_i, y_i are the individual sample points indexed with i ; \bar{x}, \bar{y} are the sample means. In order to provide details concerning the correct interpretation of correlation results, we adopt the ranges of correlation strength that were suggested by Evans (1996): $|r_{xy}| = 0$ – no correlation; $0 < |r_{xy}| \leq 0.19$ – very weak; $0.20 \leq |r_{xy}| \leq 0.39$ – weak; $0.40 \leq |r_{xy}| \leq 0.59$ – moderate; $0.60 \leq |r_{xy}| \leq 0.79$ – strong; $0.80 \leq |r_{xy}| \leq 1.00$ – very strong. Moreover, we adopt statistical significance at 0.05.

Fourth, in order to assess the links between the sustainable development of enterprises and macroeconomic stabilization, we apply a regression analysis. The simple linear regression of y on x is given by the following formula (Freund et al. 2006; Yan, Su 2009; Schmidheiny 2019):

$$y_i = \alpha_0 + \alpha_1 x_i + \varepsilon_i$$

where: y_i is an dependent variable; x_i is an independent variable; α_0 is the intercept, α_1 is the slope; ε_i denotes the i -th residual; I is an observation index.

The estimated model is given by the equation:

$$y_i = \hat{\alpha}_0 + \hat{\alpha}_1 x_i + e_i = \hat{y}_i + e_i$$

so the residual for each observation is as follows:

$$e_i = y_i - \hat{y}_i = y_i - (\hat{\alpha}_0 + \hat{\alpha}_1 x_i)$$

For regression analysis, we use the most common estimation method for linear models called the ordinary least squares (OLS) regression. The OLS procedure minimizes the sum of squared residuals (Raykov, Marcoulides 2013):

$$s(\hat{\alpha}_0, \hat{\alpha}_1) = \sum_{i=1}^n e_i^2 = \sum_{i=1}^n (y_i - \hat{y}_i)^2 = \sum_{i=1}^n (y_i - \hat{\alpha}_0 - \hat{\alpha}_1 x_i)^2 \rightarrow \min$$

Solving the minimization problem results in the following expressions (Freund et al. 2006; Yan, Su 2009):

$$\hat{\alpha}_1 = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sum_{i=1}^n (x_i - \bar{x})^2} = \frac{\sum_{i=1}^n (x_i y_i - n \bar{x} \bar{y})}{\sum_{i=1}^n x_i^2 - n \bar{x}^2}$$

$$\hat{\alpha}_0 = \bar{y} - \hat{\alpha}_1 \bar{x}$$

Like many statistical analyses, the OLS regression has underlying assumptions (Wilcox 2009), i.e.: a) the regression model is linear in the coefficients and the error term; b) the error term has a population mean of zero; c) all independent variables are uncorrelated with the error term; d) the observations of the error term are uncorrelated with each other; e) the error term has a constant variance (no heteroscedasticity); f) no independent variable is a perfect linear function of other explanatory variables; g) the error term is normally distributed (this assumption is optional). Our regression model satisfies the above assumptions. The calculation is carried out using GRET, Statistica and Excel.

4. The result of research

The research has been conducted on transport enterprises operating in Central and Eastern European Countries (CEECs) in 2008-2018. The highest average share is in Poland (44%). From 2008 to 2018, the number of transport enterprises in the CEECs increased by 55 015 (Table 3).

Table 3. Research sample

Country	Number of transport enterprises										
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bulgaria	16 965	19 306	19 084	19 062	19 003	19 461	20 304	21 223	22 711	23 191	23 583
Croatia	10 964	11 706	10 853	9 815	9 208	8 839	8 642	8 562	8 372	8 606	8 969
Czechia	39 345	39 548	39 341	41 153	40 064	38 944	38 610	38 159	38 439	39 791	39 821
Estonia	3 861	3 873	4 027	4 232	4 479	4 761	4 842	5 052	5 244	5 591	5 856
Hungary	32 788	31 382	30 731	30 254	28 578	26 730	26 137	27 039	27 668	28 448	28 652
Latvia	5 387	5 445	5 570	5 426	6 303	6 560	6 951	7 307	7 654	7 498	7 965
Lithuania	7 264	7 048	6 792	7 331	9 843	10 776	11 596	12 314	13 603	16 118	16 365
Poland	148 756	131 974	138 649	145 939	141 739	135 210	140 736	145 993	153 586	155 910	156 982
Romania	34 489	35 064	32 774	31 713	34 064	36 127	39 666	41 746	44 504	48 382	48 565
Slovakia	2 373	553	14 290	16 783	16 734	16 389	16 578	18 039	19 020	20 778	20 801
Slovenia	8 941	8 807	8 688	8 510	8 491	8 432	8 313	8 445	8 574	8 578	8 589
Total	311 133	294 706	310 799	320 218	318 506	312 229	322 375	333 879	349 375	362 891	366 148

Source: own study based onEurostat [<https://ec.europa.eu/Eurostat/>], access: 05.04.2020.

In the CEECs, the average value of the indicator of economic development of transport enterprises is in the range of 0.38-0.64, the indicator of social development of transport enterprises is in the range of 0.42-0.60, and the indicator of environmental development of transport enterprises is in the range of 0.54-0.64. The maximum value of the indicator of the economic development of transport enterprises (EDTE) in the CEECs is observed in Latvia (2017, 2018: 0.89), while the minimum value in Lithuania (2009: 0.03). The maximum value of the indicator of social development of transport enterprises (SODTE) in the CEECs is in Poland (2018: 0.83) and Romania (2018: 0.83); the minimum value also in Poland (2009: 0.11). The maximum value of the indicator of the environmental development of transport enterprises (ENVDT) in the CEECs is observed in Poland (2014: 0.95), while the minimum value in Czechia (2008: 0.03) (Table 4).

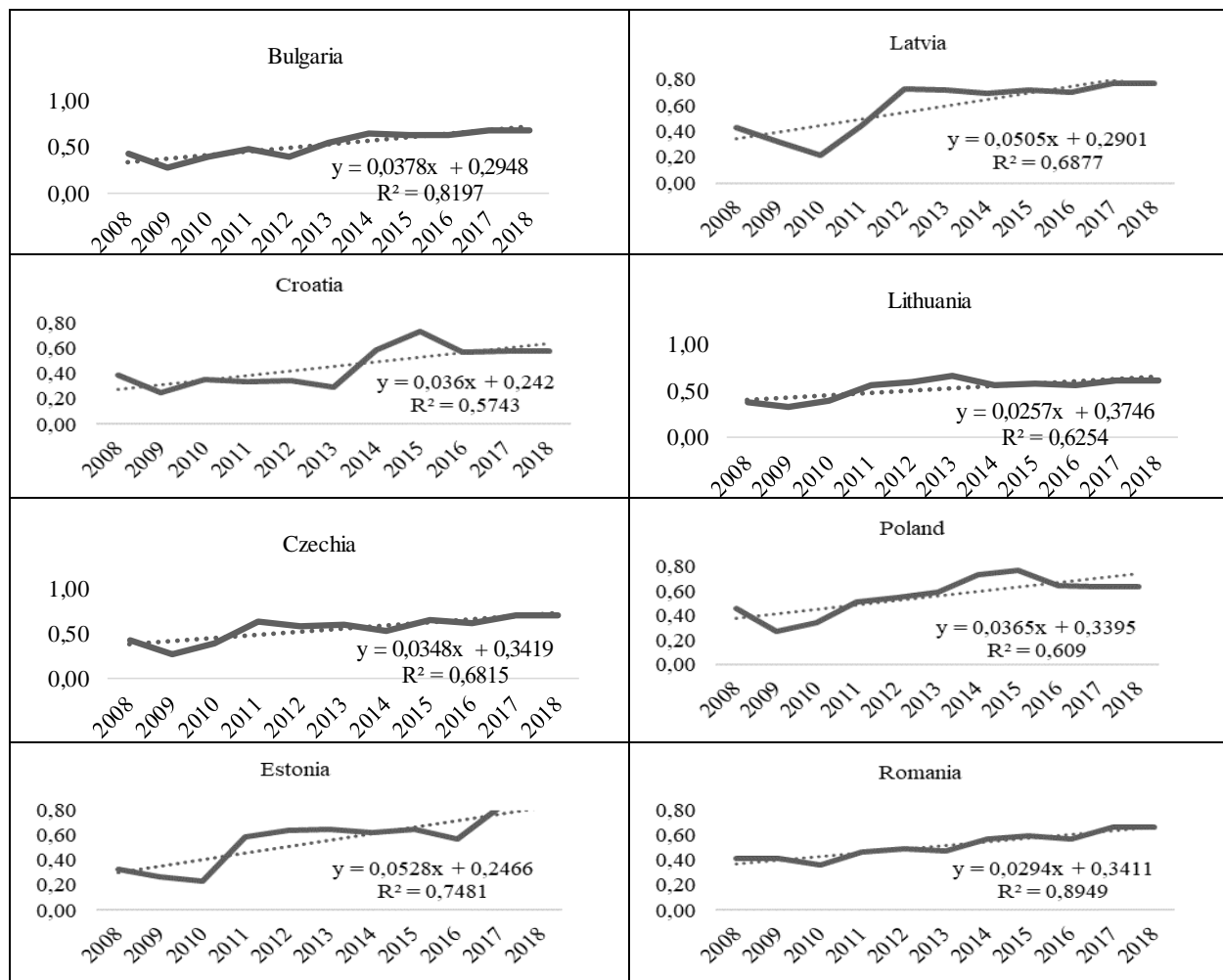
Table 4. indicators of economic, social, environmental and sustainable development of transport enterprises in the Central and Eastern European Countries (in the period from 2008 to 2018)

Country	indicator	Year											Descriptive statistics				
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Median	Mean	Min	Max	SD
Bulgaria	ED _{TE}	0.24	0.07	0.18	0.28	0.27	0.40	0.66	0.70	0.74	0.79	0.79	0.40	0.46	0.07	0.79	0.26
	SOD _{TE}	0.40	0.23	0.22	0.35	0.32	0.43	0.56	0.66	0.73	0.77	0.77	0.43	0.49	0.22	0.77	0.20
	ENVD _{TE}	0.61	0.51	0.80	0.81	0.60	0.78	0.68	0.52	0.43	0.47	0.47	0.60	0.61	0.43	0.81	0.14
	SD _{TE}	0.42	0.27	0.40	0.48	0.40	0.54	0.63	0.62	0.63	0.68	0.68	0.54	0.52	0.27	0.68	0.13
Croatia	ED _{TE}	0.36	0.33	0.32	0.15	0.05	0.13	0.44	0.72	0.49	0.61	0.61	0.36	0.38	0.05	0.72	0.21
	SOD _{TE}	0.51	0.26	0.27	0.26	0.21	0.24	0.55	0.65	0.52	0.58	0.58	0.51	0.42	0.21	0.65	0.16
	ENVD _{TE}	0.30	0.17	0.47	0.62	0.77	0.51	0.79	0.83	0.71	0.56	0.56	0.56	0.57	0.17	0.83	0.20
	SD _{TE}	0.39	0.25	0.36	0.34	0.34	0.29	0.59	0.73	0.57	0.58	0.58	0.39	0.46	0.25	0.73	0.15
Czechia	ED _{TE}	0.70	0.11	0.34	0.72	0.53	0.47	0.36	0.52	0.53	0.70	0.70	0.53	0.52	0.11	0.72	0.18
	SOD _{TE}	0.53	0.22	0.23	0.52	0.44	0.45	0.39	0.57	0.60	0.72	0.72	0.52	0.49	0.22	0.72	0.16
	ENVD _{TE}	0.03	0.45	0.59	0.65	0.76	0.85	0.83	0.83	0.72	0.69	0.69	0.69	0.64	0.03	0.85	0.22
	SD _{TE}	0.42	0.26	0.39	0.63	0.58	0.59	0.53	0.64	0.62	0.70	0.70	0.59	0.55	0.26	0.70	0.13
Estonia	ED _{TE}	0.31	0.07	0.24	0.58	0.75	0.77	0.54	0.47	0.53	0.79	0.79	0.54	0.53	0.07	0.79	0.23
	SOD _{TE}	0.38	0.18	0.30	0.52	0.65	0.66	0.59	0.55	0.56	0.80	0.80	0.56	0.55	0.18	0.80	0.19
	ENVD _{TE}	0.30	0.55	0.16	0.66	0.52	0.51	0.74	0.93	0.63	0.87	0.87	0.63	0.61	0.16	0.93	0.23
	SD _{TE}	0.33	0.26	0.23	0.59	0.64	0.65	0.62	0.65	0.57	0.82	0.82	0.62	0.56	0.23	0.82	0.19
Hungary	ED _{TE}	0.42	0.25	0.25	0.34	0.26	0.39	0.59	0.73	0.64	0.88	0.88	0.42	0.51	0.25	0.88	0.23
	SOD _{TE}	0.39	0.20	0.24	0.37	0.32	0.44	0.63	0.71	0.69	0.76	0.76	0.44	0.50	0.20	0.76	0.20
	ENVD _{TE}	0.04	0.23	0.48	0.55	0.88	0.78	0.59	0.53	0.64	0.62	0.62	0.59	0.54	0.04	0.88	0.22
	SD _{TE}	0.28	0.23	0.32	0.42	0.49	0.53	0.61	0.66	0.66	0.75	0.75	0.53	0.52	0.23	0.75	0.18
Latvia	ED _{TE}	0.54	0.06	0.09	0.42	0.85	0.84	0.83	0.89	0.71	0.89	0.89	0.83	0.64	0.06	0.89	0.30
	SOD _{TE}	0.59	0.21	0.19	0.47	0.76	0.71	0.72	0.72	0.65	0.77	0.77	0.71	0.60	0.19	0.77	0.20
	ENVD _{TE}	0.15	0.68	0.36	0.45	0.58	0.62	0.52	0.54	0.76	0.67	0.67	0.58	0.54	0.15	0.76	0.17
	SD _{TE}	0.43	0.32	0.22	0.45	0.73	0.72	0.69	0.72	0.71	0.78	0.78	0.71	0.59	0.22	0.78	0.19
Lithuania	ED _{TE}	0.30	0.03	0.15	0.41	0.51	0.64	0.62	0.62	0.68	0.86	0.86	0.62	0.51	0.03	0.86	0.26
	SOD _{TE}	0.37	0.13	0.25	0.50	0.52	0.59	0.61	0.61	0.70	0.82	0.82	0.59	0.54	0.13	0.82	0.21
	ENVD _{TE}	0.47	0.86	0.79	0.74	0.74	0.72	0.43	0.49	0.31	0.16	0.16	0.49	0.54	0.16	0.86	0.24
	SD _{TE}	0.38	0.33	0.40	0.55	0.59	0.65	0.55	0.57	0.56	0.62	0.62	0.56	0.53	0.33	0.65	0.10
Poland	ED _{TE}	0.43	0.01	0.21	0.44	0.41	0.44	0.63	0.75	0.66	0.86	0.86	0.44	0.52	0.01	0.86	0.25
	SOD _{TE}	0.43	0.11	0.38	0.49	0.49	0.46	0.62	0.70	0.67	0.83	0.83	0.49	0.55	0.11	0.83	0.20
	ENVD _{TE}	0.51	0.68	0.44	0.61	0.74	0.87	0.95	0.86	0.61	0.23	0.23	0.61	0.61	0.23	0.95	0.23
	SD _{TE}	0.45	0.27	0.34	0.51	0.55	0.59	0.73	0.77	0.65	0.64	0.64	0.59	0.56	0.27	0.77	0.15
Romania	ED _{TE}	0.42	0.17	0.15	0.36	0.37	0.38	0.52	0.66	0.69	0.88	0.88	0.42	0.50	0.15	0.88	0.24
	SOD _{TE}	0.49	0.21	0.25	0.45	0.41	0.43	0.50	0.58	0.67	0.83	0.83	0.49	0.51	0.21	0.83	0.19
	ENVD _{TE}	0.33	0.86	0.69	0.59	0.71	0.62	0.69	0.55	0.36	0.29	0.29	0.59	0.54	0.29	0.86	0.19
	SD _{TE}	0.41	0.41	0.36	0.47	0.49	0.48	0.57	0.60	0.57	0.67	0.67	0.49	0.52	0.36	0.67	0.10
Slovakia	ED _{TE}	0.18	0.10	0.36	0.54	0.61	0.77	0.68	0.70	0.62	0.69	0.69	0.62	0.54	0.10	0.77	0.21
	SOD _{TE}	0.26	0.17	0.42	0.57	0.55	0.63	0.48	0.58	0.46	0.58	0.58	0.55	0.48	0.17	0.63	0.14
	ENVD _{TE}	0.21	0.44	0.51	0.61	0.79	0.73	0.83	0.67	0.57	0.59	0.59	0.59	0.59	0.21	0.83	0.17
	SD _{TE}	0.22	0.24	0.43	0.57	0.65	0.71	0.66	0.65	0.55	0.62	0.62	0.62	0.54	0.22	0.71	0.16
Slovenia	ED _{TE}	0.56	0.22	0.32	0.31	0.27	0.29	0.32	0.41	0.55	0.73	0.73	0.32	0.43	0.22	0.73	0.17
	SOD _{TE}	0.57	0.47	0.52	0.38	0.36	0.37	0.41	0.47	0.57	0.66	0.66	0.47	0.49	0.36	0.66	0.11
	ENVD _{TE}	0.21	0.51	0.50	0.39	0.53	0.63	0.80	0.81	0.80	0.62	0.62	0.62	0.58	0.21	0.81	0.18
	SD _{TE}	0.45	0.40	0.45	0.36	0.39	0.43	0.51	0.57	0.64	0.67	0.67	0.45	0.50	0.36	0.67	0.11

Source: own study based on Eurostat [<https://ec.europa.eu/Eurostat>], access: 05.04.2020.

The average value of the indicator of sustainable development of transport enterprises (SDTE) in the CEECs from 2008 and 2018 is in the range of 0.46-0.59. The average value of the indicator of sustainable development of transport enterprises increased in: Bulgaria by 0.26 (from 0.42 to 0.68), Croatia by 0.19 (from 0.39 to 0.58), Czechia by 0.28 (from 0.42 to 0.70), Estonia by 0.49 (from 0.33 to 0.82), Hungary by 0.47 (from 0.28 to 0.75), Latvia by 0.35 (from 0.43 to 0.78), Lithuania by 0.24 (from 0.38 to 0.62), Poland by 0.19 (from 0.45 to 0.64), Romania by 0.26 (from 0.41 to 0.67), Slovakia by 0.40 (from 0.22 to 0.62), Slovenia by 0.22 (from 0.45 to 0.67). The maximum value of the indicator of sustainable development of transport enterprises is observed in Estonia (2018: 0.82), while the minimum value in Latvia (2010: 0.22) and Slovakia (2008: 0.22).

In all countries of Central and Eastern Europe, the indicator of sustainable development of transport enterprises presents a positive trend. The highest factor before the variable time (t) occurs in Hungary ($\alpha_1 = 0,0548$) (Fig.4).



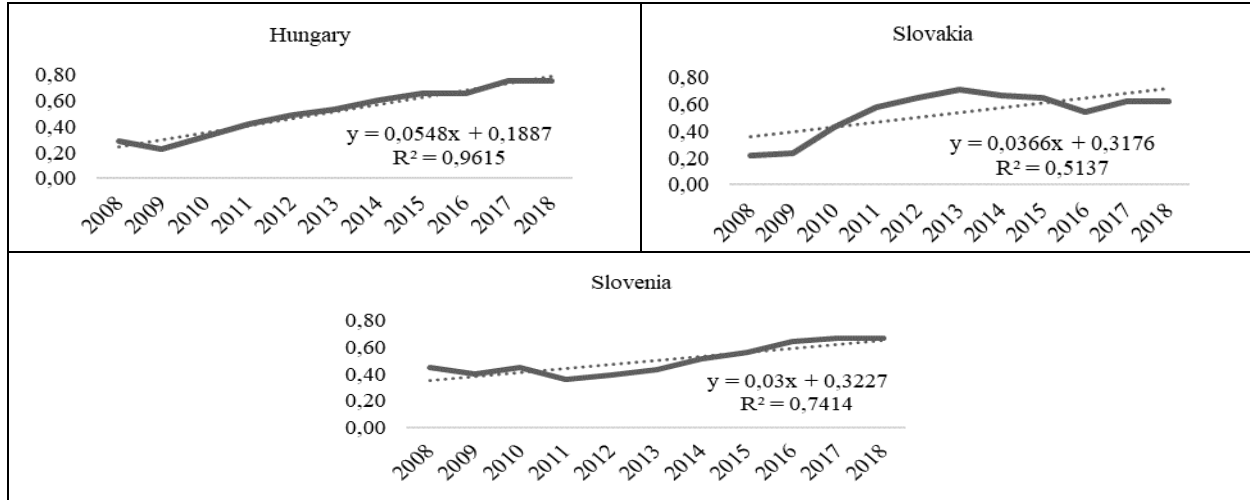


Fig. 4. Trend line for the indicator of sustainable development of transport enterprises in Central and Eastern European countries (in the period from 2008 to 2018): $y = \alpha_0 + \alpha_1 t$

Source: own study based on Eurostat [<https://ec.europa.eu/Eurostat>], access: 05.04.2020.

The average value of the indicator of macroeconomics condition in the CEECs in the period between 2008 and 2018 is in the range of 0.51-0.59. The average value of the indicator of macroeconomics condition increased in: Bulgaria by 0.58 (from 0.21 to 0.79), Croatia by 0.22 (from 0.47 to 0.69), Czechia by 0.45 (from 0.33 to 0.78), Estonia by 0.42 (from 0.36 to 0.78), Hungary by 0.35 (from 0.40 to 0.75), Latvia by 0.31 (from 0.40 to 0.71), Lithuania by 0.39 (from 0.36 to 0.75), Poland by 0.51 (from 0.25 to 0.76), Romania by 0.43 (from 0.37 to 0.80), Slovakia by 0.48 (from 0.23 to 0.71), Slovenia by 0.34 (from 0.37 to 0.71). The maximum value the indicator of macroeconomics condition is observed in Romania (2017, 2018: 0.80), while the minimum value in Bulgaria (2008: 0.21) (Table 5).

Table 5. indicator of macroeconomics condition of Central and Eastern European countries (in the period from 2008 to 2018)

Country	Year											Descriptive statistics				
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Median	Mean	Min	Max	SD
Bulgaria	0.21	0.37	0.40	0.46	0.45	0.48	0.62	0.70	0.75	0.79	0.79	0.48	0.55	0.21	0.79	0.18
Croatia	0.47	0.46	0.47	0.47	0.40	0.44	0.43	0.53	0.63	0.69	0.69	0.47	0.52	0.40	0.69	0.10
Czechia	0.33	0.30	0.33	0.45	0.46	0.46	0.54	0.64	0.72	0.78	0.78	0.46	0.53	0.30	0.78	0.17
Estonia	0.36	0.41	0.39	0.51	0.56	0.61	0.65	0.70	0.74	0.78	0.78	0.61	0.59	0.36	0.78	0.15
Hungary	0.40	0.26	0.34	0.47	0.35	0.49	0.55	0.66	0.70	0.75	0.75	0.49	0.52	0.26	0.75	0.17
Latvia	0.40	0.39	0.42	0.44	0.51	0.57	0.65	0.68	0.66	0.71	0.71	0.57	0.56	0.39	0.71	0.12
Lithuania	0.36	0.38	0.38	0.48	0.54	0.62	0.69	0.68	0.69	0.75	0.75	0.62	0.57	0.36	0.75	0.15
Poland	0.25	0.29	0.37	0.38	0.43	0.55	0.62	0.69	0.72	0.76	0.76	0.55	0.53	0.25	0.76	0.18
Romania	0.37	0.32	0.29	0.35	0.39	0.45	0.51	0.63	0.75	0.80	0.80	0.45	0.51	0.29	0.80	0.19
Slovakia	0.23	0.31	0.37	0.33	0.50	0.56	0.61	0.67	0.70	0.71	0.71	0.56	0.52	0.23	0.71	0.17
Slovenia	0.37	0.33	0.38	0.46	0.42	0.47	0.53	0.57	0.64	0.71	0.71	0.47	0.51	0.33	0.71	0.13

Source: own study based on Eurostat [<https://ec.europa.eu/Eurostat>], access: 05.04.2020.

In all countries of the CEECs, the indicator of macroeconomics condition presents a positive trend. The highest factor before the variable time (t) occurs in Poland ($\alpha_1 = 0,0575$). Fig. 5 shows parameters for equating the trend line for the indicator of macroeconomics condition in the CEECs.

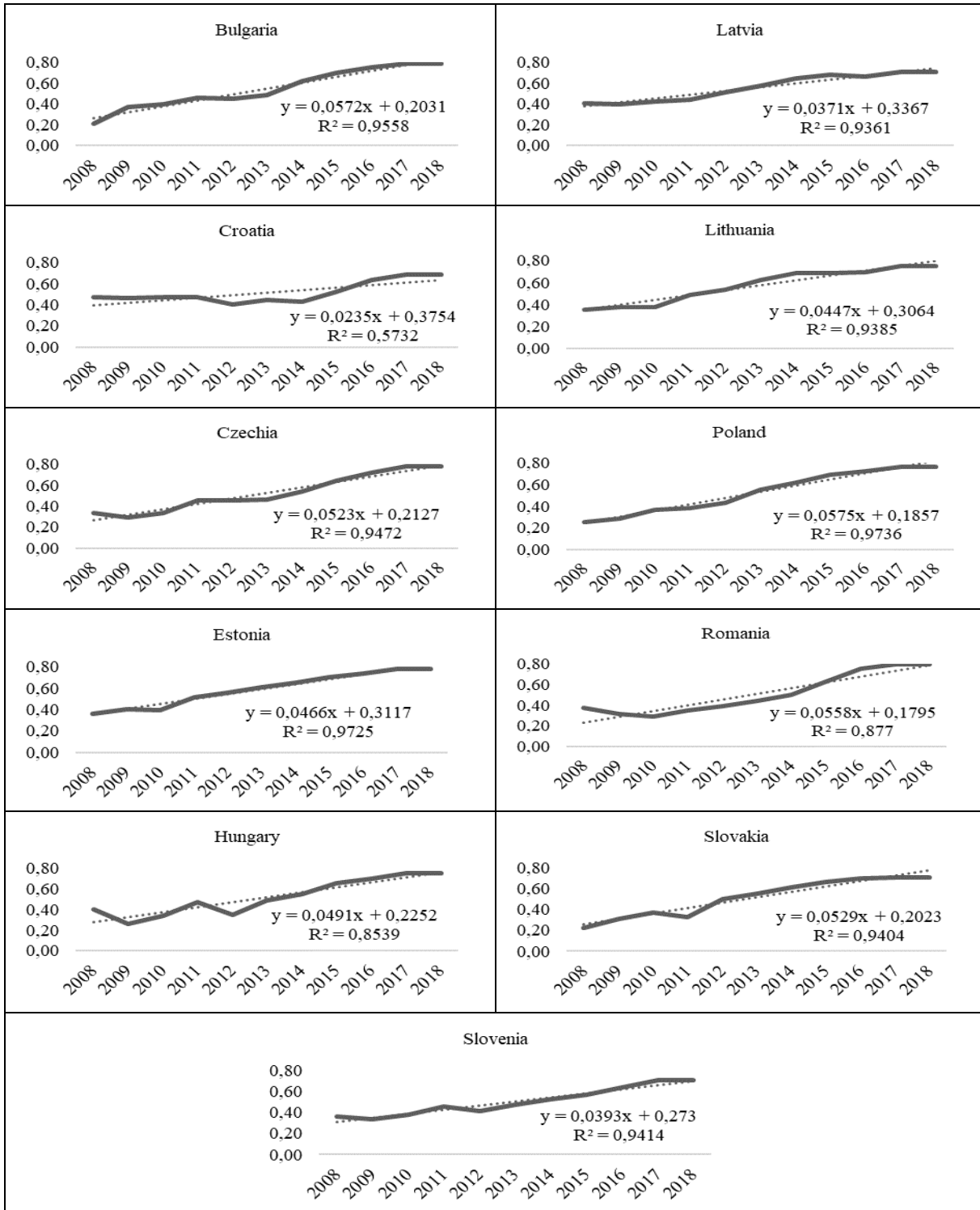


Fig. 5. The trend line for the indicator of macroeconomics condition of Central and Eastern European countries (in the period from 2008 to 2018): $y = \alpha_0 + \alpha_1 t$

Source: own study based on Eurostat [<https://ec.europa.eu/Eurostat>], access: 05.04.2020.

The Pearson's Correlation Coefficient between the indicator of macroeconomics condition (M_i) and the indicator of sustainable development of transport enterprises (SD_{TE}) is statistically significant in all analyzed countries ($p < 0.05$). The highest level of correlation is in Romania (0.94), while the lowest is in Croatia (0.59) (Fig. 6).

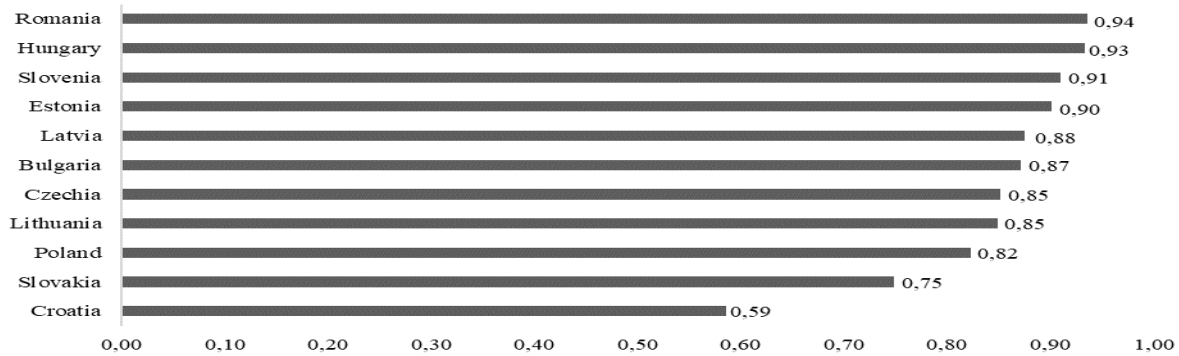


Fig. 6. The Pearson's correlation coefficient (correlations between SD_{TE} and M_i , $p < .05$)

Source: own study based on Eurostat [<https://ec.europa.eu/Eurostat>], access: 05.04.2020.

In all countries of the CEECs, the indicator of macroeconomics condition (M_i) has a positive impact on the indicator of sustainable development of transport enterprises (SD_{TE}), and a significant relationship between the variables studied. (Table 6).

Table 6. Results of OLS regressions: Dependent variable (SD_{TE}) 2008-2018: $SD_{TE} = \alpha_0 + \alpha_1 M_i + \varepsilon_i$

Dependent variable	OLS	Coefficient	SD	P- value	R ²
Bulgaria	constant	0.182	0.067	0.0243 **	0.760
	M_i	0.623	0.117	0.0005 ***	
Croatia	constant	-0.005	0.217	0.9839	0.343
	M_i	0.895	0.413	0.0582 *	
Czechia	constant	0.199	0.076	0.0278 **	0.725
	M_i	0.668	0.137	0.0009 ***	
Estonia	constant	-0.125	0.114	0.2998	0.812
	M_i	1.164	0.186	0.0002 ***	
Hungary	constant	0.008	0.069	0.915	0.870
	M_i	0.981	0.126	<0.0001 ***	
Latvia	constant	-0.184	0.147	0.2418	0.766
	M_i	1.388	0.256	0.0004 ***	
Lithuania	constant	0.185	0.074	0.0331 **	0.720
	M_i	0.598	0.124	0.001 ***	
Poland	constant	0.208	0.086	0.0377 **	0.677
	M_i	0.660	0.152	0.0019 ***	
Romania	constant	0.266	0.034	<0.0001 ***	0.875
	M_i	0.489	0.062	<0.0001 ***	
Slovakia	constant	0.173	0.113	0.1623	0.560
	M_i	0.702	0.207	0.008 ***	
Slovenia	constant	0.104	0.062	0.1281	0.828
	M_i	0.783	0.119	0.0001 ***	

Source: own study based on Eurostat [<https://ec.europa.eu/Eurostat>], access: 05.04.2020.

The research result allows for adopting the central research hypothesis (H) presented in the introduction because *"Macroeconomic conditions have a statistically significant impact on the sustainable development of transport enterprises in Central and Eastern Europe in the period from 2008 to 2018"*. In all countries, this relationship shows a high level of statistical significance. The indicator of macroeconomics condition's highest impact on the indicator of sustainable development of transport enterprises is in Latvia (1.388). In contrast, the lowest impact of the indicator of macroeconomics condition on the indicator of sustainable development of transport enterprises is in Romania (0.489). The coefficient of determination (R²) is in the range from 0.343 (the relationship between the indicator of macroeconomics conditions and the indicator of sustainable development of transport enterprises in Croatia) to 0.875 (the relationship between macroeconomics condition and the indicator of sustainable development of transport enterprises in Romania).

The high level of the analyzed dependence indicates that the state authorities should undertake actions supporting the country's socio-economic development. It is important to take initiatives and actions to support entrepreneurship and environmental protection. Financial and substantive programs of the European Union focused on innovations, new technologies, and environmental programs should play a key role here.

The first sub-hypothesis (H₁) is also true, *"the indicator of sustainable development of enterprises (SDTE) in the Central and Eastern European countries shows the positive dynamics in the period from 2008 to 2018"*. Sustainable development of transport enterprises is due to the undertaken actions and ecological initiatives, financial support programs, increased awareness of society, and consumers' quality and expectations resulting from economic conditions.

The second sub-hypothesis (H₂) is true, *"the indicator of macroeconomic conditions (M_i) in the Central and Eastern European countries shows the positive dynamics in the period from 2008 to 2018"*. The macroeconomic conditions improve due to the recovery from the crisis, the global economic boom, and consumer moods.

The third sub-hypothesis (H₃) could not be confirmed, it is not true that *"The highest average value of the indicator of sustainable development of transport enterprises (SD_{TE}) shows in countries with the highest average value of macroeconomic conditions (M_i)"*. Sustainable development is a holistic concept that depends on several factors omitted in the study, including internal and external conditions, both quantitative and qualitative.

Conclusions

The rapid development of industry has led to environmental degradation and climate change. It has become necessary to counteract the negative impact of economic activity on the natural environment. Based on socio-economic changes and the increase of ecological awareness, the concept of sustainable development was born. The main issues focus on conserving natural resources for present and future generations by achieving economic, social, and environmental goals.

The effectiveness and efficiency of implementing the concept of sustainable development require the commitment of all actors of socio-economic life, including enterprises, organizations, institutions, and individual countries. Sustainable development of the enterprise means improving the financial and property situation, taking care of the work conditions and the health of employees, and implementing activities to protect the natural environment.

The implementation of sustainable development goals depends significantly on the level of socio-economic development of countries. In enterprises, apart from macroeconomic conditions, the type, size, scale of operations, and management awareness are also necessary.

In this paper, we assume that macroeconomic determinants' impact on the sustainable development of transport enterprises in Central and Eastern Europe Countries in the period from 2008 to 2018. We analyzed the transport enterprise sector due to its negative impact on the natural environment and their role in analyzing countries' economies with a similar geographical location, a shared history, and a similar level of socio-economic development. The transformation of business conditions after joining the European Union is also crucial. The research period's definition is associated with the accession of Bulgaria and Romania in 2007 to the EU and the appearance of symptoms of an economic slowdown.

We adopted the assumption, based on research conducted so far, that socio-economic development is fundamental for enterprises' sustainable development in developing countries. To verify the research hypothesis (Macroeconomic conditions have a statistically significant impact on the sustainable development of transport enterprises in Central and Eastern Europe in the period from 2008 to 2018), we create indicators of sustainable development of transport enterprises and indicators of macroeconomic conditions and examine the relationships between them (we use the Pearson Correlation Coefficient and Ordinary Least Squares Method).

The results of the research show that the central hypothesis (H) is correct. In all countries of the CEECs, it is a positive impact of macroeconomic conditions on the sustainable development of transport enterprises. The highest degree of Pearson's Correlation Coefficient between macroeconomic conditions and sustainable development of enterprises occurs in Romania (0.94), Hungary (0.93), and Slovenia (0.91), while the lowest in Croatia (0.59). The estimation of model parameters using the OLS method also indicates a statistically significant relationship between variables. The highest impact is in Latvia (1.388), the lowest in Romania (0.489).

The first sub-hypothesis (H1), "the indicator of sustainable development of enterprises (SDTE) in the Central and Eastern European countries shows the positive dynamics in the period from 2008 to 2018" is correct. It is a positive phenomenon resulting from the increased environmental awareness of society and the good economic situation and financial programs supporting the natural environment's protection.

The second sub-hypothesis (H2), "the indicator of macroeconomic conditions (Mi) in the Central and Eastern European countries shows the positive dynamics in the period from 2008 to 2018" is correct. The main factors here are the slow recovery from the economic crisis and the good economic situation.

The third sub-hypothesis (H3) it is not true that "The highest average value of the indicator of sustainable development of transport enterprises (SDTE) shows in countries with the highest average value of macroeconomic conditions (Mi)". Sustainable development is a holistic concept that depends on several factors omitted in the study, including internal and external conditions, both quantitative and qualitative.

Determinants of sustainable development of enterprises are exciting and complex research issues. Several factors, including macroeconomic conditions, determine them. The more economically and socially developed countries are, the more significant pressure on enterprises to comply with environmental protection and social issues. Therefore, it seems crucial to create favorable conditions for doing business in harmony with nature. From that point of view, financial and institutional support from international institutions and social pressure to take ecological actions are necessary for enterprises' sustainable development, especially in developing countries. Further research will be conducted to assess the impact of internal and external conditions on enterprises' sustainable development in the European Union

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SUSTAINABILITY AND REGIONAL SECURITY IN THE CONTEXT OF LITHUANIA*

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Abstract. The article explores the relationship between sustainable development and the regional security complex. Problems of sustainability are widely analysed since the goals of sustainable development are based on the same principles that are relevant to every country. Implementation of the sustainable development goals contributes to the understanding that the contemporary lifestyle, consumption, globalisation and the use of natural resources may have a significant impact on the quality of life of future generations. Therefore, the state's responsibility is to ensure economic, social, environmental, cultural and political security for the present and future generations in all regions. However, the regional security complex has not been analysed sufficiently. The goal of this article is to analyse the relationship between sustainability and regional security in terms of the situation in Lithuania with regards to its economic, social and military security. The regional security complex and sustainable development may be determined and analysed by way of observing the same factors and indicators. Indicators describing economic, social and political security are analysed to reach the objective of the article. Authors of the article have chosen segmentation and classification methods such as decision making trees to conduct the research. The results of the analysis demonstrate that the economic and social factors are directly related to the political (military) security in the regions of Lithuania. Therefore, further research could focus on clarifying the full regional security complex that is relevant to each region in Lithuania.

Keywords: sustainable development; regional security; migration; economic growth

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1. Introduction

A great number of scientific articles is dedicated to the problems of sustainability or the implementation of sustainable development goals (Šimelytė, Antanavičienė 2013; Gilli et al. 2013; Neag et al. 2017; Tsai, 2018; Feliciano, 2019; Gil, et al. 2019; Savona, & Ciarli, 2019; Kim et al. 2019; Prada, 2020; Vasconcelos, 2021). The publication of the Brundtland Report by the United Nations in October 1987 prompted the interest in sustainable development issues to increase. It declared that human poverty reduces opportunities for sustainability and increases environmental pressures. These findings elicited a demand to balance ecology and economy. In a broader sense, sustainable development is defined as a compromise between environmental and social societal goals that creates possibilities to achieve social welfare for the present and future generations while keeping the environmental impact within the permissible limits (National Sustainable Development Strategy of the Republic of Lithuania 2011). Neag, Halmaghi & Cucuiet (2017) claim that sustainable development as a strategy involves all areas that are significant to achieving harmony and continuity as well as benefiting the quality of life. Furthermore, the implementation of sustainable development goals contributes to the development of every nation's long-term strategies in respect of economic, social, environmental, technological and security issues. In general, it helps to improve the quality of life of present and even future generations. Therefore, the main goal of sustainable development is to ensure security in all respects for present and future generations. It involves complicated decision making, especially when a long political process is required. Consequently, political security has a role in the implementation of sustainable development goals.

However, the scientific literature lacks analysis addressed to the relationship between the implementation of sustainable development and security issues. The relationship between the regional security complex and sustainable development is particularly poorly explored.

The *goal of the article* is to analyse the relationship between sustainability and regional security in terms of the situation in Lithuania with regards to its economic, social and military security.

For *methodological purposes*, the article is divided into three parts. The first part analyses the scientific literature on the concept of security, the regional security complex and the relationship between regional security and sustainable development goals. The second part is dedicated to data sources and the methodology of the research. The third part provides findings and discussion of the research related to the economic, social and military security. The article ends with conclusions and insights about the possibilities of further research.

2. Literature review

Concept of security. Currently, in the scientific context the complex phenomenon of security is understood much wider than military. For example, Belammy & Hunt (2015) propose that security should include four principal elements. The first element defines the object of security, the second identifies the threat and the third identifies the most advantageous means to deal with the threat. Finally, the fourth element determines what actions qualify to deal with the potential threat. Kafol & Bregar (2017) analyse cyber security and propose a methodology to guide organisations on how to create sustainable protection systems of the highest level in order to prevent cyberattacks. Kullenberg (2002) states that security should encompass economic, social and ecological aspects. Additionally, Ajdari & Asgharpour (2011) exclude physical, spiritual, internal, external, individual, social, national, humanistic, moral and defensive security. Therefore, it could be stated that security may vary across different groups based on their social, economic, cultural and political circumstances. Moreover, the security complex can change with time. In general, traditional understanding of security means being free of any threats or dangers, being safe and feeling secure and protected against any forced aggression from other individuals.

Based on another concept, security is something that provides or ensures safety, tranquillity and certainty (Juneau, 2013; Ajdari & Asgharpour, 2011; Tang, 2009). On the other hand, human security is usually associated with economic and social security rather than other forms of security. Guaranteeing basic human rights and ensuring human security involves removing or reducing poverty, increasing wealth and providing a dignified quality of life. In general, human security refers to the satisfaction of the basic and physical needs of humans, such as food, home, education and public health (Kundhavi, & Khanal, 2018; Kline, et al. 2017) (Table 1).

Table 1. Concepts and various types of security

The meaning of security	Security type	Concept
Lack of fear	Physical	Political
Being safe	Spiritual	Social
Tranquillity	Individual	Economic
Confidence	Social	Military
Elimination of fear	National	Environmental
Freedom from any threat	Human	Cultural
Silence of the soul	Moral	

Source: Ajdari and Asgharpour, 2011

Weaver (2008) claims that economic security, political security, military security and environmental security should be studied together because security dynamics direct the interaction of the different forms of security. Furthermore, Weaver (2008) distinguishes significant differences among various forms of security, e.g. military security vs. migration security (when migration is seen as a threat), economic security vs. environmental security. Therefore, the researcher suggests a more systematic approach to the analysis of security as a complex phenomenon by drawing out peculiarities in terms of the main objects of security. For that reason, the definition of security allows further development or evolution of regional security complexes based on the changing considerations (Buzan & Wæver, 2003). Some realist scholars (Juneau, 2013; Wohlforth, 2012; Tang, 2009; Buzan & Wæver, 2003) maintain that military capacity is not possible without economic capacity. Advocates for the dependency theory claim that military expenditures slow down the economic growth (Kentor et al., 2012; Androniceanu A.-M et al., 2020a; Androniceanu A.-M, 2020b). Meanwhile, economic security is based on liberal principles and regulated international trade (Kilroy, Hataley, and Sumano (2013). Therefore, strong economy ensures security by providing a large number of public goods as well as public safety. Military capability depends on the state's expenditures on military and armed procurement and its aggregated production (Juneau, 2013; Bon-El et al., 2020). However, the state's resources and budget are limited. Consequently, higher expenditure on military means lower expenditure on other sectors such as education, the health system, environmental protection or culture. As a result, higher expenditures on military reduce social and environmental security. The cross-national panel study by Tang (2009) confirms that the growing military expenditures formulated as a percentage of GDP increase the level of unemployment in non-OECD and lower middle-income countries. On the other hand, Kentor & Kick (2008) do not find any significant positive correlation between economic growth and expenditures on military per soldier in developed countries from 1990 to 2003. However, their research shows that increased expenditures on military slow down the economies of the less developed countries. The research by Bon-El, Pecht & Tisher (2020) reveals that investing in human capital by way of the state covering higher expenses for the benefit of education results in higher military power, civilian consumption and social welfare in the future. The study by Bildirici (2016) proves that expenditures on defence and energy consumption have had a significant impact on the economic growth in China. On the contrary, despite slowing down the economy, Russia doubled its spending on defence in the decade from 2003 to 2013 and became the third largest in the world in terms of military spending (Oxenstierna, 2016). The results from various studies suggest that there may be significant links between education, military, consumption and economic growth (Androniceanu, Tvaronavičienė,

2019). In addition, Kilroy, Hataley, and Sumano (2013) state that physical or human security may not be separate from economic security.

Regional trading blocs established since the 1950s, including EEA, EU, NAFTA and OPEC are based on memberships and international agreements. They have established stronger relationships between their members by stimulating their interdependence. Despite these regional economic agreements and memberships benefitting the member states, they can also become a source of insecurity. Trading partners within the region may experience a threat with the opening of borders resulting in an increased flow of weapons, drugs, criminals, illegal migrants and even terrorists. This provides a soil for transnational criminal activities.

Trade and movement of labour have increased within the region since 1st May 2004 that saw fifteen new countries join the European Union. However, this singular, open and free European market has also provided more possibilities for organised crime. Strong and established EU economies have been faced with higher criminal activity rates and an increased flow of legal and illegal migrants. These phenomena have caused human security to decrease in those countries. Furthermore, this insecurity has caused a rise in populist politics across the EU as well as the vote for Brexit in the United Kingdom. Accordingly, as Kilroy, Hataley, & Sumano (2013) state, the economic sector is a two-sided coin. On the one hand, regional trade agreements provide institutionalised arrangements on rules and a framework for solving economic disputes. On the other hand, trade liberalisation opens the borders of new member states and introduces transnational threats, making the partner countries a source of insecurity.

On the regional level, the state develops and secures the social sector. According to this concept, regional social security is based on identity-based policy which impacts security. The measures to ensure social security and to protect the most vulnerable groups may be applied on the international, regional or state level. As Buzan and Wæver (2009) state, social security threats unfold from the acts of sharing ideas, regional alliances, and violent and nonviolent cross-border activity. For example, continuing identity-based policy in North America has influences regional social security. The best-known evidence is found in the state of California in the United States. Proposition 187 was introduced in 1994 to limit the access of illegal migrants to public services, education and healthcare (Buzan & Wæver, 2003). As a result, insecure illegal migrants established cooperative relationships with criminal organisations and even well-known terrorist organisations. Terror attacks threaten regional social security and negatively impact economic security. For instance, terrorism and wars cause damage to the economic development by way of losing human lives, destroying property and the natural environment (Blinic et al., 2007). Since terrorist organisations operate and expand across borders, they tend to recruit members from the neighbouring states. Accordingly, both the regional social insecurity and the regional economic insecurity increase.

Regional political security relates to taking actions against threats in order to establish organisational stability. In other words, external and internal actions may cause threats to the legitimacy and stability of the state. External threats may arise from transnational corporations, organisations, alliances, cartels or social movements (Buzan & Wæver, 2009). For instance, new or existing transnational corporations lobby to use their influence on political decisions and can increase the level of corruption. In this regard, transnational corporations create political insecurity. Meanwhile, internal threats emerge from ethnic or religious minorities, illegal migrant communities or groups. Kilroy, Hataley & Sumano (2013) note that the United States, Mexico and Canada are faced with issues and challenges of political insecurity. In particular, Mexico faces problems resulting from the activity of drug cartels. In some regions of Mexico, drug cartels replace the government's role of providing identical public goods. As a result of the movement of illegal migrants and criminals, the United States and Canada experience the impact of drug cartels with regards to social costs and increased violence.

Relationship between sustainable development and the regional security complex. According to the regional security complex theory (Kline, et al. 2017; Buzan & Weaver, 2009), regional security is a set of units whose processes involve both securitisation and desecuritisation. These processes are closely connected and essential to one another's resolution. On that account, security is a concept that identifies the problems and provides solutions. However, Buzan & Weaver (2009) claim that regional security is a social construct. The other researchers (Kilroy, et al., 2013) state that the regional security complex consists of the following four elements: boundaries dividing neighbouring countries, anarchic structure of two or more autonomous units, polarity defining the distribution of power among units, and a socially constructed understanding of amity and enmity among the units.

The concepts of security and of sustainable development have strong links. All elements of sustainability may be integrated into the regional security concept. Kullenberg (2002) claims that comprehensive regional security demands both the fulfilment of human physical needs and the prevention of armed conflicts (Ciobanu et al., 2019). In other words, 17 sustainable development goals align with the components of the security complex (Table 2).

Table 2. Sustainable Development Goals and Components of Security Complex

Sustainable Development Goals	Component of the Security Complex
Goal 1. <i>Zero poverty.</i> End of poverty in all forms everywhere	Human security, economic security
Goal 2. <i>Zero hunger.</i> End of hunger, achieved food security, improved nutrition and promotion of sustainable agriculture	Human security, economic security
Goal 3. <i>Good health and well-being.</i> Ensure healthy lives and promote well-being for everyone at all ages.	Economic security, social security
Goal 4. <i>Quality education.</i> Ensure inclusive and equitable education and promote lifelong learning opportunities for all.	Social security
Goal 5. <i>Gender equality.</i> Achieve gender equality and empower all women and girls.	Social security, cultural security
Goal 6. <i>Clean water and sanitation.</i> Ensure availability and sustainable management of water and sanitation for all.	Environmental security
Goal 7. <i>Affordable and clean energy.</i> Ensure affordable, reliable and sustainable energy for all.	Environmental security
Goal 8. <i>Decent work and economic growth.</i> Promote and sustain inclusive and sustainable economic growth, full and productive employment and decent work for all.	Social security and economic security
Goal 9. <i>Industry, innovation and infrastructure.</i> Build a resilient infrastructure, promote sustainability and industrialisation, foster innovation.	Economic security
Goal 10. <i>Reduced inequalities.</i> Reduce inequalities within the country and internationally.	Social security, economic security
Goal 11. <i>Sustainable cities and communities.</i> Make cities and human settlements inclusive, safe, resilient and sustainable.	Social security
Goal 12. <i>Responsible consumption and production.</i> Ensure sustainable consumption and production patterns.	Environmental security, economic security
Goal 13. <i>Climate action.</i> Take urgent action to combat climate change and its impact.	Environmental security
Goal 14. <i>Life below water.</i> Conserve and sustainable use the oceans, seas and marine resources for sustainable development.	Environmental security

Goal 15. <i>Life on land</i> . Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.	Environmental security
Goal 16. <i>Peace, justice and strong institutions</i> . Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, build effective, accountable and inclusive institutions at all levels.	Political security
Goal 17. <i>Partnership for the goals</i> . Strengthen the means of implementation and revitalise the global partnership for sustainable development.	Political security

Source: created by the authors according to UN (2020)

Perception of links between sustainable development goals and the regional security complex may contribute to the identification of internal and external threats to the state and the region. For instance, threats emerging from outside the region are defined as threats to all actors within the region (Prada, 2020; Gil, et al., 2019; Savona, & Ciarli, 2018; Kline, et al. 2017; Kilroy, et al., 2013). As a result of regional relationships, solutions to all threats should be found to involve collective action from all partnering states, especially when it refers to political and military security. Additionally, sustainable development goals indicate that sustainable development and security are the concern of a globalised world. However, some dangers and threats equally impact both the rich and the poor in any part of the world. Moreover, sustainability is a driving force for internal and external political decisions, economic actions and regional security assurance (Feliciano, 2019; Kline, et al. 2017; Neag et al., 2017). Consequently, the integration of sustainable development into the regional security complex may address the solutions to the economic, social and security problems. Poverty, migration issues, inequality, population growth, environmental problems and external threats are interrelated and interdependent, hence they must be approached concurrently. For example, Prada (2020) finds that indicators of the sustainable development goals have strong links with internal and external migration. Goal 16 may be measured by the number of military units, the number of personnel in the military sector and the percentage of GDP dedicated to the expenditure on the defence.

3. Methodology

Principle indicators describing the economic, social and military security have been selected to analyse regional security and sustainable development in the Lithuanian context. The following sections of the article discuss the economic and demographic indicators and their dependence on the regional security, namely, the deployment of military units in Lithuania. Classification methods are used to demonstrate this dependence. Undoubtedly, economic and demographic changes affect the employment market structure, work relationships, territorial and regional distribution of labour resources as well as the overall supply and demand of workforce in the country.

The following three economic indicators listed in the Lithuanian statistics database describing the situation in the Republic of Lithuania and its districts were selected for the research: gross domestic product (GDP) per capita in Euros, percentage rate of unemployment and gross wages in Euros. Indicators for migration and natural population change were also selected to analyse the demographic situation, where the migration is reflected by the individually observed numbers of immigrants and emigrants as well as the natural population change. Military security indicators are described by the number and distribution of Lithuanian military units as well as the size of Lithuanian military units, i.e. the number of military staff. Military security indicators have been provided by the Ministry of National Defence of Lithuania.

Every indicator has complex links, i.e. the calculation for the indicators is based on identical methodology and carried out in terms of a specific region in a given year (2010-2019). The following military indicators were also assessed to determine the relationship with the deployment of military units: the number of military units in regions and region ranking based on the number of military staff. K1 ranking is definitive, where 1 means present staff and 0 means no staff. K2 ranking considers the number of staff, where 1 means more than 1000 and 0 means less than 1000.

The following methods were applied in the research: segmentation, classification using the k-means method and decision trees for classification.

The research aims to understand event and behaviour causation by employing diagnostic analytics. The principal methods of diagnostic analytics are segmentation and classification.

Segmentation is heuristic and multidimensional. It is required in the discovery of natural object groupings. Segmentation is a method of data mining designed to classify data, concepts, events, etc. into types of groups termed as clusters. This method is known as market segmentation or client segmentation in economics. It is used successfully in the prevention of fraud. Segmentation aims to gather elements into groups or clusters that exhibit an evident degree of classification among the elements, yet none across the clusters. Segmentation analysis is used to identify a classification scheme, to arrange statistical models for population research, to identify the classification rules, to anticipate the range, size and changes of a broad concept, to locate typical cases that lineate and represent a class, to identify rare cases and to reduce the complexity of an issue. Predictions are not made in segmentation. On the contrary, segmentation methods use object attributes to determine object similarities and to organise similar objects into groups. The segmentation method used in this article is the k-means method.

When considering a set of objects, each with n measurable attributes, the k-means is an analytical method that identifies groups of k -objects at a selected k -value according to the proximity of the objects to the centre of the k -groups (Bansal et al. 2017). The centre is calculated to be the arithmetic mean of the n -dimension attribute vector of each cluster.

K clusterisation algorithm:

- Step 1. Random k points are randomly selected from the scattered data to be the cluster centres;
- Step 2. The distance between each point is calculated;
- Step 3. New centres are calculated;
- Steps 2 and 3 are repeated until the criterion for convergence is met.

Classification. Classifier is presented together with the set of classified samples. The classifier learns to class new samples based on the previous samples. In other words, the primary task of classifiers is to assign class labels to new observations, which is opposite from segmentation that reveals the structure without a learning set and gives the researcher the option to create and assign labels to clusters. Classification methods are as follows: decision trees, random forests, neural networks, k-nearest neighbour, Bayes classifier, genetic algorithms and rough sets.

The *classification decision tree method* with multiple input variables (attributes) that affect classification patterns has been selected for the research. The decision tree has branches and nodes. Based on the classification patterns, a branch describes the output using one attribute. A leaf node describes the final class selection; an internal node between the root and the branch describes selection possibilities using the conditional operator 'if-then'. The break point indicates the selection. The depth of a node is defined as the minimum number of steps from the root to the node. Leaf nodes are at the ends of tree branches. They represent class labels, i.e. the results of all previous decisions. The path from the root to the leaf node includes multiple decisions made at various internal nodes. The algorithm for a decision tree is as follows:

- root node is created and all data in the analysis are noted;
- the best distribution attributes are selected;

- each attribute is assigned a branch; based on the attributes, data are allocated to each branch;
- steps 2 and 3 are repeated until the required criteria are met.

This method aims to identify the attributes in each node that will serve to obtain the required classification by way of division (Song & Ying, 2015).

3. Findings of the research

The research assesses regional economic, social and military security by analysing the relationship between economic and demographic indicators and the deployment of military units in Lithuania. A large number of immigrants and a large GDP per capita do not exist mutually in Lithuania. The algorithm's selection of segmentation regions was based on the number of immigrants. Where the annual number of immigrants was from 0 to 2 000, GDP per capita ranged from 3 to 24 thousand Euros. The second region covers the annual number of immigrants ranging from 2 000 to 5 000 and the GDP this region produces ranges from 5 to 16 thousand Euros. The largest number of immigrants (from 5 000 to more than 9 000) corresponds to a small range of GDP per capita, i.e. from 7 to 10 thousand Euros, which demonstrates why these areas are attractive to the immigrants.

The decision tree algorithm is used to link the GDP per capita, the number of immigrants and the number of military staff in the area. The K1 ranking of the military staff numbers resulted in a reliable classification into two branches with an error of 0.14. Decision tree branches demonstrate that regardless of the numbers, military staff is present where the annual number of immigrants is less than 5 689. The classification linking the number of immigrants, GDP per capita in given areas and K2 ranking of military staff in given areas is not sufficiently reliable but sufficiently informative (Fig.1). A significant number of military staff can be found where the GDP per capita is more than 12.25 thousand Euros or the GDP per capita ranges from 9.9 to 12.25 thousand Euros and the number of immigrants is between 153 to 694 or both the GDP per capita and the number of immigrants are low (<9.9 and <153 respectively).

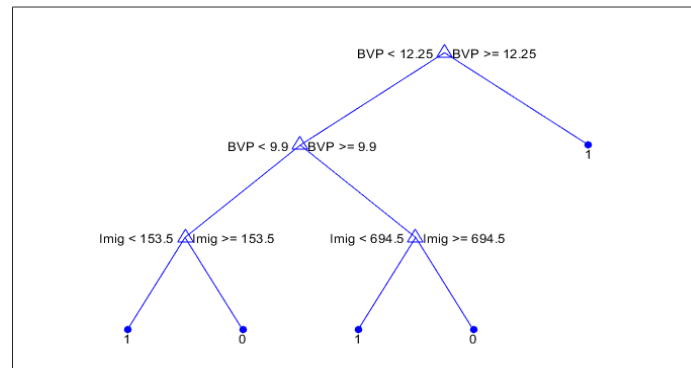


Figure 1. Classification of the number of immigrants (Imig) and GDP per capita (BVP) in given areas using the decision tree algorithm to establish a link with K2 ranking (created by authors)

The scatter plot of the annual number of emigrants and GDP per capita indicators resemble a hyperbola. As the GDP per capita increases, the number of emigrants decreases exponentially. Segmentation using the k-means method allocated the mutual dependence of the number of emigrants and the GDP per capita into three segments based on the number of emigrants. The number of emigrants that ranges from 1 000 to 4 000 is found when observing the entire GDP band (from 5 to 24 thousand Euros). Where the number of emigrants ranges from 4 000 to 9 000, the GDP per capita covers the band of 5 to 15 thousand Euros. High annual emigration rate of 9 000 to 20 000 people only corresponded with the lowest values of GDP per capita, i.e. from 5 to 10 thousand Euros.

The objective to find a link between the annual indicators of the number of emigrants and GDP per capita and the K1 ranking of military staff in given areas of the Republic of Lithuania was not successful as the results obtained were not sufficiently significant and reliable. The result with regards to the K2 ranking links was not sufficiently reliable. The following four ranges were found to be linked with a significant number of K2 ranking military staff: GDP per capita over 12.25 thousand Euros, regardless of the number of emigrants; GDP per capita between 9.9 and 12.25 thousand Euros and the annual number of emigrants that is more than 6 795; GDP per capita between 9.9 and 12.25 thousand Euros and the annual number of emigrants that is less than 1 469. GDP per capita is between 8.6 and 8.75 thousand Euros.

Three regions were characterised through segmentation by way of natural population change levels using the k-means method. Natural population change where mortality exceeds the birth-rate substantially (from -1 800 to -2 500) corresponds to a small GDP per capita (from 5 to 9 thousand Euros). Natural population change in the range of -1 800 and -1 100 corresponds with the entire band of GDP per capita (between 5 and 24 thousand Euros). In this segment, the large GDP per capita indicators (>14 thousand Euros) correspond with the capital city. Natural population change where mortality exceeds birth-rate the least (from 0 to -1 100) corresponds with GDP per capita that ranges from 5 to 17 thousand Euros. Decision tree is used to link the natural population change indicator, GDP per capita and the number of military staff based on the K1 ranking. The algorithm provided a reliable classification into 4 classes with an error of 0.11. K1 ranking of military staff regardless of numbers may be linked with natural population change in the interval between -972 and -1 236 or less than -1 236. When the number of military staff in a given area was considered and the K2 ranking was linked with the annual indicators for natural population change and GDP per capita in given areas, the result of a seven-branch classification tree was not sufficiently reliable (Fig. 2). K2 ranking may be linked with the following economic and demographic indicator intervals: GDP per capita of more than 12.25 thousand Euros, regardless of the natural population change indicator; GDP per capita in a range between 9.9 and 12.25 thousand Euros with the natural population change indicator falling below -1 321.5; GDP per capita in a range of 9.9 and 12.25 thousand Euros with the natural population change indicator falling above -679.5; GDP per capita is in a range between 8.6 and 8.75 thousand Euros.

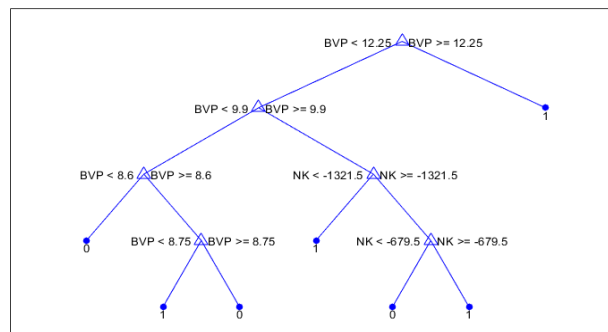


Figure 2. Classification of natural population change (NK) and GDP per capita (BVP) using the decision tree algorithm to establish a link with K2 ranking (created by authors)

Mutual dependence of annual indicators for the unemployment rate and the number of immigrants in given areas. The scatter plot of the indicators does not demonstrate a functional dependence. The first and most suitable cluster covers the indicators that correspond with an annual immigrant number below 2 000 and a full band of unemployment rates ranging from 4% to 24%. The low number of immigrants is completely natural and thus independent of the economic indicators. The unemployment rate allocated to the second cluster is between 4%

and 15%. Only one indicator marks an exception with an unemployment rate of 23%. The third cluster covers an annual number of immigrants exceeding 5 000, and an unemployment rate that ranges between 9% and 17%.

The decision tree algorithm is used to link the unemployment rate and the number of immigrants with the K1 ranking military staff. The classification provided seven branches, three of which may be linked with the presence of military staff in an area regardless of their numbers; albeit, this classification is not sufficiently reliable. The annual number of immigrants is between 1 366 and 5 689, and the unemployment rate is lower than 18.9%; the annual number of immigrants is between 726 and 1 197, and the unemployment rate is below 18.9%; the annual number of immigrants is lower than 717, and the unemployment rate is lower than 18.9% (Fig. 3).

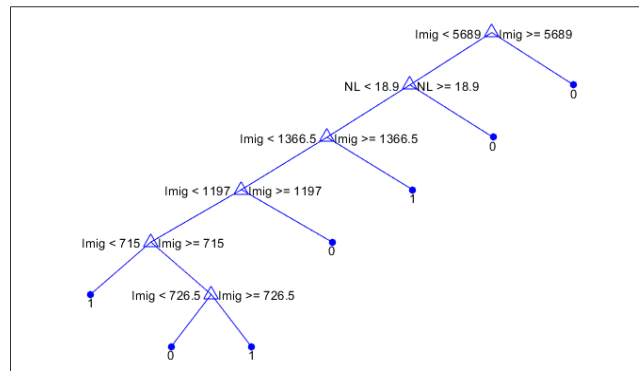


Figure 3. Classification of unemployment rate (NL) and the number of immigrants (Imig) using the decision tree algorithm to establish a link with K1 ranking (created by authors)

Six classification branches were obtained when linking the number of military staff using the K2 ranking with the unemployment rate and the number of immigrants (Fig. 4), albeit with a large error. The following three branches are related to the deployment of military staff in given areas: the unemployment rate is lower than 6.45%, regardless of the number of immigrants; the unemployment rate is between 9.85% and 14.55%, and the number of immigrants is above 763 and below 911; the unemployment rate is between 9.85% and 14.55%, and the number of immigrants is below 763.

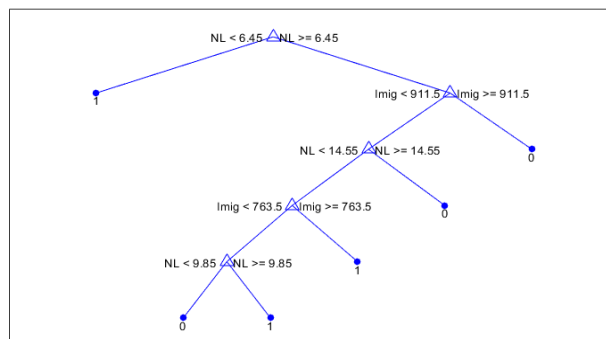


Figure 4. Classification of unemployment rate (NL) and the number of immigrants (Imig) using the decision tree algorithm to establish a link with K2 ranking (created by authors)

Segmentation of the dependence between the unemployment rate and the number of emigrants characterises three regions based on the number of emigrants. A low emigration rate (less than 4 000 emigrants annually) is characteristic of almost the entire range of the unemployment rate (from 4% to 19%). Many area indicators of the country are concentrated here, which reflects the natural migration of the population. Emigration rate in the range of 4 000 and 9 000 annually is characteristic of approximately the same range of the unemployment rate as above, except that there are fewer indicators here. A high rate of emigration (from 9 000 to 20 000 annually) is linked with a higher rate of unemployment ranging between 8% and 24%.

The decision tree algorithm provided 4 classes with an error of 0.16 for the link between the unemployment rate and the number of emigrants and the military staff, regardless of the staff numbers based on the K1 ranking. The presence of military staff in an area may be linked with the annual number of emigrants in the area that is below 8 977, regardless of the unemployment rate; where the number of emigrants was higher than 8 977, the unemployment rate was lower than 13.35%. The relationship between the unemployment rate, the number of emigrants and K2 ranking is described by seven decision tree branches (Fig. 5). A larger concentration of military staff is related to the following four ranges of economic and demographic indicators: the unemployment rate is lower than 6.45%, regardless of the number of emigrants; the unemployment rate is between 6.45% and 14.5%, and the number of emigrants is lower than 1 487; the unemployment rate is between 6.45% and 14.5%, and the number of emigrants is in the range of 1 846 and 1 887; the number of emigrants is higher than 1 887, and the unemployment rate is higher than 14.5%.

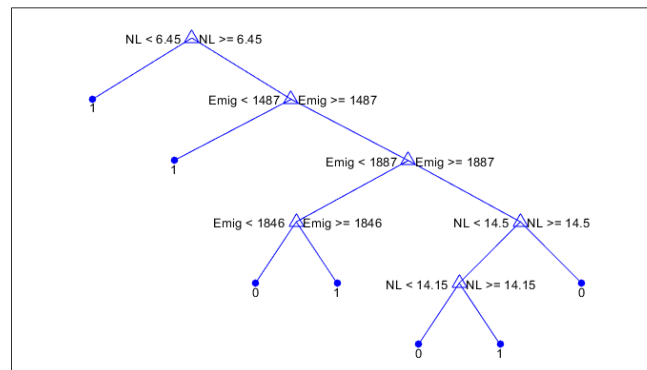


Figure 5. Classification of unemployment rate (NL) and the number of emigrants (Emig) using the decision tree algorithm to establish a link with K2 ranking. (created by authors)

Mutual dependence and scattering of the natural population change and unemployment rate indicators are rather consistent, save for the zones with the highest unemployment rate and the lowest natural population change. A small difference between the annual number of births and deaths in given areas is related to all possible indicators of the unemployment rate. The natural population change indicator ranging between 0 and -1 100 is independent of the unemployment rate. The second segment is defined by the natural population change in the range of -1 800 and -1 100, and the range for the unemployment rate in this case is smaller, i.e. between 4% and 16%. A particularly negative indicator of the natural population change (from -2 500 to -1 800) is found to be characteristic of the unemployment rate in the range of 7% and 13%. The presence of military staff in given areas is related to the unemployment rate below 17.35% and the indicator of natural population change below -1 236 or the natural population change falling between -1 236 and 893 (Fig. 6).

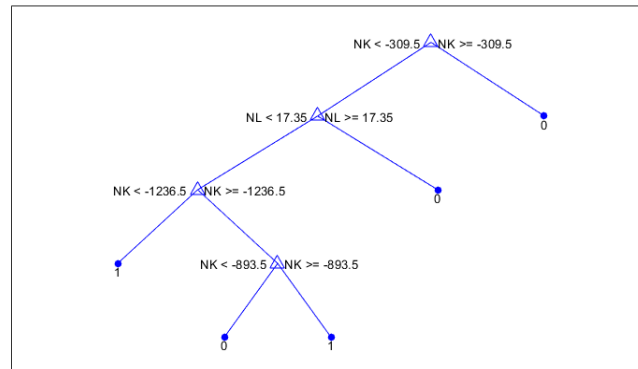


Figure 6. Classification of natural population change (NK) and the unemployment rate (NL) using the decision tree algorithm to establish a link with K1 ranking (created by authors)

The objective to link the annual indicators for natural population control and the unemployment rate in given areas with the number of military staff per K2 ranking resulted in the classification into two classes with an error of 0.2. A large number of military staff is linked to the unemployment rate that is lower than 6.45%. A large number of immigrants is linked with a higher salary. Segmentation of the dependence between the number of immigrants and the salary using the k-means method distributed the indicators into three segments according to the number of immigrants. A small number of immigrants (between 0 and 2 000) is linked to a range covering all monthly wage possibilities from 600 to 1 500 Euros per month. The annual number of immigrants ranging from 2 000 to 5 000 is linked with an average wage in the interval between 600 and 1 300 Euros. A high rate of immigration (between 5 000 and 9 000) is linked to an even smaller range of monthly wages in given areas, i.e. between 600 and 1 100 Euros. The decision tree algorithm created nine branches with regards to the average wage, the number of immigrants and the K1 ranking of military staff. The following four branches describe the link to the K1 ranking: the annual number of immigrants is between 4 825 and 5 689, and the average wage is more than 1 075.35 Euros; the annual number of immigrants is between 4 825 and 5 689, and the average wage is between 852.85 and 1 072.75 Euros; the annual number of immigrants is below 4 825, and the average wage is between 742.3 and 802.6 Euros; the annual number of immigrants is below 4 825, and the average wage is less than 741.15 Euros (Fig. 7).

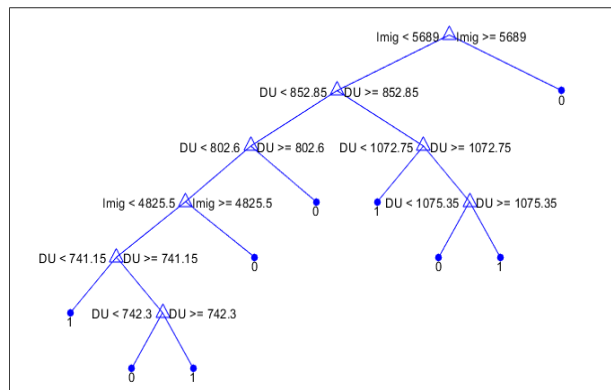


Figure 7. Classification of the number of immigrants (Imig) and the average wage (DU) using the decision tree algorithm to establish a link with K1 ranking (created by authors)

A decision tree with 6 branches and an error of 0.12 was obtained to link the number of immigrants and the average wage with the number of military staff using the K2 ranking. The larger number of military staff together with the average wage and the number of immigrants are tied to the following 3 classes (Fig. 8): the average wage is more than 1 168 Euros, regardless of the number of immigrants; the average wage is in the range of 853 and 973 Euros, regardless of the number of immigrants; the number of immigrants is below 1 088, and the average wage is less than 1 036 Euros.

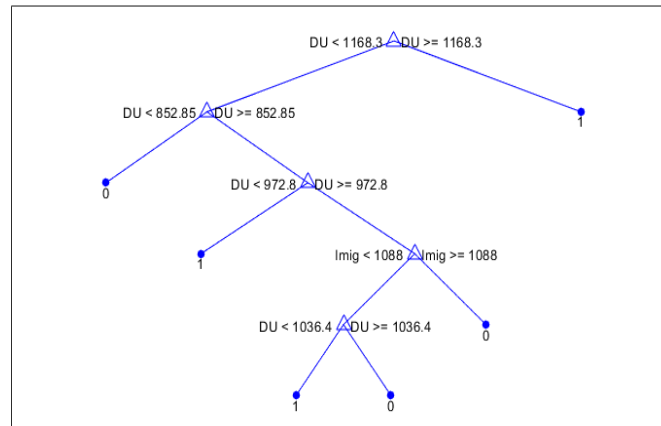


Figure 8. Classification of the number of immigrants (Imig) and the average wage (DU) using the decision tree algorithm to establish a link with K2 ranking (created by authors)

As the gross average wage increases, the number of emigrants decreases. Three segments obtained using the k-means algorithm distribute area indicators according to the number of emigrants. The first region covers the lowest rate of emigration in given areas (from 1 000 to 4 000 emigrants annually); the gross average wage here scatters across the entire band, i.e. from 700 to 1 500 Euros. The second region covers the number of emigrants that ranges between 4 000 and 9 000 annually; the wage ranges from 700 to 1 250 Euros. The third region covers a very high rate of emigration that ranges from 9 000 to 20 000 annually, and the wages within this segment fall into a smaller range between 700 and 1 100 Euros.

The objective to link the number of emigrants and the gross average wage with the military staff ranking, regardless of the number of the military staff per K1 was unsuccessful. A larger number of military staff described by K2 is linked with a classification tree with 4 branches and an error of 0.13. The number of military staff is linked with average wages exceeding 1 168 Euros or falling between 853 and 973 Euros, regardless of the number of emigrants (Fig. 9).

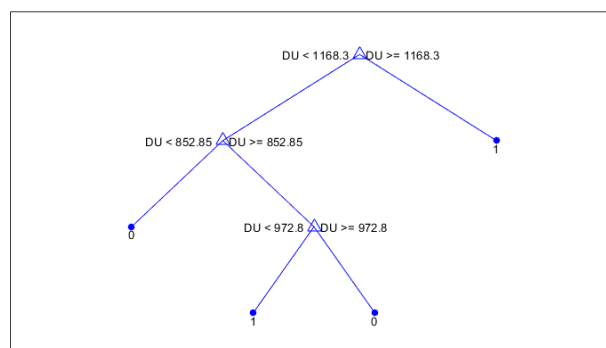


Figure 9. Classification of the number of emigrants (Emig) and the average gross wage (DU) using the decision tree algorithm to establish a link with K2 ranking (created by authors)

Mutual dependence of the natural population change framed as the annual difference between births and deaths and the average wage. The scatter plot does not demonstrate any functional dependence between these indicators. K-means algorithm allocated the indicators of natural population change and average wage into the following 4 segments: negative natural population change (below -1 800) and an average wage between 700 and 1 050 Euros; natural change approximately between -1 750 and -1 250, and an average wage scattered across the entire range between 700 and 1 050 Euros; natural population change between -1 250 and -700, and a lower average wage (from 700 to 1 200 Euros); the least negative natural population change (from -700 to 0) and an average wage between 700 and 1 350 Euros. The natural population change, average wage and the military staff per K1 ranking are linked in the decision tree with 4 branches and an error of 0.13. The number of military staff may be linked with the natural population change below -1 236 or ranging from -1 236 to -972, regardless of the average gross wage (Fig.10).

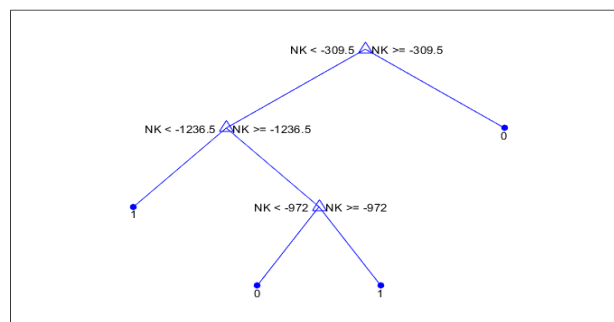


Figure 10. Classification of the natural population change (NK) and the average gross wage (DU) using the decision tree algorithm to establish a link with K1 ranking (created by authors)

The natural population change, average wage and military staff per K2 ranking are linked in the decision tree with 4 branches and an error of 0.1. A bigger number of military staff per K2 ranking is only linked with an average gross wage, regardless of the natural population change. K2 may be linked where the average gross wage is more than 1 168 Euros or ranging from 853 to 973 Euros (Fig. 11).

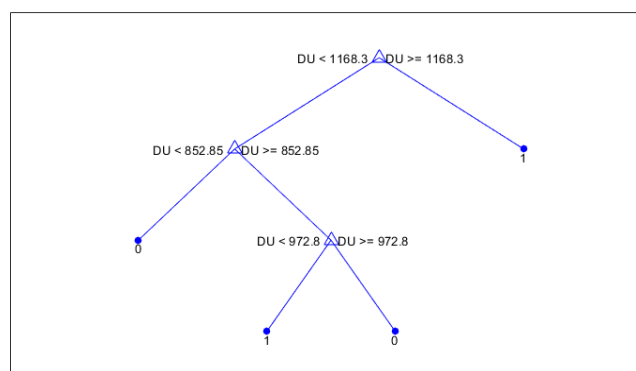


Figure 11. Classification of the natural population change (NK) and the average gross wage (DU) using the decision tree algorithm to establish a link with K2 ranking (created by authors)

Having studied the dependence between economic, demographic and social indicators, the strongest dependence was found to be between the GDP and the rate of emigration as well as a higher levels of GDP and military staff. On the other hand, the dependence between immigration and GDP has been found to be insignificant. Significant links have been identified between military staff and immigration where the unemployment rate is medium or

high. A higher number of immigrants also means a greater demand for jobs. Such a situation may be advantageous in a competition over workforce, including recruitment of military staff.

Conclusions and discussion

Sustainable development and regional security are tightly connected and often framed by analogous indicators to cover identical grounds for research. Firstly, security is understood as human satisfaction with the surrounding environment and a sense of security within the economic, social, political and cultural context. This understanding of security is closely linked to the seventeen sustainable development goals brought forward by the United Nations. The article concludes that these sustainable development goals correspond with the components of the regional security complex and can be implemented simultaneously, and their results evaluated together. The methods of segmentation and classification selected for the assessment in order to identify the links between the components of sustainable development (e.g. economic and social factors) that are integral to the security concept and the military security in Lithuania by characterising distinct regions.

In summary of the results, it may be concluded that the number of military staff can be linked with the economic and demographic indicators. However, military staff per K1 ranking does not demonstrate the number of military staff and merely assesses the presence or absence of military staff in an area. A large number of immigrants and a large GDP per capita do not mutually exist in Lithuania. A significant number of military staff is found where the GDP per capita is bigger. As the GDP per capita increases, the number of emigrants decreases. The annual indicators of the number of emigrants and the GDP per capita in the Republic of Lithuania areas could not be linked to the military staff K1 ranking.

The natural population change where the mortality substantially exceeds the birth-rate corresponds with a small GDP per capita. The military staff K1, regardless of the number of military staff, may be linked to an average natural population change within an interval. Where the unemployment rate is lower, the number of immigrants was found to be completely natural and independent of economic indicators. However, it was identified that the number of immigrants spans from 1 400 to 5 500 where the unemployment rate is high. The study into the links between the unemployment rate, immigrants and the military staff identified that where military units are deployed, i.e. where the military staff is present, the unemployment rate is low. On the other hand, the links between the unemployment rate, immigrants and the military staff were insignificant. However, there is no dependence on the number of military staff, where the unemployment rate is low and the number of immigrants is average. The number of emigrants does not show a significant dependence, where the unemployment is low or average; however, the rate of emigration is increased in regions that demonstrate a high unemployment rate. Meanwhile, a larger concentration of military staff is linked with a lower rate of unemployment and a low or average number of emigrants, where the unemployment is average or high. Previous research shows that expenditure on military security affects the rate of unemployment in the US, the United Kingdom and 11 OECD countries (Dunne & Smith, 1990). Nonetheless, another study (Abell, 1994) has demonstrated contrary results and identified that expenditure on military security has a positive impact on employment with regards to people who are ethnically white only, and the increase of military security expenses meant an increase of unemployment among African Americans. Meanwhile in China, Quing and Junhua (2015) determined that the increasing expenditures on country security are slowing down the economy. Additionally, where the higher number of military staff should be stabilising the growing unemployment, it promotes it. With regards to the results and by comparing them to previous studies, we can conclude that the number of military staff and/or an increase in the expenditure on military security have little significance in terms of the rate of unemployment in developed areas and in countries with mature economies.

It was found that a large number of immigrants is linked with higher wages independent of the number of military staff. On the other hand, the link between the number of military staff and immigrants becomes evident where the wage is average. A link between military staff, the number of emigrants and the wages was not found. However, the rate of emigration decreases in areas where the wages increase. Functional dependence also could not be identified between natural population change and average wages. Meanwhile, the number of military staff can be linked with an average or high level of natural population change. A high number of military staff per K2 is linked only with a higher wage, where it does not depend on the natural population change. K2 indicator is linked with a smaller number of immigrants in given regions and a negative natural population change. Whereas Smith (2007) identified a higher dependence between deployed military staff and external immigration in the US in those regions, where migration is considered to be a threat to security. However, the study does not characterise a dependence on wages or unemployment. On the other hand, another study analysing the US situation demonstrated that the internal migration has decreased significantly since 1950, albeit this decrease is linked with a decreasing number of military staff in individual states (Pingle, 2007). Another study conducted in Greece and spanning from 2011 to 2014 (Hausmann, Nedelkoska, 2018) confirmed a strong relationship between the increase of wages and unqualified emigrants as well as with a lower unemployment rate.

The results demonstrate that a higher number of military staff, i.e. bigger expenditure on security, has a significant relationship with a larger GDP. Further research could integrate additional factors to elucidate the Lithuanian regional security complex.

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IDENTIFYING CRITICAL SUCCESS FACTORS FOR UNIVERSITY BUSINESS INCUBATORS IN SAUDI ARABIA

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Abstract. Business incubators are a major tool in entrepreneurial eco-system of any country and forms the backbone of economic development initiatives. One of the greatest adaptations of business incubators came through universities especially public sector universities. This is due to the university's understood responsibility of supporting science and society development and ultimately providing all the new businesses' requirements in science and technology. Saudi Arabia has taken robust measures to develop and improve the local entrepreneurial eco-system by establishing and nurturing business incubators, especially university business incubators. In a small frame of time, Saudi business incubators have produced many innovative solutions for the technology, economic and social challenges. Due to multifaceted functionality and lack of standard evaluation criteria the business incubator performance became very important topic in Saudi Arabia. The purpose of this research is to develop critical success criteria for business incubators in Saudi Arabia. Survey methodology was employed to collect the data. Data were analyzed in many ways. Firstly, based on the survey results, list of success criteria for business incubators performance was presented. Secondly, descriptive analysis shows that top three critical factors include (a) coaching and mentoring hours, (b) number of services and supports offered; and (c) access to funds in terms of total attractive investment. While the least important factors considered were (a) affiliation with the university, (b) time limit to tenancy, and (c) numbers of IPOs launched. Thirdly, factor analysis summarizes all the critical success factors for university business incubators and culminates into five big factors, including (a) support services; (b) network support; (c) financial support; (d) economic development; (e) alumni success. Finally, cluster analysis shows there are two major cluster groups in the data: (a) 'employees' of the incubators and (b) 'incubatees'. This research provides guidelines and critical success criteria for business incubators operating in Saudi Arabia or elsewhere.

Keywords: Business Incubators; Accelerators; University Business Incubators; Saudi Arabia; Success Factors

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1. Introduction

Over the past two decades, Saudi Arabia has been actively engaged in educational expansion and investment. As a result of this direction from the Government, many graduated students from different fields and specializations have graduated. However, it is implausible that the Government will provide the required jobs for all those graduated students. Moreover, the private sector in Saudi Arabia is not developed enough to address this gap

between the Government and the huge number of graduated students. As a solution to this problem, the Government has developed a new initiative to establish a business incubator as part of universities throughout the Kingdom. The incubators have been increased very rapidly after launching the 2030 Vision by the Government of Saudi Arabia. There are over 35 business incubators working under the universities as non-profit organizations. Different names are assigned to these incubators, such as ‘business incubators’, ‘accelerators’ ‘accelerated business centers’, and ‘business hub center’.

2. Theoretical background

There are many definitions of business incubators (BI) in the literature. The most prominent definition comes from the National Business Incubation Association (NBIA). It defines business incubators as a catalyst tool for either regional or national economic development that has been formulated to enhance the growth rate of the new companies by providing all the required support and services or overcontrol new businesses by managing them through incubation and networking (NBIA, 2021). Other researchers have also provided useful definitions for BI as following. The business incubator is the organization that provides the logistic requirements to the business project in the early stages, such as place and the required recommendations and guidelines; a suitable space and all required assistance in the early stages for the targeted firm; the required support for the firm in the early stages (Mian, 2014). The support may include office service, coaching, and communication (Hansen et al. 2000); governance to the firm in the early stages and provides the required guidance and recommendations (Manan & Yunos 2001); support the new project and link it to the appropriate network, along with the offering of the required advice and recommendation, especially in the first few years of the business start-up (Mian, 1997).

Business incubators have evolved over a period of time and can easily be classified into four generations based on the commonalities among services offered. The first generation of the business incubator, which has been stated from 1970 till mid-1990 “traditional incubator.” The main objectives of these incubators were to enhance the national economy by improving entrepreneurship and small firm. The Government normally controls this type of incubator. Additionally, the universities and private sector contribute by providing the space, and the major revenue is by the rent of space. These incubators were based on economies of scale and offer office space and shared resources. Important characteristics were (a) reactive support, (b) landlord-tenant relationships, and inclination towards real estate management (Allahar, & Brathwaite, 2016). The second generation of the incubator which started from 1990 till 2000. This type of incubator is also named as an incubator without walls or a new economy incubator. Technology development is the main target of this incubator without the interest of job creation. The revenue of this incubator is from the equity of companies via IPO. This generation was based on accelerating the learning curve and used to provide coaching and training support in addition to first-generation services. Prominent characteristics of the generation were (a) advisory services and (b) proactive support (Allahar, & Brathwaite, 2016). The third-generation incubators were started in early 2000. These incubators were based on access to external resources, knowledge, and legitimacy and used to offer access to technological, professional, and financial networks (Bruneel et al., 2012). Prominent characteristics of the generation include (a) access to funding; (b) co-venturing; (c) business accelerators; (d) coaching; (e) mentoring; and (f) technology labs/parks (Allahar, & Brathwaite, 2016). The emergence of business accelerators during the third generation of business incubators can be seen as a catalyst for the growth of business incubators. Business accelerators are a series of programs that give developing companies access to mentorship, investors, and other support services that help them become stable, self-sufficient businesses. Start-ups that use the services of business accelerators are typically those having moved beyond the earliest stages of getting established. Typically, business incubators target local start-ups and provide office space to reduce rent, while accelerators offer fixed-term cohort-based programs. Mentoring, education, technical assistance, and seed funding are some of the common characteristics (Ganamotse et al., 2017). The fourth generation of business incubators is still evolving and based on the concept of business incubators accreditations and internationalization (Khalid et al. 2014). Prominent characteristics of the generation include (a) international business incubators; (b) accredited business incubators; and (c)

international co-incubation (Allahar, & Brathwaite, 2016). One thing is consistent among all generations and among all definitions of business incubators, i.e., business incubators are companies that help new ideas, novice entrepreneurs, and/or new start-up companies to develop by providing services such as management, training or office space, more precisely they provide support to early-stage start-ups (Bruneel et al., 2012; Khalid et al., 2014).

One of the greatest adaptations of business incubators and accelerators came through universities. Although teaching entrepreneurship is not directly linked with business incubators and accelerators as part of their curricula (Siddiqui, & Alaraifi, 2019) but graduates' risk aversion and work effort are positively influenced by the university business incubator and entrepreneurship education programs (Guerrero et al., 2020). Now universities understand their responsibility of supporting science and society development and ultimately providing all the requirements for the new business in science and technology to play their most important roles as university business incubator (Nicholls-Nixon et al., 2020). Literature provide further support to the application and implementation of UBIs throughout the globe i.e., University business incubator (UBI) works as hub to market; university; research and technology (Pellegrini, & Johnson-Sheehan, 2020); UBIs are considered as an effective tool used to compensate the weakness in the traditional business incubators (Grimaldi, & Grandi, 2001); UBIs also provide the required support to university professors, students, alumni to start businesses as entrepreneurs (Gozali et al, 2018); UBI's role is not only to provide the required support to the accelerate the growth for the new businesses in the market but also provide the required training for the university students and marketing university's innovation (Nicholls-Nixon et al., 2018); UBIs are considered as the most crucial element of entrepreneurial ecosystem (Nicholls-Nixon et al., 2020); UBI can utilize all available resources and the faculty experiences to support the new firm during the start-up period in the market (Lendner, & Dowling, 2007); UBI establishes effective networks and creates value for the incubatees to survive in the market. It also provides a chance of getting fund and support to incubatees (Cooper et al., 2012); UBI has to consider the differences of cross-border and cross-cultural organizations in order to get acceptance of incubator concept, especially in developing centuries (Dahms, & Kingkaew, 2016); UBI is a tool used to enhance national economic growth. Normally, UBIs are targeting the technology firms in early stages (Somsuk, & Laosirihongthong, 2014); UBI provide the required offices, tools, and the consultation service for the new firm; works as mediator between the university and the industrial market and creates the required link to support the university research (Wonglimpiyarat, 2016); UBI provides varieties of facilities and image to tie with university image and it provide incubatees the ability to survive in the market (Grimaldi, & Grandi, 2001). On the other hand, literature also provide significant critique to the UBIs. For example, UBI's support activities for entrepreneurs is dependent on UBI's manager's experience (Redondo, & Camarero, 2017); UBIs need to consider the organizational and cultural differences in different countries in order to get acceptance of incubator concept, especially for developing centuries (Dahms, & Kingkaew, 2016); UBIs are under great pressures to evaluate the UBI performance and the rationalization of UBI's fund (Nicholls-Nixon, & Valliere, 2019). Even research on UBIs also came under scrutiny. For example, most of earlier research have ignored to study society funding to the entrepreneur through UBIs (Redondo, & Camarero, 2019); most of the earlier research on UBI activities failed to link the UBI's activities to the different generations of business incubators and their offerings despite the fact that UBI works as mediator between the university and the industrial market and create the required link to support the university research (Wonglimpiyarat, 2016).

A very thin amount of literature is available on the critical success factors for UBIs. Firstly, a seminal work on UBI's success factors (Mian, 1994, 1996a, 1996b 1997), reviewed and upgraded success factors (Verma, 2004), and Saudi model for technology incubators (Binsawad et al., 2019); six-factor model including age and quality of facilities, credits and rewards, entry criteria, exit criteria, funding support, good system and infrastructure Gozali et al., 2018); four-factor model including human resources, financial resources, technological resources and organizational resources (Mavi et al. 2019) and most recently used success

criteria for the ranking university business incubators (UBI Global, 2020). All models have their merits and demerits. Mian's model (1994) is very old and belongs to first generation of business incubators but does not link to subsequent generations and needs updating. Verma's model (2004) is also old and belongs to the second generation of UBI (Verma, 2004). Some of the research on university business incubators and their performance were excluded from this research as they were based on students' entrepreneurial intentions; not based on actual incubator experience; for example (Yamockul, Pichyangkura, & Chandrachai, 2019) or having methodological issues (Mavi, et al 2019; Gozali et al, 2018). Binsawad et al. (2019) is a Saudi Technology business incubator model is based on personal perspective, not organizational criteria, and cannot be used for UBI performance evaluations and it does not include the attributes of the fourth generation of UBI (Binsawad et al. 2019). UBI Global model (2020) for UBI ranking is more appropriate but lacks features of earlier generations of UBI (UBI Global, 2020). It became the criteria to rank the university incubators in the world. Every year the UBI provides a report started the top business all over the world based on three categories. The first categories are the top changers. The second categories are the recognize the most promising incubator and the last category is the ranking for university incubator over the world. Every year these is around 70 counties involve in the incubator rang with total number of 300 incubators. These samples contain the most important and popular sector in the business. UBI framework to rank the incubator contain of three importins categories, the values of ecosystem, value for client and attractiveness. These three categories spared to seven indictor which use to measure the incubator performance. The seven indictors are economy enhancement, access to funds, incubator offer, talent retention, competence development, post-incubation performance and access to the network (UBI Global, 2020).

During the last two decades there has been an increasing effort by the Saudi authorities to improve the entrepreneurial ecosystem in the country establishing the business incubators and accelerators (Al-Mubarak & Busler, 2010). Saudi vision 2030 has selected entrepreneurship as future roadmap for economic development and employment creation (Saudi Arabia, Vision 2030; www.vision2030.gov.sa/en). In addition, Government has established the Small and Medium Enterprise Authority (SMEA; www.monshaat.gov.sa/en), as part of the Vision 2030 and this authority has helped to establish new business incubators and support and evaluation the performance of existing business incubators. The Kingdom of Saudi Arabia began to support its entrepreneurial ecosystem in the last decade, with different governmental initiatives and the involvement of the private sector. Such initiatives include the Saudi Business Incubator Network initiative (Salem, 2014). Another business incubator that has been established nationally to promote technology and innovation is BADIR technology business incubator (Khorsheed et al., 2014). This indicates that the Saudi government agencies responsible for shaping entrepreneurship policies must acknowledge the need to integrate business incubators into economic policy reforms (Salem, 2014). Table 1 provides a list of national business incubators and accelerators in Saudi Arabia. University business incubators have recently been introduced in Saudi Arabia (Siddiqui, Siddiqui, & Alaraifi, 2018) and almost all universities have launched university business incubators (UBI) as not-for-profit organizations.

Table 1 List of National Business Incubators participated in this study

No	Business Incubator	City	No	Business Incubator	City
1	BADIR - King Abdullah City of Science and Technology (KACST)	Riyadh	12	FLAT6LABS	Jeddah
2	Misk 500 - MISK Foundation	Riyadh	13	InspireU	Riyadh
3	9/10th - King Abdullah University of Science and Technology (KAUST)	Riyadh	14	Tamakkun BA	Riyadh
4	E3qlha - First women's business incubator	Riyadh	15	Entertainment BA	Riyadh
5	Bab Rizq - Abdullatif Jameel Motors	Riyadh	16	I-be Hub	Riyadh
6	Jeddah Valley	Jeddah	17	Inspire	Riyadh
7	Dhahran techno valley	Dharan	18	Startups House	Riyadh
8	Riyadh Taqnia venture	Riyadh	19	Oqal	Riyadh
9	Riyadh Valley	Riyadh	20	Raz	Riyadh
10	Saudi Credit and Savings bank	Riyadh	21	Riyada	Riyadh
11	Saudi Venture Capital	Riyadh			

Table 2 provides list of UBIs and parent universities in Saudi Arabia. In Saudi Arabia, not many UBIs are performing at par and there are no centralized acceptable criteria available for UBI's success. One of the obvious reasons is the fact that some of UBIs in Saudi Arabia are still in infancy stages and restricted to provide only first-generation services. Hence their progress in terms of alumni success or financial performance cannot be measured. This requires an urgent task to develop the criteria for UBI success in Saudi Arabia.

Table 2 List of University Business Incubators participated in this study

No	University Business Incubator and Parent University	City
1	Innovation and entrepreneurship center - Business incubator and accelerator, Al-Baha university	Al-Bahah
2	Najahat – Business incubator, King Faisal University	Al-Hasa
3	IAU Entrepreneurship center - Business incubator and accelerator, Imam Abdurrahman Bin Faisal University	Dammam
4	Entrepreneurship institute - King Fahad for University of Petroleum and (KFUPM)	Dammam
5	Hail university start-up accelerator - Business incubator and accelerator, Hail university	Hail
6	Jnnov8 – Business incubator and accelerator, Jazan University	Jazan
7	Business Innovation and Entrepreneurship - Business incubator and accelerator, Effat university	Jeddah
8	Sahabat Alimam – Business incubator, Imam Mohammed bin Saud Islamic University	Madinah
9	Bab-Al-Madinah – Business incubator & accelerator, Islamic University of Madinah	Madinah
10	Wadi Makkah – Business incubator and accelerator, Umm Al-Qura University	Makkah
11	Centre of creativity and entrepreneurship – Business incubator & accelerator, King Abdulaziz University	Riyadh
12	Innovation and economic development –King Abdullah University of Science of Technology (KAUST)	Riyadh
13	Hikma incubator, King Abdullah University of Science of Technology (KAUST)	Riyadh
14	King Salman Institute for Entrepreneurship - Business incubator and accelerator, King Saud University	Riyadh
15	Innovation and entrepreneurship center - Business incubator and accelerator, University of Taif	Taif

3. Research objective and methodology

The objective of this research is to identify critical success factors for UBIs in Saudi Arabia. Population of this research is considered to be all stakeholders all-inclusive. Respondents selected for this research includes graduates / alumni of UBIs successfully running their start-ups; senior employees of business incubators; incubates associated with different business incubators regardless of their stage; field business experts involved in teaching, consulting or other support activities for business incubators in Saudi Arabia. Although judgmental sampling technique was employed to collect the data, but all efforts were made to make the sample as true representative sample and include all possible groups of respondents. Questionnaire was developed using multi-stage method. Firstly, individual items were drawn from the literature review including Verma (2004), Mian (1996) and most recent UBI Global (2020). Table 3 presents a comparative account of different models used to provide success criteria for Business Incubators.

Four models including Mian (1994), Verma (2004), Binsawad et al (2019), and UBI Global (2020) were presented through semi-structured interviews to experts from the field. Participants were recruited through networking events, LinkedIn profiles, and snowballing techniques. A total of five experts from different institutions were interviewed, representing one from Monshaat (small and medium enterprise regulatory authority), two from the largest business incubators in Saudi Arabia and two from leading business schools responsible for university business incubators. All participants are well-known and were over the age of 35 and have reasonable experience in the field.

After interviews with all stakeholders three important decisions were made; (1) items from Binsawad et al (2019) inventory were dropped for further research for many reasons; (a) items were based on personal perspective not organizational perspectives; (b) criteria used for evaluation of UBIs was focused on academic research and cannot be used for UBI performance evaluations; (c) items do not include the attributes of fourth generation of UBIs; (d) items could not be validated during the research and cannot be generalizable for field research. (2) Although, UBI Global (2020) model is the most recent and updated model for critical success factor business incubators but may

not be a suitable option to measure critical success factor for Saudi UBIs due to reasons mentioned above. (3) There is a need to develop critical success factors for Saudi UBIs spreading over all generations of UBIs and meeting the needs of UBIs in different stages of their evolution. Table 4 presents the nine dimensions having 28 items selected for further research stages dully validated by six experts from the field.

Table 3 Comparison of different models used to provide success criteria for Business Incubators

Mian (1994)	Verma (2004)	Binsawad et al (2019)	UBI Global (2020)
A. Shared office services	Shared Physical Services	Management Support	Economy Enhancement
1. Photocopier	a. Security	IT Support	a. Jobs created & sustained (#)
2. Telephone	b. Computers	Reward	b. Sales revenue (\$*)
3. Facsimile (Fax)	c. Conference room	Self-Efficacy	c. Graduates (#)
4. Conference room	d. Custodial services	Interpersonal Trust	d. Self-generated revenue (\$*)
5. Security	e. Photocopier	Enjoyment in Sharing	Talent Retention
6. Receptionist	f. Furniture and equipment	Knowledge-Donation	a. Client start-ups accepted (#)
7. Custodial maintenance	g. Library	Knowledge- Collection	b. Graduate retention (#, %)
8. Personal computer	h. Telephone equipment	Diffusion of Innovation	Competence Development
9. Shipping/receiving	Shared Business Support	Complexity	a. Services offered (#)
10. Mail sorting	a. Photocopy	Compatibility	b. Coaching & mentoring hours (#)
11. Word processing clerical	b. Receptionist	Relative Advantage	Access to Funds
12. Cafeteria/lunchroom	c. Typing	Creativity Intrinsic	a. Total investment attracted (\$*)
B. Business assistance &	d. Clerical	Expertise	b. Average investment attracted (\$*)
1. Govt. grants and loans	e. Filing	Creative Thinking Skills	c. Seed funding attraction (#, %)
2. Business plan	f. Mail Services		Access to Network
3. Legal/govt. regulations	g. Word Processing		a. Partners (#)
4. Tax assistance	h. Off-hours answering services		b. Events (#)
5. Accessing outside capital	i. Audio-visual equipment		c. Alumni engagement (#, %)
6. Marketing	j. Shipping & Receiving		Program Attractiveness
7. Accounting	Financial Consulting		a. Internal applications (#, #/spot)
8. Personnel recruiting	a. Business Taxes		b. External applications (#, #/spot)
9. Business connections outside	b. Risk management		c. Sponsorship attraction (\$*)
10. Business connections	c. Govt. Grants & Loans		Post-Graduation Performance
11. Rent breaks	d. Govt. Contract preparation		a. 1-year survival rate (%)
	e. Equity & Debt Arrangements		b. 5-year survival rate (%)
	f. Export Development		c. High-growth enterprises (%)
	Management Assistance		d. Qualified exits (#)
	a. Business Plan Preparation		
	b. Employee Relations		
	c. Advertising & Marketing		
	d. Health & benefit packages		
	Professional Business		
	a. Legal Counselling /		
	b. Patent Assistance		
	c. Accounting / Bookkeeping		
	d. Computer & Information		
	e. Venture Capitalist		

After successful validation of all items, questionnaire was developed and demographic data including age, gender, experience, and education. Respondent's status was also added, including the manager, employee, trainer, faculty, incubatee. The questionnaire in its final shape was pre-tested on a smaller number of respondents. Successful completion of test run questionnaire was deployed online using data collection facility (UDQUEST) to collect the data. Respondents were contacted through emails and social media channels including WhatsApp, LinkedIn, Facebook, and Instagram etc. A total of 75 responses were found complete in all respects (N=75) and a sample size of 75 business incubator experts and alumni was believed to be adequate for the current study (Siddiqui,

2013). Data was analysed including descriptive analyses, factor analyses, and cluster analyses using SPSS and MS Excel software.

Table 4 Critical Success Factor for UBI in Saudi Arabia – Major Dimensions

Serial No.	Dimensions	Number of items	Validated by Experts				
			1	2	3	4	5
1	Access to Funds <ul style="list-style-type: none"> • Average investment attracted • Seed funding attraction • Total attractive investment 	3	√	√	√	√	√
2	Access to Network <ul style="list-style-type: none"> • Number of events conducted • Number of partners 	2	√	√	√	√	√
3	Competence Development <ul style="list-style-type: none"> • Coaching and mentoring hours • Number of services and supports 	2	√	√	√	√	√
4	Economy Enhancement <ul style="list-style-type: none"> • Total revenue for projects • Number of graduates • Number of IPOs • Number of jobs created 	4	√	√	√	√	√
5	Engaged Alumni <ul style="list-style-type: none"> • Alumni engagement per support • Number of attractiveness Program • Number of high growth rate enterprises • Number of sponsorships attracted • Rate of survival project in the first year • Rate of survival projects over five years 	6	√	√	√	√	√
6	Entry Criteria <ul style="list-style-type: none"> • Time limit to tenancy • Affiliated with university • Be able to pay operating expenses • Number of advance technology projects 	4	√	√	√	√	√
7	Incubator Governance <ul style="list-style-type: none"> • Experienced incubator manger • University link 	2	√	√	√	√	√
8	Shared Service <ul style="list-style-type: none"> • Importance of business service • Importance of management assistance • Importance of professional business 	3	√	√	√	√	√
9	Talent retention <ul style="list-style-type: none"> • Continuous improvement for the graduates • Effective start-up for the graduate 	2	√	√	√	√	√
	Total	28	√	√	√	√	√

4. Results and discussion

The data was analysed in three stages; a) descriptive analysis; b) exploratory factor analysis, c) cluster analysis multiple regression was used to investigate the effects of consumer's personality on the usage patterns of mobile phone services.

Table 5 shows descriptive analysis for UBI's critical success factors. Result of descriptive analysis shows top three critical factors include (1) competence development: coaching and mentoring hours (M=3.87); (2) access to

funds: total attractive investment ($M = 3.84$) and (3) competence development: number of services and support ($M = 3.81$). These findings are true reflection of incubatees looking for mentorship and coaching, access to funds and general services offered by the UBIs. Interestingly these findings belong to different generations of services offered by UBIs for example coaching and mentoring hours and access to funds belong to second generation of UBIs while number of services and support has been classified as part of first-generation criteria. On the other hand, three least important critical factors include (1) entry criteria: affiliated with university ($M = 3.25$); (2) entry criteria: time limit to tenancy ($M = 3.24$) and (3) economy enhancement: number of IPOs ($M = 3.21$).

Table 5 Critical Success Factor for UBI in Saudi Arabia – Descriptive Analysis [N=75]

Criteria	Level of Critical Importance (1 – Low; 5 – High)						Mean
	1	2	3	4	5	Total	
Competence Development: Coaching and mentoring hours	2	10	2	43	18	75	3.87
Access to Funds: Total attractive investment	6	8		39	22	75	3.84
Competence Development: Number of services and supports	1	16	1	35	22	75	3.81
Incubator Governance: Experienced incubator manger	3	12	3	36	21	75	3.8
Economy Enhancement: Number of jobs created	3	13		41	18	75	3.77
Access to Funds: Average investment attracted	3	12		45	15	75	3.76
Entry Criteria: Number of advance technology projects	5	11	1	40	18	75	3.73
Economy Enhancement, Total revenue for projects	1	15		48	11	75	3.71
Incubator Governance: University link	3	15	1	38	18	75	3.71
Access to Funds: Seed funding attraction	3	16		39	17	75	3.68
Talent retention: Effective start-up for the graduate	2	21		29	23	75	3.67
Engaged Alumni: Number of high growth rate enterprises	4	16		38	17	75	3.64
Economy Enhancement: Number of graduates	5	13		44	13	75	3.63
Shared Service: Importance of business service	3	18		37	17	75	3.63
Shared Service: Importance of professional business	3	17		40	15	75	3.63
Shared Service: Importance of management assistance	7	13		39	16	75	3.59
Talent Retention: Continuous improvement for the graduates	2	22		34	17	75	3.56
Engaged Alumni: Number of attractiveness Program	3	18	2	38	14	75	3.56
Engaged Alumni: Alumni engagement per support	3	20	3	32	17	75	3.53
Access to Network: Number of events conducted	4	20		36	15	75	3.51
Engaged Alumni: Rate of survival project in the first year	3	21		37	14	75	3.51
Engaged Alumni: Number of sponsorships attracted	5	18		39	13	75	3.49
Engaged Alumni: Rate of survival projects over five years	3	23	1	30	18	75	3.49
Access to Network: Number of partners	9	17		28	21	75	3.47
Entry Criteria: Be able to pay operating expenses	4	22		33	16	75	3.47
Entry Criteria: Affiliated with university	11	19		30	15	75	3.25
Entry Criteria: Time limit to tenancy	4	27		35	9	75	3.24
Economy Enhancement: Number of IPOs	10	22		30	13	75	3.19

Table 6 shows exploratory factor analysis (EFA), which can be used to summarize the UBIs critical success factors and ultimately can be used in the performance evaluation of UBIs. EFA was performed using the principal component analysis as extraction method and varimax rotation method with Kaiser normalization, was used to determine the factor structure of 28 items related to UBI critical success factors. Analyses resulted in a five-factor solution, consists of a total of 28 items. These items were analysed using qualifying criteria. The factor loading criteria were applied which required that; (a) a factor must have at least 2 salient item loadings greater than 0.3, (b) individual items must have at least one factor loading greater than 0.3 and (c) any item loading on more than one factor when the final solution is obtained will be placed only in the factor on which it loads most highly. Overall scores were created by summing item scores and creating one dimensional factor score, one for each

factor and dividing by the number of items in that factor, making overall scores relative and comparable. Participant's potential overall scores on each factor ranged from 1 to 5. The first factor is 'support services', which aims to provide all requirements for the incubator until incubatee become self-sufficient and successful in the market. The second factor is the 'network and communication services' which mainly measuring the effectiveness business incubator to get involved in the targeted field's environment and establishing an effective communication with the surrounding market which give the incubator the ability to successfully maintain the supply chain for the project. The third factor is 'financial support' which evaluate the ability of the business incubator to provide the required seed fund for the incubatee's project and the return of investment for the projects. The fourth-critical factor is the 'economic development' which relates the contribution of the business incubator's projects in national economic development in term of job creation and the number of successful projects in the market. The last important factor is the 'alumni network quality & successfulness, which measure the rate of growth for incubator project in the market.

Table 6 Critical Success Factor for UBI in Saudi Arabia - Factor Analysis [N=75]

Items	Factors				
	Support Services	Network Support	Financial support	Economic development	Alumni success
Shared Service: Importance of management assistance	.632				
Entry Criteria: Time limit to tenancy	.623				
Entry Criteria: Number of advance technology projects	.608				
Shared Service: Importance of professional business	.600				
Entry Criteria: Affiliated with university	.584				
Engaged Alumni: Rate of survival projects over five years	.570				
Incubator Governance: University link (long run relation with entrepreneur)	.555				
Talent retention: Effective start-up for the graduate and getting accepted	.545				
Economy Enhancement: Number of successful IPOs with proof	.537				
Entry Criteria: Be able to pay operating expenses	.489				
Access to Network: Number of partners (business development)		.752			
Access to Network: Number of events conducted by incubators and involve in.		.707			
Engaged Alumni: Alumni engagement peer support		.677			
Engaged Alumni: Rate of survival project in the first year		.626			
Engaged Alumni: Number of sponsorship attraction by incubators		.523			
Talent Retention: Suitable improvement for the graduate		.514			
Incubator Governance: An experienced incubator manger		.465			
Competence Development: Coaching and mentoring hours			.677		
Economy Enhancement: Total revenue for projects			.638		
Access to Funds: Average investment attracted (funding- average)			.634		
Access to Funds: Total attractive investment			.544		
Economy Enhancement: Number of jobs created by the incubator				.797	
Competence Development: Number of service and support				.581	
Economy Enhancement: Number of graduates of the incubators				.530	
Access to Funds: Seed funding attraction (funding- probability)				.347	
Shared Service: Importance of business service					.721
Engaged Alumni: High growth enterprises rate for post-graduation					.463
Engaged Alumni: Number of attractiveness Program					.431

Table 7 shows two major cluster groups which have been formulated from the samples. The first cluster is the 'employee' of the incubator, which has more than ten years in the incubator process. The second group is the

‘incubatee’, which considered as business incubator’s customers and normally spend a short period of time in the business incubator before the graduation. The employee group has chosen for the criticality of most of success factors in the survey. This vote due to the highly experience on the field and the knowledge of business incubator operation and the effective key performances factor which can be used to evaluate the efficiency of business incubator. In other hand, the incubatee group has chosen for neutral for most of the success factors which can be justify be looking to the experience of the incubator in the field. Moreover, the incubatee group does not involve in the day-to-day operation for business incubator. Additionally, both groups have their own interests, the employee group target to produce an effective product “graduato” which success in the market and incubator group looking for a knowledge and the fund to success in the project.

Table 7 Critical Success Factor for UBI in Saudi Arabia - Cluster Analysis [N=75]

Final Cluster Centres	Clusters		ANOVA					
	Incubatees	Employees	Cluster		Error		F	Sig.
			Sq.	df	Sq.	df		
Status	4	3	4.891	1	0.997	73	4.905	0.03
Access to Network: Number of partners (business development)	2	4	44.379	1	1.429	73	31.064	0.00
Economy Enhancement: Number of successful IPOs with proof	2	4	37.38	1	1.425	73	26.236	0.00
Engaged Alumni: Rate of survival projects over five years	2	4	49.902	1	0.943	73	52.914	0.00
Entry Criteria: Affiliated with university	2	4	56.255	1	1.259	73	44.671	0.00
Entry Criteria: Time limit to tenancy	2	4	23.91	1	1.175	73	20.35	0.00
Shared Service: Importance of professional business	2	4	53.302	1	0.633	73	84.141	0.00
Talent retention: Effective start-up for the graduate and getting accepted	2	4	52.859	1	0.874	73	60.474	0.00
Access to Funds: Total attractive investment	3	4	32.505	1	1.008	73	32.252	0.00
Competence Development: Number of service and support	3	4	20.594	1	0.997	73	20.653	0.00
Economy Enhancement: Number of graduates of the incubators	3	4	20.349	1	1.085	73	18.757	0.00
Engaged Alumni: Alumni engagement peer support	3	4	27.65	1	1.137	73	24.314	0.00
Engaged Alumni: High growth enterprises rate for post-graduation	3	4	18.765	1	1.213	73	15.475	0.00
Engaged Alumni: Number of sponsorship attraction by incubators	3	4	20.502	1	1.236	73	16.585	0.00
Engaged Alumni: Rate of survival project in the first year	3	4	21.181	1	1.172	73	18.071	0.00
Entry Criteria: Be able to pay operating expenses	3	4	21.463	1	1.332	73	16.118	0.00
Entry Criteria: Number of advance technology projects	3	4	23.547	1	1.084	73	21.726	0.00
Incubator Governance: An experienced incubator manger	3	4	22.253	1	1.01	73	22.028	0.00
Incubator Governance: University link (long run relation with entrepreneur)	3	4	24.576	1	1.027	73	23.93	0.00
Shared Service: Importance of management assistance	3	4	22.993	1	1.304	73	17.632	0.00
Talent Retention: Suitable improvement for the graduate	3	4	24.009	1	1.157	73	20.749	0.00
Competence Development: Coaching and mentoring hours	3	4	10.982	1	0.9	73	12.205	0.001

Conclusions

The project has been set to customize an internal criterion which can be used to evaluate UBI’s performance in Saudi Arabia or elsewhere. Three international standard modules have been explored and customize for Saudi Arabia environment. A target sample has selected by using judgmental sampling technic. The total received response is 200 responses. The results show, most of the response agreed on the criticality of the costumes models. Five main factors have been identifying through the factor analysis, economic support, network & communication, financial support, contribution in economic development and graduato quality & successfulness. Two clusters groups have been identifying from the survey results. This group is incubator group and employee.

Each opinion reflection the interest of each group in term of how this group is looking to the incubator process. The incubator more looking for fund and knowledge to effectively start their project in the market. In the other hand the incubator employee which more knowledgeable about the incubator process and procedure.

Business incubator has been started around ten years back in Saudi Arabia universities. It is recommended to lunch a comprehensive awareness for universities student in order to enhance their knowledge and build up the passion in them to start the bath in the local market. Moreover, most of business incubators are facing a difficulty of getting fund and the government bureaucratic requirements.

This research will generate many tangible outputs serving different stakeholders for example, it will provide baseline data and measuring the performance of UBIs in Saudi Arabia. Similarly this exercise will also be used to enhance other business, technology, and bio-technology incubators in Saudi Arabia. It provides output in the form research paper and /or conference paper and augment the existing literature on the subject area. It generates a critical success factor for UBIs, which will help policymakers enhance their UBI policies and rationalize their budgets for different UBIs having different levels of success criteria. Finally, and probably more exciting and rewarding output from this research is in the form of UBI consulting services to enhance the performance of UBIs in Saudi Arabia or elsewhere.

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UNIVERSITY-INDUSTRY COLLABORATION: A SCOPING REVIEW OF SUCCESS FACTORS

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Abstract. Collaboration processes between universities and companies are increasingly relevant for the generation of new knowledge and for promoting innovation. However, the literature highlights the need to delve into the factors that drive and favour these collaboration dynamics. Thus, the present paper aims to identify the success factors in university-industry collaboration processes. For this purpose, a scoping review was performed. We conducted a search in the Web of Science and Scopus databases, in order to find documents related to the subject until 2019. As a result of the scoping review, 17 success factors were identified, classified according to the four internal facilitators: structure, strategy, knowledge and relations.

Keywords: university-industry collaboration; cooperation; technology transfer; innovation

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JEL Classifications: D21, O33, O36

1. Introduction

University research has been a key source of specialized knowledge of high value for the economy (Baruch, 1997; Tseng, Huang, & Chen, 2020) and also the basis for the formulation and execution of public agendas (Debackere & Veugelers, 2005), due to the fundamental role of knowledge to increase the competitiveness of nations (Nava-Rogel & Mercado-Salgado, 2011). In the last two decades, trends in research and development have privileged collaboration between the company and universities, under an ecosystem of mutual benefit in the generation and dissemination of knowledge (Fiaz, Yang, & Abbas, 2014; Santoro & Bierly, 2006).

The university-industry collaboration is considered an important mechanism to leverage innovation, since it ensures that knowledge is managed and transferred effectively (Mikhailov, Puffal, & Santini, 2020; Weerasinghe & Dedunu, 2020). Thus, the university knowledge disseminated in that type of relationship is positively associated to firms innovation performance (Puffal, Ruffoni, & Spricigo, 2020). For instance, research and development between universities and companies, despite their complexity, lead to higher levels of innovation in the firms (Mikhailov et al., 2020). In that way, collaboration strengthens the flow of knowledge of the organizations (Bulińska-Stangrecka & Bagińska, 2020). For that reason, countries make efforts to create an innovative environment (Danko et al., 2020), from the active involvement

of universities, research institutes and the main actors of the national innovation systems (Seitzhanov, Kurmanov, Petrova, Aliyev, & Aidargaliyeva, 2020). The university-industry collaboration facilitates knowledge production that is transferred and accumulated in social actors (D'Este, Guy, & Iammarino, 2013; Santoro & Bierly, 2006). However, despite the large amount of literature related to the flow of knowledge created by the interactions between industries and universities, very little is known about the factors that drive the establishment of research collaborations between these actors (D'Este et al., 2013). In that vein, the literature highlights the need to identify the factors that contribute to this collaboration dynamic (Alpaydm, 2019; Fiaz et al., 2014). Previous studies analyse the importance of elements such as the individual characteristics of researchers (Banal-Estañol, Macho-Stadler, & Pérez-Castrillo, 2018), the organizational structure (Argueta López & Jiménez Terrazas, 2017; Baruch, 1997), the geographic proximity (D'Este et al., 2013; Tang, Motohashi, Hu, & Montoro-Sanchez, 2020), levels of trust between participants (Oliver, Montgomery, & Barda, 2020) and both formal and informal interactions between alliance members (Schaeffer, Öcalan-Özel, & Pénin, 2020).

Likewise, the density and heterogeneity of the network has a positive impact on the transfer of knowledge between universities and industries (Mao, Yu, Zhou, Harms, & Fang, 2020). Regarding geographic proximity, collaborations with intraregional universities are associated with incremental innovations, while interaction with transregional universities is associated with more radical innovations (Tang et al., 2020). Additionally, the literature addresses the motivations of researchers to transfer knowledge, highlighting the importance of applying knowledge in real situations, in order to generate innovations and contribute to environmental problems (García Ponce de León, Pérez Mora, & Miranda Zea, 2018). Literature also highlights that a critical understanding of the knowledge collaboration process is decisive for identifying business growth opportunities (Vauterin & Virkki-Hatakka, 2016) and favour innovation (Johnston & Huggins, 2017; Mao et al., 2020). Therefore, there is a growing interest in defining the determinants of collaborations between universities and the industry (Alpaydm, 2019). In that sense, further analysis is needed to analyse the development process of internal capacities of companies to effectively participate in cooperation agreements with universities, as a mechanism to produce innovations (Veugelers & Cassiman, 2005) and to improve the organizational learning process of the firm (Sherwood & Covin, 2008). This paper classifies the success factors for university-industry collaboration, from the conceptual framework of internal facilitators for innovation proposed by Pellegrini et al. (2019), which includes the organizational structure, strategy, knowledge and relations. Literature on technology transfer in interaction processes between the university and industry has focused mainly on the macro level of companies, so it is necessary to carry out more research on the key aspects for the success of these processes at the micro level (Jones & Coates, 2020). In that sense, this paper aims to identify the factors that facilitate university-industry collaboration, but with special emphasis on the perspective of business characteristics, since, up to now, much of the literature has addressed mainly the characteristics of the universities. For this purpose, the seminal framework proposed by Arksey y O'Malley (2005) was applied to carry out a scoping review. This review included documents of the Web of Science and Scopus databases, published between 2002 and 2019. Recent reviews analyse the four central measures of university-industry collaboration that have been identified previously in the literature: motivations, occupations, barriers and outcomes (Vick & Robertson, 2018). In contrast, this study delves into the characteristics necessary for companies to develop successful collaboration strategies with universities.

2. Methodology

This paper uses the seminal framework proposed by Arksey y O'Malley (2005) to carry out an scoping review, which includes the following stages: (1) identify the research question; (2) identify relevant studies; (3) select studies; (4) data charting and collation; (5) collating, summarising and reporting the results.

2.1 Identify the research question

According to the methodology proposed by Arksey y O'Malley (2005), the first stage in the literature review is to identify the research question. This research question was posed as follows: What organizational factors, characteristics or attributes favour university-industry collaboration?

2.2 Identify relevant studies

In the second stage, the relevant studies are identified. In this case, a search was carried out in the Scopus and Web of Science databases. The search was carried out according to the equations described in table 1. The descriptors were selected from the bibliometric analysis carried out by Olvera et al. (2018).

Table 1. Key search terms

Database	Search terms
Scopus	TITLE-ABS-KEY(("University Business" AND "Collaboration ") OR ("University-Business University-Industry" AND "Cooperation") OR (("University-Industry" OR "University Industry Industry-Science") AND "Partnership") OR (("Industry-Science" OR "Industry Science") AND ("Link")) OR (("Science to Business" OR "Science 2 Business") AND ("Technology Transfer")))
Web of Science	TI = (("University Business" AND "Collaboration ") OR ("University-Business University-Industry" AND "Cooperation") OR (("University-Industry" OR "University Industry Industry-Science") AND "Partnership") OR (("Industry-Science" OR "Industry Science") AND ("Link")) OR (("Science to Business" OR "Science 2 Business") AND ("Technology Transfer"))). Specifically, the search in was carried out in the following indexes: <i>SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC.</i>

Source: Own elaboration

2.3 Selected studies

Considering the third stage of the methodology, the following inclusion and exclusion criteria were considered in this scoping review: First, only peer-reviewed articles were included. Books, book chapters, conference papers, reports, review papers, and other type of materials were excluded. Second, articles published only in English were included. In third place, we included articles published between 2002 and 2019. In the fourth stage, duplicated records were eliminated. Finally, the full text documents were read to determine their relationship with our research question. Consequently, the way in which the research papers were included in the literature review is illustrated below (Figure 1)

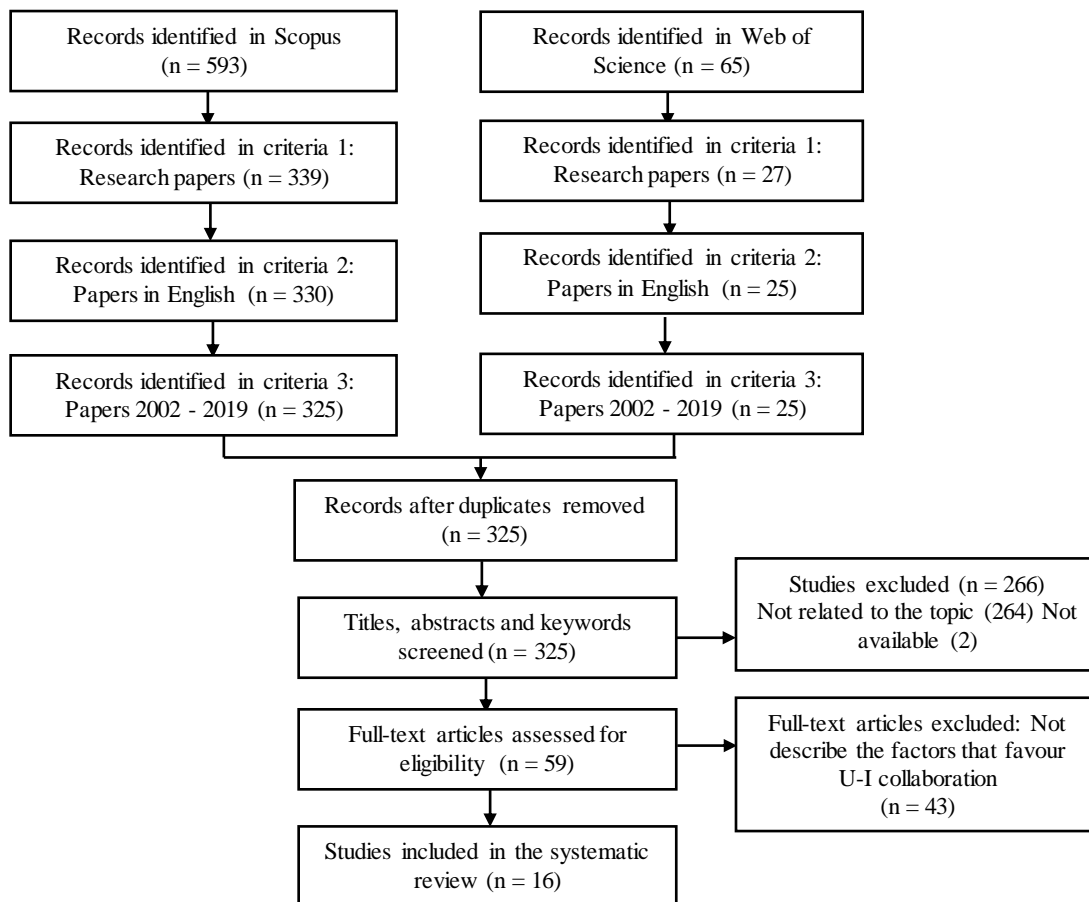


Figure 1. Flow diagram of papers included in the scoping review

Source: Own elaboration

2.4 Data charting and collation

In the fourth stage of the scoping review, the papers were reviewed in full text in order to extract the following data: author, name of the journal, methodological approach and sample of each paper included in the scoping review (Table 2).

2.5 Collating, summarising and reporting the results

In the fifth stage, the internal factors of the company that favour collaboration with universities were identified and discussed (Table 3).

3. Results

The following is a description of the papers included in this scoping review (Table 2)

Table 2. Description of the papers included in the scoping review

Author(s)	Source title	Methodological approach	Sample
(Sherwood & Covin, 2008)	<i>Journal of Product Innovation Management</i>	Quantitative	104 business managers participating in technology transfer partnerships with universities.
(Veugelers & Cassiman, 2005)	<i>International Journal of Industrial Organization</i>	Quantitative	1,335 Belgian manufacturing companies
(Santoro & Bierly, 2006)	<i>IEEE Transactions on Engineering Management</i>	Quantitative	173 managers of companies of various sizes, out of a total of 1,250 firms in the United States
(Vauterin & Virkki-Hatakka, 2016)	<i>Industry and Higher Education</i>	Qualitative	Case study of collaboration between SMEs in the cleantech sector and universities in Finland
(Mindruta, 2013)	<i>Strategic Management Journal</i>	Quantitative	447 collaboration contracts between companies and university scientists, from 1995 to 2004 on the East Coast of the United States
(Wynn, 2018)	<i>International Journal of Knowledge Management</i>	Qualitative	Sample of 3 SMEs selected from an initial review of 14 university-industry technology transfer projects in the UK
(Chang & Hsu, 2002)	<i>International Journal of Advanced Manufacturing Technology</i>	Qualitative	Population: 69 university-industrial projects classified into 2 groups: successful and unsuccessful. Successful project case study: 20 projects in Taiwan.
(Johnston & Huggins, 2017)	<i>Papers in Regional Science</i>	Quantitative	Population: 568 formal collaborations between KIBS companies and UK universities
(D'Este et al., 2013)	<i>Journal of Economic Geography</i>	Quantitative	Population: 2210 U-I research associations funded with public funds by EPSRC during 1999-2003 in the UK
(Lakpetch & Lorsuwanarat, 2012)	<i>International Journal of Organizational Analysis</i>	Mixed methods	Population: 850 actors participating in collaboration agreements, derived from the Thailand Research Funds office and the Higher Education Commission Office. Final response rate of 29%.
(Al-Tabbaa & Ankrah, 2019)	<i>European Management Review</i>	Qualitative	Population: in each case, the informants were at least one representative from the university, one from the company and two from society. Total: 37 interviews. Location: United Kingdom
(Gertner, Roberts, & Charles, 2011)	<i>Journal of Knowledge Management</i>	Qualitative	Population: 3 case studies of University-industry knowledge transfer projects developed between 2007-2010
(Araújo & Teixeira, 2014)	<i>Journal of Technology Management and Innovation</i>	Quantitative	Population: 71 technology association agreements funded by the European Business Network (EEN)
(Johnston & Huggins, 2016)	<i>Regional Studies</i>	Quantitative	Population: 568 KIBS rural businesses that participated in knowledge transfer partnerships (KTPs) between 2001 and 2008 in the UK.
(Alves, Marques, & Saur-Amaral, 2007)	<i>European Planning Studies</i>	Qualitative	Population: Case of university-industry collaboration that has been developing since 1999
(Sarpong, AbdRazak, Alexander, & Meissner, 2017)	<i>Technological Forecasting and Social Change</i>	Qualitative	Population: 27 strategic actors of the triple helix model (12 universities, 9 industries and 6 government officials) in Malaysia

Source: Own elaboration

Table 3 presents the success factors of the university-industry collaboration process identified in the scoping review, and classified according to the conceptual framework of internal facilitators proposed by (Pellegrini et al., 2019).

Table 3. Success factors of university-industry collaboration process

Internal drivers	Success factor in University-Industry collaboration process	No. of studies	Authors
Structure	Size of the firm	4	(Veugelers & Cassiman, 2005), (Mindruta, 2013), (Chang & Hsu, 2002), (Johnston & Huggins, 2017)
	Internal structural characteristics and institutional support for the development of collaborative processes	7	(Lakpetch & Lorsuwanarat, 2012), (Gertner et al., 2011), (Alves et al., 2007), (Sarpong et al., 2017), (Veugelers & Cassiman, 2005), (Vauterin & Virkki-Hatakka, 2016), (Wynn, 2018)
	Existence of intellectual property policies	3	(Santoro & Bierly, 2006), (Chang & Hsu, 2002), (Al-Tabbaa & Ankrah, 2019)
	Capacity and technological intensity of the company	4	(Santoro & Bierly, 2006), (Lakpetch & Lorsuwanarat, 2012), (Al-Tabbaa & Ankrah, 2019), (D'Este et al., 2013)
	Geographic proximity to university partners and location of the firm in areas of high business density	3	(Johnston & Huggins, 2017), (D'Este et al., 2013), (Johnston & Huggins, 2016)
	Existence of clear governance mechanisms in collaboration processes	4	(Lakpetch & Lorsuwanarat, 2012), (Alves et al., 2007), (Sarpong et al., 2017), (Vauterin & Virkki-Hatakka, 2016)
	Management and motivation of human talent and collaboration teams	5	(Sherwood & Covin, 2008), (Santoro & Bierly, 2006), (Vauterin & Virkki-Hatakka, 2016), (Lakpetch & Lorsuwanarat, 2012), (Araújo & Teixeira, 2014)
Strategy	Articulation of collaboration agreements with the organization's strategy	3	(Veugelers & Cassiman, 2005), (Wynn, 2018), (Chang & Hsu, 2002)
Knowledge	Implementation of knowledge management procedures	5	(Santoro & Bierly, 2006), (Vauterin & Virkki-Hatakka, 2016), (Wynn, 2018), (Gertner et al., 2011), (Sarpong et al., 2017)
	Absorption capacity	6	(Veugelers & Cassiman, 2005), (Santoro & Bierly, 2006), (Wynn, 2018), (Lakpetch & Lorsuwanarat, 2012), (Araújo & Teixeira, 2014), (Gertner et al., 2011)
	Social capital	6	(Santoro & Bierly, 2006), (Lakpetch & Lorsuwanarat, 2012), (Al-Tabbaa & Ankrah, 2019), (Gertner et al., 2011), (Araújo & Teixeira, 2014), (Johnston & Huggins, 2016)
Relations	Previous experience in collaborative processes and R&D	8	(Santoro & Bierly, 2006), (Chang & Hsu, 2002), (Johnston & Huggins, 2017), (D'Este et al., 2013), (Al-Tabbaa & Ankrah, 2019), (Araújo & Teixeira, 2014), (Johnston & Huggins, 2016), (Sarpong et al., 2017)
	Trust between members of the collaboration	8	(Sherwood & Covin, 2008), (Santoro & Bierly, 2006), (Vauterin & Virkki-Hatakka, 2016), (Chang & Hsu, 2002), (Lakpetch & Lorsuwanarat, 2012), (Al-Tabbaa & Ankrah, 2019), (Araújo & Teixeira, 2014), (Alves et al., 2007)
	Effective communication between members of the collaboration	5	(Sherwood & Covin, 2008), (Santoro & Bierly, 2006), (Lakpetch & Lorsuwanarat, 2012), (Gertner et al., 2011), (Alves et al., 2007)
	Shared objectives and mutual understanding of the needs and relevant aspects of the collaboration process (shared meanings)	9	(Sherwood & Covin, 2008), (Vauterin & Virkki-Hatakka, 2016), (Chang & Hsu, 2002), (Lakpetch & Lorsuwanarat, 2012), (Al-Tabbaa & Ankrah, 2019), (Gertner et al., 2011), (Araújo & Teixeira, 2014), (Alves et al., 2007), (Sarpong et al., 2017)
	Ability to share resources and costs in the cooperation process	6	(Veugelers & Cassiman, 2005), (Vauterin & Virkki-Hatakka, 2016), (Chang & Hsu, 2002), (Lakpetch & Lorsuwanarat, 2012), (Al-Tabbaa & Ankrah, 2019), (Gertner et al., 2011)
	Capacity and encouragement to joint scientific production with universities	3	(Mindruta, 2013), (Santoro & Bierly, 2006), (Johnston & Huggins, 2017)

Source: Own elaboration

3.1 Structure

Faced with this internal organizational facilitator, one of the identified success factors corresponds to the size of the firm (Chang & Hsu, 2002; Johnston & Huggins, 2017; Mindruta, 2013; Veugelers & Cassiman, 2005). The study of Veugelers and Cassiman (2005) highlights that large companies are more likely to establish collaboration agreements with

universities. Because of this, larger companies are more likely to achieve higher quality in patents and publications made in conjunction with universities (Mindruta, 2013).

A study by Johnston and Huggins (Johnston & Huggins, 2017) showed that the size of the company is also a significant determinant in the geographical scope of the links between industries and universities; for example, micro-companies form links with geographically closer universities, compared to large companies (Johnston & Huggins, 2017). In contrast, the conclusions of Santoro and Bierly (2006) point out that size is not a significant factor in the collaboration process with universities, while the sector and the firm's previous experience are significant in this process (Santoro & Bierly, 2006).

Similarly, the internal structural characteristics and the institutional support for the development of collaboration processes of the companies correspond to a success factor for the cooperation with university partners (Alves et al., 2007; Gertner et al., 2011; Lakpetch & Lorsuwannarat, 2012; Sarpong et al., 2017; Vauterin & Virkki-Hatakka, 2016; Veugelers & Cassiman, 2005). For example, Lakpetch and Lorsuwannarat (2012) highlight the importance of institutional support to promote cooperative relationships (Lakpetch & Lorsuwannarat, 2012), as well as the allocation of financial resources required for the development of joint activities (Alves et al., 2007; Lakpetch & Lorsuwannarat, 2012). In addition, leadership for the development of initiatives (Lakpetch & Lorsuwannarat, 2012; Wynn, 2018) and the ability to manage projects (Wynn, 2018) they are decisive in the university-industry collaboration processes.

According to the results, effective cooperation between companies and universities requires the existence of intellectual property policies (Al-Tabbaa & Ankrah, 2019; Chang & Hsu, 2002; Santoro & Bierly, 2006). Intellectual property policies are positively associated with knowledge transfer between companies and universities (Santoro & Bierly, 2006). These policies must be constantly evaluated to avoid possible obstacles in the technology transfer process between companies and universities (Santoro & Bierly, 2006). The above, considering that the intellectual property mechanisms that are implemented have a significant influence on the sustainability of university-industry collaboration (Al-Tabbaa & Ankrah, 2019).

The technological capacity of the company was also identified as a relevant factor for cooperation with universities (Al-Tabbaa & Ankrah, 2019; Lakpetch & Lorsuwannarat, 2012; Santoro & Bierly, 2006). Thus, communication with technology experts linked to partner organizations allows the company to obtain relevant knowledge for its processes (Sherwood & Covin, 2008).

Thus, the technological capacity of the company favours the transfer of knowledge with universities, especially with regard to tacit knowledge (Santoro & Bierly, 2006). Additionally, authors such as (D'Este et al., 2013; Santoro & Bierly, 2006) identify the technological intensity of the firm as a factor that favours cooperation with universities. In this regard, the study of Santoro and Bierly (Santoro & Bierly, 2006) validates that high-tech companies have generally accumulated more knowledge to face the transfer process with universities.

Geographical proximity to university partners, as shown above, and the firm's location in areas of high business density, also corresponds to a determining factor for cooperating with university partners (D'Este et al., 2013; Johnston & Huggins, 2016, 2017). For example, the study of D'Este et al. (2013) highlights that geographic proximity increases the likelihood of establishing research partnerships between university and industry. According to Johnston and Huggins (2017) the highest levels of industrial clustering promote links with geographically close university partners. In this way, both geographic and organizational proximity have a significant influence on the selection of partners to develop knowledge (Johnston & Huggins, 2016).

In addition, the literature highlights that companies must establish governance mechanisms in collaboration with universities, to guarantee the success of the process (Alves et al., 2007; Lakpetch & Lorsuwannarat, 2012; Sarpong et al., 2017; Vauterin & Virkki-Hatakka, 2016). Specifically, the procedures required for the development of a collaborative process are based on the needs of the organization and are driven by a learning agenda established jointly by the members of the alliance (Vauterin & Virkki-Hatakka, 2016).

In the cooperation process it is necessary to review the governance mechanisms of the alliance, which guarantees a balance in the contribution of the different partners, and which serves as a meeting point for the different interests that the two actors may have (Lakpetch & Lorsuwannarat, 2012). Among the mechanisms adopted by companies to favour collaboration with universities, the participation of managers in strategic meetings is included to facilitate an agile and flexible articulation between the members of the alliance (Alves et al., 2007).

Also, the motivation of human talent linked to the alliance and the effective management of the teams designated to the university-industry collaboration process, correspond to a success factor for the transfer of knowledge between university and industry actors (Araújo & Teixeira, 2014; Lakpetch & Lorsuwannarat, 2012; Santoro & Bierly, 2006; Sherwood & Covin, 2008; Vauterin & Virkki-Hatakka, 2016). It is important to establish a system of rewards and recognitions to increase the motivation and potential of the team to create synergies in the collaboration process (Lakpetch & Lorsuwannarat, 2012) and promote the training of the company's human talent in knowledge transfer processes (Araújo & Teixeira, 2014). Sherwood and Covin (2008) validate the importance of formal collaboration teams as an effective mechanism for the transfer of knowledge between the alliance partners, so it is essential to adjust the internal structures of the company to the collaboration processes (Sherwood & Covin, 2008).

3.2 Strategy

Another set of success factors for university-industry collaborations is related to strategy. In this aspect, the literature highlights as a key factor the articulation of collaboration agreements with the organization's strategy (Chang & Hsu, 2002; Veugelers & Cassiman, 2005; Wynn, 2018). The conclusions of Veugelers and Cassiman (2005) highlight that collaboration agreements with universities are generally part of the company's global innovation strategy.

3.3 Knowledge

In this review, success factors related to knowledge as an internal facilitator in organizations were identified. Specifically, the effective development of collaboration processes with universities requires the implementation of knowledge management procedures within firms (Gertner et al., 2011; Santoro & Bierly, 2006; Sarpong et al., 2017; Vauterin & Virkki-Hatakka, 2016; Wynn, 2018). It is relevant for organizations to establish and implement practices to capture the knowledge available within the limits of the organization and integrate it into the key competencies of the firm (Santoro & Bierly, 2006), identifying the responsibilities of the alliance partners and promoting shared knowledge in the technology transfer process (Sarpong et al., 2017). The foregoing requires identifying the knowledge of each of the members of the alliance and identifying how this could contribute to the achievement of organizational objectives, through shared discourse and continuous communication (Gertner et al., 2011).

In addition, a high absorption capacity favours university-industry collaboration (Araújo & Teixeira, 2014; Gertner et al., 2011; Lakpetch & Lorsuwannarat, 2012; Santoro & Bierly, 2006; Veugelers & Cassiman, 2005; Wynn, 2018). Absorption capacity allows companies, for example, to develop capacities to exploit different competitive strategies (Veugelers & Cassiman, 2005).

Social capital corresponds to a key determinant for cooperation between universities and companies (Al-Tabbaa & Ankrah, 2019; Araújo & Teixeira, 2014; Gertner et al., 2011; Johnston & Huggins, 2016; Lakpetch & Lorsuwannarat, 2012; Santoro & Bierly, 2006). The study of Al-Tabbaa and Ankrah (2019) validates the importance of the three components of social capital (structural, relational and cognitive) in the collaboration processes between universities and companies.

The social connection (Santoro & Bierly, 2006) and connectivity through networks (Araújo & Teixeira, 2014) they are positively related to the successful transfer of knowledge between companies and universities. This element is relevant from the perspective of learning as a social process, influenced by the characteristics and interactions between the members of the alliance (Santoro & Bierly, 2006). Specifically, the study of Gertner et al. (2011) validates the importance of personal interactions to facilitate knowledge transfer within the framework of university-industry alliances. Thus, learning from external sources requires proactive measures on the part of organizations (Santoro & Bierly, 2006).

3.4 Relations

As a result of the review, relations are identified as an important internal facilitator. It stands out, for example, companies that have experience in collaborative processes tend to be more successful in cooperating with universities (Al-Tabbaa & Ankrah, 2019; Araújo & Teixeira, 2014; Chang & Hsu, 2002; D'Este et al., 2013; Johnston & Huggins, 2016, 2017; Santoro & Bierly, 2006; Sarpong et al., 2017). The conclusions of D'Este et al. (2013) establish that experience in R&D increases the probability of forming partnerships between companies and universities. Thus, companies with experience in collaboration processes with universities achieve a greater transfer of knowledge through alliances (Chang & Hsu, 2002; Santoro & Bierly, 2006). These experiences in turn create bonds of familiarity between partners (Al-Tabbaa & Ankrah, 2019; Sherwood & Covin, 2008).

In addition, the results highlight the trust between the collaboration actors as a determinant in the success of the university-industry collaboration processes (Al-Tabbaa & Ankrah, 2019; Alves et al., 2007; Araújo & Teixeira, 2014;

Chang & Hsu, 2002; Lakpetch & Lorsuwanarat, 2012; Santoro & Bierly, 2006; Sherwood & Covin, 2008; Vauterin & Virkki-Hatakka, 2016). Further, trust between partners is essential for organizational learning (Sherwood & Covin, 2008) and knowledge transfer (Santoro & Bierly, 2006). The effective communication between the partners is a forcefully highlighted success factor in the literature (Alves et al., 2007; Gertner et al., 2011; Lakpetch & Lorsuwanarat, 2012; Santoro & Bierly, 2006; Sherwood & Covin, 2008). Effective communication allows the socialization of the interests of the alliance partners (Alves et al., 2007; Sherwood & Covin, 2008). Trust between members facilitates open communication between the parties that favours the transfer of knowledge (Santoro & Bierly, 2006).

In the current research, effective alliances between universities and companies imply the establishment of shared organizational objectives, based on the mutual understanding of the needs of the partners and the relevant aspects of the collaboration process (Al-Tabbaa & Ankrah, 2019; Alves et al., 2007; Araújo & Teixeira, 2014; Chang & Hsu, 2002; Gertner et al., 2011; Lakpetch & Lorsuwanarat, 2012; Sarpong et al., 2017; Sherwood & Covin, 2008; Vauterin & Virkki-Hatakka, 2016). In this process, shared meanings are generated between the actors (Al-Tabbaa & Ankrah, 2019; Vauterin & Virkki-Hatakka, 2016) and the possibility of co-creating with alliance members is increased (Vauterin & Virkki-Hatakka, 2016). The personal interactions that are established between the members of the alliance generate a mutual commitment and a set of shared knowledge in the communities of practice (Gertner et al., 2011). Thus, effective alliances between universities and industry influence organizational objectives to support companies in creative processes or knowledge exchange (Alves et al., 2007; Chang & Hsu, 2002). Mutual understanding reduces the mismatch between the expectations and the results of the university-industry collaboration process (Vauterin & Virkki-Hatakka, 2016). The ability to share resources and costs is one element of effective collaborative partnerships between industry and universities (Al-Tabbaa & Ankrah, 2019; Chang & Hsu, 2002; Gertner et al., 2011; Lakpetch & Lorsuwanarat, 2012; Vauterin & Virkki-Hatakka, 2016; Veugelers & Cassiman, 2005). Specifically, companies linked to successful alliances share complementary resources between the parties (Chang & Hsu, 2002), establish joint identities or procedures (Gertner et al., 2011), balance the strengths and weaknesses of partners (Chang & Hsu, 2002) and define a common perspective of the general R&D objectives (Chang & Hsu, 2002). University-industry collaboration agreements are motivated by the possibility of sharing costs in the innovation process (Veugelers & Cassiman, 2005). From this perspective, the size of the company can be related to a greater availability of the resources required to cooperate with universities, depending on the organizational strategy (Veugelers & Cassiman, 2005). Thus, knowledge collaborations are considered highly effective and valuable when they allow the creation of joint value and generate strategic value for the knowledge base of organizations (Vauterin & Virkki-Hatakka, 2016).

Finally, a set of studies analysed in this review (Johnston & Huggins, 2017; Mindruta, 2013; Santoro & Bierly, 2006) emphasize that scientific production that involves academics and industry personnel favours social connection among members and facilitates the exchange of highly relevant and pertinent knowledge to face real challenges in society (Santoro & Bierly, 2006). Further, the high levels of research activity of an institution are important facilitators of collaborative processes, even with geographically distant partners (Johnston & Huggins, 2017)(Mindruta, 2013).

4. Discussion

Technological development and the consolidation of knowledge-based economies have promoted collaboration between universities and industries, which is why different industries recognize the importance of university knowledge to generate competitive advantage (Tseng et al., 2020). From this scenario, partnerships between researchers and entrepreneurs are becoming more frequent today (Zalewska-Kurek & Harms, 2020). Such collaborations are an important source of creativity and knowledge generation for partners (Alexander, Martin, Manolchev, & Miller, 2020).

Previous research has analysed different aspects of the collaborative processes between the University-Industry, for example, the challenges in the technology transfer process (Daniel & Alves, 2020), the barriers (Chryssou, 2020; Jonbekova, Sparks, Hartley, & Kuchumova, 2020; Tootell et al., 2020), the benefits (Jonbekova et al., 2020), the U-I collaboration practices implemented by firms (Corsi, Fu, & Külzer-Sacilotto, 2020) and by the universities (Leischnig & Geigenmüller, 2020). Also, the determinants of the innovative impact in University-Industry collaborations (Messeni Petruzzelli & Murgia, 2020) and its impact on the productivity of academic research (Garcia, Araújo, Mascarini, Santos, & Costa, 2020). Additionally, recent systematic reviews (Nsanzumuhire & Groot, 2020) Regarding university-industry collaboration processes, three topics of interest stand out: interaction channels, mechanisms and barriers that these collaborations face. Likewise, it is highlighted that there is still a gap in research regarding this issue in developing countries, compared to developed ones (Nsanzumuhire & Groot, 2020). In contrast, university-industry collaboration is

increasingly considered a fundamental component of national innovation systems in both developed and developing countries (Chryssou, 2020).

Considering the above, this scoping review identifies the success factors of university-industry collaboration, specifically from the industry perspective. According to the results of the scoping review (Table 3), the success factors of the University-Industry cooperation processes most referenced in the literature are: the shared objectives and mutual understanding of the needs and relevant aspects of the collaboration process (Al-Tabbaa & Ankrah, 2019; Alves et al., 2007; Araújo & Teixeira, 2014; Chang & Hsu, 2002; Gertner et al., 2011; Lakpetch & Lorsuwannarat, 2012; Sarpong et al., 2017; Sherwood & Covin, 2008; Vauterin & Virkki-Hatakka, 2016), and the trust between members of the collaboration (Al-Tabbaa & Ankrah, 2019; Alves et al., 2007; Araújo & Teixeira, 2014; Chang & Hsu, 2002; Lakpetch & Lorsuwannarat, 2012; Santoro & Bierly, 2006; Sherwood & Covin, 2008; Vauterin & Virkki-Hatakka, 2016). These two factors are associated with relations, according to the conceptual framework of internal facilitators proposed by Pellegrini et al. (2019).

Subsequently, the literature highlights the importance of structure of the firm, specifically of the internal structural characteristics and institutional support for the development of collaborative University-Industry process (Alves et al., 2007; Gertner et al., 2011; Lakpetch & Lorsuwannarat, 2012; Sarpong et al., 2017; Vauterin & Virkki-Hatakka, 2016; Veugelers & Cassiman, 2005; Wynn, 2018). Next, the scoping review presents as success factors of the cooperation process the absorption capacity (Araújo & Teixeira, 2014; Gertner et al., 2011; Lakpetch & Lorsuwannarat, 2012; Santoro & Bierly, 2006; Veugelers & Cassiman, 2005; Wynn, 2018) and social capital (Al-Tabbaa & Ankrah, 2019; Araújo & Teixeira, 2014; Gertner et al., 2011; Johnston & Huggins, 2016; Lakpetch & Lorsuwannarat, 2012; Santoro & Bierly, 2006). These two factors are associated with knowledge as an internal facilitator of the company, according to the framework proposed by Pellegrini et al. (2019).

Finally, the strategy facilitator registers fewer citations when reviewing the success factors of collaboration processes between universities and industries. Specifically, this scoping revision includes the articulation of collaboration agreements with the organization's strategy as a facilitator of the collaboration process (Chang & Hsu, 2002; Veugelers & Cassiman, 2005; Wynn, 2018).

5. Conclusions

Collaboration between companies and universities corresponds to a growing trend in recent years. In that sense, this paper identifies the success factors in collaboration processes between universities and companies, through a literature review. The factors included in 16 papers indexed in Scopus and Web of Science, published in 2002 and 2019, are considered, and which establish companies that participate in collaboration processes with universities as the unit of analysis. As a result of the review, 17 success factors were identified in the university-industry collaboration processes, classified according to four internal organizational facilitators: structure, strategy, knowledge, and relations.

In the first place, the success factors related to the structure were identified, namely: the size of the company, the internal structural characteristics and institutional support for the development of collaborative processes, the existence of intellectual property policies, the capacity and technological intensity of the company, geographic proximity with university partners and location of the firm in areas of high business density, the existence of governance mechanisms for collaboration processes and the management and motivation of human talent and collaboration teams.

Second, in terms of innovation strategy, the articulation of collaboration agreements with the organization's strategy is identified as a success factor in University-Industry collaboration processes. Third, in relation to knowledge as a facilitator of the innovation process, this review describes the implementation of knowledge management procedures, absorption capacity and social capital, as success factors in the cooperation processes between companies, companies and universities.

Finally, regarding organizational relationships, the literature review presents the following success factors: previous experience in collaborative processes and R&D, trust among the members of the collaboration, effective communication between the members of the collaboration, shared objectives and mutual understanding of the needs and relevant aspects of the collaboration process, the ability to share resources and costs in the cooperation process, and the encouragement of joint scientific production with universities.

In sum, the main contribution of this study, both to the literature on inter-organizational cooperation and to business management, is that it synthesizes and analyses the factors that could facilitate collaboration between universities and

industries, but from the perspective of the latter, which had been little attended in the previous literature. We suggest that future studies empirically explore how and with what intensity the success factors identified in this review could affect collaboration processes between industry and universities, and how the success or failure of these initiatives can affect the performance of these organizations.

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VENTURE CAPITAL CHALLENGES IN SAUDI ARABIA

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Abstract. The purpose of this exploratory research is to highlight the major Venture Capital (VC) Challenges in Saudi Arabia. A survey design using a questionnaire has been selected for this study. The respondents include entrepreneurs, investors, employees of VC firms, investment bankers, and other relevant groups. They answered the questionnaire for their problems, challenges, and prospects about venture capital in Saudi Arabia. A judgmental sample technique was employed to collect the data (N=122). Descriptive analysis using mean comparisons show the top three VC challenges, including 'lack of government support for VC', 'bureaucratic procedures related to VC' and 'access to angel investors (funding without collateral).' Exploratory Factor Analyses show VC challenges can be grouped into six broader factors, including 'entrepreneurial ecosystem,' 'entrepreneurial culture', 'entrepreneurial attitudes', 'entrepreneurial mindset', 'entrepreneurial finance', 'entrepreneurial planning'. The research provides numerous recommendations to authorities and discusses the need for further research.

Keywords: Venture capital; Angel investors; Entrepreneurial Finance; Entrepreneurship; Saudi Arabia

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1. Introduction

Many startups require assistance in various forms to pick up and fit well into the sector where they operate. A suitable way of helping the different groups entering into the business sector afresh is to offer them funding at early and seed stages. In this regard, the operations and terms and conditions of venture capital remained quite successful (Rind, 1981). Venture capital is a form of private equity or financing offered to small companies or business foundations, usually at the beginning of their operations by larger firms or financial institutions. A startup qualifying for venture capital must prove-beyond doubt that it can enlarge to become a competitive player or must have depicted significant growth in areas such as annual revenue, growth, and development of the workers, marketing, or in all these areas (Scheela & Chua, 2003). The primary reason for the investment by venture capital firms is to acquire equity or some stake at a new startup (Cornelius, 2005). The venture capital's overall role in driving innovation in society and contributing to the economy's development is widely identified and applauded see. (Dossani & Kenney, 2002; Gilson, 2003; Gu & Qian, 2019; Sahlman, 1990). Similarly, its contribution to promoting the entrepreneurial environment is also well-recognized (Samila & Sorenson, 2011; Tian, 2012). On the other hand, due to their unique features, the role of close-end venture capital for early-stage

startup financing and sustainable venture capital importance for the sustainable startup is also emphasized (Bocken, 2015; Bonini & Capizzi, 2019). Another area that gained attention for researchers and policymakers in venture capital literature is the operational and other types of challenges faced by venture capitals in various countries. Nevertheless, venture capital firms' critical importance in the funding ecosystem requires the country's economic managers to pay attention to VCs' problems and challenges. In this regard, various studies highlighted numerous issues faced by venture capital firms in different countries. For example, Murray (1992) for UK, Campani et al. (2016) for Brazil, Jones and Mlambo (2013) for South Africa, Scheela and Van Dinh (2004) for Vietnam, Dauterive & Fok (2004), Zhang (2017) for the Chinese market, Rossi (2015) for Italy and Aberman (2009) for the USA. However, no comprehensive research is available examining the role, awareness, and challenges/problems faced by venture capital firms in KSA. This study aims to bridge this gap and focus on the venture capital market of Saudi Arabia.

2. Literature Review

The venture capitalists usually take the risk of investing in the new business operation with the belief that the business they support will record impressive performance. The factors that generally appeal to the venture capitalists and drive them to invest in the startups are that such companies usually rely on technological and innovative ways of functioning. Further, these startups also tend to use some modern business models that are highly likely to yield the best outcome when applied to the appropriate forms (Scheela & Chua, 2003). Venture capitals are one of the main contributors to innovative entrepreneurship in an economy ultimately effecting the social development.

Globally, venture capitalists tend to differ in their reasons for providing funding. One of the significant reasons facilitating venture capitalists' actions is the business condition (Cornelius, 2005). Whereas some VCs may choose to invest in new ideas or startups, others opt to invest in existing firms that only require some support to expand and reach global levels. Some venture capitalists may also strictly choose to invest in specific sectors depending on their interest or specialization. The other funding motivation for VCs at the global level is that some opt to invest their money in local firms. In contrast, others may choose to invest in companies operating at international levels (Cornelius, 2005). The U.S. dominates the global venture capital investment. Samuel (2017) states that the U.S.'s total investment accumulates to \$21.5 billion surpassing Asia, which stood second with \$12.3 billion. Europe is third in the VC list, with a total investment amounting to \$4.7 (Samuel, 2017).

Regarding the difference between venture capital and other similar financing sources, it is critical to understand that although both venture capital and angel investors are funding methods for new or startup businesses, still, there are differences between them (Bonnet & Wirtz, 2011). Nevertheless, venture capitalists are more likely to have more experience and professionalism in evaluating and managing business or money. On the other hand, angel investors are mostly educated and experienced investors; in addition to that, they typically have good knowledge in several fields with more general backgrounds or experiences (Bellavitis et al., 2017; Van Osnabrugge, 2000). Similarly, these days it is also important to differentiate between Crowdfunding and venture capital financing. According to the Securities and Exchange Commission, USA, "Crowdfunding generally refers to a financing method in which money is raised through soliciting relatively small individual investments or contributions from a large number of people. Likewise, in recent times Crowdfunding is one of the financing types to raise capital for new ventures of small existing ventures, and its role is increasing. (Capizzi & Carluccio, 2016; Marchand, 2016). Furthermore, one of the key differences between VCs and Crowdfunding is the monitoring process after funding. In venture capital, enterprises' operations and management are well-monitored, whereas such a requirement does not exist in Crowdfunding. On the other hand, the stability of enterprises in VCs is relatively better than stability in crowdfunding enterprises. In Crowdfunding, clear objectives or obligations are not existing, especially in (donation-based type) while, in VCs, the agreement is between founder/entrepreneur and venture capital for specific goals. (Mamonov Malaga, & Rosenblum, 2017).

The venture capital sector traces its origin in the U.S; the concept of venture capital is long being used for startup financing in the USA, making them a pioneer. However, it is fast developing in other countries. Although there are several common grounds between the working of 'Mudarabah,' the Islamic finance instrument, and the

modern-day venture capital, the current modern form of venture capital appeared in 2011 (Seoudi & Mahmoud, 2016). In recent times the number of non-Americans VCs has been escalating in KSA (Khan & Khan, 2020).

According to experts, venture capital is useful for countries like KSA due to the ongoing changes and heavy infrastructure investment initiatives. Furthermore, the government's other several initiatives like the promotion of entrepreneurial activities, incubators, and interest-free loans for startups are important for venture capital growth in the country (MEVCA, 2013). Moreover, in terms of their performance in Saudi Arabia, venture capital has served crucial roles as a mechanism for economic empowerment and development. Gradually, venture capital specializing in SME financing and private equity investments in the Kingdom are becoming prominent. Presently, Saudi Arabia is the biggest economy in the GCC region with many SMEs, most of which focus on retail and service provision. The high number of SMEs in Saudi Arabia suggests that establishing Venture Capital would go a long way in helping the firms fit into the highly competitive market.

The venture capitals in various countries faced many ups and downs. Especially in the previous three decades, the Asian crises, the IT bubble burst, the 2008 financial crisis, and now recent COVID crises remained the general reasons for these challenges apart from other country-specific reasons. Various studies have explored the causes of these challenges faced by venture capitals in different setups. Various authors conducted studies in the context of multiple countries to highlight these challenges and problems. Murray (1992) pointed out the problems with the venture capital firms of the UK. According to the author, even after maturity, the industry's finances remained concentrated in a few portfolio firms, which was the main strategic problem for the venture capital industry. Jones and Mlambo (2013) conducted a study for the South African market. The authors indicated that specialized fund managers' unavailability and general low entrepreneurial skills level are the main hindrance factors for venture capital firms. Scheela and Van Dinh (2004) highlighted the lack of quality investment and excessive regulations as the main challenges of Venture Capital firms in Vietnam. Dauterive and Fok (2004) pointed out the leading venture capital challenges in the Chinese market; according to the study, the strict regulatory environment and capital controls are the main hindrances these VCs face. Similarly, Zhang (2017) also focused on the institutional framework and organizational structure of venture capital investment trust with reference to China; the study suggested some key reforms relating to such firms' ownership structure and independence. There is a number of researches available on the problems and challenges faced by venture capital firms in China; some other studies that focused on China's venture capital industry's challenges include Xia et al. (2001).

Other studies explore the venture capital issues in other countries like Italy (Rossi, 2015). According to the author, venture capital in Italy focused more on already developed sectors, whereas their interest in the service sector and young innovative firms remained relatively low. Similarly, a study conducted in USA (Aberman, 2009). The author noticed that the private venture capital market was shrinking, and VC firms were not generating a healthy return. It was mainly because some of the newly emerging venture capital managers could not raise enough capital. On the other hand, a very captivating study by Brush et al. (2018) pointed out an exciting aspect of venture capital challenges for the US market. According to the analysis of the study, the business firms led by women were able to attract less funding from venture capital firms compared to the business firms led by men. As mentioned earlier with regard to Saudi Arabia, this study will bring new insights into the problems and challenges faced by Saudi Venture capitalists.

3. Data and Methodology

In this study, we used a quantitative approach based on the primary data to examine the problems and challenges of venture capital firms. For this purpose, we used a questionnaire to collect data from various stakeholders. The questionnaire highlights venture capital problems and prospects. For this purpose, our target audience was the venture capitalist managers, entrepreneurs, investors, and bankers to identify the problems and prospects of venture capital in Saudi Arabia. The questionnaire developed for this study has two parts; the first section with open-ended questions to measure the un-aided recall and perceptions towards Venture Capital, and the second section with close-ended questions with a five-point Likert scale. These questions were adapted from earlier studies (Carmines & Zeller, 1979; Fink & Litwin, 1995). After drafting the questions, various validity checks

were applied. Five different venture capital experts and university faculty were interviewed for the questionnaire draft. Several questions were added and removed; many items were adjusted based on the recommendations by the jury of experts until we reached a final draft of the questionnaire. It was pilot tested on five venture capitalists, and results were shown to the jury of experts. Open-ended questions were increased to 6 instead of 5, and close-ended questions were reduced to 31 instead of 39 questions. After validating the questionnaire, the main data collection was started in three cities, i.e., Riyadh, Jeddah, and Dammam. The sample comprises venture capitalists, entrepreneurs, experts for entrepreneurial finance, bankers, and investors. Table 1 and 2 presents the list of university business incubators and national business incubators participated in this research.

Table 1 List of University Business Incubators participated in this study

No	University Business Incubator	City
1	Innovation and entrepreneurship center - Business incubator and accelerator, Al-Baha university	Al-Bahah
2	Najahat – Business incubator, King Faisal University	Al-Hasa
3	IAU Entrepreneurship center - Business incubator and accelerator, Imam Abdurrahman Bin Faisal University	Dammam
4	Entrepreneurship institute - King Fahad for University of Petroleum and (KFUPM)	Dammam
5	Hail university startup accelerator - Business incubator and accelerator, Hail university	Hail
6	Jnnov8 – Business incubator and accelerator, Jazan University	Jazan
7	Business Innovation and Entrepreneurship - Business incubator and accelerator, Effat university	Jeddah
8	Sahabat Alimam – Business incubator, Imam Mohammed bin Saud Islamic University	Madinah
9	Bab-Al-Madinah – Business incubator & accelerator, Islamic University of Madinah	Madinah
10	Wadi Makkah – Business incubator and accelerator, Umm Al-Qura University	Makkah
11	Centre of creativity and entrepreneurship – Business incubator & accelerator, King Abdulaziz University	Riyadh
12	Innovation and economic development –King Abdullah University of Science of Technology (KAUST)	Riyadh
13	Hikma incubator, King Abdullah University of Science of Technology (KAUST)	Riyadh
14	King Salman Institute for Entrepreneurship - Business incubator and accelerator, King Saud University	Riyadh
15	Innovation and entrepreneurship center - Business incubator and accelerator, University of Taif	Taif

Table 2 List of National Business Incubators participated in this study

No	Business Incubator	City	No	Business Incubator	City
1	BADIR - King Abdullah City of Science and Technology (KACST)	Riyadh	11	FLAT6LABS	Jeddah
2	Misk 500 - MISK Foundation	Riyadh	12	InspireU	Riyadh
3	9/10ths - King Abdullah University of Science and Technology (KAUST)	Riyadh	13	Tamakkun BA	Riyadh
4	E3qlha - First women's business incubator	Riyadh	14	Entertainment BA	Riyadh
5	Bab Rizq - Abdullatif Jameel Motors	Riyadh	15	I-be Hub	Riyadh
6	Jeddah Valley	Jeddah	16	Inspire	Riyadh
7	Dhahran techno valley	Dharan	17	Startups House	Riyadh
8	Riyadh Taqnia venture	Riyadh	18	Oqal	Riyadh
9	Riyadh Valley	Riyadh	19	Raz	Riyadh
10	Saudi Credit and Savings bank	Riyadh	20	Riyada	Riyadh

The most difficult part of the research was to find venture capitalists ready to give time and share their thoughts. There was no consolidated list of venture capitalists available in Saudi Arabia. A strategy was employed in this research to get access to venture capitalists. All university business incubators and national business incubators were contacted to get referrals for their venture capitalists. The strategy was successful, and a significant number of venture capitalists were accessed through referrals. The online questionnaire link was sent to 320 various stakeholders. One hundred sixty-five responses were received, making a response rate of 52%. In order to improve the quality of data, we have excluded incomplete and inconsistent responses (Rahm & Do, 2000). Finally, 122 responses were used for further analyses. Table 3 presents the demographic details of the respondents for this research.

Table 3 Respondent's Profile

Gender	Frequenc	Percent	Status	Frequenc	Percent
Male	101	83%	Entrepreneurs	59	48%
Female	21	17%	Venture Capitalists	26	21%
Total	122	100%	Business Incubator Experts	17	14%
			Bankers & Investors	20	17%
			Total	122	100%
Age	Frequenc	Percent	Education	Frequenc	Percent
Less than 25 years	12	10%	Bachelor	73	60%
25-34 years	50	41%	Master	37	30%
More than 34 years	60	49%	Others	12	10%
Total	122	100%	Total	122	100%

4. Analyses and Results

For this exploratory study, data were analysed in two steps. Firstly, open-ended questions were analysed to measure the un-aided recall towards venture capital. Secondly, the descriptive analysis was made for close-ended questions to identify the most critical venture capital challenges in Saudi Arabia. Thirdly, exploratory factor analyses were used to summarize the challenges.

4.1 Qualitative Analysis:

Data generated during initial interviews and open-ended responses from surveys provided an opportunity to offer qualitative data analysis. Table 4 presents open-ended questions and top three responses for each question with the frequency. Respondents were allowed to give more than one answer for each open-ended question.

Table 4 Qualitative Analysis - VC Challenges in Saudi Arabia

Open Ended Questions	Three Frequent Answers	Frequency
What comes to your mind when you hear "Venture Capital"?	Highly risky investment /High profit	65
	Entrepreneurship/start-up /opportunities	58
	Funding/capital/money/finance	33
What is the most important thing for any VC firm?	Money; Profit & Return on Investment	61
	Feasibility; Market Study & Planning	39
	Idea & opportunities	19
What do VC firms expect from entrepreneurs	Entrepreneur's Personal Characteristics	63
	Good feasibility study	21
	Relevant experience & knowledge	20
What are the most important problems of VC firms in Saudi Arabia	Lack of appropriate law/legal system/regulations	22
	Venture Capitalist relevant issues	15
	Lack of good/unique/innovative ideas	11

The analysis phase was started by analysing open-ended questions and responses received during the study's earlier phases, including interviews and focus groups. Open-ended questions were included in the questionnaire to solicit replies from respondents in their own words and are intended to evoke rich data than is conceivable in close-ended questions or multiple-choice questions. This has helped us to understand the general perceptions of various stakeholders towards VC in Saudi Arabia. Regarding the un-aided call or perception towards 'Venture Capital,' the respondents showed their clarity of mind towards VC that it is a risky investment with higher returns. In another question, they described the most important agenda for any VC firm is profit and return on investment. It shows they are looking for good entrepreneurial projects for investment. In another question about the expectations from entrepreneurs to provide them finance, they expressed entrepreneurial personal characteristics as the major requirement. Personal characteristics listed in the list include multi-skills, credibility, teamwork, creativity & innovation, quality, planning, seriousness, passion, technical understanding, business understanding, honesty, and risk orientation (high Risk vs. Low Risk).

Table 5 Descriptive Analysis (Frequency Distribution & Mean) - VC Challenges in Saudi Arabia

Items	Level of Perceived Problem						
	Frequency Distribution					Total	M
	1	2	3	4	5		
Lack of government support for VC	0	8	17	41	56	122	4.19
Bureaucratic procedures related to VC	1	9	22	41	49	122	4.05
Access to angel investors (funding without collateral)	5	8	16	45	48	122	4.01
Access to VC	2	8	26	39	47	122	3.99
Lack of Entrepreneur’s vision	6	9	22	37	48	122	3.92
Lack of Entrepreneur’s commitment	6	17	12	40	47	122	3.86
Entrepreneur’s sense of insecurity	5	7	24	50	36	122	3.86
Lack of Entrepreneur’s innovation	6	9	23	42	42	122	3.86
Lack of sound feasibility study	6	9	23	43	41	122	3.85
Lack of collateral/guarantees	5	11	22	45	39	122	3.84
Lack of proper business plan	6	9	24	45	38	122	3.82
Lack of understanding - SME rules & procedure	9	10	21	42	40	122	3.77
Lack of government support for entrepreneurs	6	13	23	41	39	122	3.77
Limited ‘Stock of knowledge’ about VC	9	13	22	41	37	122	3.69
Lack of R&D in KSA	6	10	33	47	26	122	3.63
Lack of ‘Spin-off’ culture (company on campus)	13	14	22	34	39	122	3.59
Lack of Entrepreneurial Aspirations	7	21	19	45	30	122	3.57
Applicant’s Technical knowhow	7	12	38	35	30	122	3.57
Lack of Entrepreneurial Attitudes	11	15	28	30	38	122	3.57
Start-up Company registration (patent registration)	11	9	31	43	28	122	3.56
Lack of Entrepreneurial Activities	6	15	32	47	22	122	3.52
Applicant's Risk orientation (Risk taker VS Risk averse)	11	17	28	33	33	122	3.49
Access to banking facilities (bank guarantees, Forex)	9	20	28	38	27	122	3.44
Applicant’s relevant Experience	6	25	31	29	31	122	3.44
Lack of education of Entrepreneur	8	17	36	40	21	122	3.40
Applicant seeking public sector jobs	13	23	25	30	31	122	3.35
High Competition (industry competitive forces)	16	18	27	39	22	122	3.27
Applicant’s Educational background	18	16	35	35	18	122	3.16
Cultural availability of family support	14	23	32	36	17	122	3.16
Access to SME Authority	21	27	37	26	11	122	2.83
Applicant’s Family background	39	17	37	16	13	122	2.57

Regarding the most important VC problems in Saudi Arabia, 'lack of clear rules and regulation' for VC firms in Saudi Arabia has emerged as the most frequent answer, which is approximately 19% of all answers. However, according to respondents, the second highest problem is the 'issues relevant to the Venture Capital firm itself,' which was repeated 15 times (13%). On the other hand, according to respondents, both the 'investor related issues' and 'lack of an appropriate system for VC firm' are also considerable problems faced by VC firm; the answer was repeated by four times representing 3% of all answers.

4.2 Descriptive Analysis:

Closed-ended questions with five-point Likert scale responses were analysed using SPSS. The objective was to identify the most critical challenges of VC in Saudi Arabia. Table 5 presents frequency distribution and mean comparisons of all responses. The top three items based on mean comparisons include 'Lack of government support for VC' (M = 4.19); 'Bureaucratic procedures related to VC' (M = 4.05) and 'Access to angel investors (funding without collateral)' (M = 4.01).

4.3 Factor Analysis:

Exploratory factor analyses, using the maximum likelihood method of extraction and varimax rotation, was used to determine the factor structure of 31 items related to venture capital in Saudi Arabia. The factor loading criteria were applied, which required that (a) a factor must have at least two salient item loadings greater than 0.3, (b) individual items must have at least one-factor loading greater than 0.3, and (c) any item loading on more than one factor when the final solution is obtained will be placed only in the factor on which it loads most highly. Finally, the six-factor solution was obtained, meeting all criteria for successful exploratory factor analysis presented in Table 6. Based on results shown in the table below as a result of the factor analysis technique in SPSS software.

Table 6 Exploratory Factor Analyses - VC Challenges in Saudi Arabia

Items	Factors					
	Entrepre neurial Ecosyste	Entrepr eneurial Culture	Entrepr eneurial Attitud	Entrepr eneurial Mindset	Entrepr eneurial Finance	Entrepr eneurial Plannin
Start-up Company registration (patent registration)	.685					
Bureaucratic procedures related to VC	.678					
Lack of government support for entrepreneurs	.661					
Lack of government support for VC	.590					
High Competition (industry competitive forces)	.558					
Limited 'Stock of knowledge' about VC	.527					
Lack of R&D in KSA	.475					
Lack of understanding - SME rules & procedure	.407					
Lack of 'Spin-off' culture (company on campus)		.769				
Cultural availability of family support		.725				
Entrepreneur's sense of insecurity		.705				
Lack of entrepreneur's innovation		.622				
Lack of collateral/guarantees		.506				
Lack of entrepreneurial attitudes			.737			
Lack of entrepreneurial aspirations			.729			
Lack of entrepreneurial activities			.626			
Lack of entrepreneur's vision			.616			
Lack of entrepreneur's education			.545			
Lack of entrepreneur's commitment			.368			
Applicant's Technical know-how				.718		
Applicant seeking public sector jobs				.715		
Applicant's relevant Experience				.672		
Applicant's Risk orientation (Risk taker VS Risk averse)				.554		
Access to SME Authority					.733	
Access to angel investors (funding without collateral)					.693	
Access to VC					.530	
Access to banking facilities (bank guarantees, Forex etc.)					.487	
Applicant's Family background						.775
Applicant's Educational background						.540
Lack of sound feasibility study						.475
Lack of proper business plan						.442

These factors were named; accordingly, (a) entrepreneurial ecosystem, (b) entrepreneurial culture, (c) entrepreneurial attitudes, (4) entrepreneurial mindset, (5) entrepreneurial finance, (6) entrepreneurial planning. Factor 1 had an eigenvalue of 5.32, and it accounted for 22.12% of the variance. It had loadings on items like startup company registration (patent registration); bureaucratic procedures related to VC, lack of government support for entrepreneurs; lack of government support for VC; high competition (industry competitive forces); limited 'stock of knowledge' about VC; lack of R&D in KSA; lack of understanding - SME rules & procedures. It was named as Entrepreneurial Ecosystem. Factor 2 had an eigenvalue of 3.11, and it accounted for 11.14% of the

variance with loadings on items including lack of 'spin-off' culture (company on campus), cultural availability of family support, entrepreneur's sense of insecurity, lack of entrepreneur's innovation, lack of collateral/guarantees. It was named as Entrepreneurial Culture. Factor 3 had an eigenvalue of 2.81, and it accounted for 7.22% of the variance with loadings on items as lack of entrepreneurial attitudes, lack of entrepreneurial aspirations, lack of entrepreneurial activities, lack of entrepreneur's vision, lack of entrepreneur's education, lack of entrepreneur's commitment. It was labeled as Entrepreneurial Attitudes. Factor 4 had an eigenvalue of 1.36, and it accounted for 7.21% of the variance with loadings on items like applicant's technical know-how, applicant seeking public sector jobs, applicant's relevant experience, risk orientation (risk taker vs Risk-averse). It was labeled as an Entrepreneurial Mindset. Factor 5 had an eigenvalue of 1.65, and it accounted for 6.86% of the variance with loadings on items like access to SME authority, access to angel investors (funding without collateral), access to VC, access to banking facilities (bank guarantees, Forex etc.) It was named as Entrepreneurial Finance. Factor 6 had an eigenvalue of 1.47, and it accounted for 4.75% of the variance with loadings on items like applicant's family background, applicant's educational background (relevant background), lack of sound feasibility study, lack of a proper business plan. It was named Entrepreneurial Planning.

5. Conclusions and Recommendations

The role of venture capital as a useful contributor to corporate and economic growth is well documented in the literature (Rind, 1981; Samila & Sorenson, 2011). Furthermore, the venture capital role in entrepreneurship development in developing & emerging economies is also well discussed (Bonini & Capizzi, 2019; Herrington et al., 2010; Tian, 2012). In performing this valuable role, the venture capital firms, as a form of business, also face various types of challenges. Some of these challenges are relating to the rules and regulations, some relating to the local business environment, and others relate to the entrepreneurial deficiencies in the economy (Dauterive & Fok, 2004; Jones & Mlambo, 2013; Scheela & Van Dinh, 2004). In this study, we investigated the problems and challenges faced by venture capital firms in KSA. The country is an important emerging economy in the GCC region and going through an economic transformation. Efforts are going on to shift the country's economic dependence from oil to the non-oil sector, and small businesses and entrepreneurial growth is one of the areas that is stressed. Therefore, the role of venture capitals becomes critical to financing the emerging business activity in the country. Similarly, with venture capital firms' growing activity, they face various types of challenges and problems.

The study used a quantitative approach based on the primary data to examine the problems and challenges of venture capital firms. We developed a questionnaire to collect data from various stakeholders and highlights venture capital problems and prospects in KSA. We target the venture capitalist managers, entrepreneurs, investors, and bankers as respondents. The data collection was collected in three big cities of KSA, i.e., Riyadh, Jeddah, and Dammam.

The study investigates the main problems/challenges faced by venture capital firms in Saudi Arabia. We pursue to find these prospects and limitations of venture capital from all stakeholders, such as bankers, government, and investors, entrepreneurs, and funding institutions to obtain a 360-degree view. The study applied statistical techniques like factor analysis using SPSS. In the finding of the study, we categorized these challenges into six broader factors, including (1) entrepreneurial ecosystem, (2) entrepreneurial culture, (3) entrepreneurial attitudes, (4) entrepreneurial mindset, (5) entrepreneurial finance, (6) entrepreneurial planning. The challenges identified in these factors are further discussed in the results.

Qualitative and factor analysis techniques were applied using SPSS software. The results of the study revealed many interesting facts. Under the entrepreneurial ecosystem, the lack of government support for entrepreneurs, lack of government support for VC, lack of research & development in KSA remained the significant challenges. Under entrepreneurial culture, the entrepreneur's sense of insecurity, lack of entrepreneur's innovation are the main problems. Lack of entrepreneurial attitudes, lack of entrepreneurial aspirations remained the main issues under the main head of entrepreneurial attitude. Similarly, issues like the applicant's technical know-how, the applicant seeking public sector jobs, the applicant's relevant experience, and risk orientation

appeared under the Entrepreneurial Mindset factor. Moreover, under the Entrepreneurial Finance factor, problems like access to SME authority, access to banking facilities for bank guarantees, etc., purpose were identified. Finally, challenges like lack of sound feasibility study, lack of a proper business plan appeared under the Entrepreneurial Planning factor. Overall, our study results are in line with previous research see (Dauterive & Fok, 2004; Jones & Mlambo, 2013; Scheela & Van Dinh, 2004).

5.1 Recommendations

The study also presents several recommendations. Firstly, government agencies should understand that venture capital and angel investors are different from conventional banks, and VC firms should get a separate set of laws and regulations. Ministries take actions to eliminate important obstacles and develop more flexible rules and regulations towards VC. Secondly, there is a need to improve the awareness and understanding of VC. All universities, especially business schools teaching entrepreneurship, should include VC as part of the entrepreneurship curriculum. Furthermore, the ministry of education should re-organize the entrepreneurship courses in all universities to be more focused on Venture Capital as an essential pillar for the entrepreneurship domain. Finally, entrepreneurs should also improve their commitments to get the confidence of finance institutions and decision-makers. They should show professionalism, seriousness, commitment, and transparency for funding institutions.

5.2 Limitations

This research is an outcome of overcoming many limitations. These limitations include lack of resource relevant to venture capital in Saudi Arabia, availability of a limited number of entrepreneurship centers in Saudi Arabia. Moreover, difficulty to access entrepreneur's database from other institutions is another limitation. Furthermore, there is no government authority to regulate venture capital; no venture capital firms database exists in Saudi Arabia.

5.3 Need for further research

This exploratory research has been conducted as the first research on Venture Capital and its problems, challenges, and prospects in KSA. We still feel that there is a lot more to be done in this field. Firstly, there is a need for indigenous research on rules and regulations needed to support VC in Saudi Arabia. The shortage of this type of research makes the study more inevitable for many scholars. There are several dimensions for future research areas such as Venture Capital firm role in Vision 2030, venture capital development agency in Saudi Arabia.

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ENHANCING RISK MANAGEMENT CULTURE FOR SUSTAINABLE GROWTH OF ASIA COMMERCIAL BANK - ACB IN VIETNAM UNDER MIXED EFFECTS OF MACRO FACTORS

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Abstract. For sustainable growth, macro policy makers will need to look at risk management in banking industry and impacts of macro factors on market risk in order to adjust policies and build risk management culture in banking system. What we need to adjust in trade balance, risk free rate and other policies? This is one of reasons for us to conduct this study. This paper measures the Beta CAPM in famous model under impacts of both macro internal and external variables during low inflation time 2015-2020 in the country. The evidence is the fundamental role of risk management in commercial bank has been increasing with new perspectives in management, corporate governance and risk management models. We will estimate effects in risk measurement of one of big listed Vietnam commercial bank, Asia commercial bank (ACB) during the low inflation period 2015-2020 with semiannual data. Through using analysis, synthesis statistics methods, and dialectical materialism method, combined with econometric model with 9 macro variables, we figure out that CPI has a positive correlation with Beta CAPM of ACB, while Risk free rate (Rf) and lending rate have negative correlation with Beta CAPM of the bank. It implies that increase in inflation, together with decrease in Rf and lending rate will increase market risk. Then, one of its major findings is the suggestion of macro and risk management policies for bank and relevant government agencies. Our recommendation can be used for reference and expand researches in many other emerging markets.

Keywords: market risk management; risk culture; beta CAPM; low inflation; banking industry; Vietnam, policy

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JEL Classifications: M1, M21, G30

1. Introduction

Nowadays, under 4.0 industry and Basel impacts, Vietnam banks pay attention more to risk management, especially perspectives in governance, management and risk models. This is the 1st reason we conduct this research paper. Corporate culture can be defined as the set of values and standards of beliefs, behaviors, perception and thinking methods that are recognized by everyone in the company, thinking and acting as a habit. Corporate culture is like a person's personality and spiritual life, influencing its lifestyle and behavior. Building a company culture determines the success, failure and long-term survival of each business. Hence, we can see risk management culture will include perception and thinking methods relating to risk and risk management within the firm.

This study will calculate and figure out not only inflation but other macro factors, both internal and external indicators affecting the market risk level during the low inflation time (2015-2020). Asia Commercial Bank (ACB) is one of big listed joint stock commercial bank in Vietnam, which achieved significant growth in past years. Having endured heavy losses in 2012, the bank returned to positive growth on the first stage of the 2014-2018 development roadmap, with particularly impressive figures in terms of total assets and profits. before tax reported at the end of 2014. Phase two (2015-2016) focuses on building the bank's capacity when core values and competencies are maintained and strengthened, in addition, product and service packages are tailored to each segment. customers, more specifically to improve their competitiveness and better serve the target audience. During this period, ACB's technology platform was also developed by gradually transforming the core system as well as by deploying many IT applications into use. Organizational and operational restructuring is also being implemented. The final phase, which starts in 2017 and will be completed in 2018, focuses on positioning ACB once again as one of the top banks in Vietnam, especially through key metrics. including: customer satisfaction, sustainable financial results, risk management, performance and business ethics.

Our research purpose:

We aim to provide recommendations, via an econometric model, for macro and risk management policies and for building risk management culture at Vietnam commercial banks in order to prevent and control risks better in a changing world with compounding impacts from Covid 19 and trade war. Our suggestion smight be references fro other emerging markets.

We will structure the paper with introduction, research issues, literature review, conceptual theories and methodology. Next is research findings/results. Then we present discussion and conclusion and policy suggestion.

2. Previous studies

2.1. Research questions

We will explore key matters as follow:

Question 1: What are impacts of internal and external macro variables s on market risk measurement of Asia commercial bank (ACB)?

Question 2: What are risk management culture building plans for ACB to reduce potential risks?

There are hypotheses will be checked: Hypothesis 1: Beta CAPM of listed bank (ACB) will increase if inflation increase and it will decrease if GDP growth increases.

Hypothesis 2: If exchange rate decreases (VND appreciation), beta CAPM will decrease.

Hypothesis 3: With the above reasons in Covid 19 and US-China commerce war and low inflation, Beta CAPM of ACB will impose a high risk value or $(>) 1$.

2.2. Literature review

First, in 3 factor model, Fama and French (2004) mentioned stock return is affected by value and size. Then, Anderson et al. (2005) pointed that beta value on stock exchange will change according to macro indicators such as industrial manufacturing growth index and effects of macro factors large enough to be meaningful. Hojat (2015) said since the outset of the industrial revolution, the equity market has played an instrumental role in the progress of economic production. Singh et al (2010) revealed that exchange rate and GDP seem to affect returns of all portfolios, while inflation rate, exchange rate, and money supply were having negative relationship with returns for portfolios of big and medium companies. Tahmidi et al (2011) said net lending and net borrowing had significant negative effect on market risk premium in Canada, whereas in Germany and Sweden the relationship was not significant.

Next, Ohdner and Zachrison (2016) has presented research results showing that with Beta as risk measurement, investors will demand higher return when holding higher beta stocks, on the announcement date of monetary policies. Adhikari (2015) said based on cross-sectional approach it is revealed that size and profitability are positively associated with the systemic risk, while the dividend payment is negatively related to the risk. The results thus indicate that financial factors have significant predictive power for the systemic risk of a stock investment in Nepal.

Then, Ahmad and Ramzan (2016) stated the macroeconomic factors have important concerns with stocks traded in the stock market and these factors make investors to choose the stock because investors are interested to know about the factors affecting the working of stock to manage their portfolios. Gay (2016) found no significant relationship was found between respective exchange rate and oil price on the stock market index prices of either BRIC country, this may be due to the influence other domestic and international macroeconomic factors on stock market returns. Nawaz et al. (2017) said the consequences of 29 cement industries showed that there is a huge relationship between industry size, operating efficiency, and profitability with 181 systematic risk and results similar to past studies while liquidity and financial leverage have not a significant relationship with beta (systematic risk). Puspitaningtyas (2017) said the financial information is measured in four accounting variables, i.e. financial leverage, liquidity, profitability, and firm size.

Moreover, Curran and Velic (2018) took advantage of global data on stock prices and highly value CAPM model compared to previous models. They show that in the countries with higher level of openness of financial markets, fluctuation in exchange rate and bigger size of economy receive higher systematic covariance. Also there is negative correlation between world reserves and systematic risk. Kola et al (2018) used factors affecting bank profitability such as bank internal factors, industry, and macroeconomic (external) factors. Klimontowiz (2019) provided direction for banks' decision makers concerning innovativeness' factors that should be taken into account in the process of building competitive advantage and sustainable market performance. Sadeghzadeh (2018) found increases of on current ratio, on the ratio of equity capital ratio to tangible assets, on the ratio of own capital to assets, on accounts receivables turnover rate, net profits, on the ratio of equity, the marketing values of companies, on the ratio of book value increased share earnings in a short term and increases of on the ratio of debt to tangible assets and asset turnover decreased share earnings in a short term significantly. Siregar and D. (2019) showed that there is difference of systematic factors influence to stock return in three observation period. Increased market risk and economic growth, increase stock returns. Tahir et al. (2020) found higher availability of private credit in the host country results in lower dividend repatriation. Huy et al. (2020) show that the increase in GDP growth and lending rate and risk free rate has a significant effect on increasing VCB stock price with the highest impact coefficient, the second is decreasing the exchange rate, finally is a slight decrease in S&P500.

Kozaric & Dzelihodzi (2020) confirm the significance of macroeconomic for non-performing loans control and financial stability maintenance. Kruscovic (2020) pointed countries with inflation targeting have a lower rate of economic growth. Masood et al. (2020) said there is significant influence of terrorism activities on financial stock market of five selected countries. Nain et al (2020) found uncertainty influences the effectiveness of monetary policy shock. Rakshit et al (2020) reveal that in India, a higher degree of bank competition is positively associated with the prevalence of non-performing loans. Okpamen et al. (2020) said firms needed to encourage adequate interlocking members who have diverse professional training, high social net worth and experience (experience hypothesis) to positively influence effective management and financial performance of listed firms in Nigeria. Pena (2020) mentioned the interferences among some financial, economic and monetary variables are checked as an indicator of economic performance in the long run and for the monetary policy applied between the Great Moderation (GM) of 1987-2001 and the Global Financial Crisis of 2007-2009. Rakotonirainy et al. (2020) stated the horizon of capital prediction shows that banking sector reacts most to a GDP shock.

The below table 1 will summarize previous studies relating to risk management under macro impacts topic:

Table 1. Summarizing previous studies

Domestic researches	Authors name	Results, contents
1. Systemic risk and the problem of determining Beta coefficient in Vietnam	Vương Đức Hoàng Quân (2012)	In the first stage, in general, the information from the Vietnam stock market is not sufficient in quantity and quality to estimate the beta coefficient according to the traditional method, which is regression analysis of stock returns volatility compared to indices. VN-Index to value the listed companies and stocks.
1. Fama-French 3-Factor Model: The empirical evidence from HCM city	Trương Đông Lộc & Dương Thị Hoàng Trang (2014)	The research results show that earnings of stocks are positively correlated with market risk, firm size and the book value to market value (BE / ME) ratio. In other words, the Fama - French 3-factor model is suitable in explaining the change in profits of stocks listed on HOSE.
2. The econometric model for stock prices in the period 2008-2011 - Case of stock prices ACB, VNIndex, Rf	Đinh Trần Ngọc Huy (2015)	Analyze the impact of VNIndex and internal and external macro variables on the stock price of ACB.
3. The theory of average return of K. Marx and model of capital asset pricing	Nguyễn Thị Hương (2017)	The limitation of Vietnam's stock market is the lack of beta in stock analysis. However, as the market portfolio matures, beta will keep pace with the development of the market.
5. Systemic risks in banking business - periods of crisis	Nguyễn Thanh Bé & Bùi Quang Hưng (2019)	Presented in Vietnam, the risk management system at commercial banks has been paid attention to a certain extent in the past few years, but due to its structural and technical limitations, this system has not can meet the complex requirements of a modern commercial bank operating in the current risky environment.
6. Factors affecting the return rate of listed stocks from the Fama French 5-factor model	Trịnh Minh Quang et al (2019)	Referring to factors of market change will strongly affect the share prices of large companies
International researches (summary)	Authors name	Results
Macro effects on market risk	Patro et al. (2002)	They found that a number of variables including imports, exports, inflation, market capitalization, dividend yield, and a book-to-book price ratio significantly influence a person's world market risk at national level.

2. Industrial analysis on stock return	Butt et al. (2010)	The results revealed that market returns are primarily changes in stock returns, but macroeconomic variables and industry-related variables add explanatory power in describing volatility, stock returns.
3. Responses from US bank risks	Claudia et al. (2010)	The risk of about a third of US banks increases in response to monetary easing.
4. Macro effects on Pakistan banks	Saeed & Akhter (2016)	In Karachi stock market, Regression results show that exchange rate and short-term interest rate have a significant impact on the Banking index. Macroeconomic variables such as money supply, exchange rate, industrial production and Short-term interest rate and exchange rate have a negative effect on banking index while oil price has a positive effect on the bank index. Banking index.
5. The case of Istanbul exchange	Arnes (2014)	Their analysis has shown that for investors interested in Turkey, first of all, be careful not to assume that relationships that existed in the past will continue into the future. We also find that depending on the sector, the effects of changes in macroeconomic variables will also differ. For policymakers and lawmakers, however, our findings indicate that keeping interest rates low has been a good policy for the past 20 years.
6. Bank and financial stability	Emilios (2015)	The leverage cycle can cause financial instability and the impact of limited leverage on bank governance performance.
7. Macro effects on 4 countries	Gay (2016)	According to the hypothesis, the relationship between the exchange rate and the security's price should be in the same direction.
8. Liquidity risk and cost inefficiency	Tvaronavičienė et al. (2018)	Liquidity risk and cost inefficiency analysis in leading banks of UK and Germany shows that both, internal and external factors affect banks' performance; external factors in some cases appear to be of crucial importance, and therefore have to be investigated further.
9. Case of German market	Celebi & Honig (2019)	In Germany, the aggregate index (OECD), the Economic Research Institute's Export Expectations index, the climate index, exports, CPI, as well as the 3-year German government bond yield has a delayed effect on stock returns
10. Macro variables effects on Starbucks.	Kumaresan (2019)	Indicates that compared to internal corporate factors, macroeconomic factors (exchange rate) have a greater effect on firm performance.
11. Macroeconomic, Institutional and Bank-Specific Determinants of Non-Performing Loans	Bayar (2019)	Results of the dynamic panel regression analysis showed that economic growth, inflation, economic freedom (institutional development), return on assets and equity, regulatory capital to risk-weighted assets, and noninterest income to total income affected nonperforming loans negatively, while unemployment, public debt, credit growth, lagged values of nonperforming loans, cost to income ratio and financial crises affected nonperforming loans positively
12. Volatility Spillovers between Interest Rates and Equity Markets	Donzwa et al. (2019)	The volatility spillover from interest rates to stock markets are more prominent for the full-sample, as well as the sub-samples covering the pre- and during-Zero Low Bound periods.
13. Liquidity stress test for Indonesian banks	Taruna et al. (2020)	For Indonesian banks, establish significant transmission channels from macroeconomic and idiosyncratic (bank idiosyncratic risks) factors to liquidity runs. By using the macroeconomic scenario transmission, we find the liquidity stress test to be more consistent with the

		solvency stress test.
14. Financial stability	Vucinic (2020)	Stresses out an importance of international cooperation of regulators in order to preserve financial stability in the recent world of technological changes and innovations.
15. Financial Literacy - Indonesia	Tkacova et al. (2018)	Results show that all financial attitudes, behaviour and literacy variables positively affect financial literacy and wellbeing.
16. Macro Stress Testing Credit Risk	Raikotonirainy et al. (2020)	Madagascar banking sector is quite resilient and remains sufficiently capitalized under all macroeconomic scenarios designed with a solvency ratio higher than the minimum regulatory CAR ratio.
17. Capital Flow and Bank Risk Taking Behavior	Rumondor & Bary (2020)	Capital inflows, in the form of portfolio investment, is significant in raising risk-taking behavior. Large banks are less aggressive in their risk-taking behavior vis-à-vis smaller banks.
18. Monetary Base Controllability after an Exit from Quantitative Easing	Tanaka (2020)	If the bank needs to absorb a substantial amount of excess reserves when exiting, the monetary base may become uncontrollable.
19. PBC Financial Strength and Policy	Sun (2020)	Alternative financial strength indicator plays different role in helping the People's Bank of China achieve its alternative policy objectives.
20. Financial vulnerability in Malaysia	Kuek (2020)	Reveal that financial vulnerability shock catalysed significant negative effects on economic activity.

2.4. Methodology

Values of Beta CAPM are calculated from data of stock price on HOSE and HNX stock market during 2015-2020. This is L-inflation time and China-US commerce war. We use analytical and synthesis methods and dialectical materialism method. Analytical data is from the situation of listed bank (ACB) in Vietnam stock exchange.

Analysis of the effects of 9 macro variables on market risk of listed commercial bank, Asia commercial bank (ACB). Weekly data collected from 2015-2020 for ACB stock price to measure Beta and other macro data from reliable sources such as the General Statistics Office and commercial banks. Beta CAPM is a function with 9 macro variables (x1: GDP growth rate (g), x2: Risk-free rate R_f (i), x3: Loan interest rate (r), x4: Exchange rate (ex_rate), x5: S&P 500, x6: VNIndex, x7 : trade balance, x8: industrial production index, x9: CPI). We use OLS regression.

Reasons why we chose these macro factors:

First, we recognize market risk is systemic risk affected by all market indicators and macro factors.

Second, in global financial market, developing economies receive impacts from big economies such as US, China.

Third, Based on our analysis and results, Macro policies and risk management plans are recommended for both Asia commercial ban (ACB), relevant organizations and government.

Total 9 macro variables are described with sources in the below table 2:

Table 2. Variables description (source: author's synthesis from Bureau statistics, commercial banks, HOSE and HNX stock exchange in Vietnam)

Variable name	Sign	Data source	Reference source
Dependent variable			
Market risk (BetaCAPM)	BetaCAPM	HOSE and HNX	Treynor (1962), Sharpe (1964), Lintner (1965), Mossin (1966)
Independent variables			
GDP growth	g	Bureau statistics	Huy et al. (2021)
VNIndex	VNindex	HOSE and HNX	Huy et al. (2020)
Risk free rate	Rf	German market	Celebi & Honig (2019)
Lending rate	r	Istanbul financial market	Arnes (2014)
Exchange rate	Ex_rate	Pakistan financial market	Saeed & Akhter (2016)
S&P500	SP500	NYSE	Huy et al (2020)
BOT(trade balance)	BOT	Bureau statistics	Author synthesis
IM (Industrial manufacturing index)	IM	Bureau statistics	Author synthesis

In the below table, we see statistics for 9 variables. The table indicated that std.deviation of Exchange rate and trade balance and VNIndex with highest values, while std. deviation of CPI, Rf as lowest values (Figure 1).

	BETACAPM	CPI	G	IM	R	RF	VNINDEX	SP500	EX RATE	BOT
Mean	0.982799	0.027618	0.060609	167.8909	0.095691	0.042000	800.6455	2576.246	22791.45	-60.45455
Median	0.754649	0.028100	0.067600	147.4000	0.100000	0.037000	825.1000	2506.850	22920.00	-100.0000
Maximum	3.374341	0.047400	0.070800	267.2000	0.110000	0.061800	984.2400	3230.780	23230.00	400.0000
Minimum	0.404721	0.006300	0.018100	127.3000	0.080000	0.019500	579.0300	2043.940	21780.00	-500.0000
Std. Dev.	0.825392	0.012590	0.015273	44.01387	0.010825	0.014450	161.5812	416.1722	443.6015	267.7728
Skewness	2.458229	-0.162938	-2.140463	1.322279	-0.137303	0.114349	-0.254721	0.208963	-1.103011	0.573461
Kurtosis	7.810966	2.045666	6.685526	3.491429	1.756312	1.716206	1.437038	1.681378	3.459091	2.763409
Jarque-Bera	21.68694	0.466101	14.62515	3.316126	0.743494	0.779363	1.238592	0.876987	2.327097	0.628561
Probability	0.000020	0.792114	0.000667	0.190508	0.689529	0.677272	0.538323	0.645007	0.312376	0.730314
Sum	10.81079	0.303800	0.666700	1846.800	1.052600	0.462000	8807.100	28338.71	250706.0	-665.0000
Sum Sq. Dev.	6.812718	0.001585	0.002333	19372.21	0.001172	0.002088	261085.0	1731993.	1967823.	717022.7

Figure 1. Descriptive statistics for 9 macro variables (source: data synthesis from Bureau statistics, commercial banks, HOSE and HNX stock exchange in Vietnam)

3. Findings

3.1. Overall Analysis

First we look at the below figure 2, we find out correlation matrix of internal variables. We see that Increase in industrial manufacturing index will cause Beta CAPM increases while decrease in CPI will make it decreases.

Correlation Matrix										
	BETACAPM	CPI	G	IM	R	RF	VNINDEX	SP500	EX_RATE	BOT
BETACAPM	1.000000	0.301348	0.040175	0.407736	0.017521	0.071074	0.038443	-0.083222	0.006842	-0.157383
CPI	0.301348	1.000000	0.170563	0.429462	-0.404467	-0.145300	0.410100	0.239791	0.345255	-0.332970
G	0.040175	0.170563	1.000000	0.155701	-0.421321	0.251391	0.236537	-0.176527	-0.008980	-0.118760
IM	0.407736	0.429462	0.155701	1.000000	0.077944	0.117218	0.059045	-0.197708	-0.070142	-0.347985
R	0.017521	-0.404467	-0.421321	0.077944	1.000000	0.664379	-0.914370	-0.747890	-0.770506	-0.454561
RF	0.071074	-0.145300	0.251391	0.117218	0.664379	1.000000	-0.770134	-0.760251	-0.770196	-0.470740
VNINDEX	0.038443	0.410100	0.236537	0.059045	-0.914370	-0.770134	1.000000	0.841551	0.793384	0.563170
SP500	-0.083222	0.239791	-0.176527	-0.197708	-0.747890	-0.760251	0.841551	1.000000	0.775782	0.781213
EX_RATE	0.006842	0.345255	-0.008980	-0.070142	-0.770506	-0.770196	0.793384	0.775782	1.000000	0.502185
BOT	-0.157383	-0.332970	-0.118760	-0.347985	-0.454561	-0.470740	0.563170	0.781213	0.502185	1.000000

Figure 2. Macro external and internal variables correlation matrix

3.2 Empirical Research Findings and Discussion

In the below section, data used are from 2015-2020 with weekly data for stock price of Asian commercial bank (ACB), live data on VN stock exchange. Different scenarios are created by comparing 2 scenarios: macro internal factors impacts and macro external variables effects.

Market risk (beta) under the below model (Figure 3):

Low inflation period 2015-2020	Stock price	Beta CAPM	Other statistic measures	Gap
Internal variables	Scenario	Scenario	Scenario ..	Analysis
External variables				

Figure 3. Calculating market risk under impacts from macro factors in 2 scenarios

Using OLS regression from Eviews, we find out: Balance of trade and SP500 have negative correlation with market risk of ACB while exchange rate has slightly positive correlation with Beta CAPM of ACB (Figure 4).

Dependent Variable: BETACAPM

Method: Least Squares

Date: 01/01/21 Time: 14:40

Sample: 1 11

Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOT	-0.000627	0.001901	-0.329774	0.7512
EX_RATE	0.000235	0.001135	0.206995	0.8419
SP500	-4.43E-05	0.001676	-0.026413	0.9797
C	-4.296450	22.99004	-0.186883	0.8571
R-squared	0.034728	Mean dependent var		0.982799
Adjusted R-squared	-0.378961	S.D. dependent var		0.825392
S.E. of regression	0.969251	Akaike info criterion		3.050701
Sum squared resid	6.576128	Schwarz criterion		3.195390
Log likelihood	-12.77885	F-statistic		0.083946
Durbin-Watson stat	2.625422	Prob(F-statistic)		0.966640

Figure 4. External impacts on Beta CAPM

Looking at the below figure we see internal effects on Beta CAPM of ACB:G and CPI and risk free rate have higher impacts on ACB Beta CAPM, then lending rate rate. If risk free rate increases, market risk will increase (Figure 5).

Dependent Variable: BETACAPM

Method: Least Squares

Date: 01/01/21 Time: 14:46

Sample: 1 11

Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	10.30767	41.38333	0.249078	0.8156
G	-5.656530	48.56264	-0.116479	0.9129
IM	0.006252	0.011538	0.541862	0.6167
R	-0.847973	129.9411	-0.006526	0.9951
RF	9.063353	65.33558	0.138720	0.8964
VNINDEX	0.000465	0.007505	0.061982	0.9536
C	-0.680716	17.49729	-0.038904	0.9708
R-squared	0.193698	Mean dependent var		0.982799
Adjusted R-squared	-1.015754	S.D. dependent var		0.825392
S.E. of regression	1.171869	Akaike info criterion		3.416203
Sum squared resid	5.493106	Schwarz criterion		3.669409
Log likelihood	-11.78912	F-statistic		0.160154
Durbin-Watson stat	3.057151	Prob(F-statistic)		0.975154

Figure 5. Internal impacts on Beta CAPM (ACB)

Finally, Looking at the below figure we see internal effects on Beta CAPM of ACB:

We recognize that Trade balance, CPI, Industrial manufacturing have positive correlation or impacts on Beta CAPM, whereas other factors such as Risk free rate, GDP growth, Exchange rate and SP500 and lending rate have negative correlation with market risk (Beta of ACB). When GDP growth increases, beta CAPM of ACB will decreases, it is in favor of our 1st hypothesis above. And if CPI increase the market risk will go up, it is in favor of our 1st hypothesis. If exchange rate decreases (VND appreciation), it will makes market risk increase. It is NOT in favor of our 2nd hypothesis (Figure 6).

Dependent Variable: BETACAPM

Method: Least Squares

Date: 01/01/21 Time: 14:46

Sample: 1 11

Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	233.9104	277.0017	0.844437	0.5536
G	-120.6929	185.2058	-0.651669	0.6323
IM	0.001964	0.017724	0.110799	0.9297
R	-273.2131	366.3667	-0.745737	0.5921
RF	-72.76848	210.1528	-0.346265	0.7878
VNINDEX	-0.005350	0.023525	-0.227411	0.8576
SP500	-0.015548	0.016631	-0.934891	0.5214
EX_RATE	-0.001797	0.003307	-0.543452	0.6831
BOT	0.017794	0.020113	0.884680	0.5389
C	117.0860	146.9517	0.796765	0.5717
R-squared	0.571877	Mean dependent var	0.982799	
Adjusted R-squared	-3.281235	S.D. dependent var	0.825392	
S.E. of regression	1.707830	Akaike info criterion	3.328611	
Sum squared resid	2.916684	Schwarz criterion	3.690334	
Log likelihood	-8.307361	F-statistic	0.148419	
Durbin-Watson stat	3.115738	Prob(F-statistic)	0.971058	

4. Discussion for further researches

Other macro factors such as (FDI, public debt, etc.) could be added in order to recommend suitable policies and plans to control market risk better.

In order to enhance risk management culture at ACB, a big listed joint stock commercial bank in Vietnam, we have to consider some following action plans:

Forms and activities of monitoring risk

Risk monitoring is the continuous monitoring and control of activities to ensure achieving goals. It is a process of implementing controls, assessing activities continuously, independent evaluating and reporting results and defects that need to be resolve and overcome.

Monitoring risk in business life can be done periodically or randomly and it will help firms to recognize new risks happening in ongoing business activities. Monitoring risk can be performed at the division, branch levels or from

head quarters and under the form of risk report in which we might analyze risk root causes and suggest preventive or corrective actions, functioned as risk responses and may require changes.

In risk report, we could identify new risks and risk trend, or cost trend and price trend, etc.

Normally, there are two methods of risk monitoring as following:

First, it is continuous monitoring (assessment of KPI business management: turnover, cash, financial indicators, operational statistics, comparison of production, inventory, quality, sales, etc.)

Second, monitoring is done through separate evaluation. The below figure 7 will explain more.

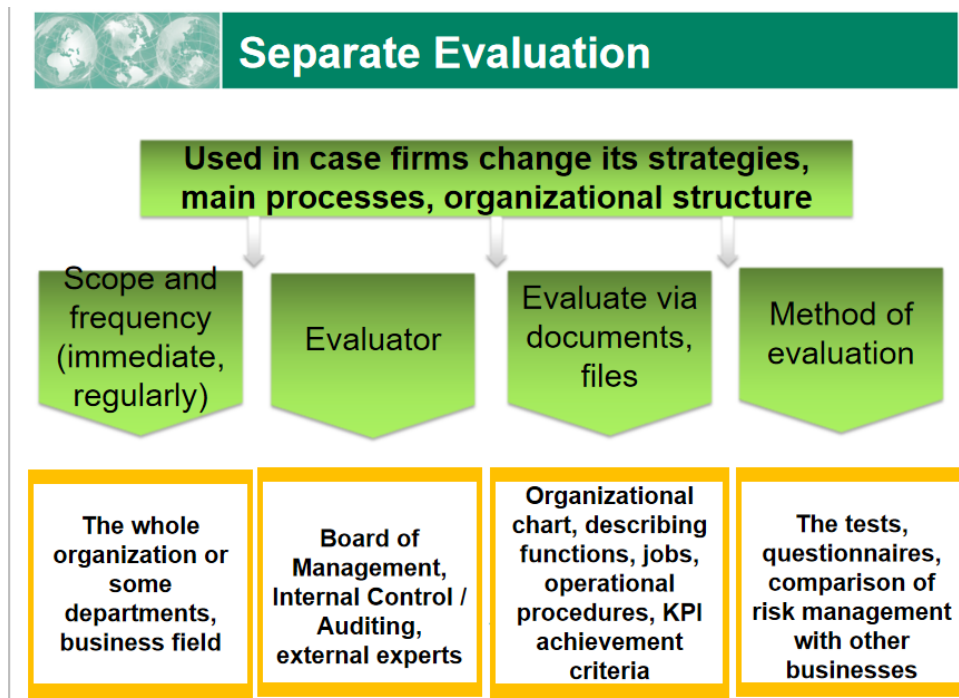


Figure 7. Explanation of Separate Evaluation

5. Conclusion and Policy suggestion

As shown from the above regression model and equation, Government and Ministry of Finance need to increase GDP growth and reduce CPI for lower market risk. This research paper provides evidence that the market risk are affected much more by CPI, GDP growth, risk free rate and lending rate. It means that the role of bank system in trying to control credit growth and rates reasonably.

Our model also shows that other macro factors such as VNIndex and exchange rate just have slight impact on Beta CAPM. And macro internal factors have much more effects on market risk of Asia commercial bank (ACB).

Policy implications:

Specifically, for banks and companies listed on Vietnam's stock market, in the context that bank loans tend to reduce since 2018 (see exhibit 1):

- Building a Beta CAPM /market risk measurement model as described above through the stages to monitor risks of key financial services industries including listed banks on Vietnam stock market
- Building a model to analyze the impact of macro variables on Beta CAPM for the financial services sector as described above.

Moreover, the government and relevant bodies such as Ministry of Finance and State Bank of Vietnam need to consider proper policies (including a combination of fiscal, monetary, exchange rate and price control policies) aiming to reduce the risk volatility and hence, help the bank system as well as the whole economy become more stable in next development stage. The Ministry of Finance continue to increase the effectiveness of fiscal policies and tax policies which are needed to combine with other macro policies at the same time. The State Bank of Vietnam continues to increase the effectiveness of capital providing channels for medicine companies as we could note that in this study, debt leverage has certain impacts on reducing risk level.

Risk management culture implications:

- Suggestions for some risk management activities at enterprise and bank level are as follows:

Make a risk recognition report; Promulgating the Code of Professional Ethics; Regulations that employees are not allowed to disclose internal information; Strengthen legal communication to raise awareness and compliance; Issue the Internal Control Procedures

- With the application of macro-variable impact analysis on Beta CAPM, businesses and banks need to develop two risk causation analyzes according to the 5M model as follows (from which proposing solutions to minimize risks): Man-Machine-Method-Material-Money.

Last but not least, we can use DMAIC model combined with Separate evaluation for risk monitoring as shown in the below model (Figure 8):

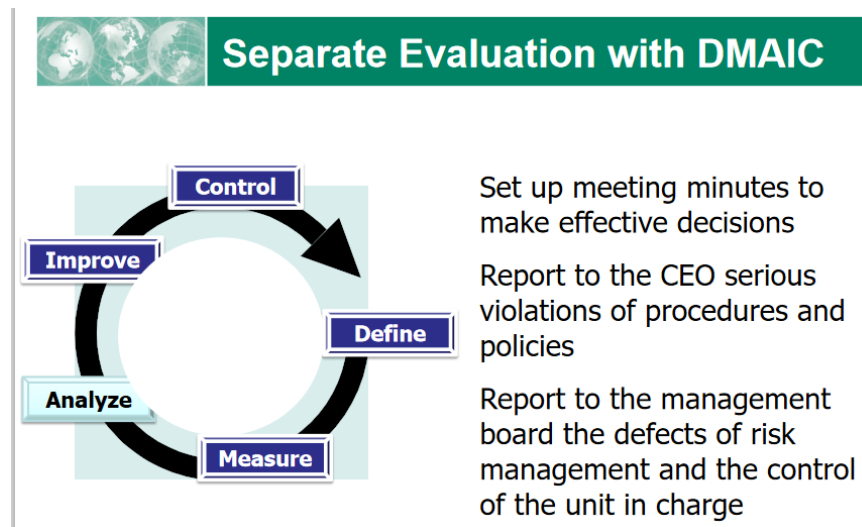


Figure 8. The process of risk monitoring with DMAIC model

Here we refer to the using of Six Sigma DMAIC model to: firstly, define scope of risk monitoring and risk scope; secondly, measure risks and safety of working place and business environment; thirdly, analyze root causes of risk; fourthly, improving and resolving defects after knowing root causes and finally, control or re-evaluation of changes made, whether It is effective or bad.

The role of risk monitoring is presented through risk assessment results sharing, coordination and communication and from that, we could propose proper risk responses and build trust.

Limitation of the research:

Finally, this study opens some new directions for further researches in risk control policies in medicine system as well as in the whole economy. We also can add other factors such as public debt into our model for expanding research. Even we can expand our research model for other Vietnam industries as well as in other emerging markets and all over the world.

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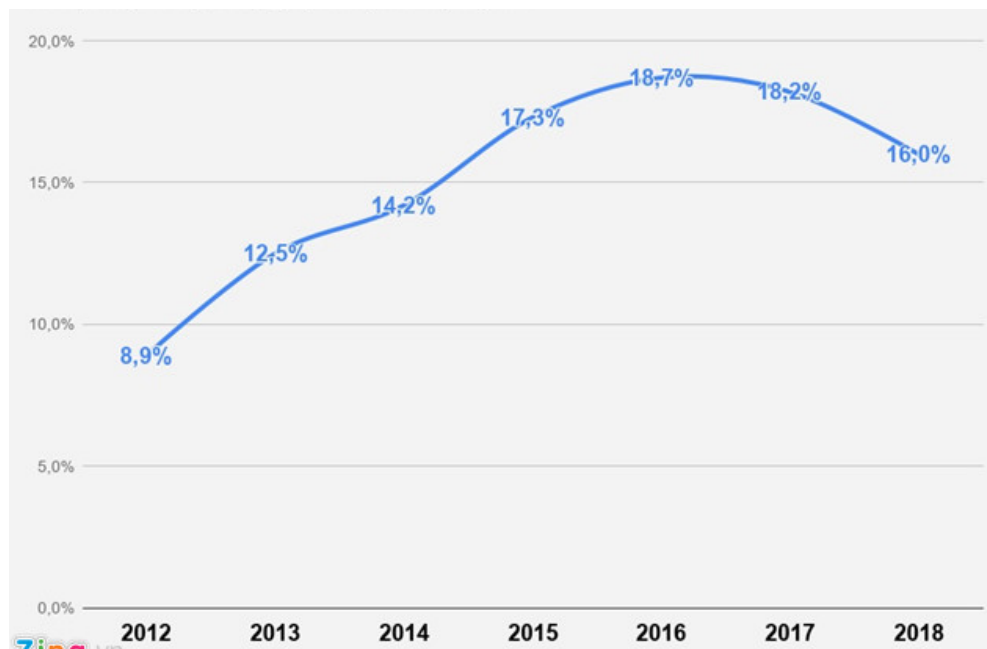
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Exhibit

Exhibit 1. Loan/Credit growth rate in the past years (2012-2018) in Vietnam



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ASSESSMENT OF THE SITUATION CONCERNING PSYCHOLOGICAL SUPPORT TO THE PUBLIC AND BUSINESS IN THE EXTREME CONDITIONS: CASE OF COVID-19

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Abstract. Restrictions on personal freedom, work or business loss, increasing financial tensions, limited communication with close people, friction between the people isolated within the household, uncertainty about the future, especially in the context of conflicting information coming from authorities, medical representatives and media reports, and other Covid-19 pandemic related factors are likely to substantially raise the spread of emotional distress and the risk of mental disorders and illnesses. In the context of such unprecedentedly high risks for society to develop mental disorders, it is purposeful to research the aspects of the provision of psychological support to the public in extreme conditions. Given the high number of stressors, an extremely high degree of uncertainty and a wide range of vulnerable social groups (entrepreneurs, pensions, family with children and etc.), the growing tensions in society necessitate the expansion of the scope of psychological support provided to the public. The main purpose of this research is to assess the situation concerning psychological support to the public in the extreme conditions at the national level.

Keywords: COVID-19; Corona virus; Psychological support; extreme conditions; business, society

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JEL Classifications: I15, I18

1. Introduction

Every crisis has a major impact on entrepreneurs and the businesses they run, regardless of what disaster (natural, human behaviour or economic) it was caused by. At the end of December 2019, the coronavirus (COVID-19) outbreak started in Wuhan, China, and spread around the world so quickly that in March 2020 the World Health Organisation declared COVID-19 the global pandemic. Lithuania was no exception. During the first and second waves, social life came to a standstill, businesses were forced to close down or move to cyberspace. Unfortunately, not all entrepreneurs, especially those working under business licences, like massage masters, small traders, etc., had to temporarily suspend their activities, severely restrict them or become unemployed. The stressful period people are undergoing can have negative effects on their mental health. For this reason,

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comprehensive research that would assess population's psychological well-being at the national level is extremely relevant.

Restrictions on personal freedom, work or business loss, increasing financial tensions, limited communication with close people, friction between the people isolated within the household, uncertainty about the future, especially in the context of conflicting information coming from authorities, medical representatives and media reports, and other Covid-19 pandemic related factors are likely to substantially raise the spread of emotional distress and the risk of mental disorders and illnesses.

Some social groups are particularly vulnerable to the adverse effects of the Covid-19 pandemic. This applies to people infected with coronavirus, families with people with chronic illnesses, the elderly with a weakened immune system, people with pre-existing medical and/or mental problems, medical staff working in 'hot spots', entrepreneurs, self-employed, etc. Given the high number of stressors, an extremely high degree of uncertainty and a wide range of vulnerable social groups, the growing tensions in society necessitate the expansion of the scope of psychological support provided to the public.

In the context of such unprecedentedly high risks for society and business to develop mental disorders, it is purposeful to research the aspects of the provision of psychological support to the public and business in extreme conditions. Previous studies mainly focused on the target psychological intervention measures (Orri et al., 2020; Pfefferbaum and North, 2020; Zhou, 2020; Connolly et al., 2020, Besenyő and Kármán, 2020 etc.), assisting healthcare professionals (Vizheh et al., 2020; Inchausti et al., 2020; Chen et al., 2020, etc.), profiling support providing psychotherapists (Humer et al., 2020) and other issues (Koushik 2020; Marazziti et al., 2020), but provision of psychological support to the public in extreme conditions has hardly been researched following a systematic approach.

The *main purpose* of this research is to assess the situation concerning psychological support to the public in the extreme conditions at the national level. The defined purpose was detailed into the following *objectives*: 1) to review the main components of a system of psychological support to the public in the extreme conditions; 2) to select and substantiate the methods of the research; 3) based on the results of the empirical research, to provide assessment of the current situation concerning psychological support to the public in the extreme conditions at the national level. The *research methods* include comparative and systematic literature analysis, simple random survey of professional psychologists.

2. Review of the main components of a system of psychological support to the public in the extreme conditions

To prevent the psychopathological changes in society's mental health and to respond rapidly to their increased risk and predicted evolution in the forms of maladaptive behaviours and a broader range of emotional disorders, appropriate psychological support measures, in scientific literature also referred to as psychological intervention measures, must be undertaken. As it was noted by Duan and Zhu (2020), psychological intervention in the current emergency conditions must be dynamic and flexible so that the measures undertaken can be promptly adjusted to the rapidly changing environment, requirements and constraints. According to Mohammed et al. (2015), in the system of psychological support to the public, the professionals of mental health care (clinical psychologists, psychotherapists and psychological intervention specialists) need to actively cooperate with other medical professionals and even public information providers. It means not only ensuring that the public has access to mental health care services and resources, but also raising public awareness of the importance of mental health

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and the risks it is exposed to under the conditions of the Covid-19 pandemic. When planning how the entire healthcare system is going to function, it is essential to focus not only on the issues related to physical treatment, but also on dealing with the destructive psychological impacts of the pandemic (Inchausti et al., 2020).

When forming the systems of psychological support to the public, direct and remote channels, through which the target psychological intervention measures are implemented by applying a variety of methods, are invoked. Based on scientific literature analysis, the main components of a system of psychological support to the public are reviewed in Table 1.

Table 1. The main components of a system of psychological support to the public

Support channel	Support methods	Support measures	Author(s), year
Direct channel (onsite)	Organisational methods	<i>First level:</i> establishment of leading groups of professionals, development of guidelines, working programs and manuals, arrangement of pre-training workshops; <i>second level:</i> establishment of a psychological intervention team; formation of functional sub-groups; <i>third level:</i> feedback mechanisms	Dong and Bouey, 2020; He et al., 2020
	Administrative methods	Monitoring reactions and activities, task redistribution, schedule adjusting, modification of expectations	Pfefferbaum and North, 2020
	Instructing, special training	Management of anxiety, fear of contagion, prevention of burnout	Inchausti et al., 2020; Chen et al., 2020; Pfefferbaum and North, 2020
	Engagement of emotionally vulnerable population groups	Support to emotionally vulnerable individuals, monitoring patients with mental health disorder symptoms	Inchausti et al., 2020
	Treatment with drugs	Drugs for increased anxiety, insomnia, hypochondriasis, post-traumatic stress disorder, etc.	National Institute for Health and Care Excellence (NICE), 2018; Inchausti et al., 2020
	Involvement of a psychologist/psychiatrist in an organisation	Establishment of a full-time or part-time psychologist position, consultations of an arriving psychologist/psychiatrist	Jiang et al., 2020
Remote channel (remote psychotherapy, telemedicine)	Dissemination of information	Dissemination of information through mass media (TV, radio, etc.) on how to behave in the current circumstances, expert recommendations for stress relief, reduction of negative information flows	Zhou, 2020; Humer et al., 2020
	Telephone hotlines	Counselling by phone, health care emergency responders	Zhou, 2020; Humer et al., 2020; Orru et al., 2020; World Health Organisation, 2020
	Internet	Online counselling services, online questionnaires for diagnosing patients' mental health condition, patient-tailored treatment, training and education through communication platforms	Jiang et al., 2020; Humer et al., 2020; Vizheh et al., 2020; Orru et al., 2020; Xiao et al., 2020

Source: compiled by the authors

The information in Table 1 shows that two main channels for implementation of particular psychological intervention measures are direct and remote. The direct channel represents the methods and measures based on a direct contact with a subject. This channel serves as a medium for application of organisational and administrative

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methods, instructing and special training, engagement of emotionally vulnerable population groups, treatment with drugs and involvement of a psychologist/psychiatrist in an organisation.

By applying *organisational methods*, first of all, a leading group of competent experts is formed at the level of the national government. This group manages the intervention and is responsible for the overall planning and implementation of the intervention measures. For instance, when developing a model of public psychological resilience to the Covid-19 pandemic in China, the Chinese government issued the order to form a leading panel of experts at the Chengdu Mental Health Centre; following the “Guideline for the Emergent Psychological Crisis Intervention during the Novel Coronavirus Pneumonia Pandemic”, approved by the National Health Commission of China on 25 January 2020, the above-mentioned panel of experts developed working programs for targeted psychological intervention (He et al., 2020). The working programs were implemented in several steps. First, on the basis of the working programs, work manuals were developed and pre-training workshops for the staff under the programs were arranged. Second, a psychological intervention team consisting of mental health professionals (psychologists, psychotherapists, psychiatrists, psychiatric nurses) was established. The members of the team of professionals were divided into 4 functional sub-groups: 1) live media group; 2) hotline consultation group; 3) online video intervention group; 4) on-site intervention group (He et al., 2020). Finally, to ensure that the psychological intervention measures are applied in a targeted and timely manner, feedback mechanisms were developed within the organisational system, i.e. the functional sub-groups were required to report regularly to the leading group. The significance of organisational measures, and in particular the importance of the role of the national leading group and functional sub-groups, is also supported by Dong and Bouey (2020). According to the authors, namely organisational mechanisms help to ensure the necessary coordination and financing of the intervention, while the intervention plan helps to select target measures for the intervention to different social groups.

Pfefferbaum and North (2020) note that to maintain the psychological health of the public, systemic measures need to be undertaken to reduce both the stress experienced by individuals and the stress associated with performing major operations. To accomplish these objectives, the authors propose *administrative methods* that can be invoked for application of such stress reduction measures as monitoring reactions and activities, task redistribution, schedule adjusting and modification of expectations. These measures are mainly proposed at the level of organisations: organisations should appoint persons to monitor both individual reactions of employees to emerging stressors and reactions to assigned tasks; when workloads are increasing, work tasks need to be redistributed and staff work schedules (especially in medical facilities) need to be adjusted. When working in extreme conditions, minimisation of the expectations previously set for employees can also contribute to stress reduction.

Inchausti et al. (2020) highlight the significance of *instructing and special training methods*. Having researched the issues of assisting frontline health professionals and Covid-19 diagnosed patients, the authors note that the special training provided to the former can substantially help them learn to manage their emotional reactions to work situations. When providing special training, frontline health professionals have to be trained to manage anxiety and fear of contagion, prevent burnout. The opinion that the above-mentioned measures can significantly contribute to psychological resilience of medical staff is also supported by Chen et al. (2020). What concerns the assistance to most *emotionally vulnerable population groups*, Inchausti et al. (2020) recommend the “support to the individuals undergoing COVID-19 treatment or preventative quarantine” (p. 3). Monitoring patients with mental health disorder symptoms is also advised.

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In case patients show such symptoms as increased anxiety, insomnia, hypochondriasis, post-traumatic stress disorder, etc., the measures of intervention can include **drug prescription** on condition that the use of drugs is as minimal as possible (National Institute for Health and Care Excellence (NICE), 2018).

Jiang et al. (2020) emphasise the importance of ***involvement of a psychologist/psychiatrist in an organisation*** (onsite psychotherapy). This is particularly the case for medical institutions, but may also apply to other organisations or sectors (e.g. sectors and/or businesses that have already lost or are at high risk of losing staff, companies on the verge of bankruptcy, etc.). According to the authors, onsite services can substantially help medical staff, patients and other affected people to overcome the psychological difficulties they are facing. Involvement of a psychologist/psychiatrist can be arranged by establishing a permanent work place or a professional can regularly arrive to provide onsite counselling.

Since traditional formats of psychotherapeutic care, i.e. the formats based on a direct contact between a patient and a psychologist/psychiatrist, pose a risk of infection transmission between the persons in contact under the conditions of the Covid-19 pandemic, one of the most obvious solutions is providing mental health care services **remotely**. (Humer et al., 2020).

In this context, the importance of ***disseminating information to the public*** is emphasised. Mass media channels (e.g. television, radio, internet, etc.) can be invoked to disseminate the information on what personal safety and hygiene practices can help one protect against infection, and thus contribute to reducing the overall level of social anxiety (Zhou, 2020). Humer et al. (2020) state that information can help to normalize the reaction of different social groups to stress, if the public information channels provide the information on what people can and/or must do in the current circumstances so that the situation can be managed. Specialist recommendations for stress relief (e.g. restructuring individual activities, adherence to normal routines, etc.) may also be provided. On the other hand, because the news and statistics related to the spread of the Covid-19 infection can raise public anxiety and panic, the flows of the negative information through public information channels are proposed to be limited. Zhou (2020) describes the positive effects of the psychological assistance **telephone hotlines**. 24-hour working free psychological assistance hotlines in Sichuan province, opened from February 6, enabled citizens to relieve their negative emotions. Because citizens with non-critical problems are strongly recommended not to visit treatment facilities during the Covid-19 pandemic outbreak, the psychological assistance hotlines serve as a measure that significantly contributes to maintaining public mental health. As it was noted by the World Health Organisation (2020), telephone hotlines help to establish a direct link between at-risk citizens and emergency responders on the basis of trust. From a broader perspective, hotlines serve not only as a risk communication and community engagement channel (RCCE) that helps save lives and minimize adverse consequences, but also as a feedback channel that minimizes the extreme situation related rumours and misunderstandings.

Remote psychotherapy can also be practised through ***the Internet*** (online). Xiao et al. (2020) and Orru et al. (2020) in their studies revealed that universities and institutes operating in different parts of the world activate provision of online counselling services, for this purpose invoking social media platforms and e-mails. Orru et al. (2020) mention online questionnaires distributed by Chinese authorities to assess a person's mental condition. Questionnaire-based data help to allocate resources and apply patient-tailored treatment. According to Humer et al. (2020), in a similar way patients can be surveyed when researching the impact of Covid-19 related stressors (e.g. contacting an infected person, loss of a loved one, physical distance, etc.), secondary stressors (e.g. economic difficulties), mental factors (depression, sensitivity, domestic violence, etc.). Andersson's (2016) research revealed that remote psychotherapy provides good results compared to the methods of the traditional contact psychotherapy. Shulman et al. (2017), Thomas et al. (2018) and other authors note that patients tend to have

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positive attitudes towards remote psychotherapy, although doctors express doubts about making an accurate diagnosis (Berger, 2017; Connolly et al., 2020). In addition, it is noted that application of the methods of remote psychotherapy can be limited by the lack of legal provisions in this area (Bojdani et al., 2020).

3. Research methodology

The activities of psychologists in Lithuania are insufficiently regulated by law – the Law on the Practical Activities of Psychologists is still awaiting approval by the Parliament of the Republic of Lithuania. To assess the situation concerning provision of psychological support to most vulnerable persons under the conditions of the COVID-19 pandemic, 240 psychologists were interviewed. With reference to the data of the Ministry of Education and Science (MES), over the 2015-2016 academic year, Lithuanian schools had 753 working psychologists and 47 psychologist assistants, and 164 psychologists worked in pedagogical-psychological services. Based on the data of the Ministry of Health (MH), stamp numbers of a health care specialist were issued to 579 medical psychologists, but in 2015 only 286 psychologists worked in the institutions subordinated to the MH. At the beginning of 2016, 230 psychologists worked in the institutions subordinated to the Ministry of Social Security and Labour (MSSL) (Lithuanian Psychological Association, 2020).

When estimating the size of the sample, it was presumed that the number of psychologists in Lithuania amounts to 2059 people. To ensure a 5% error rate, approximately 324 respondents had to be surveyed (Internet survey system calculator, available at the address <http://www.surveysystem.com/sscalc.htm>, was engaged). Since 240 of the respondents were available for the survey, the error rate increased by 5.95 %. The survey was being conducted during the period of September-October 2020, following the principles of the “snowball” data collection method. It was established (Duncan, White, & Nicholson, 2003; Vershinina & Rodionova, 2011) that when conducting the surveys of hidden populations, the basic problems faced by researchers cover accessibility of the target population and the size of the survey sample.

Respondents. By employing an online survey, the information was obtained from 240 respondents – psychologists: 229 female and 11 male. Distribution of the respondents by the pre-formed age groups was uneven: the respondents aged 18–29 accounted for 13.3 percent, the respondents aged 30–49 – for 63.3 percent, and the respondents aged 55–65 – for 22.5 percent of the total number, and only 2 respondents were older than 65. Territorial distribution of the respondents is depicted in Table 1 which indicates that basically the whole territory of Lithuania was covered, although some questionnaires were filled not from Lithuanian cities (apparently by those staying in other European countries, but having contacts with Lithuania and Lithuanian Psychological Association through which the questionnaire was distributed). It can be seen that the majority of the respondents were from Vilnius (41.9 percent of the total sample size). The second largest group of the respondents were from Kaunas (18.4 percent) and Klaipėda (7.3 percent). The respondents from smaller cities, districts or towns accounted for 39.7 percent of the total sample size.

Questionnaire. The questionnaire (26 questions in total) was prepared including the subject questions focused on the psychologists’ activities, opinions and suggestions. Most of the questions were close-ended, four questions – completely open, and three questions – mixed (several close-ended questions with the last alternative “other”, where a respondent could add his / her personal insights). Thus, the questionnaire included seven questions where a respondent was free to express personal views. These answers will be analysed in the further section of this article. A block of the questions on the potential impact of the pandemic and pandemic-related restrictions on population’s mental health was presented in the form of seven sub-scales: stress, anxiety, depression, sleep disorders, persistent tiredness, boredom and anger (aggression). The Cronbach’s alpha (reliability indicator) of the

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aggregate of these sub-scales is extremely high – 0.89, which indicates a strong internal consistency of the answers.

Data processing. Statistical analysis of the data was conducted by using the SPSS-26 software package: the analysis revealed answer frequencies, the relationships between particular variables (Spearman correlation coefficients) as well as means and answer averages (see section of the *Results*).

4. Empirical results of the research

4.1. Psychologists' attitudes to deviations in population's mental well-being under the conditions of the pandemic

To assess the real impact of the pandemic or any other crisis on population's mental health, the target population affected by the crisis needs to be surveyed or objective criteria (e.g. frequency of referrals to mental health professionals, statistics of mental disorders) need to be identified. With this study, we aim to assess the possible effects of the COVID-19 pandemic on deviations in population's mental well-being through the attitudes of the professionals who provide psychological services. Nearly all questions in the questionnaire measure experts' attitudes to various aspects of population's mental well-being and psychological service provision.

The central question was formulated as follows: *Psychological studies on the effects of the COVID-19 pandemic indicate that disorders such as constant stress, anxiety, depression, sleep disorders, boredom, etc. are most commonly reported. Do you think that the fear of falling ill, loss of employment or income, quarantine-related restrictions on daily life and professional activities really lead to the deviations in population's mental well-being listed below?* Then seven determinants indicating the deviations in population's mental well-being were listed (stress, anxiety, depression, sleep disorders, persistent tiredness, boredom and anger / aggression); plausible fluctuations in these determinants under the conditions of the pandemic were evaluated by psychologists on a 6-grade scale (from *Definitely no* to *Definitely yes*). Mean values of the evaluations provided by the total sample of 240 respondents are depicted in Figure 1.

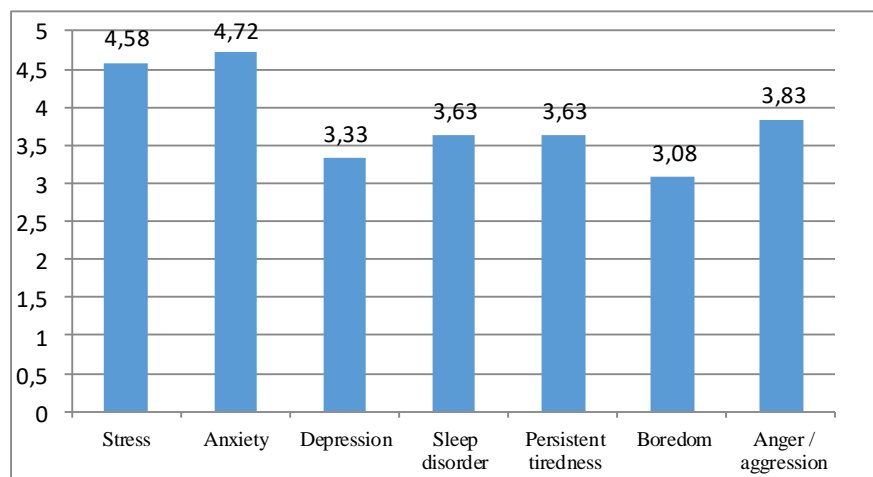


Fig. 1. Mean values of the evaluations regarding the impact of the COVID-19 pandemic on population's mental well-being provided by the total sample of the respondents (n=240) (maximum grade - 6).

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Mean values in Figure 1 indicate that positive response rates are higher for plausible fluctuations in population's stress and depression. The COVID-19 pandemic weakly affects population's boredom, although this issue is widely discussed in the public sphere.

4.2. Assessment of psychological services

Distribution of the respondents' answers to the question *"Has, in your opinion, the need for psychological (psychiatrist) services in the society or community close to you changed during the pandemic?"* are depicted in Figure 2. Only 10 percent of the respondents believe that the need for psychological services has remained the same, while others think it has increased to a greater or lesser extent.

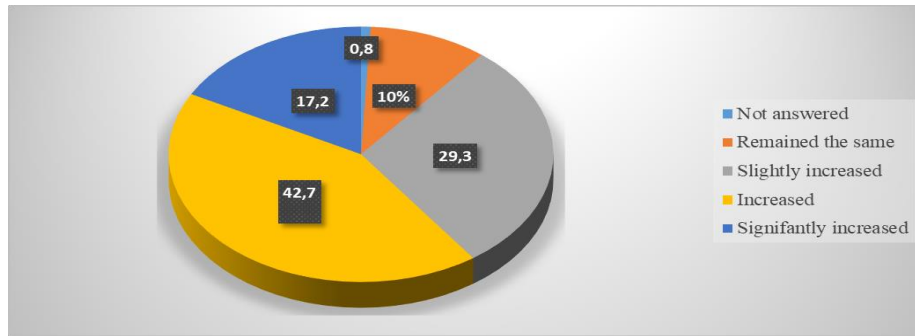


Fig. 2. Has the need for psychological services changed during the pandemic? Respondent answers, percent (compiled by the authors)

The question *"How do you assess availability of psychological services in Lithuania in general?"* is characterized by a wide range of possible answers (see Fig. 3). The respondents could mark several answer alternatives. Naturally, no service provider marked the answer *They are not needed* or *They are in excess*. 40.8 percent of the respondents believe that they are available, but 67 percent marked the answer *Poor state support in the area of psychological services*; nearly 30 percent of the respondents selected the answer *They are accidental, poorly organised*.

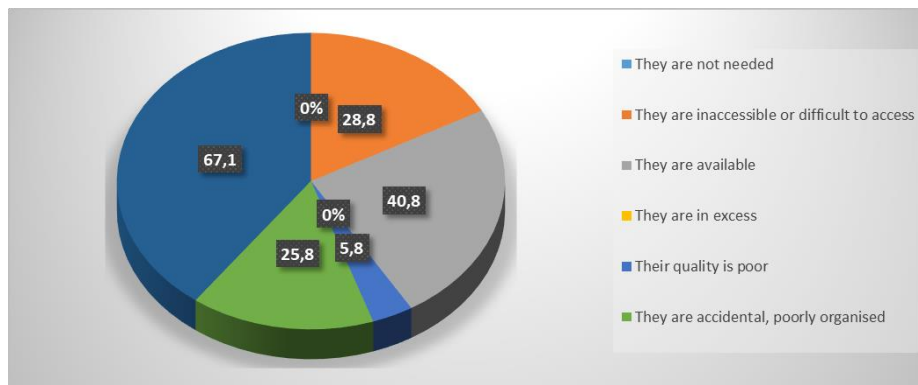


Fig. 3. Respondents' answers regarding (un)availability of psychological services, percent (compiled by the authors)

Several answers could also be marked when answering the question *"Does you experience of the COVID-19 pandemic suggest that provision of psychological services should change?"* Most frequent choices were as follows (see Fig. 4): *service accessibility should be increased*, *service provision should be organized optimally*, *networks for remote service provision should be developed*, and the answer *More significant state support to*

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cover the costs of the service is appropriate was indicated by 70.8 percent of the respondents. 9 out of 240 marked the answer *Other*. These respondents emphasized the problems of lack of the facilities for consultations, public education and information, discriminatory attitudes towards psychology specialisations when selecting a workplace (e.g. the restriction applied to educational psychology professionals to work in health care institutions, while clinical or health psychologists are allowed to work in educational institutions). Emphasis was also placed on the low salary of psychologists (especially those working in educational institutions).

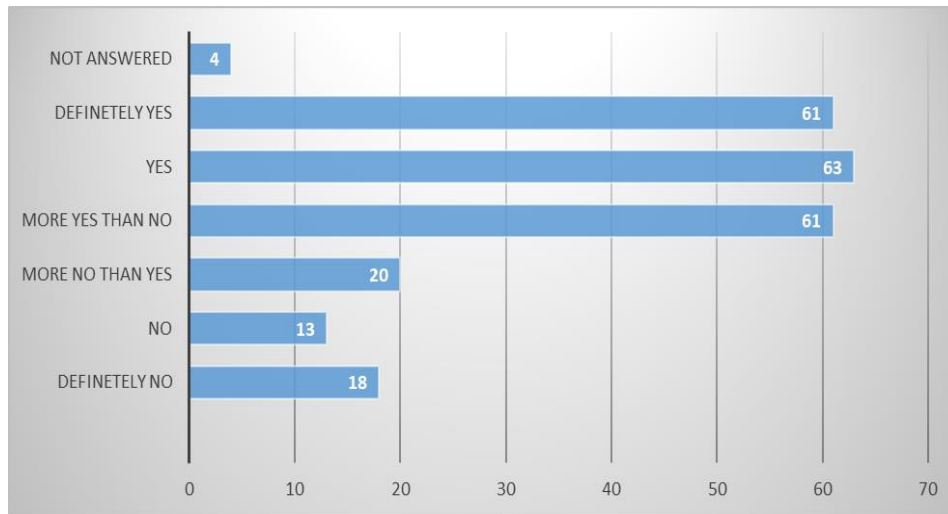


Fig. 4. Distribution of the respondents' answers to the question "Should provision of psychological services change?", persons (compiled by the authors)

Lithuania does not have any legal document regulating psychologists' practical activities. Even the list of the professions under regulation includes only a school psychologist (although professionals of this specialisation have not been and are not prepared in Lithuania). Psychological services are regulated at the knowledge level. They are best organized in the educational system, and a year ago were started in health care institutions (e.g. a psychologist's medical norm was developed). Many European countries have so-called *Psychology laws*. Lithuania started considering such laws after restoration of the country's independence, but they have not still been approved (mainly due to the differences in psychologists' attitudes), although at least two different bills are under consideration. Therefore, it was expedient to survey the respondents (not only Lithuanian Psychological Association (further LPA) activists or their opponents, but also ordinary LPA's members or professionals that do not belong to this organization) to find out their opinions on this issue.

The respondents were asked the following question: *Legal regulation of psychological services varies from one department to another, and there is no unified document regulating psychologists' practical activities. The bill of "A psychologist's practical activity law" is still under consideration. Do you think such a law is necessary?* Nearly 20 percent of the respondents (see Table 2) provided the negative answers, but about 77 percent of the respondents more or less support issuing the above-mentioned law (25.4 percent of the respondents provided the answer *Definitely yes*).

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Table 2. Distribution of the respondents' answers regarding the (un)necessity of "A psychologist's practical activity law"

Answers	n	percentage
Did not answer	4	1.7
Definitely not	18	7.5
No	13	5.4
More no than yes	20	8.3
More yes than no	61	25.4
Yes	63	26.3
Definitely yes	61	25.4

Low salaries of psychologists as well as low prices of psychological services are often discussed in the public sphere. For the surveyed sample of the psychologists, the following question was formulated: *"In your opinion, are the prices of psychological services in the public sector (in schools, services, health care institutions, etc.) adequate (e.g. compared to the prices charged for other services or salaries paid to other professionals)?"* Not surprisingly, 90 percent of the respondents indicated that the prices charged for psychological services are inadequate, i.e. much lower than the prices of other services, and only 9 percent of the respondents would agree that the prices are adequate (see Table 3).

Table 3. Distribution of the respondents' answers regarding (in)adequacy of the prices charged for psychological services

Answers	n	Percentage
Did not answer	2	.8
Definitely not	140	58.3
No	52	21.7
More no than yes	24	10.0
More yes than no	12	5.0
Yes	7	2.9
Definitely yes	3	1.3

4.3. Recipients of psychological services

The respondents were asked two questions about the potential recipients of psychological services: with one question, they were asked to indicate which population groups are most in need of psychological assistance in the event of the pandemic; with the second question, the respondents were asked which professionals are most in need of psychological assistance in the event of the pandemic. A huge variety of responses were received. The answers to the first question can be categorized as follows:

1. Age groups (seniors, adolescents and young people, students, middle-aged people);
2. Social status groups (public servants, small entrepreneurs, medical staff, educators, redundant workers, travel agents);
3. Marital status groups (single people, widowed, parents with children);
4. Problematic employment groups (unemployed, isolated, those who have lost their jobs due to the pandemic);
5. Problematic health groups (people with mental or emotional disorders, people with COVID-19, disabled, people who have addicts in their domestic environment, patients and their relatives);
6. Others (those experiencing domestic violence).

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When answering the second question, many respondents indicated medical staff, followed by educators (school and kindergarten teachers) and police officers. Other professionals (municipal administration employees, employment service specialists, salespeople, musicians, sportsmen, psychologists, company managers, private business employees, artists, waiters, hairdressers, maids, event planners) were less commonly mentioned.

4.4. Determinants of the attitudes to the changes in population's mental well-being

In this case, the term *determinants* is not used in full compliance with the strict requirements of the research methodology. The respondents were grouped depending on their answer selections which are treated as independent variables. The analysis comprised four variables: respondents' age, change in the personal psychological well-being during the pandemic, assessment of the need for psychological services and specialization (only the means of the two largest specialization groups – clinical and educational psychology – were compared). Evaluation means representing the changes in population's mental well-being (stress, anxiety, etc.) during the pandemic were treated as dependent variables. The professionals in educational psychology are likely to treat the changes in population's mental well-being more seriously, but this tendency is statistically insignificant. Some tendencies to differently assess the effects of the pandemic represented by the independent variables can also be observed. To avoid overload the report on the research results with insignificant information, we did not include any differences in the values of statistical significance. Only a few cases described below were found to be statistically significant.

First tendency: younger respondents tend to indicate that the pandemic has had stronger effects on population's mental well-being, although statistically significant differences were found only for sleep disorder evaluations (respondents aged 18–29 and 50–65 ($p \leq 0.02$), and respondents aged 18–29 and 30–49 ($p \leq 0.05$)).

Second tendency: the respondents who treated their mental well-being as worse, provided higher evaluations to all seven aspects representing population's mental well-being. A substantial number of statistically significant means were found based on the answers of the respondents who noted that well-being *remained the same*, and based on the answers of the respondents who indicated that well-being *significantly worsened* due to: stress ($p \leq 0.03$), anxiety ($p \leq 0.00$), depression ($p \leq 0.01$), sleep disorders ($p \leq 0.05$), tiredness ($p \leq 0.00$). Three statistically significant differences were found based on the answers on the respondents who noted that well-being *slightly worsened* or *significantly worsened* due to: anxiety ($p \leq 0.05$), depression ($p \leq 0.05$) and persistent tiredness ($p \leq 0.05$).

Third tendency: the respondents who envisage a greater need for psychological services tend to treat plausible changes in population's mental well-being as more significant (see Table 11). The statistically significant differences in the mean values were found when processing the answers *remained the same* and *significantly increased* due to: stress ($p \leq 0.01$), sleep disorders ($p \leq 0.02$) and tiredness ($p \leq 0.00$). Four more statistically significant differences were found when processing the evaluations of stress and tiredness provided by other respondent groups. The direction, however, persists the same: a greater need for psychological services is envisaged, a greater emphasis is placed on plausible changes in population's mental well-being.

4.5. Correlations between the variables under consideration

Because the values of the variables were not dichotomous, but expressed as evaluation scales (from 4 to 6 evaluations), Pearson correlation coefficient was employed. The tendencies depicted in Tables 1 and 2 are also confirmed by the correlations between the main variables. Strong correlations were found between the seven indicators of population's mental well-being evaluated by the respondents (values r range from 0.45 to nearly

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0.7). Given that the number of the respondents amounts to 240, the correlations observed between the indicators are very strong, as evidenced by the high Cronbach's alpha estimated for the seven scales under consideration, mentioned in Section 2.1. These correlations reflect a simple respondent evaluation tendency: a respondent, who provides a higher evaluation to one of the factors representing the changes in population's mental well-being, is likely to provide a higher evaluation to any other factor. Relatively strong correlations were found between the answers to the question *Have you undergone the changes in your psychological well-being?*, and the answers to the other questions (9 statistically significant correlations out of 11). Six statistically significant correlations out of 11 were observed between the answers to the question *Have you had to provide psychological assistance during the pandemic?* and the answers to the other questions. A substantial number of the statistically significant correlations were observed between the answers to the question regarding the changes in the need for psychological services and the other variables.

5. Conclusions and recommendations

Literature analysis and survey results revealed that psychological well-being of Lithuanian population and entrepreneurs, according to psychologists, shows signs of worsening not only due to uncertainty about how long the pandemic will last, but also due to deteriorating living conditions (exclusion, business closures, mass bankruptcies). The state must ensure that the health of its citizens, including mental health, is not harmed. Thus, based on the research results, it can be stated that to improve the provision of psychological services in transition economies under the extreme conditions, it is necessary to:

- 1) balance workloads and professionals' salaries (raise the number of workplaces in schools; raise the number of workplaces in medical institutions; raise salaries/reestimate payment coefficients);
- 2) provide training for psychologists (on how to ensure crisis assistance, arrange remote counselling; remote training and competence building sessions should also be arranged);
- 3) inform population about the services available (disseminate the information to the public on where counselling is available; cover private counselling costs from the state's budget; ensure that all age groups are informed about the services provided not only through the mobile apps and internet websites, but also by involving doctors and nurses who can provide the guidance on who patients can turn to when they are seeking assistance; employ a separate telephone line for providing the information about psychological assistance);
- 4) eliminate organisational problems (ensure decent work conditions not only in terms of the remote work in the crisis situation, but also in terms of providing psychologists with offices, equipment, personal protective measures and rest areas; enhance cooperation among medical institutions, schools and other health care institutions; build mobile crisis teams (crisis management teams) that could ensure communication with other professionals and provide comprehensive consultations). Currently, there is a lack of a unified strategy and specific guidelines on how the services can be provided. The status of psychologists should be equalized with the status of the professionals working in the mental health system.

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SOCIAL COMPETENCE-BASED PROGNOSTIC POSSIBILITIES OF CREATIVITY EXPRESSION AMONG STUDENTS OF SOCIAL PROFILE

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Abstract. The article presents a theoretical discussion of peculiarities of creativity and social competence. Creativity expression is analysed on the basis of social competence. *The aim of research:* to investigate peculiarities of perceived creativity and social competence of students of social profile in Lithuanian higher education schools, to disclose their correlations and to foresee prognostic possibilities of creativity expression on the basis of social competence. *The research methodologies:* *The Questionnaire of Personality Creativity* (Petrulis, 1988) was used to investigate the students' perceived creativity according to the subscales of intuition, phantasy, inclination to creativity, inclination to innovation, flexibility, originality, criticality, inversion and childishness. The students' social competence was assessed using the questionnaire of Ullrich, de Muynck (1994) (cf. Lekavičienė, 2001) according to the subscales of general self-confidence, resistance to failures and criticism, ability of expressing feelings, ability of asking for a favour, unyielding, ability of demanding and feeling not guilty. Employing the strategy of quantitative research, the correlations of components of social profile students' perceived creativity and social competence were established. It was also identified that social competence acquires a prognostic meaning to expression of students' creativity. The research results will have a residual value in the scientific discussion about the social competence-based expression of students' creativity.

Keywords: social competence; perceived creativity; students of social profile

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1. Introduction

Under the influence of requirements imposed by the technological progress and market economy, in the rapidly changing society, at present novice specialists need more than just competences that are based on exclusively professional skills. Seeking to adapt to the requirements of labour market and acquire competitive advantages, a particular emphasis is laid on the person's critical thinking, his/her ability to generate new ideas and to implement

them, to boldly face new challenges and adapt to constantly changing conditions (Wang et al., 2006). Moreover, self-confidence, communication skills, ability to efficiently participate in social interactions, to work in a team and to foster positive interpersonal relations serve as a factor of social welfare and a driver of innovations (Šinkūnienė, 2011) as well as guarantee success in the social environment and professional activity, help to pursue a career and to remain competitive in ever-changing situations (Iždonaitė-Medžiūnienė, 2009). Thus, in the context of the rapid development of technologies, information communication technologies and economy and under conditions of social, cultural changes in the society, the individual's creativity and social competence have been acquiring an exceptional significance.

The peculiarities of social competence and creativity and their expression have been a popular research object among researchers in the last several decades. The analysis of research works allows noticing that the main focus is laid on delving into the features of socially competent (Iždonaitė-Medžiūnienė, 2009; Lekavičienė, 2001) and creative (Grakauskaitė – Karkockienė, 2010; Torrance, 1986; Jaskyte, Taylor, Smariga, 2009; Sternberg, 2006) personality. The person's creativity as one of the key features in the labour market is emphasised (Rakauskaitė, 2014; Vaičiūnienė, Mažeikienė, 2014). Other researchers (Hemlin, Allwood and Martin, 2008; Grakauskaitė – Karkockienė, 2010) allocated more attention to the research on the factors that contribute to manifestations of person's creativity, whereas Malinauskas (2003), Šniras (2005) analysed tendencies, possibilities and problems related to social competence development. Thus, the main focus of researchers is laid on studying features of socially competent and creative personality and distinguishing the factors that result in their manifestation. However, the components of individual's social competence, as some of the factors that influence expression of creativity, have not been exhaustively investigated and in-depth and empirically grounded research studies are few. In such a situation, the links between the components of social competence and perceived creativity as well as their prognostic analysis have been more and more often seen as an important field of scientific research. On the other hand, more comprehensive scientific research conducted applying the regression analysis, which would allow foreseeing social competence-based prognostic possibilities of perceived creativity expression according to separate dimensions in the regression equation, would help to identify if the level of social competence could influence manifestation of person's creativity. It would also be possible to establish the components of person's creativity which can acquire a prognostic meaning for creativity expression as well as to disclose the possibilities for promotion of personal creative potential while developing social competences.

Considering the relevance of the topic, the article reveals the peculiarities of perceived creativity and social competence of social profile students from Lithuanian higher education schools. The correlations of components of creativity and social competence are identified and prognostic possibilities of creativity expression are foreseen.

The research problem is defined through the following questions: what level of perceived creativity and social competence is typical of social profile students from Lithuanian higher education schools? How students' perceived creativity is related to components of social competence? What components of students' social competence can significantly forecast the expression of social profile students' perceived creativity?

The object of research: peculiarities of social competence and perceived creativity of social profile students from Lithuanian higher education schools, correlations and prognostic possibilities of some (dependent) variables on the basis of other (independent) variables.

The goal of research: to investigate the peculiarities of social competence and perceived creativity of social profile students from Lithuanian higher education schools, to reveal their correlations and to foresee social competence-based prognostic possibilities of creativity expression.

The objectives of research:

1. To conduct the analysis of previous research on the analysed topic theoretically substantiating manifestation of creativity on the basis of social competence level.
2. To identify peculiarities of perceived creativity and social competence of social profile students from Lithuanian higher education schools.

3. To disclose correlations of social competence and perceived creativity.
4. To foresee social competence-based prognostic possibilities of expression of perceived creativity in the regression equation.

2. Theoretical background

Over the last decades the research studies on the analysis of the phenomenon of creative thinking have increased. Up to now discussions have been held about the qualities that characterise a creative personality and how expression and development of person's creativity are encouraged. On the other hand, more often attention is focused on the fact that person's abilities and skills that manifest themselves in social situations comprise an important indicator foreseeing manifestation of individual's creativity. The researchers allocate their attention to the importance of social competence stressing out the expression of person's creativity. Creative thinking is an important indicator of successful business, which, according to the analysis of scholarly literature, is related to the aspects of social competence. It is important that creativity encourages creation of innovations and their introduction in organisations (Cropley, 2015; Newman et al., 2018). Creativity is also linked to the person's pursuit of mastery, willingness to take risk, independence and tolerance to various approaches (Beaney, 2019; Benea-Popușoi, Duca, 2021; Chen et al., 2018; Demarin, Derke, 2020; Jahanshahi et al., 2019; Huertas, Pergentino, 2020; Karimi, et al., 2020). The works of others researchers focus on the relationships between creativity and leadership and, at the same time, between person's self-confidence and self-respect (Fonseca et al., 2019; Hughes et al., 2018; Koh et al., 2019; Liu et al., 2020). The research results also show that creativity is predetermined by the confidence in the power of own efficiency in the society (Haase et al., 2018). Self-confidence as an important element of social competence was highlighted by Sipahi (2018) as well, who emphasized that a creative personality is curious, patient, brave enough to accept changes and innovations as well as to take risk.

Other scholars also recognize that personality self-confidence is an important indicator of predicting a person's creative achievement, propensity to use a variety of methods and techniques, fear of risk-taking, creative and original pursuit of results (Pociute, Isiunaite, 2011; Wolfradt, Pretz, 2001). Thus, researchers' research sees trends in the relationship between self-confidence and creativity: self-confidence as well as the ability to boldly challenge challenges are significantly correlated with a person's more strongly expressed level of creativity.

It can be assumed that the person's self-confidence, his/her confidence in own abilities, perseverance with attaining the set goals disregarding the opinions of others have influence on the expression of person's creativity and is an important indicator of creative activities. Thus, the level of person's social competence is related to the expression of creativity, when next to peculiarities as strengths attributed to a creative personality, such qualities as resourcefulness in case of dissatisfaction with possessed information, originality and critical evaluation of own activities and decisions can be mentioned. Meantime, lack of self-confidence can possibly limit manifestation of person's creativity.

Particularly interesting is the concept of 'dark creativity'. 'Dark creativity' is the use of creative ideas for malevolent actions (Palmer et al. 2020). It is a combination of cognitive abilities and motivational aspects. This article is the first to investigate the impact of power on creativity in an immoral occupational task. (Khan et al. 2020) examined the association between the psychological empowerment of project-based employees and the success of the project. The results concluded that psychological empowerment is directly and indirectly positively linked to project success. Diković and Gregović (2020) study was carried out on a sample of teachers from three counties in the Republic of Croatia. Active learning encourages and develops knowledge, skills and attitudes. Teachers should promote this type of learning from the beginning.

The researchers acknowledge that a creative personality is characterised with general self-confidence, ability to critically evaluate situations, bravery and independence in decision-making (Petrulytė, 2001), emotionality, nonconformism and ability to defend own rights (Grakauskaitė-Karkockienė, 2010). Csikszentmihalyi (1996) states that a creator, as a mature personality, still possesses certain childish features: sincerity, emotionality, impulsivity and sensitivity. On the other hand, a creative personality is resourceful, autonomous and open to new experience, curious, unconstrained and has inclination to originality, more vivid imagination, fluency of thinking and pursuit of new things. Thus, certain abilities and skills comprise some of the key aspects for creative achievements of personality (Wang et al., 2019). In the study (Kelemen et al. 2020) the relationship between individual and organizational mindfulness is examined. Some authors consider these concepts to be interconnected, but the exact nature of this connection is still unclear. Research shows that organizational mindfulness implies mindfulness at the individual level.

The data of other researchers also show similar tendencies: intentions of the individual to continue the chosen activity having encountered obstacles (Hoyle, 2006), achievement motivation, perseverance in attainment of set goals and coping with challenges (Judge, Ilies, 2002; Shafi et al., 2020; Tse et al., 2018; Wang, 2020) are linked to creativity. The results of Huang & Luthans (2015); Song, Yu, Zhang, & Jiang (2015) research also show that the person's persistence seeking the established goals and not giving in to obstacles, targeting at high achievements, generation of new ideas can be of high importance in the process of creative thinking. Therefore, it can be assumed that the higher level of person's resistance to failures and obstacles, positive evaluation of own achievements without experiencing any guilt positively influence manifestation of creativity, ambition to seek high goals, ability to make plans and expand limits of own possibilities.

The authors (Griffiths, Costi, 2020) do not deny and acknowledge that creativity is related to social competence, because creativity is more than just mobilizing people when, on the contrary, being together with other personal clear creative, idea-based goals. Creativity should be addressed to other business processes where it is important not only to develop financial measurement products but also to delve into human resources in a modern organization. This allows us to state that various necessary aspects of social communication are the acceptance of another's opinion, the ability to express oneself clearly, the ability to ask for or give help. Glăveanu (2014) notes that creative action is characterized by processes of human interaction and communication.

A big number of studies confirm relationships of the person's ability to act creatively, to establish successful relations and maintain them. It can be assumed that a higher value of social activity is connected to formation of person's more favourable attitude to himself/herself and conducted activities including creative activities. Our research and the ones conducted by other researchers showed a positive correlation between the ability to maintain constructive and good relations with others and creativity (Sung, Choi, 2009). This confirms the statement that people, who possess a higher level of maintaining constructive relations and social openness, focused on people, able to establish contacts easier and to engage in joint activities and spend more time communicating with others, are able to create, generate new ideas and to accept challenges and innovations. The results of our research also confirmed that personal emotional openness, ability to maintain constructive relations with others is a significant determinant for creativity. The fact that creativity is not a vacuum process decoupled from social competence is also acknowledged by Glăveanu (2014) and Elisondo (2016), noting that creativity is a social action and is not performed in solitude. This is because the activities of individuals depend on the opinions and acceptance of other people. Even an individual creative process is not in itself separate, more and more a person does it in a socially constructed context, which is determined by language, knowledge, expectations.

Importantly, the scientific literature places significant emphasis on social expectations, as individuals' perceptions of the creative expectations that are raised in organizations also enhance the creativity of the latter (Farmer, Tierney, & Kung-McIntyre, 2003). Communication is one of the essential functions in business, important in creating, transmitting and interpreting ideas, this suggests that certain aspects of social competence - ability to

accept criticism, resilience, to express one's position and feelings - are important in business communication. Businesses also focus on innovative creativity and the development of a creative work environment to create unique business results. To respond to this goal, according to Sipahi (2018), the ability to compete, to take initiative decisions is important. Researchers (Farmer, Tierney, & Kung-McIntyre, 2003; Prabhu et al., 2008) have focused on personality factors: self-knowledge, self-efficacy perceptions that affect employee creativity. Other researchers note that self-regulatory abilities and even a person's positive mood can affect a person's creativity (Roskes, De Dreu, & Nijstad, 2012). Authors confirm that the stronger the individual's ability of expressing feelings, the weaker his/her emotional inhibition, the less constrained the person is in communication situations, the braver his/her expression of opinion is and the less afraid s/he is to make new acquaintances and express the feelings in appropriate ways, the more new ideas such a person generates and the easier he is able to express them. Other researchers (Broekhoven, Cropley, & Seegers, 2020; Camargo, Çelik, & Storme, 2020; Feist, 1998) have identified the existing expression of divergent creative thinking. a statistically significant relationship between the expression of emotionality and creativity. Research by Sung, Choi (2009) has revealed similar trends – individuals with stronger emotional sensitivity tend to generate new ideas, as well as curiosity, interest in the environment around them, the ability to think creatively, act in unconventional ways and accept boldly. The results of research by Pacevičius (2005), Rantanen et al. (2007) show that more closed and emotionally engaged individuals, more often experiencing negative emotions, unable to express them in appropriate ways, as well as more often experiencing tension in communication situations, who likely to limit the opportunities for expression of creativity. Other researchers has also revealed similar trends, with a person's persistence in pursuing the chosen activity despite difficulties and obstacles (Hoyle, 2006; Rantanen et al., 2007) and a stronger commitment to achieving goals are associated with the manifestation of creativity, as it is likely that a person capable of accepting negative assessments and disagreements from others and respond to failures, and persevere in achieving the set goals, has a higher level of creativity, is more flexible and original in performing activities.

3. Research objective and methodology

The research participants. The research sample included 176 students of social profile from Lithuanian higher education schools: 108 (61.4 %) female and 68 (38.6 %) male students. There were 54 (30.7 %) first year, 48 (27.3 %) second year, 44 (25 %) third year and 30 (17 %) fourth year students. The average age of respondents was 20.8 years. Attempts were made to include students of social profile from various Lithuanian schools of higher education into the quantitative research. The research sample was convenient. Anonymity was ensured during the research and the ethical principle of free choice to participate in the survey was followed. The received results were processes and presented in a generalised manner, confidentiality of data was guaranteed and the participants were informed about the details of research completion.

The research methods. *Analytical descriptive method* was used to analyse peculiarities of social competence and creativity, possibilities for creativity manifestation based on the level of social competence. *The quantitative research.* The strategy of quantitative research was applied to investigate expression of creativity, social competence among students from Lithuanian higher education institutions and their correlations and to foresee social competence-based prognostic possibilities. The students' social competence was assessed using the questionnaire of Ullrich, de Muynck (1994) (cf. Lekavičiene, 2001). The questionnaire consists of 45 statements with six variants or responses: from 0 ("This is not the case at all, completely untrue") to 5 ("Completely true"). The indicators are calculated according to seven scales: 1) *general self-confidence* (provides information on the respondent's self-confidence, perception of own relevance, determination); 2) *resistance to failures and criticism* (allows evaluating the participant's ability to accept negative evaluation and disapproval of surrounding people); 3) *ability of expressing feelings* (evaluates the participant's ability to show own positive and negative feelings, to discuss them with other people); 4) *ability of asking for a favour* (helps to evaluate the participant's ability to contact with familiar and unfamiliar people); 5) *unyielding* (allows evaluating the participant's behaviour regarding the requirements from other people); 6) *ability of demanding* (shows the participant's ability to make complaints

and formulate requirements); 7) *feeling not guilty* (allows evaluating a sense of guilt, which can arise after not satisfying requests or requirements of other peoples). *Reliability of questionnaire*. The results of statistical data analysis show that the internal consistency of all the scales of the Lithuanian versions of *Social Competence Questionnaire* is good; according to separate factors, the Cronbach alpha varies from 0.61 to 0.79 (Lekavičienė, 2001). The students' perceived creativity was investigated applying *The Questionnaire of Personality Creativity* (Petrulis, 1988). From the author's perspective, creativity is a particularly complex, multi-sided dimension, which manifests itself at the levels: 1) behaviour and activity, 2) thinking (e.g., generation of ideas, etc.) and 3) personality. The questionnaire form consists of 64 statements, where the respondents are requested to answer "Yes" or "No". The results are analysed according to the subscales of *intuition, phantasy, inclination to creativity, inclination to innovation, flexibility, originality, criticism, intensity and childishness*. The results of statistical data analysis show that internal consistency of all the scales of *Questionnaire of Personality Creativity* is good; according to the separate scales the Cronbach alpha varies from 0.75 to 0.85. The analysis of internal consistency of *Questionnaire of Personality Creativity* (Cronbach alpha) revealed its relatively high level: *intuition* – 0.85. *phantasy* – 0.82. *inclination to creativity* – 0.75. *inclination to innovation* – 0.83. *flexibility* – 0.82. *originality* – 0.77. *criticism* – 0.81. *inversion* – 0.79 and *childishness* – 0.81. *Statistical method of research*. To process the data collected during the research, the Pearson correlation coefficient aiming to evaluate correlations between the participants' creativity and social competence indicators as well as multiple linear regression analysis were applied. The obtained results are regarded to be statistically significant, when they are in line with the significance level *p*. The statistical analysis of data was carried out applying SPSS 17 (Statistic Package for Social Sciences).

4. The research results and their analysis

Peculiarities of social competence. The received values of social competence were calculated after processing the data of *Social Competence Questionnaire* (Ullriche, de Muynck, 1994. cf. Lekavičienė, 2001). The average values of social competence in the general sample are presented in Picture 1.

As it can be seen from the research results, *general self-confidence* ($V=28.6$) and *resistance to failures and criticism* ($V=25.39$) were strongest expressed among students. The latter results refer to successful psychosocial functioning of students in social contexts when in the communication situations positive interpersonal relations are formed being self-confident and reliant on own possibilities, when making decisions own significance is perceived and reaction to criticism and failures is adequate. The lowest average values were established in the three subscales: *ability of demanding* ($V=13.6$), *feeling not guilty* ($V=14.2$) and *ability of asking for a favour* ($V=14.56$). This reveals weaker developed social-cognitive abilities of making complains or formulating requirements or expressing wishes to the surrounding people, making decisions and defending own rights. It also refers to weaker expression of dependence on others, a sense of guilty failing to satisfy requests of other people and a lack of adequate attitude towards a possibility of satisfying requirements of surrounding people.

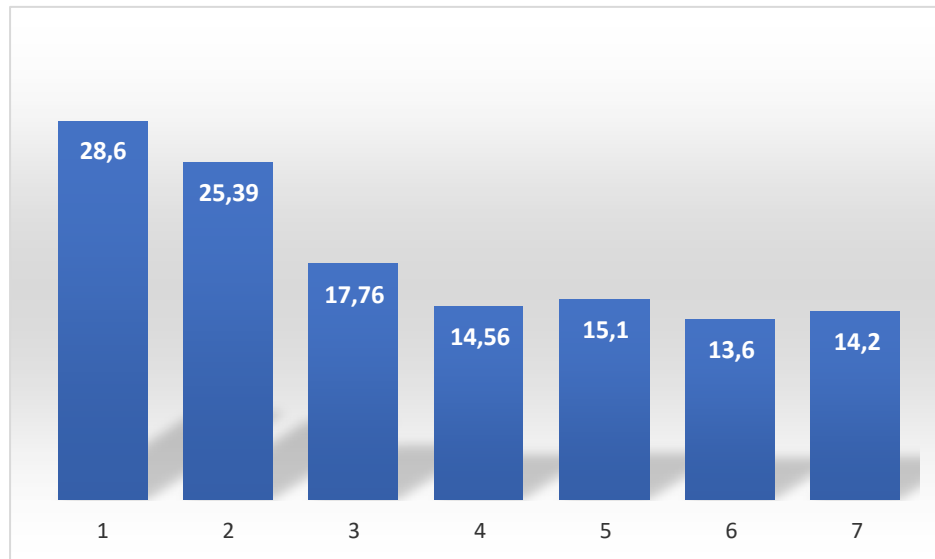


Figure 1. The average values of social competence of students (n=176)

Remark:

- 1 – General self-confidence
- 2 – Resistance to failures and criticism
- 3 – Ability of expressing feelings

- 4 – Ability of asking for a favour
- 5 – Unyielding
- 6 – Ability of demanding
- 7 – Feeling not guilty

The generalised research results allow stating that the students, who participated in the research, are self-confident and are distinguished by high level of ability to resist failures and research, whereas ability of asking for a favour and demanding as well as feeling of not guilty are expressed in a weaker way.

Peculiarities of perceived creativity. Expressivity of perceived creativity components among students was calculated applying *The Questionnaire of Personality Creativity* (Петрулис, 1988). The generalised average values of creativity among students are presented in Figure 2.

The results of conducted analysis of *The Questionnaire of Personality Creativity* showed that the highest average values were established in the subscales of *inclination to innovation* ($V=5.38$) and *childishness* ($V=5.63$). Such results disclose the inclination of the person to innovations, generation of new ideas and his/her wish to work with them as well as inclination to experiments, self-testing, stronger expressed sincerity, naivety, emotionality, impulsivity, vivid imagination, openness and sensitivity. On the other hand, the research showed that students attributed relatively high average values to *originality* ($V=4.82$) and *pursuit of creativity* ($V=3.79$). Moreover, the lowest values identified in the subscales of *intuition* ($V=1.81$) and *inversion* ($V=2.28$) allow stating that the participants in the research possessed a weaker expressed ability of changing direction or system of ideas and tended to perform assignments in the usual established order. The research results also show that in the group of students, the environment perception and conclusion making are linked to experience, long considerations and searching for justifying arguments rather than based on inner intuition. The total average of values of all the scales in *The Questionnaire of Personality Creativity* equals 31.93.

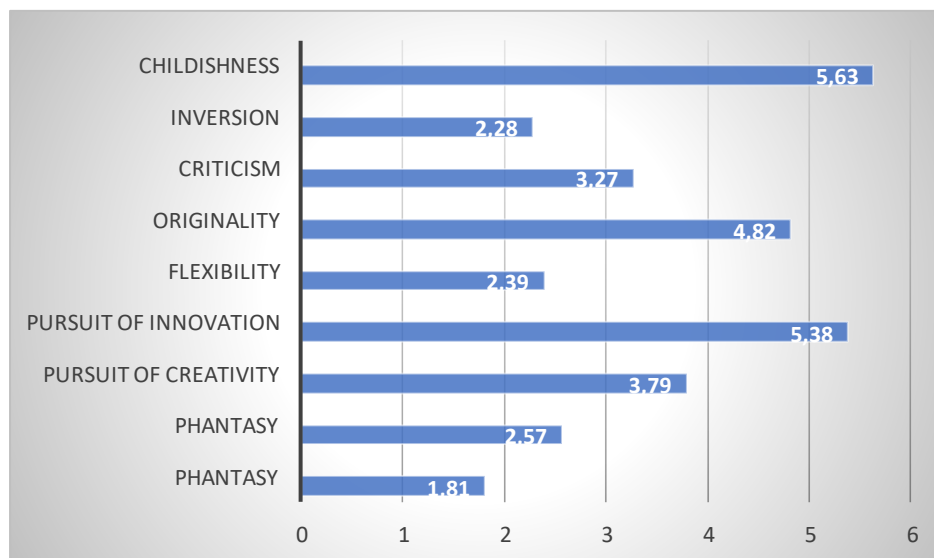


Figure 2. Average values of perceived creativity of students (n=176)

After the generalisation of results, high average values of subscales of pursuit of innovation and creativity as well as childishness and originality among students in the research were observed. It means that the respondents consider themselves to be original individuals, who pursue innovation and creativity, are not afraid to experiment and have vivid imagination. However, the research also revealed that the students also acknowledge having weaker expressed intuition and are distinguished by a lower indicator of inversion expressivity.

Correlations of perceived creativity and social competence of social profile students. Seeking to identify if students' social competence and perceived creativity are interrelated, the statistical data analysis was conducted and Pearson correlation coefficients were calculated. The results of correlation analysis are presented in Table 1. The calculations of Pearson correlation coefficients showed correlation of total creativity indicator with all the components of social competence with exception of the subscales of *ability of asking for a favour* ($p=0.451$) and *ability of demanding* ($p=0.62$). The study of relations between variables of social competence and perceived creativity disclosed rather strong positive correlations between the *total creativity* indicator and *general self-confidence* ($p=0.001$) and *unyielding* ($p=0.001$). A weak correlation was identified with the indicator of *resistance to failures and criticism* ($p=0.011$), and a weak negative correlation was established between the total creativity indicator and the subscale of *feeling not guilty* ($p=0.019$). This allows stating that slightly higher total creativity indicator is characteristic of students, who are self-confident, perceive own significance, are able to say "No", not to give in to personally disadvantageous situations and who possess ability to accept negative evaluations and disapproval as well as are more resistant to failures and criticism, compared to the ones, who experience a sense of helplessness and fear of not being able to provide help to others or are vulnerable and unable to react to criticism and failures in adequate ways. Rather relevant results are observed after a sufficiently significant correlation was identified between the *total creativity* indicator and *ability of expressing feelings* ($p=0.001$). Thus, the more expressed the ability to establish constructive relations with others and to discuss their experiences with them and benevolence in the process of communication are, the higher creativity of an individual is observed.

The results of correlation analysis disclosed statistically significant correlations between variables of social competence and certain indicators of perceived creativity. The correlation analysis of separate subscales of social competence and creativity in the group of students showed weak but statistically significant positive correlations between *general self-confidence* and such subscales of creativity as *intuition* ($p=0.002$), *phantasy* ($p=0.008$), *pursuit of innovation* ($p=0.002$), *originality* ($p=0.002$) and *criticism* ($p=0.002$). Thus, it can be noted that self-

confident research participants, who perceive their significance and relevance and pursue their set goals in a determined way see themselves as original individuals, who pursue innovation, possess vivid imagination and are more critical personalities.

After the calculation of Pearson correlation coefficients, in the group of research participants rather strong statistically significant positive correlations were found between *unyielding* and *originality* ($p=0.002$), *criticism* ($p=0.003$), *phantasy* ($p=0.003$) and *flexibility* ($p=0.001$). Slightly weaker but still statistically significant correlations were identified between *pursuit of innovation* ($p=0.006$) and *inversion* ($p=0.007$). Thus, the participants with higher level of ability to respond to requirements from other people in adequate ways and not to give in to personally disadvantageous situations, with ability to put forward their wishes and to protect own rights, to say “No” and able not to feel tension in communication situation are distinguished by stronger expressed phantasy, inversion, originality, flexibility as well as criticism while performing assignments and pursuit of innovation.

The correlation analysis of subscales of perceived creativity and social competence revealed positive correlations between the participants’ *ability of expressing feelings* and the following subscales of creativity: *flexibility* ($p=0.001$), *childishness* ($p=0.002$), *originality* ($p=0.003$), *criticism* ($p=0.004$), *pursuit of innovation* ($p=0.002$) and *creativity* ($p=0.004$). The aforesaid allows pointing out that the students, who demonstrate better expressed confidence in other individuals while establishing contact with them, benevolence while communicating with others and discussing the feelings they are going through, give higher evaluation to their flexibility, originality, childlessness and criticism as well as have stronger expressed pursuit of innovation and creativity.

The calculated Pearson correlation coefficients disclosed negative correlations between the subscales of *feeling not guilty* and *phantasy* ($p=0.002$) as well as *childishness* ($p=0.001$); a relatively weak but positive correlation was identified with the subscale of *criticism* ($p=0.017$). This allows stating that social profile students, who possess weaker responsibility for solving problems of other people and less frequently experience a sense of guilt not being able to help others, are distinguished by stronger expressed phantasy and childishness, whereas the participants with stronger expressed adequate attitude to a possibility of satisfying requirements of other people leads to a higher level of criticism. Important results are observed after establishing strong positive correlations between the indicator of *resistance to failures and criticism* and *intuition* ($p=0.001$), *creativity* ($p=0.001$) and *pursuit of innovation* ($p=0.001$) and weak positive significant correlations with *flexibility* ($p=0.014$) and *originality* ($p=0.017$). Following the results of research, it can be noted that the participants’ ability to adequately react to negative evaluations and disapproval of surrounding people and to accept them precondition stronger expressed intuition, flexibility, originality, pursuit of innovation and creativity. On the opposite, the stronger expressed fear of getting at the forefront, an experienced sense of helplessness as well as vulnerability and lack of ability to react to criticism and failures adequately are linked to weaker expression of flexibility, originality, intuition as well as pursuit of innovation and creativity among the social-profile students in the research. A weak but significantly positive correlation found between *resistance to failures and criticism* and *criticism* ($p=0.008$) shows that stronger expressed criticism is typical of the research participants who are able to react to failures and criticism in adequate ways and to accept negative evaluations of and disapproval of surrounding people and are not afraid to get at the forefront. The correlation analysis of perceived creativity and social competence revealed relatively weak but significantly positive correlations between *ability of asking for a favour* and *pursuit of creativity* ($p=0.009$), *flexibility* ($p=0.004$) and *originality* ($p=0.009$). Thus, it can be stated that the respondents, who are distinguished by a stronger expressed ability of asking for a favour, absence of fear of being rejected or being a burden to the surrounding people, evaluate higher their own originality and flexibility as well as pursuit of creativity. The calculations of Pearson correlation coefficients disclosed moderate positive correlations between the subscales of *ability of demanding* and *criticism* ($p=0.001$) and *pursuit of innovation* ($p=0.009$). Also, only negative correlation with *childishness* ($p=0.003$) shows that a stronger expressed ability of students to make complaints and formulate requirements, to present own wishes and to defend them as well as stronger manifested

aggressive behaviour and disregard of others around result in stronger expressed criticism and pursuit of innovation. Meanwhile, a stronger expressed feature of childishness is typical of weaker expressed ability of respondents to defend their rights using appropriate ways.

Table 1. The results of correlation analysis of features of students' personality and creativity (n=176)

	General self-confidence	Resistance to failures and criticism	Ability of expressing feelings	Ability of asking for a favour	Unyielding	Ability of demanding	Not feeling guilty
Intuition	0.192** 0.002	0.349** 0.001	0.092 0.12	0.107 0.078	0.088 0.141	0.073 0.21	0.064 0.471
Phantasy	0.161** 0.008	0.046 0.483	0.057 0.492	0.032 0.71	0.204** 0.003	0.038 0.48	-0.182** 0.002
Pursuit of creativity	0.044 0.464	0.325** 0.001	0.176* 0.004	0.157* 0.009	0.1 0.094	0.079 0.397	0.092 0.117
Pursuit of innovation	0.208** 0.002	0.297** 0.001	0.263** 0.002	0.089 0.18	0.154** 0.006	0.197** 0.009	0.073 0.218
Flexibility	0.066 0.271	0.148* 0.014	0.291** 0.001	0.169* 0.004	0.285** 0.001	0.054 0.396	-0.078 0.21
Originality	0.212** 0.002	0.159* 0.017	0.195** 0.003	0.153* 0.009	0.272** 0.002	0.039 0.51	-0.085 0.152
Criticism	0.187** 0.002	0.163* 0.008	0.173* 0.004	0.036 0.68	0.246** 0.003	0.253** 0.001	0.148* 0.017
Inversion	-0.034 0.56	0.084 0.401	0.041 0.53	0.066 0.41	0.16* 0.007	0.021 0.742	0.048 0.59
Childishness	-0.018 0.804	0.098 0.307	0.288** 0.002	-0.075 0.32	-0.102 0.089	-0.218** 0.003	-0.216** 0.001
Total average	0.35** 0.001	0.188** 0.011	0.32** 0.001	0.046 0.451	0.371** 0.001	0.035 0.62	-0.156* 0.019

*p<0.01; **p<0.001)

The generalized results of correlation analysis allow stating that self-confident students, who are able to accept negative evaluations and disapproval of surrounding people and are resistant to failures and criticism, demonstrate a higher total indicator of creative personality. It was established that general self-confidence and perception of own significance result in stronger expression of intuition, phantasy, criticism, originality and pursuit of innovation. The results also showed that the participants with a stronger expressed ability to express feelings in appropriate ways, demonstrate stronger expression of creativity and pursuit of innovation as well as flexibility, originality, childishness and criticism. It was also noticed that being able to appropriately accept negative evaluations and disapproval of surrounding people and to adequately react to failures and criticism, the students, who are not afraid of getting at the forefront, demonstrate stronger expressed criticism, intuition, flexibility and originality, pursuit of innovation and creativity. The students, who are able to ask for a favour and are not afraid to be rejected tend to evaluate their originality, flexibility and pursuit of creativity higher. Thus, the conducted correlation analysis allowed identifying statistically significant correlations between the students' social competence and perceived creativity. However, the correlations among variables were rather weak.

Social competence-based prognostic possibilities of creativity expression among students of social profile. The correlation analysis revealed statistically significant correlations between the evaluation of students' perceived creativity and social competence. However, it should be acknowledged that correlations express more or less probable statistical tendencies and show an approximate compatibility of two variables and tend to be more stochastic (Vaitkevičius, Saudargienė, 2006). For this reason, the regression analysis was conducted, which allowed foreseeing prognostic possibilities of some (dependent) variables on the basis of other (independent) variables from the regression equation. The regressive analysis of variables is presented in Table 2.

The relationship of present and estimated expression of creativity according to separate indicators ranges from 0.24 to 0.328 among participants of the research. The values of the latter determination coefficients show a rather

weak power of social competence (independent variable) in forecasting creativity (dependent variable), and this allows assuming that on the basis of the components of social competence the forecasted expression of students' perceived creativity may range only from 3.3 % to 8.9 %. The results of linear regression analysis in the group of students disclosed that the regression R of the subscales of *inversion* ($p=0.061$) and *intuition* ($p=0.069$) does not significantly exceed the zero (see: Table 2).

Table 2. The correlation coefficient R and determination coefficient R of dependent variables (perceived creativity) and independent variables (social competence) in the group of social profile students-participants in the research

Name of scale	R	R	Corrected R	Type III sums of squares	Degree of freedom (df)	Mean of squares	F	p
Intuition	0.214	0.046	0.022	179.501	10	25.643	1.913	0.069
Phantasy	0.273	0.075	0.051	130.476	10	18.639	3.206	0.003
Pursuit of creativity	0.24	0.058	0.033	325.0	10	46.429	2.289	0.028
Pursuit of innovation	0.27	0.073	0.048	184.073	10	26.296	2.923	0.006
Flexibility	0.256	0.065	0.04	253.085	10	36.155	2.612	0.013
Originality	0.273	0.075	0.05	205.958	10	29.432	3.004	0.005
Criticism	0.243	0.061	0.035	361.212	10	51.602	2.566	0.014
Inversion	0.219	0.048	0.024	109.815	10	15.688	1.994	0.061
Childishness	0.328	0.106	0.089	354.569	10	50.653	4.726	0.001
Total indicator	0.253	0.064	0.04	126.071	10	18.01	2.716	0.01

The results of conducted linear regression analysis showed that the variables of *general self-confidence* ($p=0.001$), *ability of expressing feelings* ($p=0.001$), *unyielding* ($p=0.007$) and *ability of demanding* ($p=0.004$) are significant prognostic indicators of *inclination to innovation*. It was also established that the expression of *inclination to innovation* is significantly foreseen by the variable of *resistance to failures and criticism* ($p=0.012$) (see: Table 3). Moreover, the variable *general self-confidence* is significant for forecasting expression of *intuition* ($p=0.007$), (see: Table 3), *originality* ($p=0.002$) and *criticism* ($p=0.017$) (see: Table 4). It was also revealed that *pursuit of creativity* ($p=0.001$) (see: Table 3) and the person's *originality* ($p=0.001$) (see: Table 4) significantly forecast the variable *resistance to failures and criticism*, whereas the variable *unyielding* ($p=0.008$) and *ability of demanding* ($p=0.006$) are significant prognostic indicators of *criticism* (see: Table 4). The results of linear regression analysis disclose that the expression of participants' *flexibility* can be significantly foreseen by the following three variables of social competence: *resistance to failures and criticism* ($p=0.003$), *ability of asking for a favour* ($p=0.001$) and *unyielding* ($p=0.002$), whereas the expression of *phantasy* is predetermined by the variables of *general self-confidence* ($p=0.001$), *resistance to failures and criticism* ($p=0.001$) and *unyielding* ($p=0.025$) (see: Table 3). On the other hand, the research results showed that the variable *feeling not guilty* is a significant prognostic indicator of *phantasy* ($p=0.016$) and *pursuit of creativity* ($p=0.001$) (see: Table 3), whereas the variable *ability of expressing feelings* is a significant indicator of *intuition* ($p=0.001$) (see: Table 3), *childishness* ($p=0.026$) and *originality* ($p=0.011$) (see: Table 4). The results of regression analysis show that *general self-confidence* ($p=0.027$), *resistance to failures and criticism* ($p=0.003$) and *unyielding* ($p=0.001$) are significant prognostic indicators of *total creativity* of research participants.

Table 3. The regression equation coefficients (B), normalized coefficients (β) and significance level (p) of regression equation of values of students' perceived creativity and social competence (p)

	Intuition			Phantasy			Pursuit of creativity			Pursuit of innovation			Flexibility		
	B	β	p	B	β	p	B	β	p	B	β	p	B	β	p
1	0.486	0.181	0.007	1.16	0.301	0.001	0.372	0.112	0.057	0.795	0.257	0.001	0.441	0.112	0.064
2	0.203	0.11	0.053	0.62	0.271	0.001	0.785	0.264	0.001	0.447	0.151	0.012	0.51	0.218	0.003
3	0.482	0.224	0.001	0.119	0.096	0.107	0.381	0.115	0.057	0.71	0.209	0.001	0.182	0.076	0.228
4	0.243	0.071	0.19	0.247	0.128	0.061	0.198	0.091	0.07	0.219	0.082	0.139	0.42	0.266	0.001
5	0.201	0.079	0.103	0.327	0.148	0.025	0.213	0.115	0.058	0.497	0.168	0.007	0.47	0.217	0.002
6	0.212	0.096	0.121	0.123	0.07	0.331	0.126	0.049	0.318	0.465	0.183	0.004	0.206	0.081	0.194
7	0.211	0.104	0.061	-	-	0.016	-	-	0.001	0.131	0.083	0.169	0.206	0.079	0.081
				0.461	0.174		1.106	0.279							

Table 4. The regression equation coefficients (B), normalized coefficients (β) and significance level (p) of regression equation of values of students' perceived creativity and social competence (p)

	Originality			Criticism			Inversion			Childishness			Total indicator		
	B	β	p	B	β	p	B	β	p	B	β	P	B	β	p
1	0.468	0.269	0.002	0.414	0.198	0.017	0.212	0.93	0.122	0.327	0.124	0.058	0.336	0.141	0.027
2	0.738	0.283	0.001	0.142	0.084	0.246	0.201	0.113	0.062	0.167	0.122	0.061	0.412	0.185	0.003
3	0.459	0.193	0.011	0.135	0.061	0.31	0.181	0.118	0.056	0.335	0.171	0.026	0.181	0.076	0.129
4	0.146	0.087	0.19	0.147	0.074	0.197	0.193	0.096	0.092	0.169	0.102	0.17	0.136	0.062	0.181
5	0.201	0.079	0.103	0.527	0.217	0.008	0.143	0.113	0.079	0.137	0.052	0.208	0.41	0.209	0.001
6	0.229	0.095	0.124	0.332	0.228	0.006	0.129	0.052	0.219	0.125	0.081	0.103	0.446	0.114	0.065
7	0.188	0.094	0.11	0.212	0.105	0.084	0.126	0.058	0.21	0.116	0.064	0.21	0.201	0.089	0.092

Remark:

- 1 – General self-confidence
- 2 – Resistance to failures and criticism
- 3 – Ability of expressing feelings
- 4 – Ability of asking for a favour
- 5 – Unyielding
- 6 – Ability of demanding
- 7 – Feeling not guilty

After identification if social competence can be employed to forecast the perceived creativity of students, the regression analysis was applied. It allowed foreseeing prognostic possibilities of dependent variables in the regression equation on the basis of independent variables. The results of linear regression analysis disclose a prognostic meaning of social competence to expression of perceived creativity. Thus, on the basis of social competence the expression of person's perceived creativity can be significantly forecasted. Following the data of regression analysis, considering the specifics and links of correlation between social competence and perceived creativity and after evaluation and identification of social competence-based prognostic possibilities of perceived creativity, it can be assumed that a more targeted choice of methods, forms and assignments for development of students' social competence, the expression of their perceived creativity is also promoted. However, it should be noted that the percentage of dispersion of person's social competence and perceived creativity, explained through regression, is not high. This shows that social competence cannot serve as the only source for drawing unambiguous conclusions and foreseeing the level of students' perceived creativity. Therefore, adding other methods of information gathering, applying different research methodologies, increasing the sample, further research on the factors that allow forecasting the expression of students' perceived creativity with a higher probability and stronger prognostic power.

Conclusions

1. The research results showed the strongest expression of self-confidence and resistance to failure and criticism among students. The lowest mean averages were identified in the three subscales: ability to demand, not feeling guilty and ability to ask for a favour.
2. Analysing the peculiarities of students' perceived creativity, the highest values were observed within the scales of pursuit of innovation and creativity, childishness and originality. The research results revealed that the lowest mean values of expression of perceived creativity were established within the scales of intuition and inversion.
3. Employing the Pearson correlation analysis, the correlations between the social competence and perceived creativity were evaluated and identified:
 - 3.1. The identified significant correlations show that social profile students with a higher level of self-confidence, unyielding, ability to express feeling and resistance to failure and criticism have a higher level of total creativity indicator. The indicator of the subscale of not feeling guilty negatively correlates with that of total creativity.
 - 3.2. The correlation analysis discloses that self-confident students also possess a higher level of intuition, phantasy, pursuit of innovation, originality and criticism, whereas stronger expression of originality, criticism, phantasy, flexibility, pursuit of innovation and inversion is characteristic of students with more expressed unyielding.
 - 3.3. The research allowed concluding that the students' resistance to failures and criticism positively correlates with the indicators of intuition, creativity, pursuit of creativity and innovation, flexibility, originality and criticism. The research participants with stronger ability to ask for a favour, tend to evaluate their originality and flexibility as well as pursuit of creativity higher.
 - 3.4. The correlation analysis of subscales of perceived creativity and social competence disclosed positive relations between the subscales of the participants' ability to express feelings and creativity: flexibility, childishness, originality, criticism, pursuit of innovation and creation.
 - 3.5. The results of correlation analysis revealed that students' ability to demand negatively correlates with childishness and positively correlates with criticism and pursuit of innovation. Meanwhile, such indicators of perceived creativity as phantasy and childishness show negative correlation with not feeling guilty and the latter positively correlates with the subscale of criticism.
4. The research results show that certain components of social competence acquire a prognostic meaning for expression of students' perceived creativity and allow for significant forecasting of students' perceived creativity.

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BUSINESS COUNTERINTELLIGENCE AS A PROTECTION STRATEGY FOR SMES*

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Abstract. The objective of this research was to analyze the processes of business counterintelligence as a strategy to shield the SMEs from competitive intelligence services. It was framed in the convergence of research approaches given in 2 phases: quantitative phase (Likert type questionnaire applied to 385 Colombian businessmen), qualitative phase (semi-structured interview to 4 police officers with more than 25 years of experience in police counter-intelligence) and the conclusions are formulated taking into account the convergence of approaches by dimension/category. The significant findings allude to the existence of a perception on the part of the entrepreneurs about the counterintelligence systems implemented in the SMEs they manage. However, experts on the subject agree on the lack of knowledge of risk factors regarding information vulnerability and the lack of strategies to shield SMEs from competitive intelligence services.

Keywords: Business Counterintelligence; Business Intelligence Services; Counterintelligence Strategie; SMEs

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1. Introduction

Throughout history, military strategies have been associated with business strategies. This is because they share similar objectives in terms of achieving competitive advantage over the adversary. The study of strategic management has its origins in the military, terms such as objectives, mission, strengths and weaknesses were created to address problems on the battlefield. The academic literature records writings such as the book "The Art of War" related to military strategy that date back to around 500 BC, The phrase "If you use the enemy to defeat the enemy, you will be powerful everywhere you go" (Sun, 2016, p. 1) is a commonplace phrase in the literature, and it is only when you know every detail of the terrain that you can maneuver and fight" (Sun, 2016, p. 1). 78), alludes to the spying strategies used to destabilize the organization of an army, executing internal sabotage actions and collecting information on position, logistics and combat strength (Catoira, 2018; Jayaram, 2020; Khristoforov & Guseva, 2020; Teixeira Júnior & Da Silva, 2020).

The spying activities during the cold war (cases of KGB[†] communist bloc and CIA[‡] capitalist) until today have multiplied the public cases as: Pentagon Papers (a classified Pentagon report on U.S. decision-making in relation to the Vietnam War), Watergate (extraction of documents on the harassment of activist groups and political figures that destroyed Richard Nixon's political career), Wikileaks (publication of documents on the dynamics and activities of the U.S. government abroad) and the case of Snowden (he warned about the massive programs of diplomatic surveillance and manipulation, economic espionage and social control by the U.S. government) (Cadiz, 2016; Crespo-Pazmiño, 2019; Olmedo & Gavilánez, 2018).

Undoubtedly, acts of espionage gain access to privileged information and generate competitive advantage in any public or private organization. In the business field there are also cases of theft of trade secrets that according to the consulting firm (PWC, 2018) companies in the world lose an estimated "3 billion euros, equivalent to 5% of world GDP" (p.65). Most of this crime is associated with the theft of formulas and methods from development processes and systems as vital to the functioning of the organization. A recent case is the lawsuit filed by TESLA against RIVIAN for the alleged systematic theft of sensitive data and trade secrets from different projects, alleging the existence of a pattern of searching for TESLA personnel to consciously manipulate the illegal appropriation of TESLA trade secrets (Hipertextual, 2020; Pazmiño, 2020).

In Colombia, trade secrets are protected by Decision 486 of the (Andean Community, 2000). However, the violation of them is constantly evidenced in bidding processes, for example, recent disputes between Claro and Banco Agrario, where there is an alleged leakage of information in bidding processes to hire a provider of ICT services and computer security for the headquarters of the agrarian bank for contracts exceeding US\$ 40 billion (Espectador, 2020; González-Díaz & Cruz-Ayala, 2020). In SMEs, the situation regarding theft of trade secrets has not been addressed. In fact, more than 96% of SMEs do not conduct risk assessments of vulnerability to cyber attacks, do not follow up on trusted employees and do not strategically plan for the protection of information assets (Griewatz et al., 2020; PWC, 2018; Riisager-Simonsen et al., 2020; Tejerna-Macias, 2018).

[†] The KGB (Komitet Gosudarstvennoy Bezopasnosti (Комитет Государственной Безопасности)) translated into Spanish as The Committee for State Security, was the name of the intelligence agency of the Soviet Union from March 13, 1954 to March 13, 1991.

[‡] The CIA (Central Intelligence Agency), in Spanish: Central Intelligence Agency is a civilian foreign intelligence service of the United States federal government in charge of collecting, processing and analyzing national security information from around the world, mainly through the use of human intelligence.

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1.1. Business Counterintelligence

There is no evidence in the scientific literature of studies on corporate counterintelligence, since it is a relatively new term that combines two words: "counter-intelligence" and "entrepreneurship". On the one hand, Gómez de la Torre Rotta and Medrano Carmona (2020); Mendoza Cortés (2020); Rodríguez (2017) agree that counterintelligence frames a set of activities aimed at detecting, preventing and eliminating the enemy's intelligence actions. As for business, reference is made to the company as an institution dedicated to activities or the pursuit of economic or commercial ends to satisfy the needs for goods or services of society (Cortiñas, 2019). In short, corporate counterintelligence refers to the set of coordinated activities to detect, prevent and eliminate intelligence services in their different forms, which are intended to alter the healthy internal and external development of the organization (Bohnsack et al., 2020). An economic entity must consider corporate counterintelligence as a measure to protect its tangible and intangible assets. This allows the creation of a space for sustainable development and secure information systems for economic activities. SMEs with good business counterintelligence systems guarantee information protection (Hernandez-Julio et al., 2020). Therefore, this research analyzes business counterintelligence processes as a strategy to shield SMEs from competitive intelligence services.

2. Methodology

In the present study we used the design of convergent mixed research, structured in 2 parallel sections (quantitative section and qualitative section). These research designs involve a confrontation of data from different angles (quantitative and qualitative), in order to merge them, confront them and generate a comprehensive interpretation with a holistic view of the object of study (Fetters et al., 2013; Guetterman et al., 2015; Kettles et al., 2011). Triangulation increases confidence, overcomes reductionism of approaches, and in case of congruency in the conclusions, confers reliability and validity of the results.

2.1. In the quantitative section

A survey was applied (questionnaire with 7 items with a Likert scale validated in the opinion of 3 experts with a Cronbach's Alpha coefficient of 0.91(Excellent) to a random sample with a margin of error of 5% with a confidence level of 95%, for a total of 385 SME entrepreneurs in Colombia. The data was analyzed with descriptive statistics to understand the behavior of the variables under study. SPSS25 was used as a tool for the analysis of quantitative data. The operationalization of the business counter-intelligence variable is shown in table 1.

Table 1. Operationalization of the business counterintelligence variable

Variable	Dimensions	Indicators
BUSINESS counterintelligence	Detect	Strategic diagnosis of SME information security vulnerabilities
		Organization of actions to detect intelligence operations of the competition against you
		Infiltration of employee-agents in charge of intelligence to the work team
	To prevent	Execution of activities aimed at preventing competition intelligence activities against you
		Information systems are monitored by a trusted work team
	Remove	Application of rules and procedures to punish personnel involved in activities that violate the security of the information of the SME
		Implementation of strategies to obtain strategic information from the competition

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For the interpretation of the data, the following interpretation criteria were considered according to the cut points, 4 cut-points were applied with a distance of 0.8 (see table 2).

Table 2. Criteria for Interpretation of dimensions and business counterintelligence variable

Cut points	Data range	Interpretation			
		Detect	To prevent	Remove	Counterintelligence
1	1.00-1.80	Poor intelligence detection systems	Poor intelligence Prevention systems	Poor intelligence Elimination systems	Poor business counterintelligence system
2	1.81-2.60	Bad intelligence detection systems	Bad intelligence Prevention systems	Bad intelligence Elimination systems	Bad business counterintelligence system
3	2.61-3.40	Regular intelligence detection systems	Regular intelligence Prevention systems	Regular intelligence Elimination systems	Regulate business counterintelligence system
4	3.41-4.20	Good intelligence detection systems	Good intelligence Prevention systems	Good intelligence Elimination systems	Good business counterintelligence system
5	4.21-5.00	Excellent intelligence detection system	Excellent intelligence Prevention system	Excellent intelligence Elimination system	Excellent business counterintelligence system

2.2. Qualitative section

In parallel, four police counter-intelligence experts were consulted on practical counter-intelligence procedures through a semi-structured interview with four questions related to the categories: Detect, Prevent and Eliminate. The selection criteria of the experts were: more than 25 years of service in the counterintelligence department of the Police, command of executive levels (sub-commissioner and commissioners) (González-Díaz & Polo, 2018). Subsequently, the opinions generated by the experts were subjected to a hermeneutic and interpretative analysis under the approaches of Martinez (2011) who proposes 4 steps: structuring, categorization, comparison and interpretation. Atlas.ti8 was used as a tool for the analysis of qualitative data.

3. Analysis and discussion of results

Once the information has been collected in parallel with each of the instruments, regardless of the research approach, the results are presented and discussed in two sections: Quantitative and Qualitative. Finally, a convergence of approaches is made to respond to the objective of this study.

3.1. Quantitative Section

In this section we used descriptive statistics in order to know the current situation of business counterintelligence in Colombian SMEs, which generated the following results (see table 3)

Table 3. Summary of the descriptive statistics of the business counterintelligence

		Detect	To prevent	Remove	Business Counterintelligence
N	Valid	385	385	385	385
	Lost	0	0	0	0
Half		3.41	3.47	3.34	3.42
Dev . Deviation		1,363	1,335	1,442	1,365
Minimum		one	one	one	one
Maximum		5	5	5	5

Table 3, shows a total of 385 managers surveyed with 0 missing values, with an average of 3.42 which according to table 2, is categorized as a good business counter-intelligence system. However, studies referring to the vulnerability assessment of information in SMEs published by Ocampo Giraldo (2019), Naughton et al. (2020),

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Mabula et al. (2020) and Ageeva and Mishura (2019) do not agree with what is presented, in other words, those who manage SMEs are convinced that rudimentary procedures such as private surveillance are sufficient to safeguard the business operations of these entities . Therefore, a detailed analysis is made in figures (1, 2, 3 and 4).

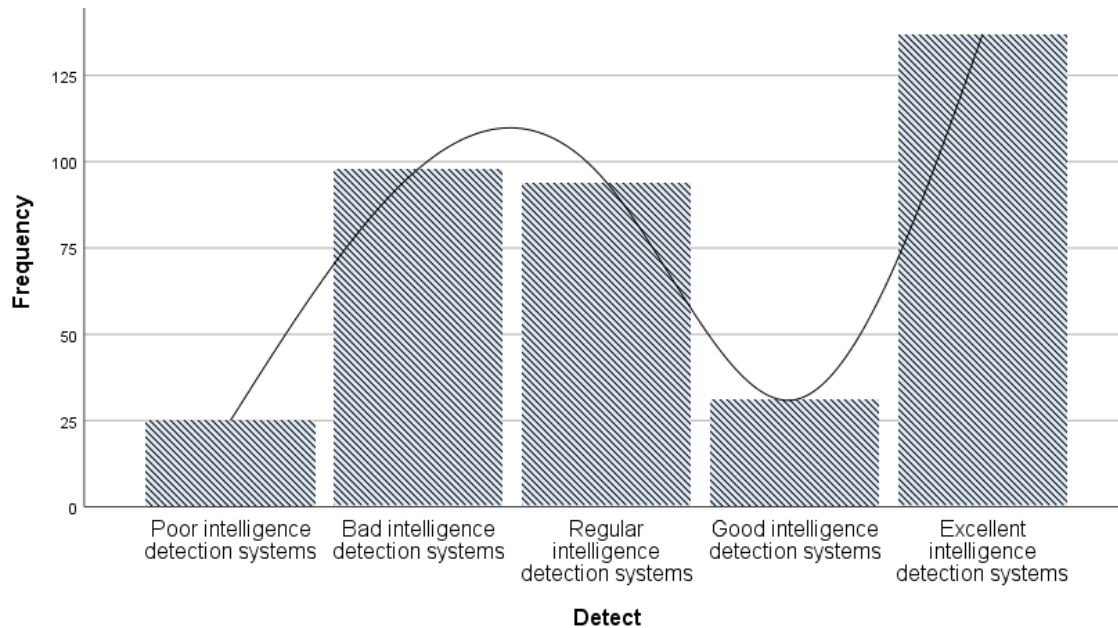


Figure 1. Detection of competitor intelligence actions

In figure 1, the detection of competitive actions that violate the security of information and business secrets of SMEs is shown. The managers surveyed consider that the procedures assumed by the SME are good enough to detect competitive intelligence, consider that they have a good strategic diagnosis of the information security vulnerabilities of the SME, good organization of the actions to detect competitive intelligence operations against them and infiltration of employees-agents in charge of making intelligence to the work team as they propose (Laszka et al, 2014; Tariq et al., 2012; Wilson, 2014; Masood et al., 2020). These results do not coincide with those proposed by Gaitán Castro (2019) and Díaz Pérez (2020), who consider that SMEs lack the financial resources to implement a monitoring and information follow-up system to detect fraud with information management (González-Díaz & Ledesma, 2020).

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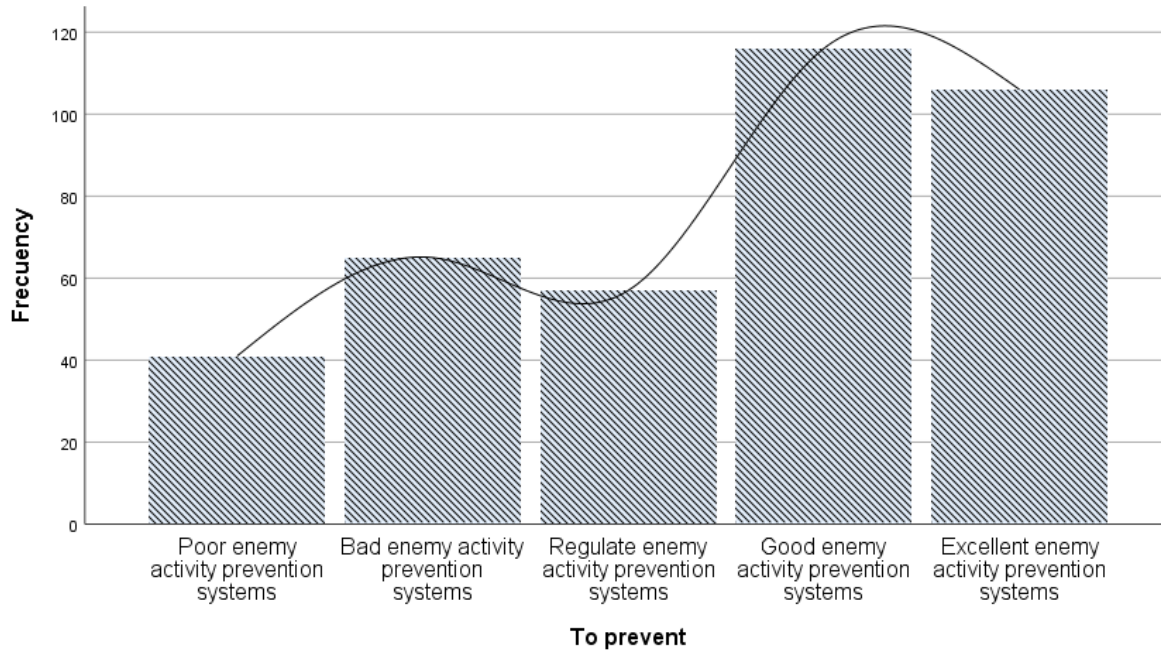


Figure 2. Prevention of competitor intelligence actions

In figure 2, the behavior of the surveyed managers' answers regarding the prevention of intelligence actions by the competition can be seen. An average of 3.47 was obtained according to the data interpretation scale of table 2, which is considered as good systems for the prevention of enemy activity. Specifically, the managers consider to execute activities destined to prevent intelligence activities of the competition against them and their information systems are monitored by a trustworthy work team. These results contrast with those presented by Lara (2018) and Cevallos Villegas et al. (2018) who point to serious deficiencies in the detection systems of competitive intelligence services that may violate strategic trade secrets. Likewise, authors such as Al-Mohannadi et al. (2020) and Sari (2018) recommend an intensive process of social auditing of employees and direct competition using artificial intelligence-based web services to counter and report cyber threats.

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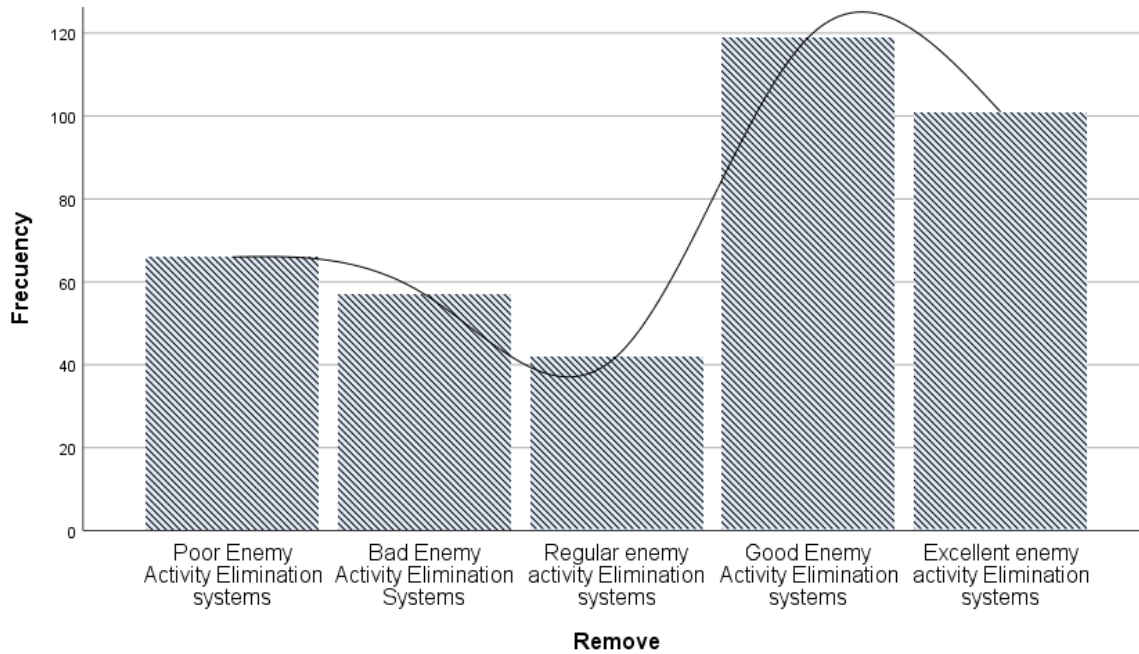


Figure 3. Elimination of actions competitive intelligence

Figure 3 shows the results of the surveyed managers regarding the systems of elimination of competitive intelligence actions in SMEs, who obtained an arithmetic average of 3.34, which implies that regular systems of elimination of enemy activity. It shows the impossibility of administrative and criminal processes for the application of rules and procedures to sanction staff involved in activities that violate the security of information of the SME and difficulty in implementing strategies to obtain strategic information from the competition. All of this is consistent with the studies by Díaz (2018), Muñoz-Gallego (2018) and Norberto et al. (2018) who state that although Colombia has made progress in legal matters regarding trade secrets, operational and procedural mechanisms are still required to sanction them (Sánchez et al., 2020).

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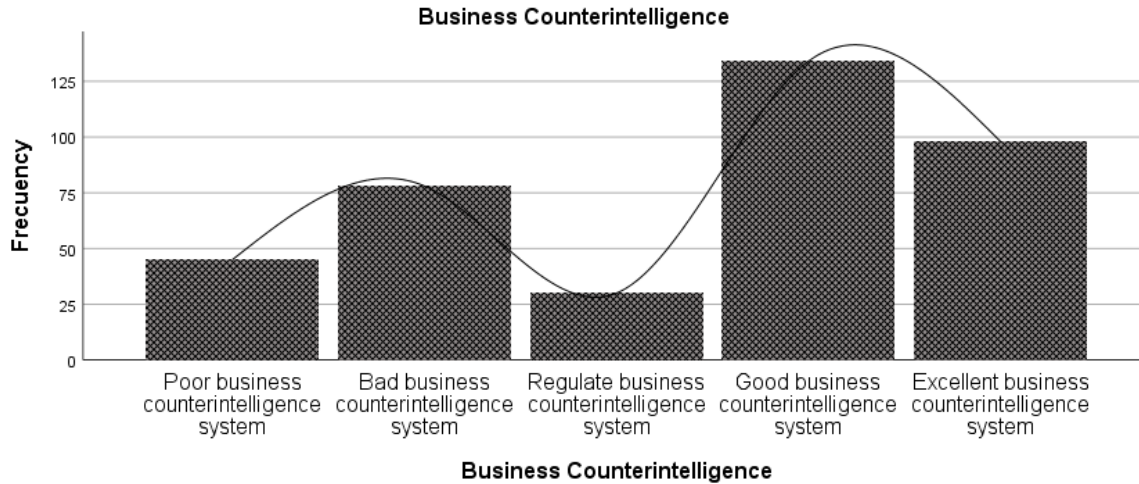


Figure 4. Business Counterintelligence in SMEs in Colombia

Once the descriptive statistics of each dimension were analyzed, the arithmetic average of the business counter-intelligence variable was calculated, which obtained an average of 3.42, which represents a good system of business counter-intelligence in Colombian SMEs in the scale of interpretation of the results described in table 3. However, these results contradict the cross-cutting approaches of Múnera Pavón (2019), Durst and Zieba (2020), Jalil and Hassan (2020), Knickmeier (2020), who indirectly believe that businessmen believe that their companies are protected from the leakage of strategic material by having a closed video camera monitoring system, leaving aside information traffic as a determining factor in the development of a company. Therefore, a reconceptualization of the concept of security and protection of assets is required, reflecting on the professional secrets that give life to the economic entity (Button, 2020; Jung & Jung, 2020; Konopatsch, 2020; Sailio et al., 2020).

3.2. Cualitative section

In this section we used hermeneutic interpretative analysis of key informants' discourses through the following stages: structuring, categorization, contrasting, and interpretation. To this end, it was used as a tool for the analysis of qualitative data (Atlas.ti8), which allowed the generation of the following table 4 and the semantic network (figure 5).

Table 4. Table Analysis keycode-informant

	Key Informant 1 Gr = 9		Key Informant 2 Gr = 6		Key Informant 3 Gr = 9		Key Informant 4 Gr = 16		Totals
	Absolute	Relative of the column	Absolute	Relative of the column	Absolute	Relative of the column	Absolute	Relative of the column	Absolute
Detect Gr = 22; GS = 10	5	45.45%	4	33.33%	4	30.77%	9	30.00%	22
Remove Gr = 19; GS = 6	4	36.36%	4	33.33%	4	30.77%	7	23.33%	19
Prevent Gr = 25; GS = 9	two	18.18%	4	33.33%	5	38.46%	14	46.67%	25
Totals	eleven	100.00%	12	100.00%	13	100.00%	30	100.00%	66

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Table 4 shows the concurrence of the categories (Detect, Eliminate and Prevent) that respond to the guiding category of Business Counterintelligence. In this case, the interviewees are experts in the field of police counter-intelligence and consider that it is necessary to be more consistent when elaborating planning processes to prevent enemy action with a frequency in codes of 46.67%, emphasizing the monitoring of human sources, infiltration of the environment, technological means, monitoring of social networks, vulnerability testing, psychological awareness, surveillance and home visits. As for the processes of eliminating enemy actions, experts consider that social engineering is required, legalizing sanctions and implementing security protocols, without neglecting the processes aimed at detecting enemy actions (González-Díaz, Acosta-Moltó, et al., 2020; González-Díaz, Becerra-Peréz, et al., 2020).

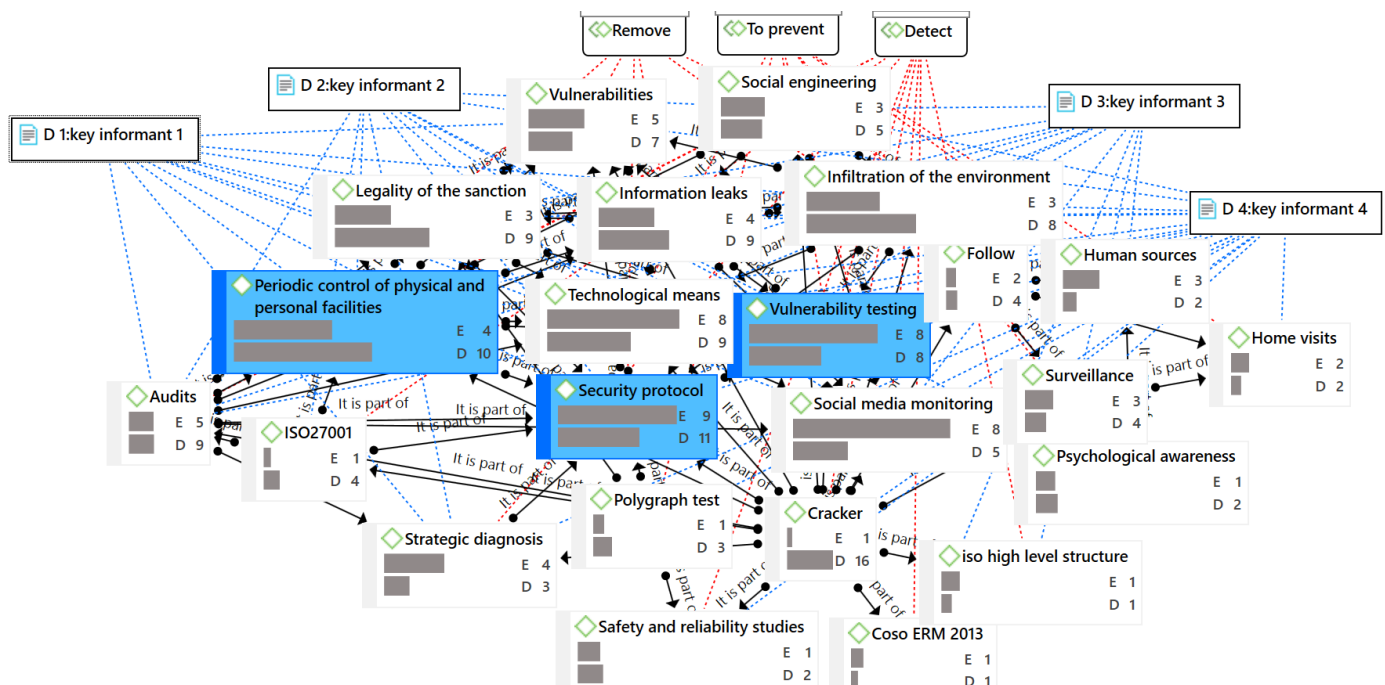


Figure 5. Hermeneutical framework about Police Counterintelligence

Figure 5 shows the hermeneutic framework of counterintelligence from police procedures through a semantic network that accounts for detection processes. These are focused on studies of the risk and threats that affect the security of the company's information. Likewise, a series of threat probability impact assessments must be carried out. Therefore, every organization must have a security protocol, both internal and external, that allows to know its vulnerabilities, weaknesses and also its strengths. In order to know the first ones, it is necessary to make a periodic control of its physical facilities as well as of its human component in order to establish possible information leaks and internal and external channels that allow it. Likewise, self-assessments, internal control audits, checklists, application of ISO 27001, Coso ERM 2013 and 2017 and ISO high level structure context analysis, following each of the controls so as not to leave anything out in the analysis, as this is the only way to be rigorous and avoid overlooking possible vulnerabilities (Noroño Sánchez et al., 2020).

As for the prevention of competitive intelligence actions, physical vulnerability tests must be carried out on the facilities and personnel working in the company or institution. Likewise, security and reliability studies,

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polygraph tests, home visits and accompaniment of personnel must be carried out. The continuous monitoring through surveillance, monitoring, extraction, interception of lines. Similarly, the activities to prevent contrary actions would be self-inflicted using an external element in order to know the weak part that allows its access, that is, if you want to know the vulnerabilities at the computer level, you can send a computer virus that can infiltrate the security system, if you want to know the physical vulnerabilities of the facilities to perform simulation activities that break with the security protocols and at the level of human component to perform control activities and monitoring of staff that is considered a threat.

In terms of eliminating the action of intelligence by the competition, you can run a good practice of intensive awareness at the beginning of the implementation of controls, which can be in 3 phases to ensure that the organization knows the rules and after this a stage of punishment with the application of exemplary attitudes, which should be visible to serve as a corrective measure but even more so pedagogical to the rest of people. In extreme cases, the formal mechanisms established in the Political Constitution of Colombia, Law on Intelligence and Counterintelligence 1621, Law 734 and 1015, Criminal Code, Law 1581 on Data Protection, may be used. Any person who violates the security of information has criminal and disciplinary reach.

4. Conclusions

Once both research approaches have been analyzed, a convergence is proposed based on the dimensions/categories: Detect, Eliminate and Prevent the action of competition. In this sense, the detection of competitive actions that violate the security of information and business secrets of SMEs is considered good, the experts recommend to maintain institutional stability by conducting a frequent study of the risks and threats that affect the security of information of the company or institution, if this is assumed as a frequent procedure, business sustainability is guaranteed, because organizational weaknesses can be addressed in time. Likewise, it is necessary to be rigorous in the access of external personnel to the SME. This requires investments in monitoring and follow-up systems to detect fraud with information management.

As for the processes of prevention of intelligence actions by the competition in SMEs, managers consider having good prevention systems. However, several studies described above contradict this position, so it is inferred levels of ignorance as to the scope of prevention of external intelligence attacks. Therefore, experts recommend testing the physical vulnerability of facilities and personnel working in the company and continuous monitoring through surveillance and follow-up. The systems of elimination of competitive intelligence actions in SMEs are regular due to the lack of knowledge about administrative and criminal processes for the application of rules and procedures to sanction personnel involved in activities that violate the security of the information of the SME. Therefore, it is recommended to implement awareness programs and reward the culture of information asset security, all of which will guarantee the sustainability of business counterintelligence.

Finally, the experts suggest implementing strategies to mitigate the processes of intelligence against SMEs, framed in creating false profiles in social networks, surveillance, monitoring, expansion. It is possible to resort to the service of hacker or cracker to obtain privileged information, processes of infiltration of their environment, monitoring of their social networks through social engineering, strategy of collection of human sources (cooperators, informants, single line of questioning) technical means, infiltration, counter-intelligence.

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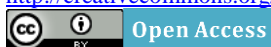
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LEGAL REGULATION OF ENTREPRENEURIAL ACTIVITY IN THE NATIONAL SECURITY SYSTEM

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Abstract. The main directions of the destructive economic impact on business activities in the national security system have been identified, which allowed to identify possible risks for business activities and to develop a set of preventive measures to reduce the negative impact of external factors. Given the current conditions of the macroeconomic situation, it is necessary to constantly monitor the processes that take place in the external environment and have an impact on the state of economic security of business. With the help of international rating indices, which are an important tool, a significant reference point and an external source of information, Ukraine's place in international rankings has been tracked in the second section and a comprehensive assessment has been made, as the relevant rankings places by which world organizations mark Ukraine are indicators of its development. The interrelation and influence of the given indicators on the economic security of entrepreneurial activity are substantiated. According to the study of Ukraine's position in international rankings, it is concluded that Ukraine's position is currently unsatisfactory, Ukraine has not yet created safe conditions for business development: unstable tax legislation, significant corruption pressure and currency restrictions, lack of serious gains in investment attractiveness and to ensure national competitiveness, state support for business development is insufficient and unfocused; limited opportunities for financing state programs for business development. Entrepreneurial activity management in Ukraine is a direction of state policy, a set of measures and forms of economic, legal, and organizational impact on business and entrepreneurs, including through state support and protection of business entities, as well as state control over compliance requirements of the legislation by subjects of such an activity.

Keywords: entrepreneurial activity; national security; legal regulation; international rankings; state policy

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1. Introduction

The operation of subjects of entrepreneurial activity takes place in an unstable and chaotic business environment, which is characterized by an increase in the degree of its uncertainty, complexity, and unpredictability (Chehabeddine, M., & Tvaronavičienė, M. 2020; Mazzanti, M., 2020; Vasconcelos, V.V. 2021). This requires subjects of entrepreneurial activity to respond quickly and adequately to changes in the business environment, to find ways to overcome external threats and to provide the necessary level of economic security. It is economic security that has a determining role in ensuring the sustainable development and competitiveness of subjects of entrepreneurial activity.

With the inclusion of Ukraine's economy in the world economy, in particular, the intensification of European integration processes, there is an objective need to develop a more effective system of economic security of entrepreneurial activity when entering new world markets.

Entrepreneurial activity has always been closely linked to the risks posed by the internal and external environment of businesses. Therefore, ensuring the appropriate level of economic security is an integral prerequisite for entrepreneurial activity in the face of increasing the complexity of business processes, increasing political, economic, social, environmental, and other instability.

The issue of economic security becomes especially relevant and requires the creation of an effective mechanism for managing the system of economic security of entrepreneurial activity. Such a system should be based not only on neutralizing the negative impact of exogenous and endogenous factors on business but also on preventing potential or hidden (latent) threats and eliminating actual dangers, which requires the formation of a set of preventive measures to ensure economic security of entrepreneurial activity.

One of the main tasks to fulfill this is, of course, reforming and improving the entrepreneurial activity management system. After all, the implementation of any changes in the system of entrepreneurship directly depends on how this system will be managed, directed, and controlled. In particular, the current management of business in Ukraine is objectively inefficient and does not meet the requirements of the time.

The purpose of this study is to highlight the basic principles, to reveal key issues, and to prepare specific proposals for improving the legal regulation of administrative entrepreneurial activity management in Ukraine.

2. Literature Survey

The problems of economic security of entrepreneurial activity are becoming extremely important, because the factors related to the development of European integration processes, with their impact on the efficiency of entrepreneurial activity, are gaining in importance.

Theoretical principles of economic security of enterprises are reflected in the works of many scientists: McKenny, A. F., et. al. (2017), Fagerberg, J. (2017), Kuhlmann, S., & Rip, A. (2018) and others.

Peculiarities of the influence of European integration processes on entrepreneurial activity are considered in the works of Flanagan, K., & Uyarra, E. (2016), Carayannis, EG, Meissner, D., & Edelkina, A. (2017), Schot, J., & Steinmueller, WE (2018) and others.

Entrepreneurial activity as one of the most driving forces of economic development of the state requires an

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orderly management process, through which it will acquire clear features of the appropriate activity, will be a way of economic legal employment and a means of ensuring the lives of individuals and the general population. In the modern conditions of state formation in the Ukrainian science of administrative law, there are currently no comprehensive systematic studies on the methodological foundations of business management, so there is a need to study and develop the concept, purpose and objectives, methods, and forms of such management.

It should be noted that the issues of improving the entrepreneurial activity management system in Ukraine have been the subject of active discussions and, accordingly, reflected in the works of scholars on the theory of law, administrative law, commercial (business) law, and other related branches of law, such as: Díez-Martín, F., Blanco-González, A., & Prado-Román, C. (2016), Kacperczyk, A., & Younkin, P. (2017), Kibler, E., Salmivaara, V., Stenholm, P., & Terjesen, S. (2018), Ingram Bogusz, C., Teigland, R., & Vaast, E. (2019) and others.

The study of theoretical and empirical achievements of these authors makes it possible to say that they have created a theoretical basis and practical tools to ensure the economic security of business have been proposed. At the same time, the deepening of European integration processes, in which Ukraine is involved, forms new requirements for the basic elements of the mechanism of economic security of the entrepreneurial activity management, in particular, the optimization of internal and external information flows. The need to form theoretical foundations and practical tools to ensure the economic security of entrepreneurial activity in the development of European integration processes has led to the choice of topic and direction of research and structure of work.

Without diminishing the importance of scientific developments of these authors, however, it should be noted that in view of the above, today requires a comprehensive study of the problems of business management in Ukraine. It should be emphasized that the issue of entrepreneurial activity management in Ukraine and its improvement have not yet been the subject of a separate study, which, given the ongoing reform of business management and its results (including those strategically planned by 2020), is a significant omission from both theoretical and scientific and practical point of view. Also, the leading practice of business management in economically powerful countries of the world (in particular, the EU and EU member states, the USA, Japan and the PRC) has not been systematically considered in order to make recommendations for the application of such practice in Ukraine. This scientific work is aimed at solving the outlined issues.

3. Methods

The methodological basis of the study is a number of general and special methods of cognition, the choice of which is determined by the characteristics of its object, subject, purpose, and objectives.

Thus, the historical method was used to determine the characteristics of entrepreneurial activity in the world and in modern Ukraine, to clarify the essence of entrepreneurial activity as a social and legal phenomenon and its components: the method of classification, induction, and deduction) was used to provide general legal characteristics of management activity concerning entrepreneurship in Ukraine - definition of the purpose, tasks, principles, methods, and forms of management in the specified spheres. The method of systematization in combination with the system-functional method was used during the development of the system of administrative entrepreneurial activity management in Ukraine and the delineation of their powers.

Using the logical-semantic method, the basic concepts in the work are defined. The system-structural method, the method of synthesis, and the method of empirical cognition of observation were used in the study of problems that

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exist in the field of entrepreneurial activity management, which created opportunities to take into account existing practice in this area and theoretical developments of leading scholars of administrative law.

Methods of generalization and classification provided opportunities to develop a general system of international legal level of entrepreneurial activity management. The comparative legal method was used in comparing the norms and provisions of national legislation on the regulation of entrepreneurial activity management in Ukraine and the legislation of developed countries. Formal-dogmatic and modeling method allowed to identify shortcomings in the legal regulation in the research area and to formulate specific proposals for its improvement.

Scientific and theoretical basis for the work includes scientific works of scientists in philosophy, general theory of state and law, administrative, economic, international and European law, other branches of legal sciences, including foreign researchers. Provisions and conclusions are based on the norms of the Constitution of Ukraine, international acts in the field of business regulation, regulations of the Verkhovna Rada of Ukraine, the President of Ukraine, the Cabinet of Ministers of Ukraine, central executive bodies, as well as current legislation of some countries with developed market economies and the EU Member States, the US, Japan, and the PRC).

The information and empirical basis of the study were generalizations of the published practice of national (Chamber of Commerce, National Institute for Strategic Studies and others) and international experts and specialists (GREGO; World Bank, International Finance Corporation, etc).

This approach allowed the author to substantiate its conclusions and suggestions taking into account the needs of the practice, international experience, and the need to improve regulations governing the relationship.

4. Results

Entrepreneurial activity management in Ukraine is a direction of state policy, a set of measures and forms of economic, legal, and organizational influence on entrepreneurial activity and entrepreneurs, including through state support and protection of the subjects of entrepreneurial activity, as well as state control over compliance with the law by the subjects of such activities. At the same time, such management is aimed at: ensuring the economic security of the state and the security of society through rational management; achieving effective legal regulation of organizational and economic relations in the state in accordance with the requirements of modernity and the real circumstances of economic reality in the country; achievement of optimally constructed administrative relations between the authorities on the regulation of economic activity; reduction of state intervention in the activities of economic entities and elimination of obstacles to the development of legitimate economic activity.

Today, the development of entrepreneurship in Ukraine has reached a stage where the improvement of the state's regulatory policy determines its further prospects. Consequently, the issues of state regulation of entrepreneurship and the means of influence of the state (public administration systems in general) on entrepreneurial activity are significantly relevant. Secondly, it should be emphasized that the formation of a comprehensive system of means of state regulation of entrepreneurship has not yet been completed in Ukraine. In this regard, we can see the chaotic, inconsistent, and fragmentary actions of public authorities in the development and implementation of modern public policy in the field of entrepreneurship, which would meet the standards and conditions of a market economy.

It should be noted that the system of bodies carrying out general administrative entrepreneurial activity management in Ukraine is multifaceted, as such a system includes all state authorities, which are authorized to

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protect national security. However, the most important part of the study is the analysis of the relevant rights and responsibilities of bodies carrying out special administrative entrepreneurial activity management in the field of economic security (On approval of the Procedure for state accreditation of institutions conducting training, retraining and advanced training of drivers of vehicles, and certification of their specialists (2009), as well as the safety and well-being of the population, so let's move on to the second group of bodies, namely the system of bodies that carry out special administrative entrepreneurial activity management in Ukraine.

For example, according to the Law of Ukraine “On the Foundations of National Security of Ukraine” (2003), the concept of “economic security” is part of a broader concept - “national security of Ukraine”, which is carried out by conducting a balanced public policy in accordance with duly adopted doctrines, concepts, strategies, and programs in the political, economic, social, military, environmental, scientific and technological, information, and other areas.

Entrepreneurial activity plays an important role in a significant part of the economic security of the state: both as a factor in ensuring and growing the economy, and as a factor in stopping such economic growth and “destroying” the state's economy as a whole. This is due to the fact that the activities of entrepreneurs in the Ukrainian market affect the state of growth or decline in prices, as well as in the field of competition, taxes and fees, etc. Therefore, given that the economic security of Ukraine, as a state with a market economy that is significantly globalized, directly depends on security and ensuring the security in the field of competition and taxes and fees, in the field of state customs, pricing and commodity prices, services, etc, the availability and efficient and optimal operation of bodies carrying out special administrative entrepreneurial activity management in the field of economic security are difficult to underestimate.

At the same time, a special administrative entrepreneurial activity management in the field of economic security is carried out by a number of central public authorities and their subordinate authorities within their own powers. However, given the various sectors and subsectors of the economy and state economic policy of our state and the relevant bodies, which are responsible for security in the relevant sectors and subsectors of the economy, it is most appropriate to consider these bodies given the specific subject of their commitment.

Economic security in the field of economic competition is provided in our country by the Antimonopoly Committee of Ukraine (hereinafter - AMCU), which is a state body under the control of the President of Ukraine (accountable to the Verkhovna Rada), a body with a special status, the purpose of which, respectively, is to ensure state protection of competition in entrepreneurial activity and in the field of public procurement.

It is difficult to underestimate the impact of the development of new and improvement of existing regulations, in particular the impact of bringing Ukrainian tax and customs legislation in line with the *acquis Communautaire* on the state and development of entrepreneurial activity in the country. In particular, the current tax legislation can be described as contradictory, uncertain, unstable, and inadequate to current business conditions; for the functioning of tax policy, it is necessary to reorient it from purely fiscal goals to stimulate economic growth. At the same time, the introduction of new tax legislation has led to mass closures of enterprises compared to previous years.

The significant number and frequency of changes and additions to the regulations of tax legislation significantly complicate the work of regulatory authorities and negatively affects the activities of business entities, as well as reduces the attractiveness of the national economy for foreign investors.

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It follows that entrepreneurial activity can directly affect the safety and well-being of the population concerned, especially when in the course of their economic activity entrepreneurs carry out: transportation, storage and use (exploitation) of non-food products; production, storage, transportation, use, burial, destruction and utilization of toxic substances; construction, dredging works; extraction of sand and gravel; laying of cables, pipelines, and other communications on the lands of the water fund; production, storage, transportation, sale, disposal, and destruction of medicines; storage, transportation, trade and use of plant protection products and the use of pesticides and agrochemicals.

So, in conclusion, we consider it appropriate to emphasize that the system of bodies that carry out special administrative entrepreneurial activity management is multifaceted, given the diversity of national security areas that can be harmed by entrepreneurial activity. Thus, the bodies carrying out special administrative entrepreneurial activity management in the field of economic security of Ukraine include: the Antimonopoly Committee of Ukraine, the State Fiscal Service of Ukraine, the National Commission for Economic Security in Financial Services Markets, the National Securities and Stock Market Commission. In turn, the bodies carrying out special administrative entrepreneurial activity management in the field of safety and well-being of the population in Ukraine include: Sanitary and Epidemiological Service, State Ecological Inspectorate, State Service for Medicines and Drug Control, and State Inspectorate for Human Rights consumers.

Ukraine is actively integrating into the European economic space, and therefore the definition and analysis of positions in key international indices is an important task to ensure the economic security of entrepreneurial activity in the context of European integration. International rankings are an important source of information that outlines the various aspects of economic processes in countries. The analysis of the country's place is especially important for making managerial decisions to ensure economic security. Rating indices are an important tool, an important reference point and an external source of information in the development of preventive measures.

Analysis of objective data that reflects the current state of Ukraine's economy is a necessary element of the study, which allows to identify existing trends and becomes the basis of research hypotheses. As part of the task of analyzing the objective preconditions for the transformation of latent threats into existing ones for entrepreneurial activity in the context of the development of European integration processes, the state and dynamics of the external environment should be analyzed in the context of economic security. At the same time, within the study, the authors are interested in the dynamics of indicators that reflect some of the target guidelines for the transformation of the economic system at different levels.

Given the current conditions of the macroeconomic situation, it is necessary to constantly monitor Ukraine's place in international rankings and make a comprehensive assessment, as the relevant rankings, which mark Ukraine's world organizations, are indicators of its development.

One of the main rating systems that allows to determine the level of economic security and the level of integration of Ukraine into the European community is the Global Competitiveness Index (GCI), which is determined by the World Economic Forum. Global competitiveness is assessed by the following parameters: the situation of institutions, infrastructure efficiency, macroeconomic stability, health and primary education, higher education and training, market efficiency of goods and services, labor market efficiency, financial market development, technological level, competitiveness of companies, market size and innovation potential (Global Peace Index). Therefore, we consider it appropriate in the context of this study to analyze the rating positions of Ukraine on this index (Figure 1).

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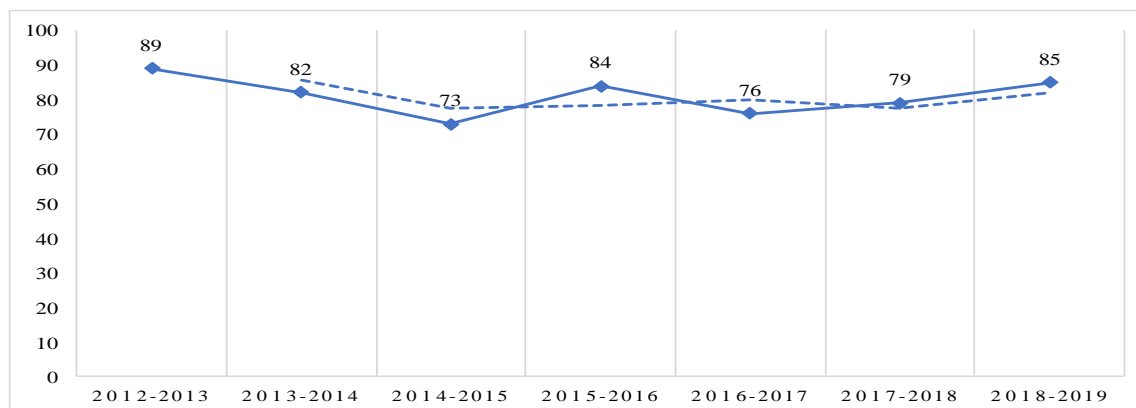


Figure 1. Dynamics of changes in Ukraine's position in the ranking of the Global Competitiveness Index for 2012-2018

Source: built by the author on the basis of Global Peace Index

The analysis of Ukraine's rating positions in the dynamics for 2012-2018 according to the Global Competitiveness Index showed a wave-like dynamics with a significant lag behind highly developed European countries. The dynamics of the global competitiveness index has shown that Ukraine's position fluctuates due to crisis situations.

The indicators that affect the development and state of economic security entrepreneurial activity in Ukraine are considered. According to the indicators such as infrastructure, Ukraine ranks 75th, macroeconomic environment – 128th, business compliance with modern requirements – 98th, level of innovation – 52th, efficiency of the goods market – 108th, labor market efficiency – 73th, financial market development – 130th, technology development – 81th (Global Peace Index). The main purpose of the rating should be to determine the indicators of future development of the national economy and the openness of the national market to external participants. The dynamics of Ukraine's position in this ranking is still disappointing.

With the help of this index, ten components grouped into four categories are analyzed. The index of economic freedom is measured as a percentage in the range from 0 to 100. The lower the value, the lower the degree of economic freedom, respectively, the maximum value corresponds to the highest degree of economic freedom. All countries participating in the analysis of this index are divided into the following groups (Index of Economic Freedom): free - with an index of 80-100; mostly free - with an index of 70-79.9; moderately free - with an index of 60-69.9; mostly unfree - with a rate of 50-59.9; despotic - with an index of 0-49.9. The correspondence of the dynamics of growth of economic freedom characterizes the higher level of economic security.

The state and dynamics of this indicator by categories are analyzed, the results of the analysis are presented in Table 1.

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Table 1. Dynamics of the index of economic freedom of Ukraine

Name of the category	2016	2018	Increase +/-
Government spending	29,4	38,2	+8,8
Monetary freedom	67,7	47,4	-20,3
Property rights	30,0	41,4	+11,4
Freedom of business	46,2	62,1	+15,9
Freedom from corruption	24,0	29,2	+5,2
Freedom of investment	20,0	25,0	+5,,0
Freedom of the labor market	51,2	48,8	-2,4
Freedom of trade	84,4	85,9	+1,5
Financial freedom	30,0	30,0	0
Fiscal freedom	78,2	78,6	+0,4
General index of economic freedom	46,1	48,1	+2

Source: built by the author on the basis Index of Economic Freedom

Dynamics of changes in the general index of economic freedom of Ukraine in the rating for 2010-2017 is visualized in Figure 2.

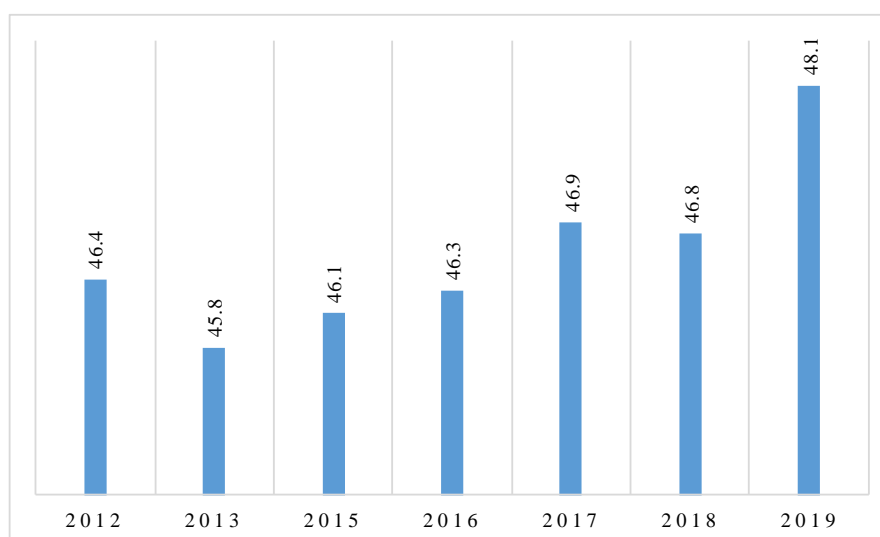


Figure 2. Dynamics of changes in Ukraine's position in the ranking of the Index of Economic Freedom for 2012-2018

Source: built by the author on the basis Index of Economic Freedom

In order to identify the relationship between the level of economic freedom in the state and the economic security of entrepreneurial activity, it is necessary to consider the impact of individual components of economic freedom on the functional areas of economic security. Components that are part of the rule of law (protection of property rights, freedom from corruption) are part of the socio-political factors that contribute to ensuring an appropriate level of judicial or legal security. Regulatory efficiency is the third group, which includes: freedom of business,

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freedom of the labor market, monetary freedom. This group has the greatest impact on the state of the intellectual and personnel component of economic security. The last group is the openness of markets, which consists of freedom of trade, freedom of investment, and financial freedom.

It should be noted that freedom of trade is the only component that has a high position in Ukraine but freedom of investment and financial freedom are at a critical level, which has an extremely negative impact on the investment and financial components of economic security. Freedom of entrepreneurship is a prerequisite for the economic security of entrepreneurial activity in the context of the development of European integration processes. However, according to 2019, Ukraine ranked the lowest among European countries in the ranking of economic freedom.

In the process of assessing the economic security of entrepreneurial activity, it is advisable to use methods of assessing the favorable business environment based on the results of the rating “Doing Business”, which is calculated annually by the International Finance Corporation (IFC). The Doing Business Index is an index of comparison of ease of carrying out entrepreneurial activity between countries around the world, which is measured by ten points that affect its formation (Figure 3).

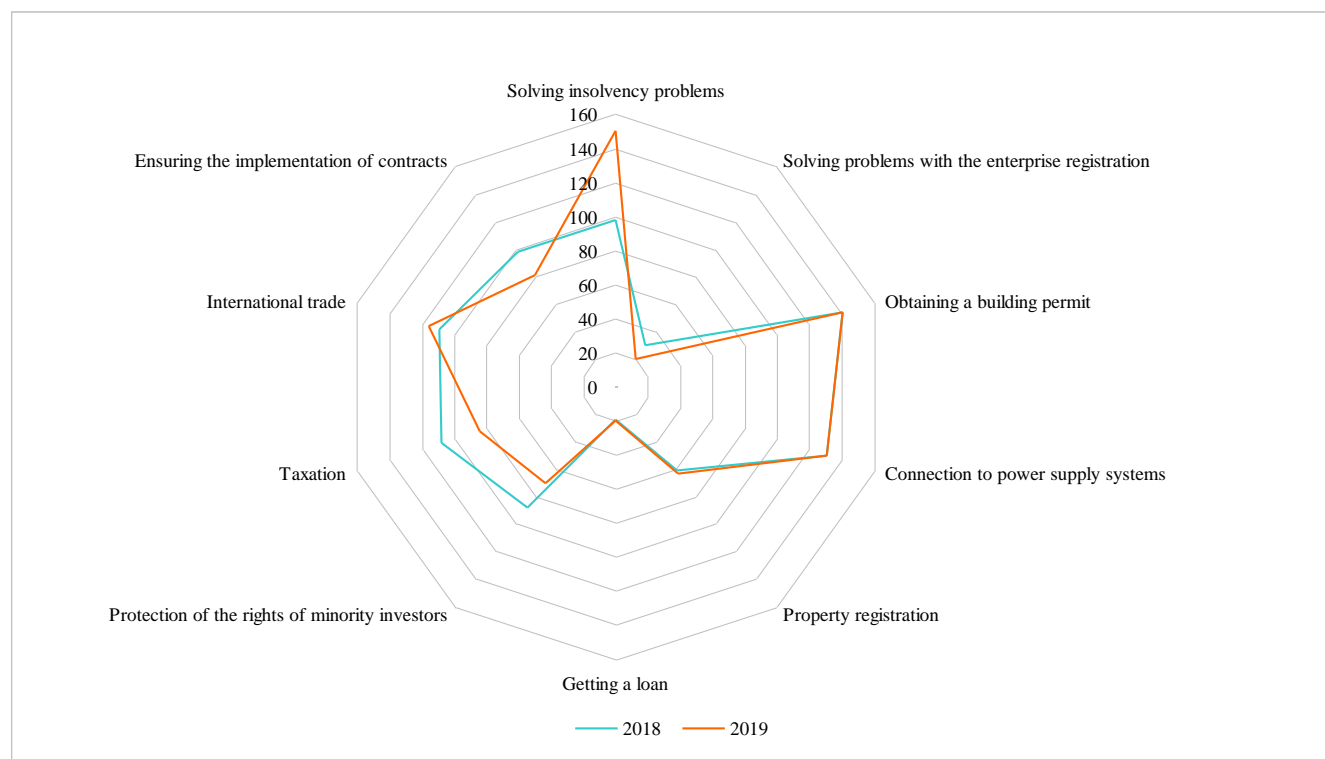


Figure 3. Change in the Ukraine's position under the main components of the rating of ease of doing business for 2018-2019

Source: built by the author on the basis Doing business

Within the World Bank's Doing Business rating, the regulatory conditions are analyzed, which apply to economic entities in the country throughout their life cycle, namely, starting from the establishment of an enterprise and directly conducting business, engaging in foreign economic activity, which acquires a special significance in the conditions of development of European integration processes. The higher the country's position in the World

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Bank's Doing Business rating, the more favorable the conditions for the organization of entrepreneurial activity, its functioning, and the state of economic security.

Given the results of the Doing Business rating for 2018-2019, which shows the ease of doing business in the country, we can conclude that Ukraine's business climate is very low and the government does not create the necessary favorable conditions to improve the situation in this sector of the economy, namely, registration of enterprises, registration of property, obtaining loans, protection of minority investors, taxation, international trade, and insolvency.

The results of the analysis showed Ukraine's low position, which is due to the real economic situation in the country, a set of exogenous factors, including: instability and imperfection of the regulatory framework, irrational taxation system, high level of corruption in government and judiciary, inappropriate monetary policy, high level shadow economy, low level of protection of property rights, solvency of the population, political instability, high inflation, trade barriers, non-transparency of business conditions, etc.

For a more compact and clear presentation of information in digital form, Table 2 summarizes the main indicators of Ukraine's position in world rankings in the dynamics for 2014-2019, which may indicate the level of economic development, the degree of doing business, the main obstacles to business development, opportunities and the potential of the country, etc.

Table 2. Ukraine's place in world rankings in the dynamics for 2014-2019

Indexes	Years		Number of countries participating in the ranking	Deviation
	2014-2015	2018-2019		
Global Competitiveness Index	73	85	144-138	-12
The IMD World Competitiveness	50	59	60-61	-9
Doing Business	86	83	132-138	+3
The Enabling Trade Index	64	61	136	+3
The level of the shadow economy	34	32	28	-2
Index of economic freedom	163	162	179-178	+1
BDO International Business Compass	115	130	174	-15

Source: systematized by the author

Diagnosis of economic security of entrepreneurial activity in the development of European integration processes, unfavorable socio-political and economic situation in the country is an important step in identifying hazards that may harm the level of economic security and making appropriate management decisions to ensure it. In order to develop preventive measures, it is important to analyze the current state in which the subjects of entrepreneurial activity operate. Thus, there is a need to diagnose the state of economic security entrepreneurial activity in the dynamics to identify latent risks, positive and negative changes under the influence of threats of exogenous and endogenous factors.

Given the diverse set of exogenous factors that affect the activities of economic entities, the diagnosis of economic security should begin with an analysis of the main indicators of the financial component of economic security.

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In the absence of profit or loss, it cannot be said that the subject of entrepreneurial activity is in economic security. To ensure economic security of entrepreneurial activity in the conditions of constant intensification of competition, it is necessary to reliably assess and monitor the dynamics of the financial condition.

The shadowing of the economy is one of the main threats to both the economic security of the state and the economic security of entrepreneurial activity. The shadow economy is one of the important destabilizing external factors that affect the state of economic security entrepreneurial activity. The shadow economy is an unregistered economic activity of an economic entity, which is characterized by minimization of costs for the production of goods, works and services, tax evasion, fees (mandatory payments), statistical questionnaires and statistical reporting, the result of which is a violation of statutory norms (the level of the minimum wage, working hours, working conditions and safety, etc).

In developed countries, the optimal structure of the economy is achieved through a rational combination of large, medium, and small enterprises. The patterns of the scientific and technological revolution and the problem of employment of the population reinforce the economic necessity of coexistence and interaction of enterprises of different sizes. The Western economy relies on large companies that provide it with stability and manageability, as well as small and medium enterprises, which form a competitive environment that provides flexibility and dynamism of the economy, individualization of production and services, high employment. Moreover, a significant proportion of small and medium-sized enterprises exist with and for large companies, and the sustainability of the situation, income, financial and investment opportunities of small firms directly depend on their relationship with big business.

The experience of development of Western countries shows that the successful functioning of the market mechanism requires an appropriate system of property rights, laws and regulations that ensure their transfer, legal institutions, and decision-making mechanisms. Excessive government intervention leads to deformation of market processes and falling production efficiency. However, deregulation without economic order, the formation of effective socio-economic mechanisms, and strict control can turn into economic anarchy. A well-balanced policy is needed on this issue.

The above-mentioned business management practice in the EU, USA and Japan and PRC indicates the need to regulate a special set of business management tools in the country. The concept of business management in these countries is based on the objective idea that entrepreneurial activity is the foundation and guarantor of the state economy, so management based on state support for entrepreneurship means supporting the economy of the state itself. However, state aid to entrepreneurship alone is not considered to be a full-fledged business management.

An important stage in the evolution of business management in Ukraine should be the deregulation of business following the example of developed countries such as the USA and Japan. At the same time, given the fact that Ukraine pursues the ambitious goal of EU membership, such deregulation should not contradict EU law, to which Ukrainian legislation is approaching in the process of adaptation.

5. Discussion

Today in Ukraine there is a wide process of business deregulation through the adoption of relevant deregulatory regulations. At the same time, experts note that despite the government's declaration of reforms to stimulate business, entrepreneurs are still forced to work under excessive state pressure. Parliament passes laws aimed at deregulating business but, in practice, these rules either do not change the situation fundamentally or are simply

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sabotaged by officials. It is necessary to agree with such position as the deregulation which occurs in our state is not always such as it is registered in the corresponding regulations.

Thus, we believe that enterprises in Ukraine need more freedom, and such freedom should really be the ability of enterprises to act in accordance with their economic interests and goals, based on the knowledge of objective business needs. However, of course, such freedom should not be arbitrary and violate legitimate public and state interests. To balance entrepreneurial freedom and the interests of society and the state, it must be regulated and put into practice.

Legal economic order. According to Art. 5 of the Commercial Code of Ukraine (CC of Ukraine), such an order in Ukraine is formed on the basis of optimal combination of market self-regulation of economic relations and economic regulation of macroeconomic processes, based on the constitutional requirement of state responsibility for its activities and definition of Ukraine as a sovereign and independent, democratic, social, and legal state.

It should also be noted that we have already emphasized above the fact that in Ukraine an excessive number of authorized bodies are involved in the entrepreneurial activity management. Therefore, given that the system of bodies engaged in special administrative entrepreneurial activity management in Ukraine is characterized as overloaded with a significant number of bodies (this, of course, negatively affects the investment climate of our country, the attractiveness of doing business for citizens and residents, as well as causes an increase in corruption), the authors propose to take as a model the US system (there is the principle of the market, in which a number of issues are not controlled by entrepreneurs but by the customers of this entrepreneur; the number of special bodies is minimized) or Japan (as in the United States - there are regulatory authorities but in fact there are several authorities - antitrust, fiscal, securities and stock market authorities, a special authority).

Based on this, the authors consider it appropriate to create a special body (or reorganize, provide the following functions of the State Regulatory Service of Ukraine) and eliminate (with the subsequent transfer of powers of such bodies to the special) the following authorities: National Commission for State Regulation of Financial Services Markets; State Sanitary and Epidemiological Service of Ukraine; State Ecological Inspectorate of Ukraine; State Service of Ukraine for Medicines and Drug Control; State Veterinary and Phytosanitary Service of Ukraine; State Inspectorate of Ukraine for Consumer Protection. The functions performed by these bodies (based on the experience of economically developed countries that have achieved economic success, in part by fighting bureaucracy) may be performed by one body, to which inspectors on all these special issues will be recruited on the basis of a public competition on the principle: 2 inspectors on the indicated issues work in the district and the city (also in the city districts); 8 inspectors - in the region; 1 chief inspector and two deputies - work at the central level.

Thus, the authors conclude that the legal economic order in our country is sufficiently regulated but it should be provided with more liberalized instruments and those that will best meet global trends in entrepreneurial activity management. To do this, our state should borrow the experience of the United States and Japan and introduce their models to encourage entrepreneurship. The American model is based on a system of comprehensive encouragement of entrepreneurship, which contributes to the enrichment of the most active part of the population.

An acceptable standard of living for low-income groups and the regulation of other economic issues are ensured through the redistribution of part of national income and tax functions. The Japanese model is characterized by the leading influence of the state on the main directions of economic development. Various production

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corporations and associations take on the solution of social problems. At the same time, the participation of employees in production management is encouraged.

At the same time, to adopt the experience of Japan, the state authorities of Ukraine should:

- a) create conditions for providing easily accessible financial funds for starting a small business;
- b) review the system of small business taxation (in general, the main areas of state support that allow to realize the potential effect of business development include: the formation of a favorable business climate; removal of legal, administrative, and organizational barriers; expanding access to small and medium enterprises to financial resources, development of leasing of equipment and technologies, systematic development of infrastructure for providing small and medium enterprises with integrated financial, material, informational, consulting, and organizational and methodological assistance);
- c) to strengthen the connection between the creation of small and medium enterprises with academic knowledge, higher education institutions through the establishment of academic incubators and pre-incubators.
- d) provide the possibility of continuing education for entrepreneurs (consultations, seminars, trainings, second education, training courses and retraining).

In addition, we consider it necessary to develop and adopt a legislative act entitled “Fundamentals of entrepreneurial activity management in Ukraine” in the process of formation of modern administrative and legal regulation of entrepreneurial activity management in Ukraine.

Within the framework of such a normative legal act, a set of general rules and standards of entrepreneurial activity management in our state should be regulated, namely: concepts and objects, subjects (their powers) of the entrepreneurial activity management; basic legal, economic, social, environmental, humanitarian and organizational and legal principles of entrepreneurial activity management in Ukraine; control over the performance of functions of entrepreneurial activity management; liability for violation of legislation on entrepreneurial activity management.

It should also be noted that the regulations on entrepreneurial activity in Ukraine are characterized by the gradual democratization of the regulation of such activities, which is caused, first of all, by the deeper integration of our country into the European Union. However, despite the fact that certain norms of Ukrainian legislation are even more flexible than similar ones in the EU member states, due to many objective and subjective factors, the legal norms on entrepreneurship in Ukraine cannot yet correspond to European ones in terms of perfection and efficiency.

The imperfection of the Ukrainian legislation regulating entrepreneurial activity is deepened by a number of factors: first, the lack of legally defined concepts of “economic capacity”, “economic capacity”, “economic legal personality”; secondly, the unregulated economic commercial activity of a private enterprise and the very nature of such an enterprise; thirdly, the lack of normative regulation of entrepreneurial activity of persons belonging to “free professions”, which indicates the need to develop and adopt a law of Ukraine “On free professions”, which would regulate, inter alia, the issues of legal status and economic legal personality of individuals that belong to the category of “free professions”; fourth, limited forms of investment in the Ukrainian economy.

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Conclusions

Based on the research, it can be concluded that the rapid development of entrepreneurial activity in Ukraine, increasing business risks and reducing the security of entrepreneurial activity related to Ukraine's European integration processes requires the formation of scientifically sound approaches to early prevention of latent threats and timely response to identified dangers of entrepreneurial activity in the context of European integration. The state and prospects of development and conditions of entrepreneurial activity in Ukraine in terms of European integration are analyzed in the paper based on a study of Ukraine's position in international rankings and world statistics, which are compiled by international organizations and institutions and reveal various aspects of economic processes in the country.

According to the analysis of Ukraine's place in international rankings, it is determined that Ukraine's position is currently unsatisfactory, and the conditions for entrepreneurial activity in Ukraine are extremely dangerous: unstable tax legislation, significant corruption pressure and currency restrictions, lack of significant achievements in ensuring investment attractiveness and ensuring the national competitiveness, the state support for the development of entrepreneurial activity is insufficient and unfocused; limited opportunities to finance state programs for entrepreneurial activity development.

In conclusion, the practice of business management in the EU, the USA, Japan, and the PRC indicates the need to regulate a special set of business management tools in Ukraine. Following the example of these states, the concept of business management should be developed and implemented in Ukraine, which is based on the objective truth that entrepreneurial activity is the foundation and guarantor of the state economy, so management based on state support of entrepreneurship means supporting the state's economy.

In addition, it is objectively appropriate to develop and adopt a new version of the Law of Ukraine "On Development and State Support of Small and Medium Enterprises in Ukraine" in the form of the Law "On Encouragement of Small and Medium Enterprises in Ukraine". In order to standardize and achieve fair entrepreneurial activity management in Ukraine, it is recommended to develop and create a special legislative act "Principles of entrepreneurial activity management in Ukraine".

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THE EFFECTIVENESS OF FUNDS SPENT ON THE CAMPAIGN WITH REGARD TO THE RESULTS OF THE ELECTIONS IN THE SLOVAK REPUBLIC*

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Abstract The research study thematically focuses on the effectiveness of financing selected campaigns of political parties in elections to the National Council of the Slovak Republic. The authors examined the relationship between the funds spent by selected political entities on the election campaign with regard to the final ranking in the elections. The analysis confirmed a new trend of declining financial resources spent in the election campaign since the parliamentary elections in 2020, which occurred after the validity of legislation that limits the amount of money spent on the campaign in the Slovak Republic. The research also showed that the leaders and managers of political parties have not yet begun to focus on the effectiveness of the funds spent on the campaign, as they have to spend twice as much money on 1% of the election profits as two years ago. The authors recommend for campaign organizers use of the latest marketing methods and techniques to be able to more effectively convince potential voters in an increasingly challenging election campaign.

Keywords: political party; finance; campaign; economics; Slovak Republic

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JEL Classifications: F50, F68, Z11

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1. Introduction

“Election campaigns aim to reinforce or change people’s voting behaviour. Pressure groups use campaigns to alert the public to a particular issue, to influence the public’s opinion on that issue, and to mobilize support and pressurize those in power to take some desired action. Access to the mass media is often crucial for a pressure group’s successful campaign” (Watson, J. Hill, A. 2006: 34). The election campaign in Slovakia is specifically regulated by Act 181/2014 Coll. on the election campaign and the amendment of Act no. 85/2005 Coll. on political parties and political movements, as amended. This law characterizes an election campaign as any activity of a political party, political movement, a coalition of political parties and political movements, candidates and third parties under § 8, for which remuneration is usually paid to promote their activities, goals and program to obtain the elected office according to a special regulation (Act No. 85/2005 Coll.).

Majority authors agree with the statement that in the current era, full of competition and instability in demand, it is much more important to use modern strategies. The election campaign has certain rules or criteria, which follow from the law, regarding the duration of the campaign itself. The election campaign begins on the day of the publication of the decision to declare elections in the Collection of Laws of the Slovak Republic (hereinafter referred to as the “declaration of elections”) and ends 48 hours before the day of the elections. (Act No. 85/2005 Coll.) The election campaign has limitations not only in terms of duration but also in terms of funding. This restriction is also based on Act no. 181/2014 Coll., Specifically from § 3. A political party and a political movement (hereinafter referred to as a "political party") may spend a maximum of EUR 3,000,000, including value-added tax, on its election campaign in the elections to the National Council of the Slovak Republic and the elections to the European Parliament. The limit of the political party's costs under the first sentence shall also include the difference between the price of the gift or other gratuitous performance specified in the contract and the usual price and the political party's promotion costs incurred 180 days before the election day. In particular, however, this Act regulates the conditions for the election of the President of the Slovak Republic, the election of local authorities or the election of mayors and mayors, or deputies of the city council.

2. Theoretical background

According to Lincényi and Fabuš, the election campaign also influences the public through the media. (Lincényi, 2015). There are many theoretical approaches to defining an election campaign. It is necessary to realize that just as many phenomena from social life went through development, so the election campaign itself went through certain stages. The stage of the premodern campaign can be included in the period of the end of the 19th century, which is associated with the granting of universal suffrage, the development of civil rights and the arrival of mass political parties. Today, this stage is characteristic of second-category elections such as municipal elections. The leader is surrounded by a small group of advisers, with the party press or local press playing an important role (in the case of municipal elections). In the early 1950s, nationwide television broadcasting was created, and so the premodern campaigns changed to modern campaigns. Modern campaigns have been professionalized and centralized. An important aspect of the campaign is also the use of marketing. According to Smaliukien and Monni (2019), social marketing comes to the fore. According to several authors, it is important to follow current trends in political marketing in order to increase the number of supporters (Brosius et al. 2020) (Geurkink et al. 2020) According to several authors, technology innovation is essential (Ignatavičius et. al. 2015) Of course, this also applies to election campaigns, where technology is no longer necessary.

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The period of modern campaigns could also be called the period of media campaigns because they are worked out exclusively by experts in political communication, survey analysts, marketers and managers. Participation of ordinary people, volunteers or common party members is disappearing here. During this period, it was very important that everything the leader says and does looks good on the screens and thus has the greatest possible effect in terms of gaining public confidence. The last period is the period of the postmodern campaign and dates back to the early 90s of the 20th century. During this period, politicians are partially returning to the premodern management of the campaign. It is a kind of mix of two previous periods with the addition of new knowledge. Politicians are again partially managing the campaign, on the other hand, they are using the services of marketing experts or communication consultants. A novelty that is crucial for this period is the Internet, or social networks, which can be understood as the current attractiveness of the global reach. (Rybanská, Košičiarová, Nagyová, 2015). Political communication is shifting to social networks as part of the election campaign. The most popular social networks for communication about politics include Facebook, Twitter or Instagram, especially social media are increasingly used for sharing content, ideas, opinions, experiences and are basically an extension of the web. They are important participants who conceive and interpret political events in the world (Bulanda, Vavrečka, 2019). The digital world has caused many changes in the field of marketing communication which affects almost all areas of our lives, including political (Světlik, Bulanda, 2019). Political leaders are thus closer to their constituents. They talk to them on a daily basis through statuses or comments. "The Internet and social networks have made it possible to spread information on an unprecedented scale and faster than ever before. Having a profile on a social network is a membership in an interconnected globalized society, so we can be in touch with anyone and have information from anywhere in the world. Also, creating content on social networks and video sharing portals is becoming easier and more accessible to the masses." (Laczko, 2020:105) However, current postmodern political campaigns also have their downsides. Today, it is very easy to involve unclean means such as misinformation, hoaxes or conspiracies in the campaigns, which are reached especially by populist and extremist political parties. The vast majority of misinformation is currently concentrated and disseminated by cyberspace, the Internet and social networks. The reasons are logical. Social networks mean low information dissemination costs, different target groups, global reach and unprecedented speed of information flow (Laczko, 2019; Lincényi, Laczko, 2020). In connection with the campaign, Fabuš (2015) emphasizes the need for cost-effectiveness.

3. Research objective and methodology

The main goal of the presented research was to analyze the relationship between the funds spent in the political campaign and the results of the elections to the National Council of the Slovak Republic.

The secondary goal of the research was to find out whether the amount of money spent affects the result of political parties in elections.

As part of research planning and design, we preferred the concept of creating research questions to identifying research problems. We have identified the following 2 research questions (SRQ) and another 2 secondary research questions (SRQ):

RQ1: What are the development tendencies of the volume of spent financial resources of political parties in the election campaign in the Slovak Republic?

Explanation RQ1: We assume that in the Slovak Republic since the parliamentary elections in 2020, there has been a decrease in the volume of financial resources spent by political parties on the election campaign. The reason is the amendment to Act 181/2014 on the election campaign of 2019, which since 2020 introduced a

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maximum permitted limit for the election campaign of EUR 3 million per candidate subject or the abolition of third party support in the political campaign.[†]

SRQ1: How much financial resources did the political parties spend on the election campaign for the selected parliamentary elections in the Slovak Republic?

Explanation SRQ1: Information on the funds used in the elections will be drawn from the final reports of political parties, which are published by law on the website of the Ministry of the Interior of the Slovak Republic.

RQ2: What was the relationship between the money spent and the results of the parliamentary elections?

Explanation RQ2: We think that it is possible to observe increased effectiveness of the financial resources spent in the campaign concerning the results of political parties in the parliamentary elections in the Slovak Republic. We assume that leaders and managers of political entities are aware that the amount of financial resources spent by a political party is not equal to electoral success and it is necessary to focus on the effectiveness of financial resources spent. We believe that campaign organizers will use new marketing methods and techniques to be better able to convince potential voters in such a challenging battle and competition. In order to confirm this statement, we need to analyze the relationship between these two variables.

SRQ2: What electoral success did the political parties achieve in the monitored elections to the National Council of the Slovak Republic?

Explanation SRQ2: To analyze the relationship between the money spent and the election results, we need to further parse how each political party turned out in the elections. We will draw the election results of individual political parties from the website of the Statistical Office of the Slovak Republic.

4. Results and discussion

In the research, we analyzed the relationship between the funds spent and the results of the parliamentary elections. The authors intended to analyze all parliamentary elections since the establishment of the Slovak Republic in 1993: the elections in 1994, 1998, 2002, 2006, 2010, 2012, 2016 and 2020. It should be noted, however, that political parties have been obliged to publish the number of resources spent on the campaign only since the 2012 parliamentary elections. From the above, we were forced to limit the research set to 2012, 2016 and 2020 elections.

Analysis of elections to the National Council of the Slovak Republic in 2012

Early elections to the National Council of the Slovak Republic in 2012 took place on March 10, 2012. A total of 26 political entities ran in the elections, which was 8 more than in the previous elections in 2010. Of the 28 political parties running, 6 parties entered parliament. In the parliamentary elections in 2012, the clear winner was the Smer - SD party with a gain of 44.42%. However, it should be noted here that the Smer-SD party used EUR 3.3 million in the election campaign, thus using the most funds for the election campaign. Immediately behind her, as far as the funds spent are concerned, was the SDKÚ - DS party. However, we can observe that although almost 2.2 million euros were spent on the campaign, the party gained only 6.09%. The Slovak National Party (SNS) invested just over 1.2 million euros in the campaign, yet it failed to overcome the necessary electoral quorum to enter parliament. The SaS political party spent almost 1.2 million euros on the political campaign, so

[†] ACT of 29 May 2014 on the election campaign and the amendment of Act no. 85/2005 Coll. on political parties and political movements, as amended. Amendment: 501/2019 Coll.

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almost one million euros less than the SDKÚ - DS party, nevertheless had a similar election result. The political party MOST - HÍD invested 1.1 million euros in the political campaign with an election result of almost 7%. The last party analyzed is KDH, which invested 1 million euros in the campaign, while the electoral success overtook the parties that invested more funds in the campaign (more in Table 1).

Table 1. Results of the 2012 parliamentary elections

Order of success in elections	Political party	The result of the election (%)	Budget (eur)
1	Smer - SD	44,41	3.309.656,59
2	KDH	8,82	1.054.523
3	OĽaNO	8,55	500.399
4	MOST - HÍD	6,89	1.144.588,20
5	SDKÚ - DS	6,09	2.152.913,10
6	SaS	5,88	1.189.287,15
7	SNS	4,55	1.212.971

Source: Own processing based on publicly available data

Analysis of elections to the National Council of the Slovak Republic in 2016

Elections to the National Council of the Slovak Republic in 2016 took place on March 5, 2016. A total of 23 political entities ran in the elections. Of the 23 political parties running, 8 parties entered parliament. Also in 2016, the winner was again the Smer - SD party, which spent almost 3 million euros on the election campaign. In second place is the two-party coalition OĽaNO - NOVA, which invested 2.4 million euros in the election campaign with a gain of 11% of the vote. In third place is the MOST-HÍD party, which has spent a similar amount of money as the OĽaNO-NOVA two-party coalition, but with an election result almost half as low. The Smer party invested 2.1 million euros in the election campaign. The electoral quorum exceeded by only a few thousand votes. On the contrary, the KDH movement spent 1.5 million euros on the campaign but failed to reach the electoral quorum to get into parliament. The Slovak National Party (SNS) won almost 9% of the vote in the elections, spending 1.3 million euros on the campaign. SMK invested 600,000 euros in the campaign but won only 4% in the election, so it failed to get into parliament. The opposite example is the SaS party, which invested only 400,000 euros in the campaign, with an election result of 12%. Sme rodina movement spent similar funds, with almost half the success of the SaS party. According to the final reports of the political parties, which are submitted to the Ministry of the Interior of the Slovak Republic, the ĽSNS party spent only 1,000 euros on the campaign. Despite almost no financial budget, this political party managed to win 8% in the elections (more in Table 2).

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Table 2. Results of the 2016 parliamentary elections

Political party	Budget (eur)	The result of the election (%)
Smer - SD	2.976.832	28,28
SaS	424.764	12,1
OLaNO - NOVA	2.412.853	11,02
SNS	1.315.719	8,64
ĽSNS	1.050	8,04
Sme rodina	373.460	6,62
MOST- HÍD	2.392.045	6,5
Siet'	2.157.020	5,6
KDH	1.555.554	4,94
SMK	625.225	4,04
SDKÚ - DS	250.639	0,26

Source: Own processing based on publicly available data

Analysis of elections to the National Council of the Slovak Republic in 2020

So far, the last Elections to the National Council of the Slovak Republic took place on February 29, 2020. The coalition of the parties PS - Spolu spent the most funds on the election campaign, but it did not manage to get into the parliament, despite the high financial resources. As it was a coalition of two parties, the quorum is not a standard 5%, but increases to 7%. The second party that spent the most money is the Smer - SD party, which with a similar budget won 18% in the elections. In third place was the OĽaNO movement, which won 25% of the election, making it the winner of the election. The Za ľudí party invested 1.7 million euros and won 5.7% of the vote in the election. The MOST - HÍD party invested 1.5 million euros in the campaign but failed to obtain the necessary quorum for the election to parliament. There were many more political parties that spent bigger financial amount and did not get into parliament in these elections. The SNS party, which was in the governing coalition in the last election period, invested 1.4 million euros in the elections but won only 3% in the elections. The newly formed Vlast party invested 1.1 million euros in the campaign and only 2.9% of people expressed confidence for them in the election. A Dobrá voľba party used 1 million euros in the election campaign, but only 3% of people expressed confidence in it. On the contrary, parties such as Sme rodina and ĽSNS invested something around 700,000 euros in the election campaign with an election result of around 8% (more in Table 3).

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Table 3. Results of the 2020 parliamentary elections

Political party	Budget (eur)	The result of the election (%)
PS- Spolu	2.521.627	6,96
Smer- SD	2.371.686	18,29
OĽaNO	2.030.630	25,02
Za ľudí	1.722.362	5,77
SaS	1.535.287	6,22
MOST – HÍD	1.480.342	2,05
SNS	1.359.655	3,16
VLAST	1.127.796	2,93
Dobrá voľba	1.066.062	3,06
KDH	1.047.427	4,65
MKO- MKS	937.534	3,9
Sme rodina	760.324	8,24
ĽSNS	651.055	7,97

Source: Own processing based on publicly available data

Discussion

As mentioned above, in analyzing the development trends of the volume of financial resources spent by political parties in the election campaign for the National Council in the Slovak Republic, we relied on publicly available sources, which political parties are obliged to publish by law since the 2012 elections. For the analysis, we used data from six political entities (Smer-SD, KDH, OĽaNO, MOST-HÍD, SaS, SNS), because these subjects ran in all three analyzed elections to the National Council of the Slovak Republic (2012, 2016, 2020).

In the first research question, we assumed that in the Slovak Republic since the parliamentary elections in 2020, there has been a decrease in the number of financial resources spent by political parties on the election campaign. We stated this because an amendment to Act 181/2014 on the election campaign of 2019 has been in force since 2020, which introduced a maximum permitted limit for the election campaign of EUR 3 million per candidate, or the abolition of third party support in a political campaign. This change in legislation was reflected in the development trends of the funds spent in the campaign. Although the candidate parties in the 2020 parliamentary elections we examined together invested more financial resources in the campaign than in 2012, the total amount of money spent on these parties in the campaign was even higher in the 2016 parliamentary elections. More on Figure 1.

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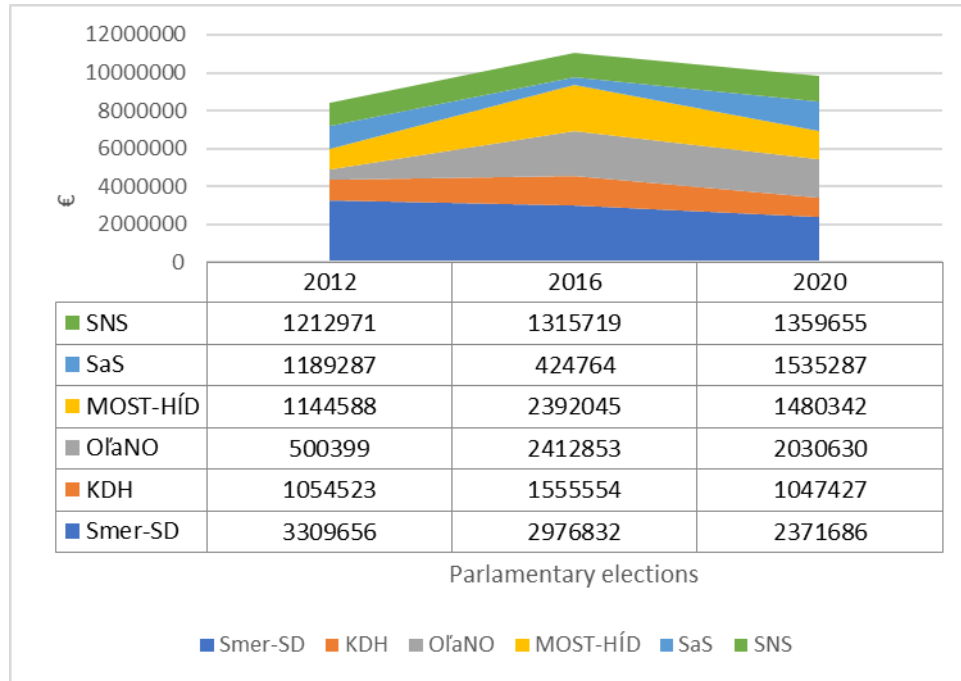


Figure 1. Development tendencies of spent financial resources in the campaign of selected parliamentary elections in the Slovak Republic
Source: Own processing

In the second research question, we stated that it is possible to observe increased effectiveness of financial resources spent in the campaign with regard to the results of political parties in the parliamentary elections in the Slovak Republic. We thought that it was possible to observe increased effectiveness of the financial resources spent in the campaign concerning the results of political parties in the parliamentary elections in the Slovak Republic. We assumed that the leaders and managers of political entities are aware that the amount of financial resources spent by a political party is not equal to electoral success and it is necessary to focus on the effectiveness of financial resources spent. We believed that election campaigners would use new marketing methods and techniques to be more able to convince potential voters in such a challenging battle and competition. To confirm this statement, we analyzed the relationship between these two variables. Thus, we divided the volume of financial resources spent by the candidate party (see Figure no. 1) by the real number of% won in the parliamentary elections (see Table 4). The analysis did not confirm an increase in the effectiveness of the financial resources spent by the candidate parliamentary parties in the elections in the Slovak Republic. The candidate parties in the 2020 parliamentary elections that we examined had to spend twice as much money on the 1% election gain as they did in the 2012 parliamentary election campaign. It should be added, however, that slight differences can be observed in the effectiveness of the campaigns of individual candidate parties (more in Table 5).

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Table 4. Overview of the success of political parties in parliamentary elections in the Slovak Republic

Column 1	2012	2016	2020
Smer-SD	44,41	28,28	18,29
KDH	8,82	4,94	4,65
OPaNO	8,55	11,02	25,02
MOST-HÍD	6,89	6,5	2,05
SaS	5,88	12,1	6,22
SNS	4,55	8,64	3,16

Source: Own processing

Table 5. Efficiency of spent funds (€) on 1% of gain in elections in the Slovak Republic

Column 1	2012	2016	2020
Smer-SD	74525	105262	129671
KDH	119560	314889	225253
OPaNO	58526	218952	81160
MOST- HÍD	166123	368006	722118
SaS	202259	35104	246830
SNS	266587	152282	430270
Total	887580	1194495	1835302

Source: Own processing

5. Conclusions

Based on the quantitative analysis of the effectiveness of funds spent on the campaign with regard to the results in selected elections in the Slovak Republic, several starting points and conclusions follow:

In the Slovak Republic, the volume of financial resources spent in the election campaign in the parliamentary elections has been declining since 2020. This is a consequence of the current legislation on the election campaign, which since the beginning of 2020 has limited the maximum permitted amount of funding for the election campaign to the amount of EUR 3 million. It means that the Slovak Republic will not go the way of billions of election campaigns, as we know from the US presidential election.

Paradoxically, a clear trend of a decrease in the efficiency of financial resources spent in the parliamentary elections in the Slovak Republic can be further observed from the results of the analysis. Candidate parties in the 2020 parliamentary elections had to spend twice as much financial resources on the 1% election gain as they did eight years ago in the 2012 parliamentary elections. From the above, it is clear that it is much more difficult for the candidate political entities, but also more expensive to get a real vote in the parliamentary elections in the Slovak Republic. It seems that the leaders and managers of political parties have not yet focused on the effectiveness of the financial resources spent in the political campaign. Therefore, we recommend campaign organizers to use new marketing methods and techniques in the future to be better able to convince potential voters in such a challenging battle and competition.

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By carrying out this research study, the authors do not claim a comprehensive view of the analysis of the effectiveness of the funds spent concerning the results in selected elections in the Slovak Republic. The research topic offers several other and interesting research subjects for further elaboration. One of them is the research of the effectiveness of the election campaign with regard to the types and intensity of the use of political marketing tools. It would be beneficial for science and practice to examine the effectiveness of the funds spent on the campaign in the future parliamentary and other elections in the Slovak Republic. It would also be interesting to compare the results from Slovakia with other countries of the Member States of the European Union.

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LAYER AND STRUCTURAL COMPONENTS OF MODERN INVESTMENT SECURITY OF THE COUNTRY

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Abstract. The article considers the structure of components of the country's investment security as part of ensuring general national economic safety. It was determined that the Investment component of economic security takes a determining place in the country's economic security, while the provision of the economic security and implementation of the national interests should form the investment policy of the country. The authors identified styles and models of the Investment behavior under the condition of achievement or ignoring of the proper level of investment security, they formed the directions for adherence and monitoring of the country's investment security. They supplemented the classification parameters of types of the country's investment security. They also built a model of the integrated investment security provision at different managerial levels of the national economy; they proved the availability of a stable interrelation and interdependence between the components of the country's investment security. The country's investment security was proved to be considered as the achievement of the investment level, which makes it possible to please current investment needs of the national economy in terms of volume and structure of investments, with the consideration of efficient use and repayment, the optimal correlation between volumes of domestic and external investments, foreign investments in the country and domestic ones abroad, the formation of the favorable national balance of payments.

Keywords: country's investment security; economic security; direct and portfolio investments; Investment behavior; accumulation of gross investments

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JEL Classifications: F35, F42

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1. Introduction

The development of the globalization processes, the domination of international investment relationships between the world countries, improvement of competition for direct foreign investments, increase in the domestic investment of the foreground industries of the economic complexes increasingly affect the growth of the national economies. Nonetheless, as of today, those countries, which are currently developing due to political transformations, crises occurrence in the sectors of the national economy and the financial system, in particular, the absence of substantiated economic and financial policies, practical self-removal of state authorities from regulation and implementation of investment processes, a huge level of public relations corruption, and, hence – the absence of a proper investment climate are not able to increase their domestic investment and lose the competitive struggle for foreign investments and corporate interests. Moreover, in the developing countries, there is still a flight of capital abroad, it is possible to observe the irrational sectoral and regional distribution of available investment resources, which preserves an imperfect structure of the national economy of raw materials type and significantly reduces its competitiveness by fixing the technological gap, it increases the dependence of the domestic producers on the world markets conjuncture, and increases the volumes of financing of foreign economies. Herewith, a considerable share of savings does not transform into investments, leaving the channels of inter-industry and inter-regional capital overflow underdeveloped. This all, undoubtedly, requires the fastest and quality development of the investment processes with the consideration of the proper investment security.

2. Literature Survey

Numerous writings on the problems of the country's economic security reveal the notion and content of the investment security category in theoretical and practical aspects. At the same time, there are a lack of publications on the key components of economic security, namely, the ones dedicated to investment security problems. Moreover, the content of the notion of investment security requires clarification as well as the mechanisms of the investment security provision. As of today, the investment and economic security of any country are affected by internal and external threats. Thus, the main task any country faces is the creation of an effective reactive mechanism. As noted by (Aitken & Harrison 1999; De Gregorio 2003; Chehabeddine & Tvaronavičienė, 2020), the threats to economic security are the factors, which complicate self-regulation of the economy and implementation of the economic interests, lead to the movement of the economic indicator beyond the normative or border values.

The country's investment security can be provided under the condition if one provides all conditions, required for satisfaction of interest and needs in the long term run; generation of innovative shifts in the economy; standing up to external threats, and use of the national competitive advantages (Xiao & Dickie 2000).

The research papers of (Barro & Sala-I-Martin 2003; Eden 2012) state that the organization of investments should be the basis for the provision of economic security as the growth of investments should stimulate economic activity, and growth in demand, which, in its turn, will lead to an increase in employment and national income, i.e. to the realization of national interests. The researchers (Callanan 2000; Lall 2000) mention that capital accumulation should be considered as the most important condition for economic growth and surmounting the crisis. Both the degree of investment activity and tempos of the stock capital recovery will depend on the dynamics and investment volumes.

In particular, Azam et. al. (2016); Vasconcelos (2021) determine the investment component of economic security as the totality of legal and regulatory, social, and ecological conditions, which determine the type and dynamics of

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the reproduction process, provide the reliability of refund, and efficiency of the invested capital. The author considers investment security as a capability to maintain production accumulations and capital investing at the level, providing the required tempos of extended reproduction, restructuration, and technological retooling of the national economy.

As noted by (Gestrin & Novik 2015; Xu 2000), investment security calls for the provision of such investment quotes, which (in terms of volume and structure) meet the relevant requirements of the economy. Such authors as (Borensztein et. al. 1998) identify investment security as the one, “providing economically sound reproduction of the stock capital and intellectual human capital with a focus on the growth of the economic results, the improvement of production efficiency, quality of produced goods and services, and social standards of living.”

The aim of the study is to determine the principal components of the formation of investment security of the country in the context of transformations and modern challenges and to develop methodological recommendations for the development of investment security at various management levels of the national economy. The main objectives of the study are: a) to investigate the investor's behavior models in the conditions of achieving investment security; b) to determine the relationship between the investment component of economic security and investment policy within the national economy; c) identify and methodically justify the leading components of the country's investment security.

The country's investment activity is achieved under the condition of adherence to the border norm of investment, which makes it possible to reproduce the scientific-and-technical and intellectual potential of the nation; carry out extended reproduction of the stock capital; maintain the competitiveness of the economy; guarantee the GDP growth at the level of the social-economic growth tasks, and international cooperation; create strategic reserves; overcome depressive phenomena in the country's regions; preserve and reproduce natural resources; keep the ecological parameters at a safe level.

3. Methods

Considering that economy is one of the vital spheres of activity of the society, the country, and personality, the problem of determining a place of investment security in the system of economic security of the country is primarily related to the assessment of the economy's viability, its strength under possible internal and external threats. From the methodological point of view, we will ground on the following methods and approaches: 1) a criterion approach. Let us consider the indicators, characterizing the limit value of investment activity, as the criteria of the country's investment security, under the excess of which it is impossible to provide stability of the economy's development following the objectives of social development and tasks of the country's national security provision. Thus, the investment component of economic security is a peculiar subsystem of economic security, which creates prerequisites for better use of social and economic relationships in the development and scientific and technical restoration of productive forces of society through active investment activity. 2) The investment process method. Investments are one of the most moving elements of total expenditure. In view of this, the investment component is the most mobile system, characterizing investment activity conditions, and should cover a range of interrelated indicators. The assessment of the investment component of economic security is of crucial importance; its indicators are the growth of gross investments and the efficiency of their use. The question of assessing investment security of the real sector of both the country and the region belongs to the least studied ones. Modern scientific researches refer, primarily, the general economic aspects, leaving the peculiarities of the investment process without proper attention. Under such conditions, one faces a need for special research of the questions of guaranteeing investment security of the national economy as well as the development of a system

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of the corresponding indicators. 3) An indicative method. The most difficult moment in solving these tasks is the formation of a system of indicators, characterizing investment security. The indicators should reflect the level of the remoteness of the real sector's current state of the economy from the border of security. It is worth mentioning that there is a direct and reverse system of relationship between investments and economic dynamics: the development of investments into a real economic activity promotes economic growth, and vice versa, the decrease in investments may lead to the economic slowdown. We can use the notion of a multiplier (K) by determining the dependence between the growth of economic results, which are assessed by GDP, and the growth of the investment volume (I), i.e. $GDP=KI$. Although this dependence in the real economy is affected by many other macroeconomic factors (labor, financial, etc.), it can be considered as the theoretical and methodological foundation for determining investment macroeconomic security.

4. Results

The depth and comprehensiveness of studying investment behavior and safety are largely determined by the selected cognition methodology. Investment behavior is always associated with limiting. If there were no limitations, there would not be the need for investment designing, decision making, development of variants for the objectives achieving within the national economy. The limitations can be of financial, monetary, and credit, legal, institutional, and informational nature. Thus, the material restrictions may appear due to a lack of production space, raw materials, energy, etc. The material restrictions also cover the lack of employees of the required qualification, specialists in certain fields of activity. The financial restraints are expressed by the lack of monetary capital (sources of financing and crediting). The legal restrictions are reflected in the peculiarities of performance of specific powers (for example, an investor does not possess all the necessary powers in his sphere of competence), the existence of state legal conditions of business, the need for legal registration of specific operations. The institutional limitations occur, on one hand, due to the absence of the organizations of a specific type, which will be able to speed up and cheapen decision making, lower the risk of investing, on the other hand – due to the existence of those state system links, which slowdown the investment flow. Apart from those cases, the institutional restrictions may also appear due to the existence of specific moral conditions of the investor's activity in a particular socio-economic system (William 2016). The informational limitations are most important are of great importance for understanding the nature of investment behavior and investment security. For an investor, a vital atmosphere is the availability of information about a wide range of phenomena and events, surrounding him. Depending on the nature of the restrictions, investment behavior can take various forms. Thus, if the existing restrictions are determined by objective regularities of productive forces functioning, the nature of the established economic system, the legal order, and the subject cannot overcome them, this weakens the independence of his actions in the decision-making situations, concerning the objectives and means of investment, simplifies the function of the choice of the spheres and instruments of the capital formation. Such behavior can be regarded as the normative-limited as the investor acts within strictly set technical, economical, and legal norms, where the obedience to norms – fixing the preliminarily permissible target actions and ways or their achievement – takes an important place. Such investment behavior may be based on a continuing habit or custom. Thus, so many investors prefer working with the investment instruments, that they have already given a good account of themselves, and are reluctant to work with the new ones. Of particular importance for this behavioral pattern are various effects, bearing the name of the behavioral phenomena. Thus, the behavior of the entity may be conditioned by the behavior of people (the imitation effect), surrounding it. "In his everyday life, a person makes investment decisions, based on the behavior of other people, which seems to be well-grounded and rational to him." (Benmamoun and Lehnert 2013). Phenomena play an important role in such behavior. They see the world thanks to mass-media information and communication, individual stereotypes, the opinion about friends and acquaintances. The majority of the financial pyramids and trust societies are built on such behavioral effects.

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The second type of investment behavior and investment security provision, which can be defined as unlimited, grounds on the assumption that there is complete accessibility of required resources, and, above all – there are no transactional costs for data collection and processing, which makes it possible for the investor to consider all available opportunities. “The expenses, related to decision-making, the possibility of an error, and, often, the expenses for the acquisition of the information belong in the theories, based on full rationality, to a category of the homogeneous ones” (Moran 1998). Under such a type of behavior, the optimality and uniqueness of the result assume the process of decision-making to be made through a simple algorithm of action (the expenses for decision-making should be minimal). Such a condition is realized if the investor’s capabilities in the area of data obtaining and processing are compared with the volume of coming information and complexity of the set task. This type of behavior is rather a theoretical assumption than a practical reality, nevertheless, its existence is quite acceptable and theoretically justified, as it makes it possible to understand the nature of the investment behavior. To some extent, the unlimited investment behavior is typical for a monopolist, as its marginal costs on the data search and collection for him are always lower than the marginal utility of its use.

The limited investment behavior is the main type of investment behavior, under which the investor’s activity is carried out under various types of restrictions. Such behavior results from the existence of the market uncertainty, asymmetric distribution of information, and its asynchronous nature. Under such circumstances, the investor cannot predict all possible situations and calculate the optimal line of behavior and provide the proper level of investment security. Under the limited type of behavior, the choice procedure is carried out with the consideration of transactional expenses, playing the role of the selection criteria, while the selection process itself covers the number of alternatives; the nature of the set tasks (clear and one-dimensional or uncertain and multidimensional); the degree of their reproduction or repeatability; the availability and accessibility of information; corresponding motivations and stimuli (Hermes & Lensik 2003).

Thus, investment entities differ upon the possibilities of obtaining and ways of the information use for making investment decisions and expectations, corresponding to them. Assuming that an investor can get and process all the necessary information for decision making, then his behavior can be regarded as purposeful rational. Under such a model, we understand the behavior, based on a thoughtful, cautious, and rational attitude to objective achievement. Such behavior grounds on the investor’s ability to use calculations, knowledge, and assessment under the condition of uncertainty, based not only on his personal experience but also on the generalized experience, bearing the name of the investment security. Otherwise, behavior can be of purposeful rational nature, under which the objective achievement is carried out under the excessive use of the institutional instruments. There are peculiar styles and scenarios per each model. The correlation of styles, instruments, and their primary features upon the selected model is given in Table 1.

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Table 1. Styles and models of investor behavior under the condition of achievement or ignoring of the proper level of investment security

Investment style	Investment objective	Type of tool	Main features	Behavior models
Conservative	Hedge against inflation	Estate property, collectibles, state valuable securities, capital stocks, and loan stocks of developed stable components	A low-risk level, high reliable, but low-profit	Mainly single-dimensional, passive, ordinary
Moderately-aggressive	Long-term capital investment and its growth	Equipment of sustainable industries, a small share of state valuable securities, a big share of valuable securities of developed and medium-sized, but reliable, emitters with a long market history	Medium risk level, Diversified profitability, liquidity	Multidimensional, active, calculative,
Aggressive	A speculative game, the possibility of the rapid growth of invested funds	Tangible assets of promising industries, a high share of high-yielding securities of small emitters, venture companies, etc.	High-risk level, highly profitable, highly liquid	Multidimensional, active, calculative, purposeful rational
Irrational	No clear objectives	Randomly selected valuable securities	Low risk, non-systemic	Multidimensional, active, purposeful rational

Source: compiled by the author according to the data (Gallagher 2017; Moran 1998)

Thus, the investment tools turn out to be an external element of the investors' behavior. They determine the models and character of the investment style. The investment capabilities of the tools mostly depend on the investment environment, in which they are used by the investor and the level of investment security or its parameters he sets.

Let us consider the interplay of such notions as the investment component of economic security and the investment policy. The investment component of economic security acts as a target object of the investment policy. The investment policy is a totality of measures of organizational and economic influence of the government bodies at all levels, focused on the provision of favorable conditions for attracting investments and increasing their efficiency. Thus, the investment component of economic security determines the initial conditions for the development of the investment policy, on the one hand, and turns out to be its result, on the other hand (Fig. 1).

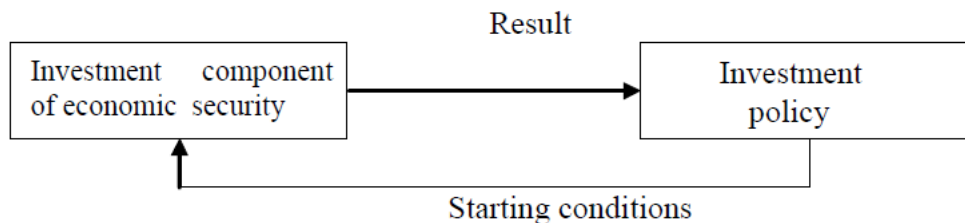


Figure 1. The interplay of the investment component of investment security and the investment policy

Source: compiled by the author according to the data (Aitken and Harrison (1999)

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The investment component of economic security provides more favorable conditions for investing under the influence of the investment policy. The efficiency of the investment policy is determined as a rate of indicator change of the investment component of economic security for the better. The improvement of the investment component of economic security, in its turn, positively affects the further improvement of the investment policy.

The share of accumulation of gross investments in GDP is the summarizing, or complex, an indicator of the investment security. The share of accumulation in GDP, for the developing countries, should constitute for 30–35% of the GDP volume. Thus, for example, in China, at the top of investment activity from 1990 to 2000, the share of accumulation in GDP exceeded 30% and reached 33–34% under the tempos of the GDP growth about 8–10% per annum (World Development Indicators: Structure of service imports 2020).

$$\frac{GCF}{GDP} = 30 - 35\% \quad (1)$$

where: GCF – Gross capital formation, million US dollars,
GDP – Gross domestic product, US dollars.

The increased attention to investment security is conditioned by the fact that investments are the foundation for the materialization of economic security, and, hence, the systematicity of tasks of the latter objectively requires activation of the investment processes to provide expanded reproduction, the formation of the potential for positive changes under the conditions of aggravation of socio-economic contradictions, threats to development, and independence of the country. Thus, based on the World Bank and International Finance Corporation experts estimates, under the increase in private investments in the developing countries by 1% to GDP, under other equal conditions, one observes the average annual growth ratio of the economy by 0.69%. Moreover, the importance of providing investment security is determined by the need for keeping to the national interests in this sphere. Thus, among the national interests in the field of investment security, in particular, the following ones are highlighted (Alfaro and Chauvin 2016):

- 1) long-term: formation of the investment, and later – the innovative model of development, provision structural reorganization of the economy; formation of a favorable investment climate;
- 2) medium-term: provision of manageability of the process of the capital flow (with the consideration of the motives and trends of its international movement) to high-tech sectors of the economy, combining of investments with innovations, speeding up of industry modernization based on modern technologies, provision of qualitative composition of foreign investments, the development of share market, and the joint investment institutions;
- 3) short-term: avoiding of the banking system destruction, minimization of losses in the result of the global financial crisis, provision of the liquidity of enterprises and banks, avoiding exceptional dependence on foreign capital due to large volumes of external bond debt and attraction of additional international loans, protection of the economy from the expansion of the foreign TNCs under unacceptable conditions for the country, compliance with the norms of investment to GDP, and maintenance of the innovative directness of investments.

Nevertheless, from the above-mentioned national interests in the provision of investment security, in our view, it is legitimate to include only the formation of a favorable investment climate, avoiding of exclusive dependence on the foreign capital due to large volumes of foreign debt, and attraction of additional international loans, protection

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of the economy from the expansion of foreign TNCs on unacceptable conditions for the country, compliance with the norms of investment in GDP, maintenance of innovative investments.

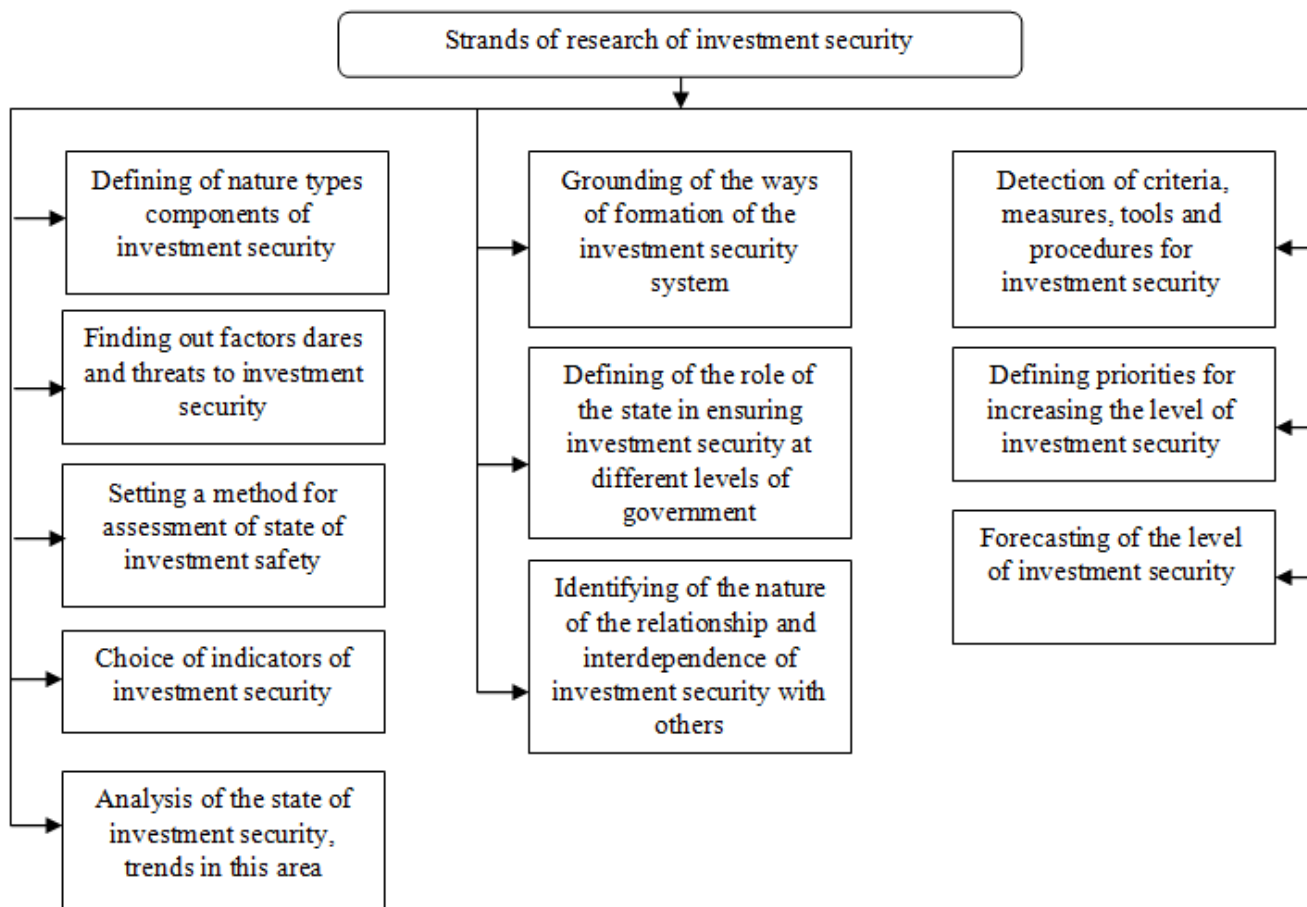


Figure 2. Directions of compliance and monitoring of the country's investment security

At the same time, we consider the national interests in the area of investment security as follows: the attraction of efficient (that will provide a greater gross economic effect than the rate of return, required by an investor, for covering the obligations on return of investments and borrowed funds) volume of investments; support of national commodity producers; increase in the employment of the country's population; and the attraction of modern technologies.

In the economic literature and scientific researches, the authors also speak about "investment security of the national economy," "regional investment security," "investment security of the socio-economic system," "security of the investment processes," "security of investment relations," "investment and economic security," "innovation and investment security," "innovation and investment security of innovative economic development," "economic security in the investment sphere," "economic security of the investment strategy implementation," "economic security of state investing of construction," "security of the foreign investments attraction," "innovation and investment component of the economic security," "financial and investment security," and "investment security of the social and economic system reproduction."

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The development of theoretical and methodological fundamentals of investment security should be preceded by the definition of such principles with respect to investment in general. The held analysis has shown that the vast majority of scientific schools, theories, and concepts consider investment in the field of safety-related aspect, in particular: it identifies the connection between them and economic growth, accumulation, and external debt; determines factors, affecting the achievement of a proper level of investments, the outflow of the national capital abroad, as well as the risks, stimuli, and cyclicity of investing, demonstrates to the study of its uncertainty, and investor's behavior; puts an emphasis on the need for directing investments at innovations and diversification of the investment portfolio (Blomstrom et al 2000).

We think the study of the investment security should be carried out upon the directions, presented in Figure 2.

They should cover, first of all, the definition of content, types, components of investment security; clarification of factors, challenges, and threats to investment security; the development of assessment methodology of its state; the choice of the corresponding indicators; the analysis of the state of investment security and tendencies in this area. Of no less importance is the justification of approaches to the formation of the investment security system; the definition of the country's role in the provision of the latter at different management levels; the identification of the nature of interrelation and interdependence of investment security with other components of financial security and types of economic security.

And, finally, the obligatory directions of investment security research should be regarded as follows: identification of criteria, measures, tools, and procedures on its provision; the determination of its level advancement priorities; prediction of investment security level. One should mention that nowadays, there is no straightforward reasoned definition of investment security's nature. Thus, we think it would be inappropriate to state that the investment security is a complex indicator that has not been explored to the fullest extent, as, considering the multidimensionality of this category, there is no single measuring instrument for it.

The investment security has a rather simplifies definition as a state, under which are present: a) conditions of protection of investment resources, which are directed in the economy; b) the possibilities of the resources accumulation or capital investments; c) the capability of the national economic system to generate an investment process, supporting sustainable growth and strategic competitiveness of the country; d) access restrictions for foreign direct investments in the economic entities, whose activity is related to the realization of national interests; the condition of the country's provision with modern high-tech production tools (Morck, 2010).

At the same time, we think, if the positive aspect logically reflects the components of investment security, then it is at least incorrect to consider the combination of the state of the economy and its changes, guaranteed by the state as a normative aspect, as the competitiveness of the economy cannot be determined by the normative regulation alone (the thing the mentioned researcher puts an emphasis on).

We think that considering the multidimensional nature of the category "investment security of a country," the study of its content should be carried out with the use of a greater number of different conceptual approaches. We also think that the notion of the country's investment security should be considered as follows (Balasubramanyam et. al., 1996):

1) the achievement of the interests synchronization of subjects of the investment relationship for the provision of expanded reproduction in the country; restructuration and formation of the innovative model for the development of the national economy, the optimal distribution of investments upon regions and departments of the economic complex, reliability, and efficiency of investments;

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2) avoiding of asymmetry (between the investment demand and supply, volumes of investments and the GDP growth, domestic and foreign investments, volumes and structure of investments in the regional and sectoral context) of the investment processes and losses for making unjustified unreasoned decisions;

3) the level of satisfaction of investment demand of the domestic economic entities, households, sectors of the economic complex, regions, and country in financial and material resources and intellectual property objects, required for adequate provision of their life activities and steady development;

4) investment attractiveness of investment objects, conditioned by the prospects of development, volumes, and prospects of product sales acceptable to investors, provision of services and execution of work, the efficiency of use of such assets, their liquidity, paying capacity, and financial firmness;

5) the availability of an investment doctrine, strategy, and policy, directed at the formation and efficient use of the investment capital of the investment process participants, the formation of the national economy's investment reserves, counteraction to unproductive capital outflow abroad, the introduction of the civilized regime of investments (withdrawal of investments), provision of a favorable investment climate, prevention of challenges and threats in the investment sphere, and reduction of risks of investment projects implementation.

The classification of the investment security varieties promotes a better understanding of its nature; presented in Table 2.

Table 2. Expanded classification of types of the country's investment security

Criterion of classification	Types of investment security
Management level	households, economic entities, FIG, TNC, industry, region, sectors of the economy (types of activity), investment market, interstate formations, and world community
Geographic affiliation	national, international
Object	money resources; valuable securities; property; property right; other rights which have estimated money value, invested in the objects of entrepreneurial and other activity for getting profit/another effect/capitalization growth; budgetary investments; investments in human capital
Entities involved in investment activities	investors (individual and collective, institutional investors of the country), co-investors, requestors, contractors, participants of public-private collaboration, guarantors, investment recipients
Investment form	direct investment security (exchange), transitional investment (the use of private money capital), direct investment (under the participation of the savings' owner and investment retailer), annuity (investments which bring income to its owner at equal intervals)
Investment directions	security of investing in the diversification of the economy, import-substitution, innovations, venture, social, and mixed investment
Sources of investment resources	security of private, запозичених and engaged investment resources
State	current, long-range
Orientation	strategic, tactic; feasible, financial, and intellectual investing
Investment scenario	security of independent, security of alternative, the security of back-to-back, security of passive investing
Investment activity processes	security of investment resources formation, the security of investment resources transformation, the security of investment, the security of realization of investment

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Investment risk level	security of “forced” (legally determined) and social investments, investments in the creation of the new ones and expansion of manufacturing departments and improvement of efficiency, research/innovation
Form of Investment Business	security of corporate financing, project financing, investment lending, investment management, investment banking (underwriting, servicing of merger/takeover of business agreements, investment advice)
Formalization	formalized, non-formalized
Level	sufficient, insufficient; high, medium, low
Dynamics	constant, increasing, running down, renewable

Source: Alfaro & Chauvin (2016)

It must be said that investment security is inherent not only to the country, region, industry, and enterprise. We think, one should distinguish the investment security of households, business entities, FIGs, TNCs, industries of the economic complex, regions, sectors of the national economy (types of activity), an investment market, a socio-economic system, a country, the interstate formations (economic/monetary unions), and the global community (Figure 3). Herewith, one should mention that the country’s investment security is the result of its components as the listed managerial levels of investment security cannot provide it without the country’s participation.

Investment activity security is an unattainable component of investment security. In the context of investment security, it is legitimate to consider: 1) security of strategic (for the purpose of control over the investment object and making managerial decisions) and tactic (investment of funds in the real sector of the economy and purchasing of valuable securities for making a profit) investments; 2) security of investment resources formation, their transformation, investing (stability of income (interest money, dividends), invincibility at the investment capital market), and investment implementation; 3) security of investing in physical, monetary, and fictitious (property rights and intellectual valuables) assets (He 2011). That means one should speak of the security of the domestic and foreign investment, investing in the production of goods, provision of services, work performance; granting of a loan, a credit; purchasing of securities; 4) security of passive (which makes it possible to keep the achieved level) and active (which improves the competitiveness of the economic agent) investing; 5) security of “forced” (legally determined) and social investments as well as investing in the creation of the new ones and expansion of manufacturing departments and improvement of efficiency, research/innovation; 6) security of the particular investment projects (CCSI (formerly VCC) and WAIPA 2010).

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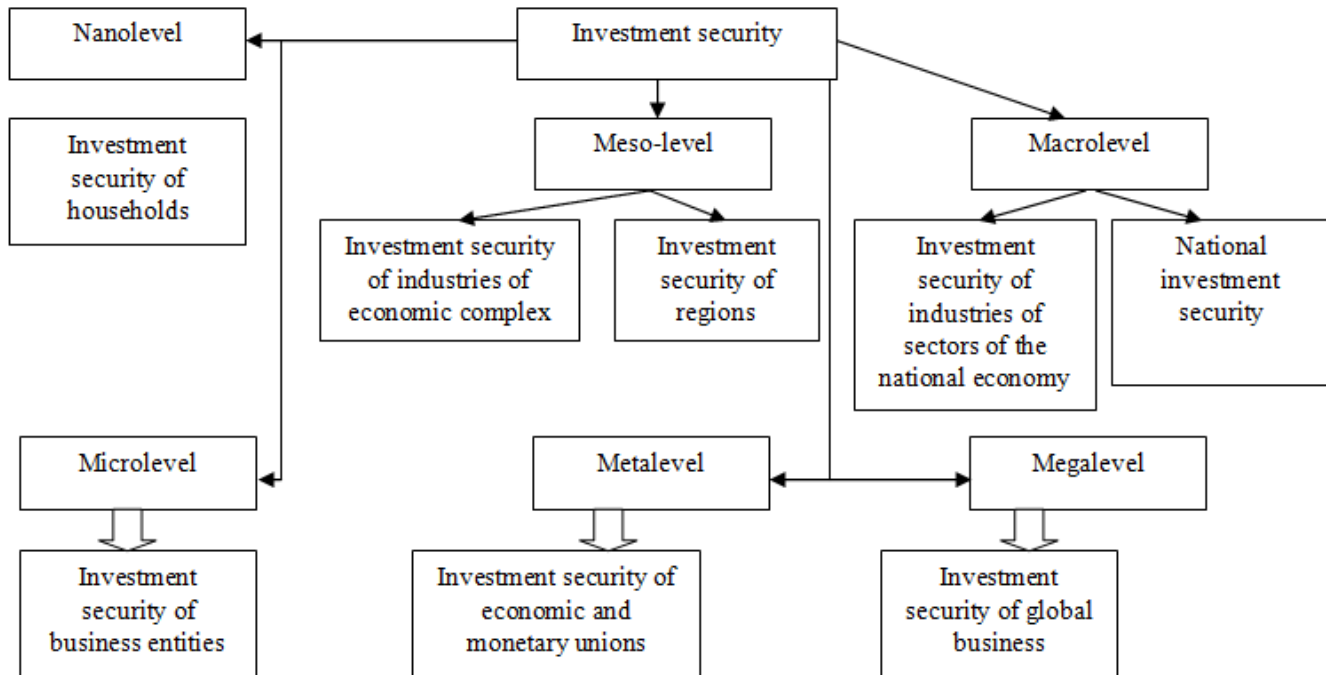


Figure 3. Investment security at different managerial levels of the national economy

At the same time, in this context, one should keep it in mind that no investment can simultaneously be characterized by such properties (peculiar to different investments) as attractiveness, invulnerability to shocks in the investment capital market, reliability, liquidity, and stability of income generation. It is necessary to consider the security of investing programs and sets of works. The security of policies of attracting domestic and foreign investments should be also put in the center of attention. Apart from that, it is reasonable to speak about the security of the investment projects, which can be achieved only under the condition of their full provision and threats' balancing acceptable to their participants.

Thus, (O'Connor, 2016) through the use of a general economic and theoretical approach to understanding any activity in the analysis of investment activity, namely, its interpretation as a unity of objectives, tools, results, and implementation mechanisms, reveals the relationship of categories, reflecting a subsystem of relationship, related to guaranteeing economic security, namely: "economic security" – "investment activity" – "investment process" – "investment ensuring of economic security" – "investment security" – "an investment security mechanism" – "investment policy." At the same time, under such an approach one observes the disruption of the existing causative-consecutive relationship between these mentioned categories. There is a clear correlation and interdependence between the country's investment security and its components (Figure 4).

To put it in other words, it is safe to say that the level of investment security significantly affects the levels of consumption and accumulation, demand and supply on the merchandise and financial markets, labor market, increase/decrease of business and investment activity of households, economic entities, industries, regions, sectors of the national economy, and, hence, determines the level of social and economic development of the country in general, stimulates/hinders economic growth (Golub et al 2011). At the same time, a comprehensive approach of

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studying the theoretical and methodological foundations of the country's investment security requires a clear identification of the factors, determining its condition, and threats to it.

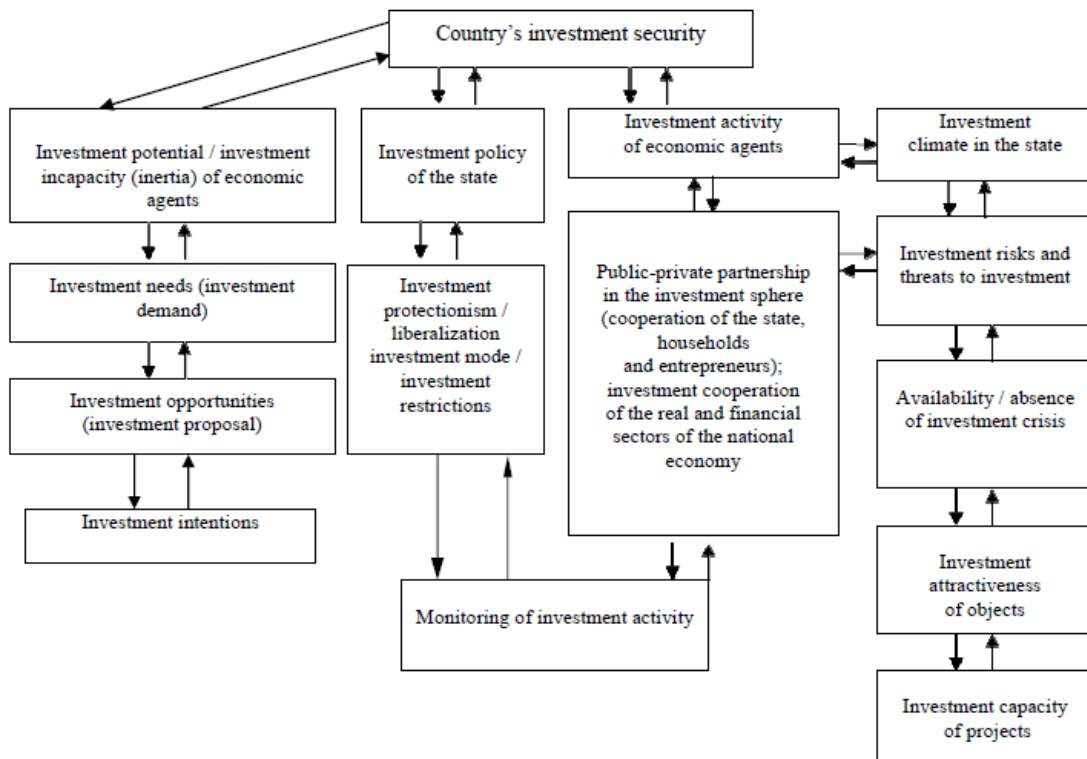


Figure 4. Interrelation and interdependence of the country's investment security components

State regulation of the investment component of economic security is considered as the totality of forms and ways, providing: the unification of state and private interests; generation of rational proportions between consumption, accumulation, and investment in the economy; combining of forecasting, indicative regulation, and measures of state influence on the investment market. The state performs its economic functions through the formation and spending of the state budget, which is a powerful lever of state regulation of the economy, and the manifestation of the investment policy. Thus, the overcoming of the economic crisis is possible via the identification of the real sources and volumes of government investments.

5. Discussion

Thus, the main threat to the country's investment security is the underfinancing of the economy's real sector. The problem of the investment security provision is especially important for developing countries, which should ensure the development of the market economy, overcome the deformations in the economy's structure, hold the renewal of products and productive apparatus in an industrial setting, and master new types of activity in the service industries. An additional point is that among the main threats for investment security also are:

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- noncompliance with the norm of investing in relation to GDP;
- a low level of the investment climate upon all its components;
- the imperfection of the state monetary and credit policy, which hinders balancing between savings and investments;
- a shift in the investment structures (technological, reproductive, sectoral, regional, and by sources of investment)
- the absence of a strategy concerning direct foreign investments.

Following the orientation on the achievement of investment security as a subsystem of economic security, it is necessary to implement the following high priority tasks:

- the choice of a promising direction of investment;
- setting market and economic conditions for the investment of reproduction of the main funds and modernization and innovative accumulation of the stock capital;
- formation of a stable institutional structure, which provides stabilized conditions for performance of organizational-administrative functions;
- scientific substantiation of a reliable methodological system of complex assessment and analysis of efficiency of investment activity with the consideration of requirements of economic security;
- transformation of the economic structure for the transition to the production of science-intensive products with the consideration of an increase in the demand for goods and services in the markets;
- establishment of reliable financial prerequisites and conditions for provision of stable investing of innovative priorities, including through attraction of new sources of financing and investment process;
- the choice of reliable methods and legal ways of rights protection of private and foreign investors;
- formation of the investment activity insurance system, including shares and other valuable securities (via hedging of the investment risks and implementation of other methods);
- rationalization of tax payments, stipulated by current legislation, including tax optimization during the transition to an innovative economy.

The author's further research is focused on the analysis of the financial market indicators, signaling the occurrence of threats for investment security.

Conclusions

The country's investment security should be considered as the achievement of the investment level, which makes it possible to please current investment needs of the national economy in terms of volume and structure of investments, with the consideration of efficient use and repayment of the invested funds, the optimal correlation between volumes of domestic and external investments, foreign investments in the country and domestic ones abroad, and support of the favorable national balance of payments.

At the same time, investment security has another component. Thus, the assessment of the market value of business or assets is needed nowadays not only within the framework of purchase and sale transactions, when granting loans and determining the object's collateral value, but also for making strategic and managerial decisions, and preparation of reports following the requirements of the international investment community. To ensure the financial security of the country, it is necessary to build the system of investment security with the consideration of the necessity of keeping to a well-balanced anti-inflationary policy, the achievement of the budget deficit reduction, and an increase in efficiency of a state borrowings policy. The provision of investment security should be built with the consideration of a dramatic reduction of the capital export abroad, a high level of

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the interrelationship of international capitals, the absence of big volumes of foreign capital, intense competition between the spheres of its investment and countries, which engage foreign capital.

Investment security is determined by the structure and domination at the domestic market of specific investment motives, diversification level of investment sources; the volume of capital outflow; the level of return on invested funds; presence/absence of investment risk insurance; due diligence/dishonesty of investors' behavior; the level of coordination of managers' interests, majority, and minority owners; by the level of investors' awareness; the form of receiving investment income; the currency exchange rate regime and interest policy that were established in the country; the character of the depreciation policy; the time frames for making decisions on investment; and a clear investment policy, developed for the long term.

The level of investment security of the developing countries is still regarded as low. The investment climate, which forms in the country, may not stimulate the attraction of direct and portfolio investments. Successful investment attraction requires quality "goods," i.e. the investment-attractive business entities with a well-developed mechanism of investment consumption, with a modern management structure, without debts, etc. A lot of national companies today do not meet these requirements and, therefore, cannot become a real investment object. Thus, the country should implement the entire complex of practical measures on increasing the level of investment security within the lines of the national economy. The improvement of the investment climate, the increase of the investment activity, and, hence, the level of investment security are possible under the condition of establishing the corresponding financial and economic, normative and legal, and methodological bases, and concentration of resources for the implementation of a perfect investment policy.

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SMUGGLING AS A THREAT TO ECONOMIC SECURITY OF THE STATE

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Abstract. Smuggling has been proven to be a global threat to the economic security of each country. The authors have assessed the macroeconomic impact of smuggling on the current scale: GDP and work places. They discovered that the mechanism of administrative and legal prevention and counteraction to violations of customs rules, which is realized through the institution of administrative responsibility, appears to be independently-individual, along with other means of its legal protection. Herewith, it is worth to mention that administrative responsibility for violation of customs rules is the responsibility of a special authorized official or citizen, a regulated by the customs law norms, which resides in the awareness of guilt, illegality of actions in the area of customs legal order and, in case of sufficient grounds, ability to bear responsibility in the form of an administrative penalty, which is imposed by the customs authority or court. This shows that the object of administrative and legal prevention and counteraction to violation of the customs rules is specific and individualized. It sits in the area of social and economic relations. Administrative responsibility is an efficient means of offence prevention, including the ones, aimed at violation of the customs rules. It focuses on the prevention of any illegal behaviour. The measures of administrative prevention of the customs rules violation are characterized as the actions, applied by customs authorities, based on the provisions defined by customs legislation under the absence of customs law violations for their prevention and detection as well. They are one of the components of a complex mechanism used by the customs authorities to combat violation of the customs rules. They precede greater legal restrictions on the material and personal sphere of the offender's personality, measures of administrative termination and responsibility.

Keywords: economic security; multiplier; smuggling schemes; administrative responsibility; customs rules

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JEL Classifications: F35, F42

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1. Introduction

Economic security of a country is determined by a wide array of factors (e.g. Masood et al. 2020; Chehabeddine, Tvaronavičienė, 2020).

The problem of smuggling is one of the country's major priorities in protecting its economic security. A significant part of the export-import trade flows in Ukraine are characterized as smuggled for more than two last decades. Special hazard for the state resides in the fact that smuggling operations usually involve acts of corruption, carried out by state and local authority officers. As a result, the interests of the domestic commodity producers experience significant losses.

Illegal entry of foreign goods reduces the demand for Ukrainian products, leads to liquidation of manufacturing facilities, decrease in the competitiveness of the Ukrainian enterprises in the domestic market, and their shift abroad. All those issues contribute to the reduction of personnel and wages funds.

Furthermore, the results of such criminal activity negatively affect public relations in the field of protection of life and health of citizens in case of smuggling of arms and ammunition, nuclear materials and substances, deprive the citizens of the right to use cultural values and historical heritage of Ukraine.

Smuggling should be considered to be one of the biggest threats to the national security of Ukraine. The mentioned threat reinforces itself through the policy of transnational corporations and criminal organizations, aimed at taking advantage of the criminal schemes in international economic activity, due to which the majority of financial flows remain untaxed and contribute to a significant expansion of the shadow economy.

In 2018, the legal foreign trade turnover of Ukraine amounted to \$104.5 billion, which is equivalent to 80% of the GDP of Ukraine, while shade import traditionally falls in the range of 10% from the GDP. The budget income from international commerce is generated not only by the customs fees (UAH 27.1 billion or 3% of state budget revenues in 2018) but by the import VAT, generating significant income to the budget of Ukraine (Official site of the State Fiscal Service of Ukraine). In 2018, UAH 295.4 billion, or 79%, out of UAH 374 billion of income from the value-added taxes, was generated thanks to import VAT. Along with customs fees and import taxes, it is 40.2%, or almost a half, of state budget income.

2. Literature Survey

Modern juridical science offers us with a range of different grounds for classification of offences, but when it comes to characteristics of the customs offences, it seems to be appropriate to consider the classification, depending on the branch of law, the rules of which are violated in the process of the offence commitment. In this context, based on this classification basis, it is possible to identify customs offences as the ones, which trespass on a specific group of social relations, appearing in the area of state customs policy and customs affairs of Ukraine.

Upon the general rule, an offence has the following characteristics:

- 1) it has lawless and legally inappropriate nature, i.e. contradicts the rules of law, manifests itself as the violation of prohibitions, determined in the laws and sub-decrees, abuse of subjective law, and excess of competence (Avdeev et. al. (2019));
- 2) it has a socially harmful or socially dangerous nature (Danijela (2016)). The given feature is characterized by undesirability for a society, a state or an individual; it includes the appearance of the negative consequences that may occur both at the time and in the future; the degree of its danger or harm for the public may vary, and it finds its reflection in the negative reaction from the state and in accordance with the requirements of the legal norm.

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A range of authors distinguish two aspects of public danger: first of all, it is the nature of public danger as a qualitative estimate of the harmful nature of an act, grounding on the object of the offence (Grotteli, M. (2015)); secondly, it is the degree of social danger, i.e. the size of damage caused by the offence (Kiyanchuk, I. (2017)).

The scientists consider that all offences are harmful to a society, but only a part of them are socially dangerous;
1) expressed as behaviour in the form of action (theft, robbery) or inaction (leaving a person in a helpless state). The current legislation does not consider thoughts, intentions, and beliefs to be illegal if they were not implemented (van Engelenburg, S., Janssen, M., & Klievink, B. (2019));

2) having volitional nature, i.e. the ones, which depend on the will and consciousness of the participants at the time of execution; they are carried out voluntarily by people (Nguyen, T. C. N., Kettle, M., & Doherty, C. (2019));

3) regarded as guilt-inducing action. Guilt is a person's mental attitude to his action and its consequences (Kormych, B. (2018));

4) has a causal connection between the action and caused consequences (Rogers, T. W., Jaccard, N., Morton, E. J., & Griffin, L. D. (2017));

5) causes the application of legal responsibility measures to the law-breaker (Nowak, T., Sowiński, C., & Czyżowicz, W. (2015)).

Previously, the legal literature had already formulated a position, the supporters of which stated that the range of customs offences included such tortious acts as customs offences, violation of customs rules and violations, interfering with the performance of the powers, assigned to officers of revenue and tallage bodies (Świerczyńska, J. (2016)).

Nonetheless, they provided no sufficiently strong argumentation. At the time when there are no questions to the identification of crimes, the identification of two separate groups of offences appears to be not so clear. In this context, it is logical to consider the relationship between violation of customs rules and violations, which prevent the implementation of powers, assigned to the officials of the revenue and tallage bodies with such a misdemeanour as an administrative offence.

In the course of further investigation, we think it necessary to carry out the division of the customs offence into specific groups. Based on general offence classification upon the degree of social danger and caused damage, they fall into the following categories:

- offences, illegal, guilt-inducing (intentional or unintended) action or inactivity, infringing on civil order, property, rights and freedoms of citizens, established administrative order, for which the law prescribes responsibility for the offence (Lay, C., & Astrina, A. R. (2020));
- socially dangerous, guilt-inducing, illegal and criminally liable accts (action or inactivity), committed by the subject of crime (Komarov, O. (2016)).

According to the current legislation, the crimes, committed in the lines of customs, include the following criminal offences: smuggling, transfer of big quantities of goods, and cultural and historical valuables, poisonous and superpotent substances, radioactive materials, explosives, as well as arms and ammunition, special technical means of non-public information acquisition across the customs border of Ukraine, outside the customs control or with concealment from the customs control, stipulated in (Article 201 of The Criminal Code of Ukraine), and smuggling of narcotic drugs, psychotropic substances, their analogs or precursors or counterfeited

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pharmaceutical products (Article 305 of the Criminal Code of Ukraine).

3. Methods

The methodological basis of the study covers a set of methods, means and ways of scientific knowledge of the nature and content of the legal phenomena. The study included the use of both general scientific methods (observation, comparison, description, classification) to identify the regularities, which characterize the principle of legality; and special methods, more specifically: historical and legal – to study the genesis of legislation, concerning the regulation of the principle of legality and disclose the views of scientists of different times on the problems, related to the subject under the study; systemic and structural – for conceptual analysis of the principle of legality, its nature and place in the system of principles of criminal proceedings; a dogmatic method and a method of definitions analysis – for clarification and in-depth understanding of the conceptual and categorical apparatus, related to the subject of the study; analysis, synthesis, classification, and grouping – used for determining the subjects of observance and implementation of the principle of legality; comparative analysis – when making a generalization of different approaches to implementation of the principle of legality during the pre-trial investigation; the logical and regulatory method and modelling – to formulate and justify the amendments to the criminal procedural legislation; sociological – to learn the opinions of the prosecution authority officers, regarding the problem of the study; statistical – to generalize the survey findings, study the criminal case files, law enforcement and court practice materials.

The normative-legal and information basis of the study included the Constitution of Ukraine, international agreements, considered indispensable by Verkhovna Rada of Ukraine, the judgments of the European Court of Human Rights, laws and by-laws of Ukraine, court practice.

The theoretical foundation of the research covered scientific papers in the area of legal theory, constitutional and international law, and the criminal procedure.

4. Results

Nonetheless, the analysis of the available information shows that the situation in the area of counteraction to smuggling has not changed significantly in recent years. It continues to be difficult. According to statistical data of the Security Service of Ukraine (SSU) for the first half of 2019, one detected 37 crimes under Article 201 of the Criminal Code of Ukraine and 4 crimes under Article 333 of the Criminal Code. People, suspected of committing, were reported on suspicion, while the items of offence were seized; 27 people were convicted; the customs officers seized objects of smuggling and detected violations of the customs rules for over UAH 18.6 million; they confiscated the items of smuggling and detected violations of the customs rules by court order for UAH 536.000. Due to its high profitability, the most common type of shadow business is the illegal transfer of excise goods across the customs border (tobacco products – to EU countries, alcohol and fuel – lubricating oils – in Ukraine). Such movement has a pronounced regional localization. It results in committing official crimes (corruption) and economic crimes (creation of clandestine manufacturing facilities).

In the current year, according to the data by Security Service of Ukraine (SBU), it is reported that 18 criminal proceedings have been initiated against customs officials (13 of which – under the Article 368 of the Criminal Code of Ukraine), 13 – against members of the State Border Guard Service of Ukraine (STS of Ukraine), 2 – against employees of regulatory authorities at the customs border. One convicted 7 officers of the State Tax Service of Ukraine, 3 – customs officers, and 1 officer of the controlling bodies at the customs border. One also fired 5 officials of the customs bodies, 8 servicemen of the State Tax Service of Ukraine, and 2 officers of controlling bodies on the customs border. In particular, it was reported that a number of heads of city and regional

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customs received suspicions of wrongdoings. The State Bureau of Investigation carried out a pre-trial investigation into the possible complicity of customs officers of the Yagodin Volyn Customs of the State Fiscal Service of Ukraine (SFU of Ukraine) in the illegal transportation of goods with an approximate value of \$550.000 with the preliminary qualification of the crime as an abuse of power or official position, which entailed serious consequences (part 2 of the Article 364 of the Criminal Code of Ukraine).

The insufficient density of the Ukrainian border protection system has made it a transit point for drugs. Ukraine now has 409 km of uncontrolled border with the Russian Federation, the rest 1.300 km of the section, controlled to the junction of the border with Belarus. The main countries of supply of smuggled drugs today are Iran, Colombia, Moldova, Netherlands, Panama, Poland, Russia, Hungary, etc. For example, Poland is now one of the world's leaders in the production of synthetic drugs. It has quite developed economic ties with Ukraine as well as a fairly long border. Considering the geopolitical position of Ukraine, we can speak about the expansion of spheres of influence of the international drug mafia, using the territory of our state as a transport corridor for the transportation of drugs, as well as a new market for their sales.

The Internet and the global growth of technological advances such as mobile communications and the international banking system have made national borders more vulnerable. Information technologies are widely used by organized criminal groups as a means of preparation and implementation of smuggling. The latest information technologies provide the members of a transnational criminal organization with an opportunity to ensure their anonymity in a low-risk environment, as well as attract more people into criminal activities, hiding their personalities.

Among the main factors, providing favourable conditions for smuggling are insufficient coordination of law enforcement and regulatory authorities of Ukraine with the corresponding authorities of the neighbouring countries for information exchange on countermeasures to the movement of goods beyond the customs control or with hiding from customs control. As a rule, the reason behind this is the absence of a unified database of the customs authorities of Ukraine with the customs authorities of foreign countries; assistance of the officials of the state authorities, in particular, law enforcement and controlling ones to legal entities or individuals in the movement of the specified type of goods across the customs border of Ukraine (corruption component); imperfect and contradictory legislative regulation of the activity concerning counteraction to smuggling and violation of the customs rules; the availability of a significant difference between the prices for the specific group of goods in the domestic and international markets; unemployment of residents of the border areas.

Here are the determining factors, affecting the formation and development of the smuggling environment:

- incompleteness of the demarcation process with Russia, Belarus, and Moldova, location of settlements, private houses, territories of private property, and the land shares close to the state border line;
- insufficiency of engineering and technical arrangements of the state border line, the availability of uncontrolled roads and water crossings, significant distances between individual Ukrainian and adjacent border crossing points;
- the loss of control over the specific area of a state border on the temporarily occupied territories of Ukraine, which can be used for the illegal transfer of items of crime;
- problems of personnel and logistics support of the State Tax Service of Ukraine, the customs offices of the Ukrainian Federal Customs Service, and other state bodies, performing control functions at the state border;
- corruption of the customs and border guards officers, the law enforcement officials who provide the pre-trial investigation of the criminal smuggling proceedings, as well as the corruption of the judges in sentencing smugglers;
- the insufficient level of the customs control over the international parcels due to their significant quantity;

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- the possibility of selling smuggling goods anonymously through the Internet shops and auctions;
- gradual restriction of the powers of the law enforcement agencies in the area of counteraction to smuggling and offences of the foreign economic entities and foreign business entities;
- the absence of a clear definition of a concept and a full list of potent and toxic substances in current legislation, and the inability to conduct laboratory tests for determining a substance as poisonous or strongly active, which makes it difficult to document their smuggling.

As of today, the most common schemes for smuggling of goods include: import of goods without customs documents, payment of fees and taxes, fixation in the accounts of the corresponding services; transfer of goods by substitution or fabrication of the shipping documents, concealment of goods as other products, manipulations with the name and coding of goods, their quantity and weight; addressing of import goods to the non-existent companies; transfer of cargo beyond the checkpoints in the “green” section of the border; registration of vehicles with goods as such, which run as “empty,” “interrupted” transit (goods are declared as “transit” when imported into Ukraine with their subsequent unloading on the territory of Ukraine and formal closure of the “transit”); substitution of goods after their import into the customs territory of Ukraine on the way to the internal customs of destination; disappearance of goods that are not released into free circulation and are under customs control, from the places of their storage (warehouses and temporary storage places, territories of ports and airports).

This range also includes the abuse of the benefits, provided by legislation for the import of goods by citizens (products worth 500 euros – by road transport, 1000 euros – by air): division of big amounts of goods, formation of brigades of individual citizens (the so-called “ants”), which, within the norm “up to 500 euros, up to 50 kg” can move goods without taxation; “postal smuggling” – a separate direction of schemes with the norms of tax-free import (goods for the amount of no more than 150 euros in one parcel); redesign of commercial batches so that they look as small parcels, their division upon the norm of up to 150 euros and subsequent import to counterfeiters; misleading declaration: undervaluation of weight; artificial undervaluation of the customs value to border indicatives; indication of the wrong commodity code, belonging to other product; the use of goods of the “cover” group (high-cost goods are declared as low-cost, complete replacement of the names; hiding the quantitative and qualitative characteristics of goods, trademarks, and manufacturers of goods, and creation of importing firms that receive “special conditions” from the customs). (tariffs, “play” with weight and codes, etc.) for large-scale import of highly liquid imported goods, which puts the legal business in an uncompetitive environment.

After discussion of the legal aspects of the smuggling consequences as a threat to Ukrainian national security, let us consider the macroeconomic consequences of the existence of smuggling in the current scale: GDP and work places.

Figure 1 displays the methodology, compiled by the author, for assessment of the macroeconomic consequences of smuggling existence in the current scale: GDP and work places.

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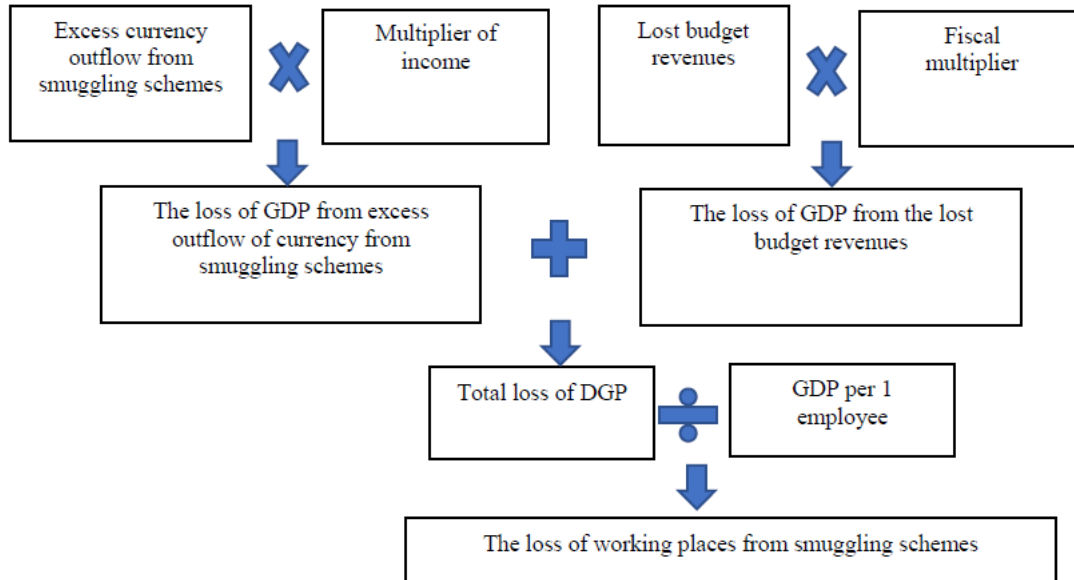


Figure 1. Architectonics of methodology for the assessment of the macroeconomic consequences of smuggling existence in the current scale: GDP and work places

Source: compiled by the authors

As for calculations, we consider it to be correct to proceed from the category of excessive outflow of currency due to the existence of smuggling schemes as even with complete “whitewashing,” smuggling costs are transformed into a legal import. Nonetheless, under such a scenario, the price for imported goods will significantly increase, hence, the demand for them and the outflow of foreign currency abroad will decrease, and a significant component of the price – the tax burden – will be a flow of funds within the country. We used the following formula to calculate the excess outflow of currency:

$$C_v = C_{cur} - B_p + F \quad (1)$$

where C_v – excess currency outflow from smuggling, money units; C_{cur} – current volumes of incoming smuggling, money units; B_p – new expenses of people for “whitewashing,” money units; F – tax component (budget revenues), money units.

The current outflow of currency represents a calculated amount of smuggling.

A potential outflow of currency was modelled using econometric regression.

First of all, we calculated the dependence of smuggling on the average wages in the US dollars as the one, which best represents the dynamics of consumer purchasing power in relation to import. Thus, we receive the following regression:

$$C = 1,97 + 0,03 \times \bar{W}; R^2 = 97.21\% \quad (2)$$

where C – volumes of smuggling, money units; \bar{W} – average wages, money units.

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Considering that current weighted-average tax burden on legal imports is 30.37%, and the cost of smuggling transshipment does not exceed 7%, after “whitewashing” smuggled goods will increase in price by an average of 21.8% (Table 1).

Table 1. Current volumes of smuggling and new expenses of customers for import by imitation of its growing price on net value of legalization in 21.8% in Ukraine (bln US dollars)

Values	2013	2014	2015	2016	2017	2018	2019	2020F	2021F
Current volumes of smuggling	15.3	10.3	8.0	8.9	10.	11.9	13.5	15.4	17.2
New expenses of customers for import by “whitewashing” of smuggled goods	12.5	9.5	6.9	7.2	8.9	10.4	10.7	11.9	13

Note: F – forecast

Source: compiled by the author based on the data of Official site of the State Fiscal Service of Ukraine

Respectively, we discount the wages by the value of potential appreciation (simulating a decrease in the purchasing power of the population) and put it into the regression equation, and get the value of new potential foreign exchange expenditures of the population of Ukraine in case of smuggling schemes closure.

Alongside this, the data, obtained of the new potential expenses of the population on already “white” import include taxes, which remain inside the country and manifest themselves as an internal flow (Table 2). Therefore, for further calculations, it will be correct to use the volumes of currency, leaving the country. Respectively, we will reduce the calculated new expenditures of the population on the total tax burden of imports – 30.37%. As a result, we will obtain a key indicator of indirect losses from the existence of smuggling schemes – the net surplus outflow of currency.

Table 2. Net outflow of currency as a result of the existence of smuggling schemes in Ukraine (bln US dollars)

Values	2013	2014	2015	2016	2017	2018	2019	2020F	2021F
Final difference in currency expenses of the economy	6.6	3.7	3.2	3.9	4.2	4.7	6.0	7.0	8.2

Source: compiled by the author based on the data of Official site of the State Fiscal Service of Ukraine

The next step includes consideration of the income multiplier (the average for 2013-2019 is 1.5). It is also important to increase in the corresponding proportions the indirect losses of the economy due to currency outflows and, respectively, the decline in domestic demand (Table 3).

Table 3. Total GDP losses due to excess currency outflows due to the existence of smuggling schemes in Ukraine (bln US dollars)

Values	2013	2014	2015	2016	2017	2018	2019	2020F	2021F
Loss of GDP from excess currency outflow	9.9	5.6	4.8	5.8	6.2	7.0	9.0	10.6	12.2

Source: compiled by the author based on the data of Official site of the State Fiscal Service of Ukraine

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While calculating the total direct and indirect losses of the economy from smuggling, it is also important to consider the lost budget revenues. Let us find them as potential expenses for legalized import, multiplied by the total tax burden of imports – 30.37% (Table 4).

Table 4. General direct and indirect losses of GDP due to the existence of smuggling schemes in Ukraine, bln US dollars

Values	2013	2014	2015	2016	2017	2018	2019	2020F	2021F
Excess currency outflow	9.9	5.6	4.8	5.8	6.2	7.0	9.0	10.6	12.2
Losses of budget	3.8	2.9	2.1	2.2	2.7	3.2	3.2	3.6	3.9
Total	13.7	8.5	6.9	8.0	8.9	10.2	12.2	14.3	16.2

Source: compiled by the author based on the data of Official site of the State Fiscal Service of Ukraine

To calculate the loss of work places in Ukraine as a result of smuggling schemes, let us first find the current level of GDP per 1 employee, with consideration of the shadow sector. Thus, an official GDP statistic does not reflect the real added value, formed within the country. We consider the employment statistics to be correct due to the existence of significant penalties, which motivate employers to employ workers officially, at least for the minimum wage (Table 5).

Table 5. Added value, generated by one employed person in Ukraine (thousand US dollars/1 employee)

Values	2013	2014	2015	2016	2017	2018	2019	2020F	2021F
GDP, bln US dollars	1465	2190	2744	2385	21984	3563	4092	4768	5454
“Shade” economy, %	35	43	40	35	35	32	32	32	32
GDP: official sector + “shade” sector, bln US dollars	1978	3132	3842	3220	4013	4703	5402	6294	7199
Number of employed people, thousand of people	19314	18073	16443	16227	16156	16002	16000	16000	16000
GDP / 1 employed, thousand US dollars per 1 working person	12.8	14.4	10.6	7.7	9.3	10.8	12.1	13.6	15.1

Source: compiled by the author based on the data of Official site of the State Fiscal Service of Ukraine

Respectively, let us divide the total loss of GDP by the average added value, generated by one employed person and, find out that as of 2017, Ukraine had lost almost 3 million potential jobs due to ineffective anti-smuggling measures (Table 6).

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Table 6. Number of lost / “exported” work places by Ukraine as a result of the existence of smuggling schemes in existing scales, thousand

Values	2013	2014	2015	2016	2017	2018	2019	2020F	2021F
Number of lost / “exported” work places	1067	585	644	1029	956	940	1009	1041	1065

Source: compiled by the author based on the data of Official site of the State Fiscal Service of Ukraine

The conducted calculations make it possible to state about the need for strengthening of measures on fighting against smuggling schemes in Ukraine as a condition of national security stability.

Respectively, there are two main problems in Ukraine, enabling the life of smuggling:

Existing gaps in legislation, which create the problem of tools absence for fighting against customs regulations violations. For example, the legislation does not provide for the mandatory sealing of vehicles and 80% of cargo transported within Ukraine is not guaranteed by the importer. As a result, one can simply substitute the cargo or “drown” it. Similarly, control over the movement of parcels from the border to sorting locations (so-called “mail smuggling”) is not provided for at the regulatory level. Thus, any manipulations with cargo are possible along the way.

The non-compliance with current legislation, i.e. – corruption in the customs and border guard services. On the one hand, as the successful cases of “Naftogaz” and the “Agrarian Fund” show us – partial solution of the problem lies at the level of wages of employees of these agencies and implementation of Western standards. On the other hand, the responsibility of civil servants in these agencies with the inevitability of punishment is also important.

As for the macroeconomic effect, the real problem with smuggling resides not in the loss of the budget, but the distortion of the domestic market and the principles of competition, which primarily affects legal business. Respectively, considering the importance of the smuggling problem, it is clear that the approach to its resolving should be complex. In other words, it should cover not only strengthening/improvement of controls at customs and borders but also the closure of the gaps in the domestic market, enabling the life of smuggling schemes. One of such gaps is the right of subjects of the simplified taxation system to sell goods without any primary documentation for them. That is, without documents, describing the origin of goods. Of course, smuggled goods can be sold through the “bought” necessary documents in the FSB of Ukraine, but such a scheme is already criminally punishable, much more risky and expensive. At the same time, the mass “sales” of fake primary documents by the Fiscal Service is impossible under the current institutional framework; the National Anti-Corruption Bureau (NABU), the National Agency for Prevention of Corruption (NACP), the anti-corruption prosecutor’s office and investigative journalists have significantly reduced the possibility of such as maneuver.

The absence of an obligation from “STS taxpayers” to have the receipt documents for goods in a complex with the possibility to sell it without cash registers provides favourable grounds for selling any amount of smuggled goods. Respectively, as long as the sale of smuggled goods is possible due to the abuse of the simplified taxation scheme, all “STS taxpayers” will constantly found themselves under unjustified pressure from the fiscal/regulatory authorities, and understandable criticism from the side of “white” business on the general taxation system.

At the same time, it is worth to mention that on practice – the operations against the possibility of selling smuggled goods in the domestic market can have a bigger return than the new anti-corruption programs at

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customs/border guard service. Considering that the current scale of abuse of official positions is impossible without the support of political parties, which “got” the customs in the course of inter-fractional agreements. Respectively, the measures of the government of Ukraine on real counteraction to smuggling – will face the corresponding critics of the smuggling beneficiaries, media-attacks, and blocking of decisions through the judicial system, as it currently can be observed with a competition for the position of the head of the customs service. At the same time, the transition to obligatory storage of primary documents, describing the origin of goods, will neither bring harm to honest market participants nor contribute the main beneficiaries of smuggling, as a direct threat to “business.”

Special prevention of customs regulations violations includes measures that directly address the causes and conditions of customs regulations violations. Special preventive measures are divided into general and individual measures. General prevention of customs regulations violations concerns a non-personified group. The general measures of special prevention of customs rules violation should include the following ones: the actions, related to the development and introduction into practice of technical means of the customs control, introduction of the newest technologies and achievements of science and technology in the field of computerization; the actions, related to the improvement of the activity of all subjects of prevention of customs rules violation; measures, aimed at improvement of professional training, legal and general culture of the customs employees, improvement of their social and financial support; proper legal support of preventive activity of the subjects, etc. Individual prevention of crime is characterized as systematic measures of purposeful action on the legal consciousness and actions of a specific person to prevent its illegal behaviour in the future. This type of the customs rules violations prevention resides in timely identification of people, who can potentially commit a violation of customs rules; in conduction of educational impact on such individuals and their micro and macro environment, and consideration of other measures.

All this allows us to come to a conclusion that it makes sense to consider the mechanism of administrative and legal prevention and counteraction to customs rules violations through a theoretical analysis of the mechanism of administrative and legal regulation and as its integral part.

In general, the mechanism of administrative and legal prevention and counteraction to violations of the customs rules is characterized by the following peculiarities and features: it is a specific set of means (administrative and legal), the application of which is aimed at regulation of public relations in the area of prevention and counteraction to the customs rules violations; prevention of the customs rules violations is a set of measures, which are carried out by specially authorized subjects to prevent causes and conditions, promoting the breach of the customs rules and prevention of their occurrence in the future.

The administrative and legal mechanism for prevention and counteraction to violations of the customs rules includes the following elements: the norms of the administrative law; administrative-legal relations; administrative-legal methods; the procedures for the norms of administrative law implementation.

All this allows us to come to the conclusion that the administrative and legal mechanism on prevention and counteraction against customs rules violations is a dynamic set of interrelated and interacting administrative and legal measures, and the means, using which the subjects’ behaviour is set according to the requirements and permits of legal norms, including three stages: the publication of legal norms, the appearance of specific rights and responsibilities, and realization of the rights and obligations by the subjects of these relations.

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It is a complex process, covering a set of operations, aimed at organization of actions, the impact of administrative law on freedom and the behaviour of the subjects of relations on prevention of offences contributing to the appearance of legal relations. Considering this, it is possible to distinguish the following elements of the administrative and legal mechanism on prevention of customs rules violations, namely: the legal norms, established by laws and by-laws, legal relations, appearing in this area and regulated by the norms of law, as well as the actions of subjects concerning the implementation of the rights and obligations, specified by the norms of law. Thus, considering public importance of the above-highlighted problems, these days, there is a need for regulation of the forms, methods, and types of preventive activity on prevention and counteraction to customs rules violation as well as the procedure for the implementation of the preventive measures by revenue and tollage authorities at the regulatory level.

All this allows us to make a conclusion, concerning the formation of the operational priorities for prevention and counteraction to violations of the customs rules. Thus, we consider it expedient, first of all, to develop and adopt the “Regulation on the Prevention of the Customs Rules Violations.” This regulation should define the legal and regulatory framework, main tasks, types, forms and mechanism of application of the main measures to prevent violations of customs rules. This regulation should clearly determine the legal and regulatory frameworks, main tasks, forms, and mechanisms of application of the main measures on the customs rules violation prevention. While developing this regulation, it is advisable to give a detailed description of the main forms, methods, and objects of individual preventive measures; determine the status and powers of subjects, authorized to implement individual preventive measures; highlight the main directions for the implementation of the preventive activity, concerning prevention and counteraction to customs rules violations and fix the main preventive measures in the Plan of Action of the State Fiscal Service.

5. Discussion

One of the efficient ways to strengthen the fight against the illegal import of goods into the customs territory of Ukraine is the renewal of criminal responsibility for the smuggling of goods. Since the entry into force of the Law “On Amendments to Certain Legislative Acts of Ukraine Regarding Humanization of Liability for Offences in the Sphere of Economic Activity” in the part, considering the terms of removing criminal liability for the smuggling of goods, the number of such offences has significantly increased.

The strategy, approved by Cabinet of Ministers of Ukraine (CMU), Strategy in the field of combating illicit production and circulation of tobacco products until 2021 (2017), determines illegal tobacco trade as a threat to national security, hindering the economic development of the state, and the one, having a negative impact on Ukraine’s image in the international arena. One of the main directions of this strategy is the introduction of criminal responsibility for the illegal transfer of tobacco products across the customs border of Ukraine. The proposal of setting criminal responsibility for “commodity smuggling” was supported in June 2019 by the interagency working group on coordination of integrated border management (established by the Decree of the Government of Ukraine of 30.01.2019 № 83) during the consideration of the project a National Integrated Border Management Strategy for the period up to 2025.

Under such conditions, to increase the efficiency of measures on fighting against smuggling, encouraging of participants of foreign economic activity to faithful payment of the customs fees, unconditional direction to the state income of smuggled excisable and other goods; there is the need for establishing criminal liability for smuggling of excisable and counterfeit goods (products) in large amounts through the addition of the corresponding group of goods to the objects of crime, specified by the Article 201 of the Criminal Code of Ukraine.

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Here, one should also add the need for establishing criminal liability for illegal creation and use of engineering structures and vehicles for illegal transfer of goods across the state border of Ukraine. In addition, it is advisable to initiate amendments and additions to other regulations, in particular: to define the concept and list of poisonous and potent substances; implement the provisions of the Concept of creation and implementation of the automated system of control over the circulation of excisable goods (alcoholic beverages and tobacco products) “Electronic excise stamp,” approved by the resolution of the Cabinet of Ministers of Ukraine of 06.07.2016 № 497-p.

Organizational plan proposals:

1. The approach to solving the smuggling problem should be multidimensional – cover not only strengthening of customs and border controls but also include the elimination of the gaps in the internal market, which make it possible for the smuggling schemes to exist.
2. In real-world terms, the operations against the possibility of selling smuggled goods in the domestic market through the Special Operations Service has a bigger return than the new anti-corruption programs at customs and border guards.
3. The situation requires provision of full information exchange between the databases of the customs and border guard services, as well as compliance with the requirements of the law on the right of duty-free importation of goods while being abroad for more than 24 hours and entry for no more than once every 72 hours.
4. The anti-smuggling operations on detection of smuggling sources should consider a social aspect, performing law enforcement and economic functions, more precisely – promote overcoming of unemployment in the border areas.
5. The system of provision of the customs security of Ukraine should be formed with consideration of the international experience of the world’s major economies. In this regard, it is necessary to reform the subjects of customs security provision in Ukraine.
6. It is necessary to broaden the powers, regarding the implementation of law enforcement intelligence-gathering activities by the customs authorities, and to unify the customs and criminal procedural legislation of Ukraine in the part, related to the provision of the efficient mechanisms for implementation law enforcement intelligence-gathering activities by the customs authorities, connected to the crimes, the characteristics of which can be detected during customs control.

Conclusions

Upon the research results, it is possible to draw the following conclusions.

1. Smuggling in Ukraine has been widespread throughout all period of its independence. The results of the criminal activity of smugglers found their reflection in all spheres of economic activity of the state.
2. The highest forms of smuggling in Ukraine are one of the components of transnational organized crime activity.
3. The crimes, which are related to an illegal transfer of cargo across the border of Ukraine, are implemented through the use of the corruption schemes, including engagement of the officials of the State Fiscal Service of Ukraine and the State Border Guard Service of Ukraine, and other state bodies as well.
4. Judges in Ukraine often consciously help the criminals to avoid just punishment for crimes, related to smuggling, which can be qualified as a corruption crime.
5. One of the gaps on the internal market that contributes to smuggling is the right of entities of the simplified taxation system to sell goods without any primary documentation for them, which would describe the origin of the products.

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6. The absence of an obligation from “STS taxpayers” to have the receipt documents for goods in a complex with the possibility to sell it without cash registers provides favourable grounds for selling any amount of smuggled goods.
7. The current scale of abuse of official positions would not have been possible without the support of political parties, which “got” the customs in the course of inter-fractional agreements.
8. The government measures on counteraction to smuggling face the corresponding critics of the smuggling beneficiaries, media-attacks, and blocking of decisions through the judicial system.
9. Smuggling also flourishes thanks to a longstanding practice of getting additional untaxed income among the residents in the border areas – smuggling acts as a “living” alternative to employment or legal entrepreneurship.
10. Rough breach of the law in the customs and State Border Guard Service of Ukraine are possible only under the condition of availability of the corresponding corruption, grounding on the breaches in the information flows with those states, which are regarded as trade partners of Ukraine.

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MECHANISM OF FORMATION OF INNOVATION SECURITY AND ACTIVATION OF INNOVATION ACTIVITY OF CORPORATIONS

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Abstract. It has been proven that international migration is a global challenge to the national security of each country. The statistical analysis of migration processes in Ukraine has been carried out. Special features of legal regulation of migration flows in Ukraine have been considered. Migration control concerning transit migration in Ukraine is mainly related to the system of restrictions and measures of responsibility for non-compliance with established norms, and at the same time it is more important to ensure the legal stay of foreign citizens in the country, proper legal regulation of their accounting. Instead, Ukrainian case law and judgments of the European Court of Human Rights concerning Ukraine indicate existing violations in the procedure of state protection of the rights and freedoms of foreigners and stateless persons, which they are endowed with in accordance with international standards and national legislation while in Ukraine. One of the problems of migration control in Ukraine is the imperfection of the procedure for registration of citizens at the place of residence, which does not meet the state need to control the processes of population movement and migration within the country. Currently, the basis for registration is not the fact of living in a dwelling, but rather the right to reside in it, as the registration procedure involves the submission of supporting documents for such right. Moreover, living of citizens without registration of residence is an offense and entails the occurrence of administrative liability, while living outside the place of registration is legal.

Keywords: national security; migration flows; migration control; administrative responsibility; transit migration

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1. Introduction

Modern migration policy is mainly focused on eliminating threats related to security, primarily national, as well as personal security (citizens and newly arrived members of the immigration society), especially when it comes to such a subdivision of migration policy as the policy of adaptation of immigrants, which, albeit at a slow pace, but still developing in modern recipient countries of migrants. However, with successful cooperation in the regulation of migration processes, both with traditional and preventive measures, we can talk about combating the threats posed by the intensification of uncontrolled processes of international migration for security at the international (global) level.

The unparalleled importance of the issue under study is also confirmed by the content of the Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their member states, on the other, which stipulates the importance of joint management of migration flows between territories and a comprehensive dialogue on all issues in the field of migration, including illegal migration, legal migration, smuggling and trafficking in human beings, as well as the inclusion of problematic issues in national strategies for the economic and social development of migrant regions.

The special importance of migration control problems is also reflected in the national legislation by the fact that in accordance with the provisions of the Constitution of Ukraine only the laws of Ukraine determine the principles of regulation of demographic and migration processes, as well as the formation and operation of free and other special zones that have an economic or migration regime different from the general one. In our opinion, it is with this that the need for scientific studies in the relevant field, the development of scientific tools, clear legal categories, the conceptual framework of the relevant processes is related.

The purpose of the paper is a theoretical justification, development of scientific and methodological principles and practical solutions focused on improving the system of regulation of international migration in the context of globalization.

2. Literature Survey

As an economic category, international migration is a direct manifestation of the existence of the international (world) labor market, which is developing due to the uneven distribution of labor resources between countries.

Personel is recruited in countries where the demand for labor of the appropriate level of education and with the necessary skills and professional competencies exceeds its supply. In the event that an employee is unable to realize his or her potential, he or she seeks to move to a country where there is a vacancy commensurate with his or her level of professional competence. If a country is unable to provide adequate jobs for workers in the national labor market, there is a phenomenon of outflow of personnel.

The intensification of migration processes in the world economy is due to several reasons:

- 1) the tendency to increased contrast in the levels of economic and social development of exporting and importing countries of labor and population (Tymchyk (2014));
- 2) the growth of international capital movement and the functioning of transnational corporations that promote the union of labor and capital (Turetska (2018));
- 3) demographic crisis in developed countries, which is manifested in a reduction in the number of able-bodied

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people and an increase in the elderly (Vasylchenko (2014));

4) the presence of a large number of low-prestige jobs in services, health care, construction, agriculture, etc. where the natives are reluctant to work (Levenets (2017))

5) the presence and intensity of information communications between countries or their absence (Reznik, et. al. (2020); Chehabeddine & Tvaronavičienė (2020));

6) interethnic, religious, political problems, etc. (Hrabylnikov (2015); Lincényi, & Laczko (2020)).

In scientific papers, regulations, you can find different interpretations of the concept of labor migration (Hula, (2018)). In the most general sense, labor migration is considered as the movement of population outside certain territories within the country or abroad due to changes in employment and residence.

As a social phenomenon, migration includes three parameters: change of coordinates of his or her location by a person (mobility factor), intentions of a person to improve his or her material and social condition (need factor) and attempts of a person to settle in a new place and consider it his or her "second home" (stability factor).

In the scientific literature, in the study of the migration regime of stay of foreign citizens and stateless persons in Ukraine the promising components are the following (Belevtseva, 2019):

- legal regime of "transnational corridors" and transit of foreign citizens through the territory of Ukraine;
- legal standing of compatriots who voluntarily relocate from abroad and other foreign citizens temporarily residing in Ukraine;
- legal regime of border areas.

In this study, the issues of migration control are subject to analysis, namely, by keeping records of foreign citizens and stateless persons. Therefore, our study will not relate to the regime of border areas.

Based on the study and analysis of the literature on the subject of the publication, it can be argued that the relationship between international migration and security issues remain poorly studied today, in contrast to the issues of migration processes themselves and security issues, which have long been considered mainly in the military dimension.

3. Methods

The theoretical-methodological basis of the paper are the basic factors of economics. Various study methods were used to solve the set tasks, in particular, system analysis (for theoretical-methodological substantiation of factors and consequences of migration); graphic analysis (to assess the dynamics of international labor migration); statistical analysis (to calculate the balance of migration, gross migration, coefficients of departure, arrival and migration turnover); grouping.

The accuracy of the study results is provided by a comprehensive use of general and special scientific methods of cognition. The methodological basis is a dialectical general scientific method of cognition, which was used in the study of the development of doctrine of control activities in the area of migration. The method of semantic analysis was used to clarify the content of such concepts as "migration", "control", "migration control", "registration", "accounting", "verification", "passport", "form of control", "method of control", etc., and the formal-logical method was used in distinguishing similar concepts. Modeling and forecasting method was used when developing provisions for reforming the procedure for registration of citizens at the place of residence or stay. Methods of analysis and synthesis were used in the development of proposals to improve the legislation. The above methods were used in the study with the purpose of ensuring its comprehensiveness.

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The theoretical foundations of the study were laid down by the fundamental achievements of scientists in the field of general theory of state and law, management theory, constitutional, administrative law and process (justice) and other branches of law formulated in the works of specialists, as well as encyclopedic legal literature.

The normative basis of the work is the Constitution of Ukraine, Laws of Ukraine, acts of the President of Ukraine, the Cabinet of Ministers of Ukraine, central executive bodies, international normative legal acts, the binding nature of which has been approved by the Verkhovna Rada of Ukraine.

The empirical basis of the study consists of law enforcement acts of government entities, court decisions, reference and statistical materials, etc.

4. Results

While analyzing the so-called transit migration, it should be noted that in Ukraine control measures are mainly related to the system of restrictions and liability for non-compliance with established norms. At the same time, in our opinion, it is more important to ensure the legal stay of foreign citizens on the territory of the state, so the issue of their registration, ensuring their rights and freedoms, which they are entitled to in accordance with international standards and national legislation when in Ukraine is more significant. Here it is also necessary to refer to the definition of "legal migration".

The legislation does not define this, but gives the definition of "illegal migrant", i.e., a foreigner or a stateless person who have crossed the state border outside checkpoints or at checkpoints, but with the avoidance of border control and did not immediately apply for refugee status or asylum in Ukraine, as well as a foreigner or a stateless person who legally arrived in Ukraine, but after the expiration of the period of their stay lost the grounds for further stay and evade leaving Ukraine (Law of Ukraine 'On the Legal Status of Foreigners and Stateless Persons' (2011)).

Accordingly, a foreigner, if he or she lives in Ukraine and does not meet the standard criteria, is a legal migrant. In general, the administrative and legal status of foreign citizens and stateless persons is established by the Law of Ukraine "On the Legal Status of Foreigners and Stateless Persons", the Convention on the Status of Refugees, the Convention on the Status of Stateless Persons, the Declaration of the Human Rights as regards the persons who are not the citizens of the country, in which they reside, and other laws and regulations.

The law defines a number of grounds for the stay of foreigners and stateless persons on the territory of Ukraine (Law of Ukraine 'On the Legal Status of Foreigners and Stateless Persons' (2011)).

Firstly, foreigners and stateless persons may, in accordance with the Law of Ukraine 'On Immigration' (2001), immigrate to Ukraine for permanent residence. The above law determines immigration as arrival in Ukraine or stay in Ukraine of foreigners and stateless persons for permanent residence in accordance with the order established by the law (Article 1 of the Law "On Immigration").

Secondly, foreigners and stateless persons may be recognized as refugees or granted asylum in Ukraine, in which case they are considered to be permanent residents of Ukraine, as evidenced by a refugee certificate.

Thirdly, there are foreigners and stateless persons who came to Ukraine to participate in the implementation of international technical assistance projects, in order to preach religious beliefs, to participate in the activities of branches, offices, representative offices and other structural units of public (non-governmental) organizations of

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foreign countries, for carrying out cultural, scientific, educational activity on the grounds and in the order established by the international agreements of Ukraine or special programs, for the purpose of education or employment, for work as the correspondent or the representative of foreign mass media. Such persons receive a temporary residence permit and are considered to be legally present on the territory of Ukraine for the period of validity of the circumstances that caused the stay.

Fourthly, foreigners and stateless persons who arrived in Ukraine for the purpose of family reunification with persons who are citizens of Ukraine, or who while staying legally on the territory of Ukraine married Ukrainian citizens and received temporary residence permit are considered to be legally present on the territory of Ukraine for the period prior to obtaining an immigration permit (Article 4 of the Law "On the Legal Status of Foreigners and Stateless Persons").

Thus, foreigners and stateless persons can stay in our country for different periods (both permanently and temporarily) and for different purposes, the legal regulation of their status allows to distinguish three groups of persons:

- 1) persons permanently residing on the territory of Ukraine;
- 2) persons temporarily residing on the territory of Ukraine;
- 3) refugees and asylum seekers.

Consequently, it is just in this order that the legal regulation of their registration by the national law will be studied. However, due to the fact that the mechanisms of registration and control of persons permanently residing in Ukraine coincide with those applied to persons temporarily staying in Ukraine, their analysis will be conducted simultaneously.

Permanent residence of foreigners in Ukraine is related to such concept as "immigration" and is regulated by the Law of Ukraine "On Immigration" (2001). Immigration permit is issued within the immigration quota set by the Cabinet of Ministers of Ukraine for the following categories of immigrants:

- 1) workers of science and culture, whose immigration meets the interests of Ukraine;
- 2) highly qualified specialists and workers, the urgent need for which is considerable for the economy of Ukraine;
- 3) persons who have made a foreign investment in the economy of Ukraine in a foreign convertible currency in the amount of not less than 100 (one hundred) thousand US dollars;
- 4) persons who are full brothers or sisters, grandparents, grandson or granddaughter of citizens of Ukraine;
- 5) persons who were previously citizens of Ukraine;
- 6) parents, husband (wife) of an immigrant and his minor children;
- 7) persons who have continuously resided on the territory of Ukraine for three years from the date of establishing their status as a victim of human trafficking;
- 8) persons who have served in the Armed Forces of Ukraine for three or more years.

So, for example, for 2019 the government established the following quotas of immigration to Ukraine by categories of immigrants (region-wise): workers of science and culture — 280; highly qualified specialists and workers — 4; persons who have made a foreign investment in the economy of Ukraine — without restrictions; persons who are full brothers or sisters, grandparents, grandson or granddaughter of citizens of Ukraine — 875; persons who were previously citizens of Ukraine — 498; parents, husband (wife) of an immigrant and his minor

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children — 2,070; persons who have continuously resided on the territory of Ukraine for three years from the date of establishing their status as a victim of human trafficking — 41; and in total for all categories — 3,768 people (On establishing an immigration quota for 2019 (2019)). These quotas are formed by categories of immigrants and on a regional basis (taking into account the current demographic situation) in accordance with the proposals of central and local executive bodies.

Such proposals are based on the results of the analysis of the immigration process in the previous calendar year and take into account the need to limit the quota of immigration to Ukraine of foreigners and stateless persons from the countries of origin of a significant number of illegal migrants (About the statement of the Order of formation of the immigration quota, the Order of proceedings on applications for granting of the immigration permit and representations on its cancellation and execution of the accepted decisions (2002)).

Thus, obtaining permanent residence and citizenship certificates directly depends on the availability of an immigration permit, the issuance of which is set annually by a quota. Assessing the size of the immigration quota and the principles of its formation, experts note the existence of corruption-causing factors (Immigration policy: analysis of procedures and legislative novelties in Ukraine (2019)). It is widely believed that the government should reconsider the feasibility of forming a quota and perhaps remove immigration restrictions altogether, especially for highly qualified professionals.

Often it is the existence of such quotas, which in fact are not always justified, that encourages foreigners to illegally obtain permission outside the quotas: through fictitious marriages, falsification of territorial origin or country of arrival. Immigration permit may also be granted outside the quota, but in cases limited by law. In particular, immigration permit may be granted to one of the spouses, if the other spouse, with whom he or she has been married for more than two years, is a citizen of Ukraine, children and parents of citizens of Ukraine; persons who are guardians or trustees of citizens of Ukraine, or are under the guardianship or custody of citizens of Ukraine; persons who have the right to acquire citizenship of Ukraine by territorial origin; persons whose immigration is of state interest to Ukraine; foreign Ukrainians, spouses of foreign Ukrainians, and their children in case of their joint entry and stay on the territory of Ukraine (Article 4 of the Law "On Immigration").

For permanent residence in Ukraine, a foreigner must obtain an immigration permit. Annually, 22–25 thousand such permits were issued, but after 2014 their number decreased and in 2019 amounted to only 14.2 thousand. 285 thousand foreigners permanently reside in the country, or less than 0.7% of the population (Figure 1).

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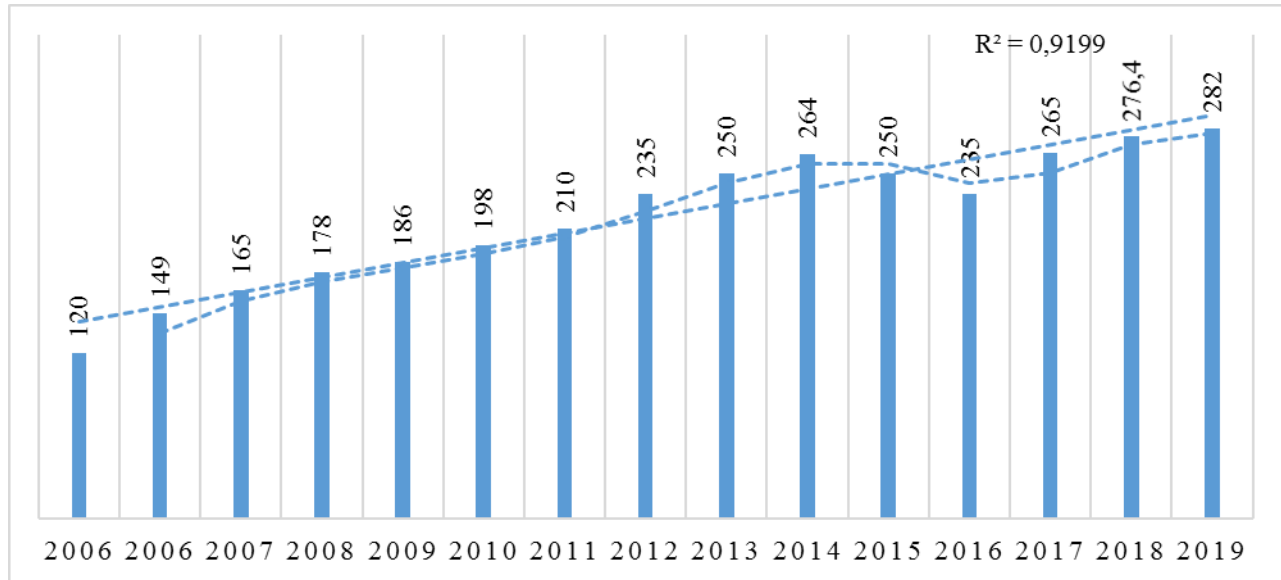


Figure 1. Number of foreigners permanently residing in Ukraine during 2005-2019, thousands of persons (using the linear filtering tool)
Source: State Migration Service of Ukraine

Some foreigners stay in Ukraine temporarily, as of December 31, 2019, they amounted to 133 thousand. Most of them are students of Ukrainian higher educational institutions and temporary workers. After the decrease caused by the difficult security and economic situation, the number of foreign students in higher educational institutions of the country began to grow again and in the 2018/2019 academic year amounted to almost 55 thousand. (Figure 2). Most of them were citizens of India (19.7%), Morocco (9.9%), Azerbaijan (8.2%) and Tajikistan (5.3%). Medical and pharmacological education is the most popular education.

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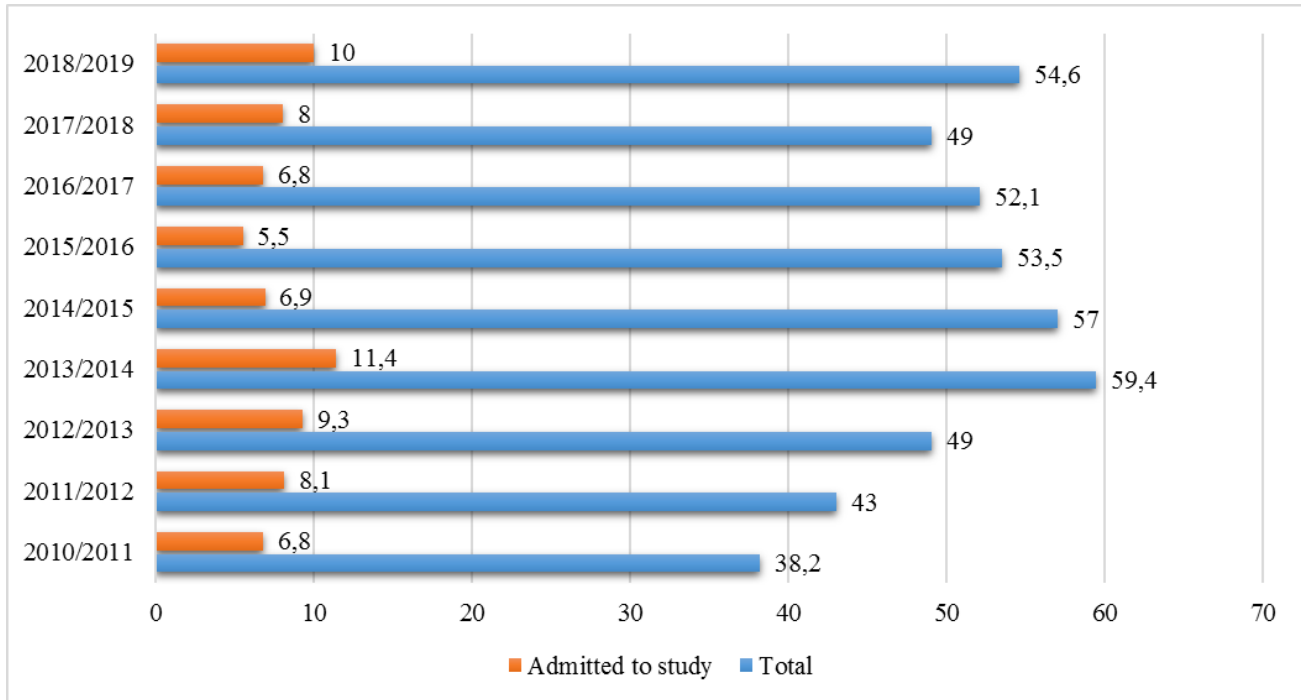


Figure 2. Foreign students in higher education institutions in Ukraine, thousands of persons
Source: State Statistics Service of Ukraine

The State Employment Service, which issues work permits for foreigners, registered 16 thousand foreign workers in 2018 (Figure 3). Immigrant workers are mainly directors and managers engaged in trade and repair, industry, information and telecommunications. In 2018, the most numerous among them were citizens of Turkey (about 3 thousand), the Russian Federation (1.6 thousand), China and Belarus (about 1 thousand).

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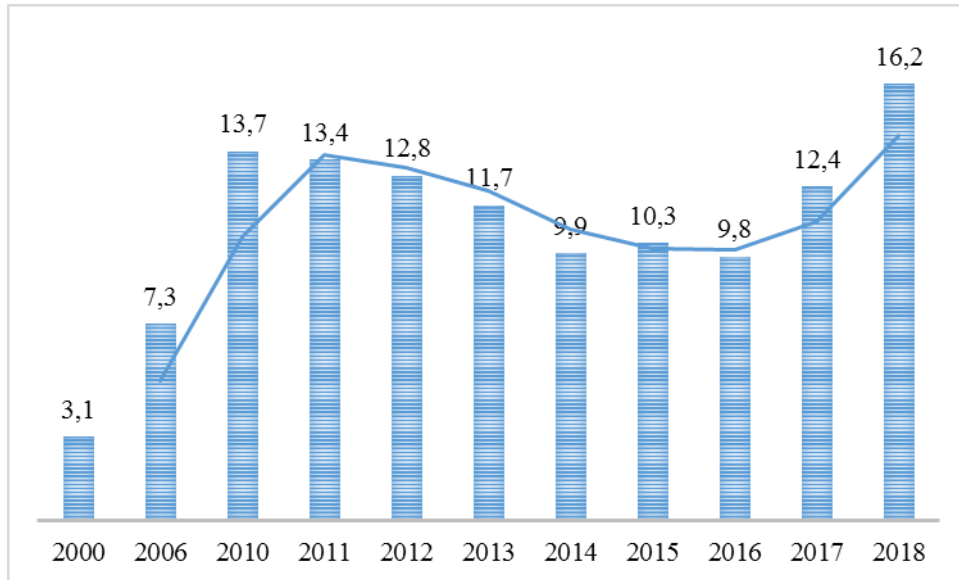


Figure 3. Number of foreigners who temporarily worked in Ukraine with an employment permit at the end of the year, thousands of persons

Source: Ministry of Social Policy of Ukraine

Another group of foreigners in Ukraine are refugees and persons who have been granted subsidiary protection. As of December 2019, 2,096 foreigners with the appropriate status resided in the country. Most of them are from Afghanistan (985 people) and Syria (446 people), as well as from some CIS countries, including Armenia (188 people) and the Russian Federation (135 people).

During 2019, 1,443 applications for international protection were filed, and 93 decisions on granting refugee status or subsidiary protection were made (Figure 4).

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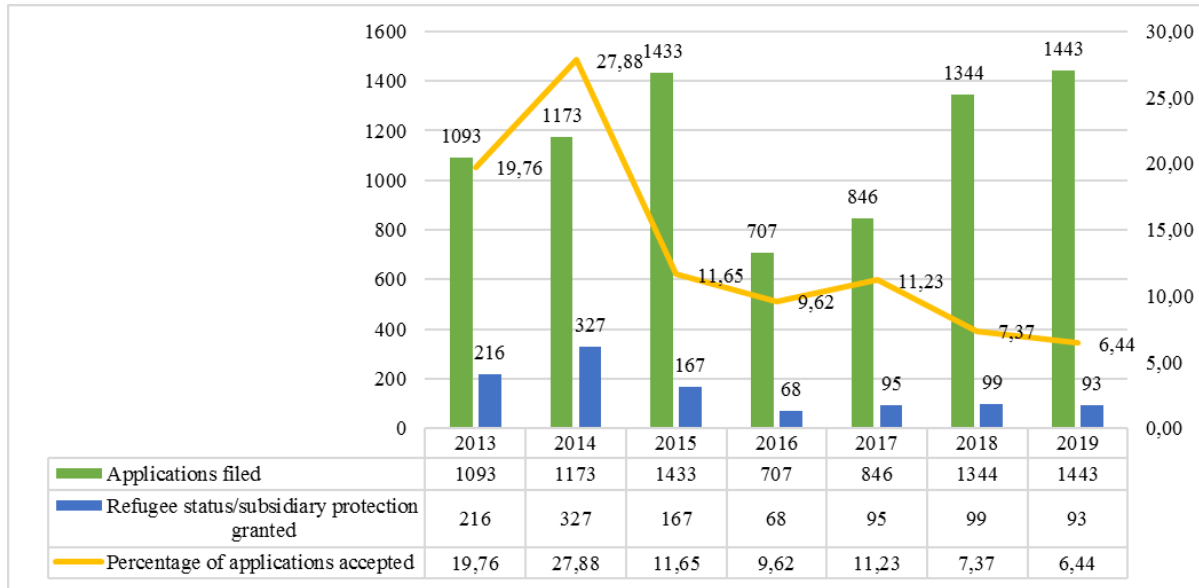


Figure 4. Number of applications for international protection and positive decisions made in Ukraine (for refugee status and subsidiary protection totally during 2014-2019)

Source: State Migration Service of Ukraine

Unregulated migration is relevant for Ukraine in two aspects. First, a certain part of Ukrainian citizens who go abroad to earn money, stay there or engage in paid activities without proper permits and documents.

Secondly, the territory of Ukraine is used for illegal transit to European countries. According to a study on labor migration conducted by the State Statistics Service in 2017, almost one in four labor migrants worked abroad without any legal status or with only a tourist visa, which is three percentage points more than in 2008.

The simplest method of forecasting the volume of migration flows, based on statistics, is extrapolation. Extrapolation allows to provide a short-term forecast (not more than 1/3 of the time period according to which data a model is built) and consist in application of the conclusions of previous observations over the intensity of migration flows to the nearest period. When applying the extrapolation method, it is assumed that the main trends of previous periods will be maintained for the forecast period.

In order to consider the constructed regression model reliable, the value of the coefficient of determination must exceed 0.5 and approach one. Construction of regression equations and calculation of the coefficient of determination are carried out using Microsoft Office Excel (Table 1).

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Table 1. Calculations of the coefficient of determination for regression models

Model type	Scale of arrival		Scale of departure	
	Equation	R^2	Equation	R^2
Linear	$y = -298.91t + 34,289$	0.0173	$y = -3,574.21 + 57,801$	0.6887
Exponential	$y = 35,957e^{-0.024t}$	0.0888	$y = 53,342e^{-0.115t}$	0.7278
Logarithmic	$y = -1,532\ln(t) + 36,628$	0.0061	$y = -13,452\ln(t) + 62,828$	0.9066
Stepped	$y = 35,512t^{-0.098}$	0.0452	$y = 910,471t^{-0.709}$	0.7835

Source: author's calculations based on the data of the State Migration Service of Ukraine

In the calculation, there is a weak relationship between the scale of arrival of migrants and the time factor, while the construction of the trend equation and forecasting the scale of emigration from Ukraine may take place, as the distribution of input data is more balanced. With the value of the coefficient of determination $R^2 = 0.9066$, the logarithmic model of the regression equation is the closest to the input data:

$$y = -13,452\ln(t) + 62,828 \quad (1)$$

Substituting in the above equation the time variable reflecting the following periods ($t = 16; 17; 18; 19; 20$) we receive the forecast of scales of departure of labor migrants (Table 2). According to the forecast, it can be argued that while maintaining the given trend, the scale of departure of migrant workers from Ukraine will decrease in 2020–2023 and will amount to 10–12 thousand people per year.

Table 2. Forecast of the scale of labor emigration from Ukraine for the period of 2020–2023, thousands of persons

Period	Time variable, t	Theoretical scale of arrival	Theoretical scale of departure
2020	17	30,560.4	12,214.5
2021	18	29,835.7	11,729.4
2022	19	29,128.2	11,288.3
2023	20	28,437.4	10,885.2

Source: author's calculations based on the data of the State Migration Service of Ukraine

There are special features of registration for such category of foreigners as refugees and persons in need of subsidiary and temporary protection. In the Law of Ukraine ‘On Refugees and Persons in Need of Subsidiary or Temporary Protection’, a refugee is defined as person who is not a citizen of Ukraine and, as a result of justified fears of being persecuted on the grounds of race, religion, nationality, nationality, belonging to a particular social group or political opinion, is outside the country of his or her nationality and is unable to enjoy the protection of this country or unwilling to enjoy this protection as a result of such fears or without citizenship and outside the country of his/her previous permanent residence, cannot or does not wish to return to it as a result of these fears (Law of Ukraine ‘On the Legal Status of Foreigners and Stateless Persons’ (2011)).

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Separately, it should be noted that the legislator identified just a justified fear of becoming a victim of persecution as a key criterion for characterizing a refugee. This criterion is detailed in the national judicial practice (On the Judicial Practice of Considering Disputes Concerning Refugee Status and a Person in Need of Additional or Temporary Protection, Forced Return and Compulsory Expulsion of a Foreigner or a Stateless Person from Ukraine and Disputes Related to the Stay of a Foreigner and a Stateless Person in Ukraine (2009)) and consists of subjective and objective sides. The subjective side lies in the fact that a person has this fear. Fear is an evaluative judgment that indicates psychological assessment of the surrounding situation by a person. Influenced by this subjective assessment, a person decided to leave the country and became a refugee. Subjective assessment depends on a person, and what is the norm for one person may be intolerable for another. Fear is based not only on the fact that a person has personally suffered from actions that forced him or her to leave the country, i.e., this fear may arise not from the own experience of refugee, but from the experience of others (relatives, friends and other members of the same racial or social group, etc.).

The objective side is related to the existence of a justified fears of persecution and means that there is factual evidence that these fears are real. When recognizing the status of refugee, the situation in the country of origin is an evidence of the fact that subjective fears of being persecuted are justified, i.e., supported by an objective situation in the country and a history that has taken place personally with an applicant.

A person in need of subsidiary protection is recognized as not being a refugee under the Convention relating to the Status of Refugees (1951) and the Protocol relating to the Status of Refugees (1967) and national legislation, but in need of protection because the person was forced to come to Ukraine or stay in Ukraine as a result of threats to life, security or liberty in the country of origin for fear of the death penalty or torture, inhuman or degrading treatment or punishment or widespread violence in situations of international or internal armed conflict or systematic violation of human rights and is unable or unwilling to return to such country as result of these fears. Persons in need of temporary protection include foreigners and stateless persons who are massively forced to seek protection in Ukraine as a result of external aggression, foreign occupation, civil war, ethnic clashes, natural or man-made disasters or other events that disturb public order in a particular area or on all territory of the country of origin (Law of Ukraine 'On the Legal Status of Foreigners and Stateless Persons' (2011)).

The issue of subsidiary and temporary protection has arisen and has been addressed in national legislation, as noted in certain scientific studies, due to the lack of clear and understandable criteria for granting the status of refugees to third-country nationals (Mushak (2015)). However, it is difficult to agree with this, as among the sources of legal regulation there are not only national legal acts, but also international acts and sources of soft law, which are widely used in the justification of decisions of national courts.

Thus, the definition of concepts and their characteristics is contained in Council Directive 2004/83/EC of 29 April 2004 on minimum standards for the qualification and status of third-country nationals and stateless persons as refugees or otherwise in need of international protection, as well as the essence of guaranteed protection. This act stipulates that applications for the relevant status are justified if the following conditions are met: the applicant made a real attempt to substantiate his or her application; all the important facts at his disposal were provided and there was a satisfactory explanation as to any absence of other important facts; the allegations of the applicant are clear and plausible and do not contradict the specific and general information in his case; the applicant has filed his application for international protection as soon as possible if the applicant cannot prove the absence of a valid reason for filing such application; it is established that, in general, the applicant is credible (Council Directive 2004/83/EC of 29 April 2004 on minimum standards for the qualifications and status of third country nationals or

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stateless persons as refugees or as persons who otherwise need international protection and the content of the protection granted).

Another important soft law instrument is the Directive of the European Parliament and of the Council «On common procedures for granting and withdrawing international protection», which aims to establish common procedures for granting and withdrawing international protection, which member states must follow or introduce more favorable procedures, which are comparable to those defined by the relevant directive (Directive 2013/32/EU of the European Parliament and of the Council of 26 June 2013 on common procedures for granting and withdrawing international protection.). A separate directive defines common standards and procedures applicable to the return of persons illegally staying on the territory of third countries (Law of Ukraine 'On the Single State Demographic Register and the Documents that Confirm the Citizenship of Ukraine, Identify a Person or its Special Status' (2013)).

The peculiarity of their registration is that not only persons who have been granted the status, but all those who have applied for recognition as a refugee or a person in need of subsidiary protection are subject to centralized registration and entering information into the relevant centralized information system. Therefore, it is worth examining the whole procedure of recognition as a refugee or a person in need of subsidiary protection.

The existing violations in the procedure of acquiring special legal status are evidenced by the case law and decisions of the European Court of Human Rights concerning our state. Thus, in the decision in the case of Kebe and Others v. Ukraine (Case of Kebe and Others v. Ukraine: Judgment of the European Court of Human Rights of 1 December 2017. 2552/12.), it was established that border guards did not provide an opportunity for foreigners to apply for refugee status while on board the ship, they were not provided with information on the asylum procedure in Ukraine, no duly considered their need for international protection and did not accept their applications. In addition, the decision to refuse to cross the state border to the applicants took effect immediately, which made it possible to expel or forcibly return the applicants outside Ukraine at any time, without proper consideration by the authorities of the application for a potential threat to the applicants.

As for fingerprinting of applicants for acquiring the relevant special status, it is not a fabrication of a domestic legislator. In Germany obtaining political asylum also requires that asylum seekers be photographed and fingerprinted in order to identify them (Svoboda, 2010).

There is also an opinion in the literature that migrants, stateless persons and persons seeking political asylum in Ukraine should also be subject to mandatory dactyloscopic registration, and the relevant international norms should be taken into account when determining the procedure for their registration (Svoboda, 2010).

In this regard, it should be noted that such remarks were relevant until 2011, when the current laws "On the legal status of foreigners and stateless persons", "On refugees and persons in need of subsidiary or temporary protection" were adopted. Currently, the concept of "asylum" is contained in the Constitution of Ukraine, where Article 26 stipulates that foreigners and stateless persons may be granted asylum in the order established by law, and Article 106 stipulates that the authority to make decisions on asylum in Ukraine are referred to the competence of the President. The Law of Ukraine "On the Legal Status of Foreigners and Stateless Persons" stipulates that asylum may be granted to foreigners and stateless persons in accordance with the procedure established by law (Article 7 of the Law). That is, a separate asylum law is envisaged, which we do not have. Today in Ukraine it is possible to recognize a person as a refugee, a person in need of subsidiary or temporary

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protection, for such persons a separate special legal status is established. Therefore, when publicistic and political sources refer to political asylum, they most likely mean the status of refugees, a person in need of subsidiary or temporary protection.

At the same time, the case law indicates that legislative provisions are not always literally implemented in law enforcement activities. Thus, the decision of the Administrative Court of Cassation of the Supreme Court in case №815/476/17 cites the provisions of the above law on the grounds for loss of refugee status. It is noted that a similar norm is enshrined in the Convention relating to the Status of Refugees (1951), according to which the provisions of this Convention do not apply to persons who have voluntarily re-used the protection of the country of citizenship (nationality).

The court also cited paragraphs 118, 119 of the Guidelines on Procedures and Criteria for Determining Refugee Status of the Office of the High Commissioner for Refugees (UN): "voluntary resumption of the protection of the country of one's nationality" means that a refugee who has voluntarily re-used the protection of the country of his or her citizenship does not need international protection. In this case, the above provision on termination of status must meet three conditions: 1) voluntariness: a refugee must act voluntarily; 2) intention: a refugee must intend to take action to re-use the protection of the country of his or her citizenship; 3) renewal: a refugee must really obtain such protection (Case №815/476/17: Decision of the Administrative Court of Cassation of the Supreme Court of 17.10. 2018).

However, in support of its decision, the court states that in determining whether refugee status has been lost in such circumstances, it is necessary to distinguish between the actual use of the protection of the country of citizenship and accidental, insignificant contacts with the authorities of this country. If a refugee has applied for, receives or renews a national passport, this will indicate, in the absence of evidence to the contrary, that he or she intends to use the protection of the country of his or her citizenship. On the other hand, obtaining certain documents from the authorities of a country, which should also be sought by persons of another citizenship, for example, birth or marriage certificates, or other similar services, cannot be considered as a renewal of the protection of that country. A refugee seeking protection from the authorities of the country of his or her citizenship may be considered to have resumed the use of protection only if such protection has actually been granted to him or her (Case № 815/476/17: Decision of the Administrative Court of Cassation of the Supreme Court of 17.10. 2018).

5. Discussion

Ukraine has a well-developed system for collecting information on migration. Its main sources are current migration records, censuses, household surveys, and administrative data.

A number of state registers have been created, covering certain groups of the population and containing data that could potentially be used to supplement knowledge about migration. However, the disadvantages of migration data are their lack of comparability not only with international data, but also with administrative data of various agencies, under-registration or double-entry of migrants.

In order to provide the sound statistical and factual basis needed to make appropriate migration policy decisions, it is necessary to:

to provide a block of questions related to migration (permanent, labor, circular) in the 2020 census;

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add standardized modules on migration to household and labor force surveys to collect information on labor migration abroad, reintegration of returnees, level of integration of immigrants;
ensure compliance of migration data collected and published in Ukraine with UN recommendations on migration statistics and indicators used by Eurostat;
identify opportunities to use new sources of statistical information, such as state registers containing population data, big data;
to strengthen the level of interaction between agencies in order to achieve comparability of administrative data;
to strengthen the role of the State Statistics Service of Ukraine in coordinating and methodological support for the work of departments of executive bodies responsible for administrative data in the area of migration;
in order to achieve these goals, develop and implement an integrated strategy to improve migration data.

Conclusions

One of the problems of migration control in Ukraine is the imperfection of the procedure for registration of citizens at the place of residence, which does not meet the state need to control the processes of population movement and migration within the country. Currently, the basis for registration is not the fact of living in a dwelling, but rather the right to reside in it, as the registration procedure involves the submission of supporting documents for such right.

Moreover, living of citizens without registration of residence is an offense and entails the occurrence of administrative liability, while living outside the place of registration is legal. All this condition a situation where individuals are forced to register not where they actually live, but where they can document the right to residence, which leads to the accumulation in the registers of local communities of information about the place of residence, which is not true. The solution to this problem is seen through the change of the very principle of registration from the permit to the notification, when the citizen only notifies the relevant authorities about his place of residence.

The only case in law where registration of residence is carried out by notification is acquiring the status of a forcibly displaced person, when the applicant declares a new address, which is his place of residence, without the need to provide any evidence or obtain residence permits.

Another practical problem that needs to be solved by law is to regulate the registration of residence of persons registered in the temporarily occupied territories of Donetsk or Luhansk regions, as well as Crimea, who are internally displaced persons, as well as internal migrants who migrated before 2014, but did not change the place of registration, as well as students who studied in higher educational institutions of Ukraine and were registered for the period of study. All of the above categories of persons have problems with registration and access to all administrative services provided at the place of registered residence.

The normative solution to this problem may consist in establishing a body and regulating the mechanism of registration of residence of a person in the temporarily occupied territory, as well as entering information about the place of residence of such persons in the register of territorial communities by unifying the procedures of registration of internally displaced persons and registration at the place of residence. However, currently a kind of solution to this problem of registration at the place of residence is the activity of law enforcement agencies, which are the bodies of the migration service, which do not record the place of registration of an individual when

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exchanging a passport due to unfitness for further use, or obtaining the first passport upon reaching 16 years of age in the form ID-cards.

Migration control concerning the so-called transit migration in Ukraine is mainly related to the system of restrictions and measures of responsibility for non-compliance with established norms, and at the same time it is more important to ensure the legal stay of foreign citizens in the country, proper legal regulation of their accounting. Instead, the national case law and judgments of the European Court of Human Rights concerning our country indicate existing violations in the procedure of state protection of the rights and freedoms of foreigners and stateless persons, which they are entitled to in accordance with international standards and national legislation while staying on the territory of Ukraine.

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INFLUENCE OF SHADOW ECONOMY LEGALIZATION ON NATIONAL SECURITY OF UKRAINE

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Abstract. The held analysis indicates about the availability of a wide spectrum of schemes and instruments of tax evasion, complex application of which, apart from reduction of the fiscal flows, causes deterioration of the economic environment and appearance of the negative macroeconomic consequences: distortion of the payment balance, capital outflow from the country, formation of additional pressure on the exchange rate, destructive influence on the formation of differently vectored priorities of the customs and tax policy of the country, and deepening of corruption schemes. In general, these losses are reflected in significant volumes of shortfalls in budget revenues and the ability of public authorities to perform functions and powers assigned to them. Under the condition of accelerated development of the European integration processes, entry to the new markets for sales of goods and services, the analysis and identification of all possible schemes of tax evasion and illegal financial flows formation take an important place in the general state strategy on the country's development. The availability of a considerable variety of types and forms of the shadow financial transactions implementation requires the implementation of a measures complex, aimed at timely identification and prevention, development of methodological instruments for assessment of the effects from the existence of the shadow sector in the national economy. This situation makes it necessary to develop an efficient instrumentarium on counteraction to tax evasion, making it possible to timely detect illegal actions of the economic entities at all stages of their appearance. The development of these measures will contribute to financial security level improvement and strengthening of competitiveness of the economy of Ukraine.

Keywords: shadow economy; legalization; national security; financial security; taxation

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1. Introduction

The current economic development trends in Ukraine are characterized by the instability of the activity figures, budget deficits, low efficiency of the economic, political, and social reforms, rise in the level of the unprofitability of the enterprises, a high level of corruption, etc. The transformational transfigurations, which are observed in these days in Ukraine, take place under the influence of factors of exogenous and endogenous nature, which, on the one hand, are the stimulators of these processes and, on the other hand, deepen economic misbalances in the country and lead to threats to national security (Kozlovskiy, S., Grynyuk, R., Baidala, V., Burdiak, V. & Bakun, Y. (2019)).

Shadowing of the economy is one of the most powerful destabilizing factors nowadays (Osipov, G.V., Glotov, V.I., Karepova, S.G. (2018); Vigliarolo, F. (2020); Draskovic, V., Jovovic, R., Streimikiene, D. & Bilan, S V. (2020); Mazzanti, M., Mazzarano, M., Pronti, A., Quatrosi, M. (2020); Chehabeddine, M., Tvaronavičienė, M. (2020); Dorogov, N.I., Kapitonov, I.A., & Batyrova, N.T. (2020)).

Financial flows often become an object of manipulation during the preparation of statistical, accounting, and tax reporting, determination of the economic subjects' activity results, and, as a result, significantly hinder investment processes in the country, limit the tempo of the economic development, and significantly level down the effectiveness of the introduced reforms.

The reinforcement of the globalization processes, openness of the economic and financial systems, an increase in the scale of the export-import operations, and other factors, create preconditions for the expansion of the shadowing volumes of the national economy (NE). According to the estimates of the International Monetary Fund, in 2018, the average global level of the national economy shadowing amounted 25% of the global GDP, and in Ukraine, it reached even higher level – 30% of GDP (Ministry of Economic Development, Trade and Agriculture of Ukraine).

According to the estimated of the Basel Institute on Governance, Ukraine lags significantly behind the leading countries in terms of the quality of the anti-money laundering and counter-terrorist financing policies (in 2017 – 52nd position, in 2019 – 37th place out of 125 possible positions). One of the most common ways of shadowing of NE is the avoidance of tax obligations by the economic agents, which leads to the formation of tax gaps (TG) in the NE. The total average volume of TG in the EU countries upon all taxes amounts approximately 20 % (825 billion euro) of the volume of tax revenues, while in Ukraine – it is about 25 %. Therefore, the TG management should be considered as an important direction of implementation of the state policy on unshadowing of the NE, which necessitates an objective need for harmonization of its methodological, organizational, institutional, and regulatory subsystems.

The shadowing of the economy (Nguyen, T.A.N., Luong, T.T.H. (2020) is an expected result of the economic processes, which reside in the growth of the global economic crisis and the European integration and globalization processes in the country. As of today, the operations on income shadowing are actively used in all spheres of public life and at all its levels. The high level of corruption inside the state, a significant level of bureaucracy, difficulty in starting and further business development contribute to the diversification of channels of the capital transfer and increase in the scale of their use.

The contemporary challenges of the economic development, appearing on the way of economic entities in Ukraine, encourage them to use diverse ways for optimization and reduction of possible expenditures of the

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production cycle. While trying to hide their income, commercial entities implement various schemes of shadow funds withdrawal abroad and their subsequent legalization.

As a result, one observes an increase in the need for identification of the legal and illegal shadowing schemes as an opportunity to reduce tax pressure, accumulate additional income, etc.

2. Literature Survey

There is a great number of approaches to the determination of the main ways to transfer capital abroad in economic literature. Putniņš, T. J., & Sauka, A. (2015) distinguish two forms of the capital flow: an investment channel – withdrawal (input) of the entrepreneur's capital or foreign investments, and financial and credit channel – withdrawal (input) of the loan capital or capital transfer (loans, credits, bank deposits, payments upon the transactions with foreign partners).

Based on the held analysis, it is possible to identify the following channels of assets concealment out of country:

- 1) external-economic – non-repayment of foreign exchange assets, which is related to the use of external-economic transactions (Κάτσιογ, Σ. (2015));
- 2) investment – the use of schemes on the return of pseudo-investments or payments of dividends to non-residents, which significantly exceed the actually invested foreign capital (Schneider, F., Raczkowski, K., & Mróz, B. (2015));
- 3) foreign exchange – implementation of transactions with valuable securities, primarily through repurchasing of domestic securities (González-Fernández, M., & González-Velasco, C. (2015));
- 4) insurance – implementation of fictitious transactions in the field of insurance and reinsurance (Dell'Anno, R. (2016)).

Other authors also distinguish the following schemes of the money withdrawal abroad:

- 1) foreign economic – transfer of foreign currency abroad, disguised as a foreign economic activity through such transactions (Salahodjaev, R. (2015)):
 - understatement of export and overcharge of import contract prices to make a foreign partner receive a reward, part of which is transferred to the foreign accounts of the Ukrainian residents;
 - non-repayment of export earnings or implementation of goods, imported without their actual import into the country, in particular, through the mechanism of making advance payments, disguised as fictitious import ones;
 - contracts;
 - transfer or non-repayment of currency from abroad in the form of contributions to the statutory funds of the joint ventures;
 - lodging of a security deposit in a foreign bank for obtaining a loan, which is actually not disbursed;
 - artificial application of penalties by a non-resident;
- 2) investment – the use of schemes on the return of pseudo-investments or payment of dividends to non-residents, which significantly exceed the actually invested foreign capital (Feige, E. L. (2016));
- 3) stock – conduction of repurchase transactions of previously emitted domestic securities (Goel, R. K., & Nelson, M. A. (2016));
- 4) insurance – conduction of fictitious insurance and reinsurance transactions (Kirchgässner, G. (2017)).

Despite the existing scientific potential, there are many theoretical and applied problems, which still require a final decision and regard, in particular, the definition of catalysts of shadowing of the national economy, the assessment of efficiency of the state policy on unshadowing, considering socio-economic determinants of national economic development. The logical non-completion of the holistic view formation about the governance in the

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context of the implementation of the state policy on unshadowing of the national economy has determined the relevance of the research, its objective, tasks, and content.

3. Methods

The methodological basis of the work included the fundamental statements of the economic theory, the theory of money, finance and credit, macroeconomics, management theory, state regulation of the economy, economic and mathematical modelling, and research papers on the TG management and the unshadowing of the national economy.

The research includes the use of such research methods as the methods of logical generalization and scientific abstraction, induction and deduction – during the clarification of the conceptual and categorical framework; a system-structural analysis – while assessing the efficiency of the state policy on unshadowing of the NE.

The information and factual basis of the research covered: the laws of Ukraine, decrees of the President of Ukraine, the normative acts of the Cabinet of Ministers of Ukraine, international legal and regulatory and recommendation documents on financial monitoring, analytical and reporting data of the Ministry of Finance of Ukraine, the Ministry of Economic Development, Trade and Agriculture of Ukraine, State Statistics Service of Ukraine, data of the World Bank, and Organization for Economic Cooperation and Development, the analytical reviews of the international agency Bloomberg, the Financial Action Task Force (FATF), the research results on the TG management problematics, and counteraction to shadowing of the NE.

4. Results

The annual increase in the shadowing volumes of the economy leads to the formation of the institutional and regulatory policy on the economy shadowing countermeasures both at national and international levels. As of today, the existence of the shadow sector of the economy is typical for the majority of the world countries, each of which has already developed a variety of countermeasures that are different in terms of specificity structure of their budget, tax, finance, investment, and other policies.

The modern system of counteraction against income shadowing of each country consists of two components: a national component and a supranational component. The structure and functioning peculiarities of the national component are determined by the level of development of a particular country and the powers of the authorities, involved in this process. To date, the international community has developed a significant variety of tools on counteraction against economy shadowing, which can be divided into restricting and controlling ones (Table 1).

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Table 1. Generalization of the structural features of the national system on counter shadowing in the world countries

Country	Peculiar features of the national system
Poland	Prohibition to hold an economic activity for individuals who were previously engaged in activities, aimed at concealment of tax liabilities or other measures, regarding income shadowing in significant amounts. One introduced the property liability for unlawful acts of a financial nature.
Italy	Restrictions for payments in cash during operations, carried out by individuals and juridical entities in meaningful amounts.
Japan	Obligation to give notice to financial monitoring and control bodies about big transactions of financial character from financial and non-financial organizations.
France	Restrictions for export-import operations, carried out by domestic economic entities in the offshore areas.
Germany	Obligatory declaration of transactions with non-residents, notification of financial monitoring bodies about all suspicious operations of financial character from financial and non-financial organizations.
Netherlands	Enhancement of control over all potential sources of corruption appearance and people who were previously engaged in shadow operations. The law violators are prohibited to take public posts.

Source: systematized by the authors

Thus, for example, the Italian government has imposed restrictions on cash payments for minimizing of illicit financial flows. France limits the size of the export-import transactions with representatives of companies from offshore zones.

Alongside these instruments, an obligatory reporting of public authorities about the meaningful financial transactions to public authorities is becoming more widespread. In Germany, all financial and non-financial institutions are obliged to notify the financial monitoring authorities about all suspicious financial transactions, in Japan, all financial institutions must report to the financial monitoring and control authorities about grand-scale financial transactions.

The European integration processes across the world and the realization of the large-scale influence of the shadow economy on the development of countries have led to an understanding of the need for establishing supranational institutions, alongside national organizations on monitoring and control of shadow financial flows; whose activity is aimed at monitoring and enhancement of control over the financial operations of the member-countries of these organizations.

The functioning of the above-mentioned organizations provides deepening of international cooperation between the member-countries and eases the supervision and monitoring procedures over the level of shadow financial flows, considering the possibility of faster access to information, it contributes to the formation of the unified rules and recommendations for the national institutions, which are compulsory for all interested parties.

Usually, the engagement of a non-resident-partner in the shadow capital transfer operations complicates the procedure of financial monitoring and control over the movement of capital, the identification of all participants of the shadow schemes, verification of the information reliability, reflected in the financial statements due to a lack of timely data exchange between customs authorities of different countries. This fact contributes to an annual increase in the volume of illegal capital transfer through external channels.

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Thus, upon the results dated 2018 in the general income shadowing structure 60% of the total volume of shadow capital movement (UAH 27 billion) take the operations on illegal transfer of money abroad from Ukraine (Figure 1).

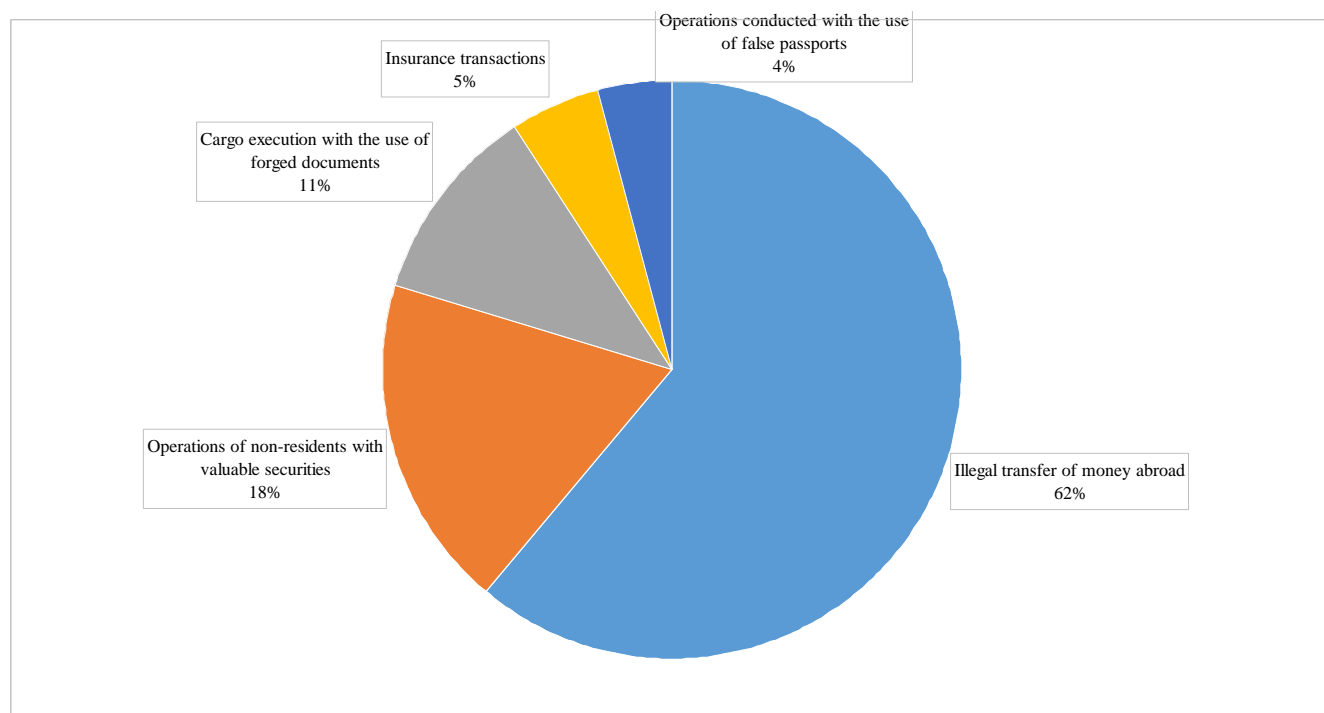


Figure 1. The most commonly used operations for money laundering in Ukraine in 2018 (UAH billion)

Source: compiled by the authors, based on the data of The most common money laundering schemes are related to operations on illegal withdrawal of money abroad and investment from offshore zones (2019)

The main sectors of the economy, which included the application of various schemes on income shadowing, were: mining industry, operations with real estate, process industry, financial and insurance activities.

Nevertheless, considering the low growth rates of the economic development of Ukraine (one of the lowest GDP growth rates in the world for the analyzed period), this value of illegal financial flows is a significant destabilizer for the economic situation in the country.

According to the methodology of Global Financial Integrity, an illegal incoming flow can form upon two directions: overrating of the export accounts and undervaluation of the import ones. Herewith, in the first case, one more often observes the procedure of return of illegally withdrawn capital, while in the second case – includes the possibility of shadow settlements for imported goods, works, and services. Alongside this, the output financial flow is made available by the action of the opposite operations – the undervaluation of export accounts and the overrating of import accounts. Thus, we can talk about the use of only one channel of the capital outflow, namely, the export-import one (Illicit Financial Flows Reports. Global Financial Integrity official web-site). At the same time, the author mentions that it is an international business component that takes a significant part of the shadow sector of the economy. It is the most common among the subjects of economic activity.

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According to the Statement of the Ministry of Economic Development, Trade and Agriculture “About the statement of Methodical recommendations concerning a complex estimation of volumes of unproductive outflow (export) of financial resources outside of Ukraine” (2015)) the capital outflow out of Ukraine can be conducted upon the following schemes: unproductive legal outflows, hidden outflows, and unrecorded outflows.

The legal unproductive capital outflows can be carried out through the provision of loans by deposit corporations to non-residents (except for the NBU), payment of interest upon deposits, belonging to non-residents, conduction of direct investments from Ukraine, implementation of portfolio investments from Ukraine, repatriation of income of the non-residents, received from investment activity in Ukraine, payment of capital and other current transfers.

The hidden capital outflows can take place through price distortion of the exported or imported products, which results in a financial profit of the foreign counterparties; under-receipt of revenues by the domestic participants of the foreign economic activity through the fictitious transactions; non-repayment of foreign currency from export operations; and the purchase of freely convertible foreign currency in Ukraine for spending it outside our state.

The conducted analysis shows about the availability of a wide spectrum of ways and schemes of illegal costs withdrawal abroad, engaging a lot of participants, among which are bank institutions, insurance and investment companies, and subjects of economic activity both inside the country and beyond its lines as well (Table 2).

Table 2. Channels of illegal costs withdrawal abroad used in Ukraine

Channel	Way of implementation	Characteristics
Bank	Granting of visibly unrecoverable loans	Transactions, involving funds transfer in foreign currency from accounts in Ukrainian banks to accounts in foreign banks
	Fraudulent bankruptcy of banking institutions with the withdrawal of funds to foreign accounts	
	Opening of an account by residents in foreign banks	
	Overstatement of the interest rate for a loan in foreign currency granted to the Ukrainian side	
	Shredding of deposits (smurfing)	
Export-import	Understatement of the documented export price for goods, which are sold offshore at world prices	Non-return of currency in Ukraine, obtained from economic activity, carried out outside Ukraine
	International reinsurance operations	
	Giving time on payment of export products	
	Manipulations with prices during commodity exchange operations with the consequent investment of part of the funds abroad	
	Unjustified advance payments, based on the fictitious contracts for the delivery of goods into the country and payment for fictitious import services	
	Overstating the quality of the export product in the contract with simultaneous overstating of the penalty for the case if the goods do not meet the specified quality	
	Overrating of the documented import price of the goods, which is actually sold at its real cost	
	Fictitious import contracts	
	Creation of fictitious debts for the controlled legal entities abroad	

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Economical	Creation of the offshore companies for withdrawal of part of the income from taxation	Conduction of unprofitable for a partner activity with an unofficial benefit outside Ukraine
	The use of schemes on the recovery of pseudo-investments or payment of dividends by non-residents, which significantly exceeds actually invested foreign capital	
	Manipulations with prices	
	The enterprises' coming into agreement with the same party for purchase and sale of the same valuable securities	
Non-bank	Non-controlled transfer of currency abroad	The use of telegraphic and other ways of funds transfer
	Purchase of real estate abroad	
	The use of charity organizations (criminal funds are disguised as charitable contributions)	
Insurance	Conclusion of a fictitious insurance contract, a refund of insurance payments, overseas reinsurance transactions	The conduction of fictitious insurance operations
	Making or a security deposit in a foreign bank with the formal intention of getting a loan and its subsequent cancellation	

Source: systematized by the authors

The problem of funds legalization, obtained by fraud is a challenge to the financial and economic sustainability of many countries. Stable operation of a country's financial system is possible under the condition of availability of effective mechanisms and measures on holding and counteraction to laundering of illegal funds at the level of various subjects of the national economy and financial institutions. In recent times, one observes adjusting of the existing legislative and regulatory framework under the requirements of international standards of the national system on combating against funds legalization, obtained by fraud, and financing of terrorism.

To identify the areas of activity and channels of the financial flows penetration, where the degree of probability of money laundering and financing of terrorism is the biggest, one should carry out an analysis and risk assessment for these transactions. The approach, based on risk assessment, will include the detection and control of potential risks of funds legalization, obtained by fraud, which will make it possible to prevent money laundering processes. The implementation of the approach, based on the risk assessment, is possible under the cooperation of the competent authorities and financial institutions.

Upon the results of the analysis, held by the International group of the Financial Action Task Force, the annual volume of money laundering amounts 700 billion – 2 trillion US dollars, which on average equals 2-5 % of the world GDP and is considered as the one, which does not have a significant impact on the indicators of the socio-economic development of society (Illicit Financial Flows Reports. Global Financial Integrity official web-site). Nevertheless, although the global average level of income shadowing does not exceed a conditionally safe level, for some countries, this indicator is regarded as critical (Table 3) and indicates about a rather developed and extensive shadowing system.

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Table 3. The economy shadowing level of the world countries, 2018

Country	Economy shadowing level (% of GDP)	Country	Economy shadowing level (% of GDP)
Azerbaijan	60,04	Germany	10,4
Ukraine	52,2	Australia	9,4
Nigeria	48,37	Canada	9,8
Russian Federation	39,07	China	8,1
Sri Lanka	37,76	Switzerland	8,4
Brazil	34,76	Japan	8,6
Pakistan	31,78	USA	5,4
Spain	17,2	X	X

Source: compiled by the authors, based on the data of The official site of the World Economic Forum

The above-given information shows that the number and volume of illegal capital outflows in Ukraine have significantly increased and the level of economic crime has also risen as a result of the deep economic and political crisis. The country takes second place upon income shadowing and has more than 50% of the total value of hidden income, Figure 2.

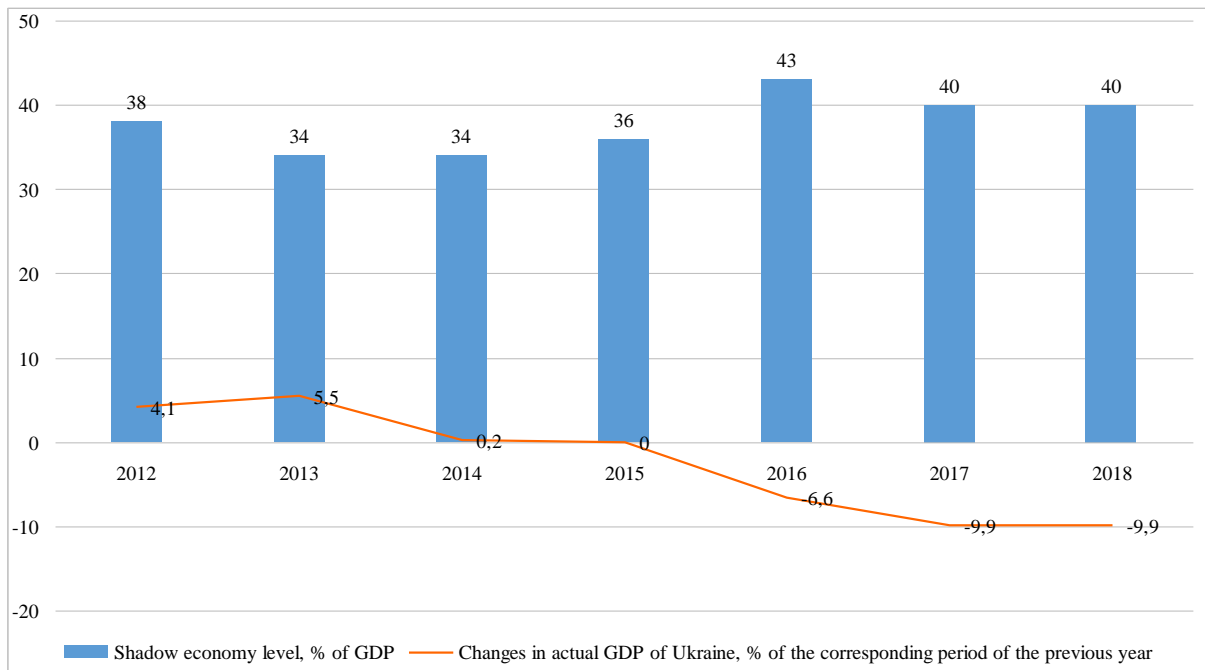


Figure 2. Integral indicator of the shadow economy in Ukraine and the growth/decline rate of real GDP

Source: compiled by the author, based on the data of National risk assessment report on preventing and countering legalization (laundering) of proceeds of crime and financing of terrorism. Kyiv, Ukraine. 2019

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The indicator of the economy shadowing in Ukraine sits at a rather high level, which indicates about significant deficiencies in the government policy. The biggest weight in the overall structure of money laundering is taken by the operations on illegal transfer of funds abroad – UAH 27 billion or 60% of the total volume.

Upon the results of 2018, the main areas of the economy, housing the application of various income shifting schemes, included: mining, real estate transactions, processing industry, and financial and insurance activities.

Some of the main sources of illegal financial flows among others are the income in the form of tax evasion and manipulation with prices during foreign economic transactions – transfer price formation, which is the most significant component of such flows.

The shadow outflow of profits abroad takes place due to violation of existing legislation on its taxation (for example, without payment of the corresponding corporate taxes or with violation of currency control and regulation rules, etc.).

Despite the availability of a rich spectrum of funds shadowing channels, the tax channels are the most widespread ones in Ukraine. Their key objective is to minimize the sums of tax obligations. As of today, there is a great diversity of ways of income shadowing through tax channels, in particular: double-entry book-keeping; introduction of accounting mistakes; underdeclaration of profit; concealment of a part of assets.

Furthermore, the operations on taking profit abroad through the distribution of business processes between business entities in different countries are also quite common. Usually, the production processes are carried out on the territory of Ukraine, while financial and asset management operations are carried out at foreign enterprises abroad. The process of income and expenditures distribution of these enterprises is built in such a way so that the maximum share of revenues is accumulated abroad.

Apart from the above-reviewed scheme on income shadowing, some economic entities use mechanisms, focusing on receiving VAT recoveries in the result of illegal operations on income shadowing.

During the study of the global competitiveness dated 2017-2018, it was determined that Ukraine, in terms of its tax system, occupies an 81 place out of 148 countries (The official site of the World Economic Forum). The use of optimization schemes contributes to the appearance of channels of money withdrawal out of the national economy. It is a rather flexible and universal tool for companies, engaged in different types of activity. Thus, the payment of interest on loans from controlled foreign companies may become a convenient channel for domestic economic entities for hiding of capital out of the country. If a foreign company is located in a country, with which Ukraine has signed a double taxation treaty, and this country is not included in the CMU list of offshore zones, the interest on such a loan is treated as an expense of the Ukrainian company, which, therefore, allows it to minimize its profit tax liabilities.

There are almost no barriers to hidden capital withdrawal in Ukraine. That is why profit is taken out of the country almost without hindrance. To prevent the illegal outflow of capital, some countries have created conditions, in which the legal transfer of profits to “tax havens” is accompanied by additional payments to the budget and expenses, while the illegal transfer is accompanied by the risk of prosecution.

Apart from their traditional purpose, the investment flows in Ukraine are often part of schemes on hidden capital withdrawal. An indicative example of this is the large volume of investment from Cyprus, which accounts for

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more than 32% of total domestic foreign direct investment. According to the data of the State Statistics Service, Cyprus accounts for the largest share with 19 billion US dollars out of 58.2 billion US dollars of foreign direct investment, attracted during all years of independence of Ukraine since 1991. Only in 2013, the investors registered in Cyprus invested 1.8 billion from 3.7 billion US dollars of direct foreign investments (in 2012 – 3.9 billion US dollars from 4.1 billion US dollars).

The estimates of the Tax Justice Network experts indicate that for the ten jurisdictions, which have the highest financial secrecy score upon the “Financial Secrecy Index” account for around 80% of global financial services trade in the global market. Over 50 % of bank assets pass through jurisdiction, which has a high level of secrecy. According to the data of the Stoles Asset Recovery Initiative, almost all large transnational companies use jurisdictions with high levels of secrecy for minimizing tax assessment base upon the corporate taxes (The official site of The Stolen Asset Recovery Initiative (StAR)).

The financial systems of developing countries are more prone to the accumulation and realization of systemic risks, despite the small size and sophistication level of their financial systems, compared to developed countries. The level of financial stability risk in a country depends on the behaviour of many participants in the financial system.

Considering constant systemic interaction of the economic agents in the domestic and foreign markets for resources, goods, and services and financial markets, and the consequences of these interactions in the form of synergistic explicit and latent effects, we have identified the drivers and methods for economy shadowing.

The main components of the process of illegal funds withdrawal abroad are given in Figure 3.

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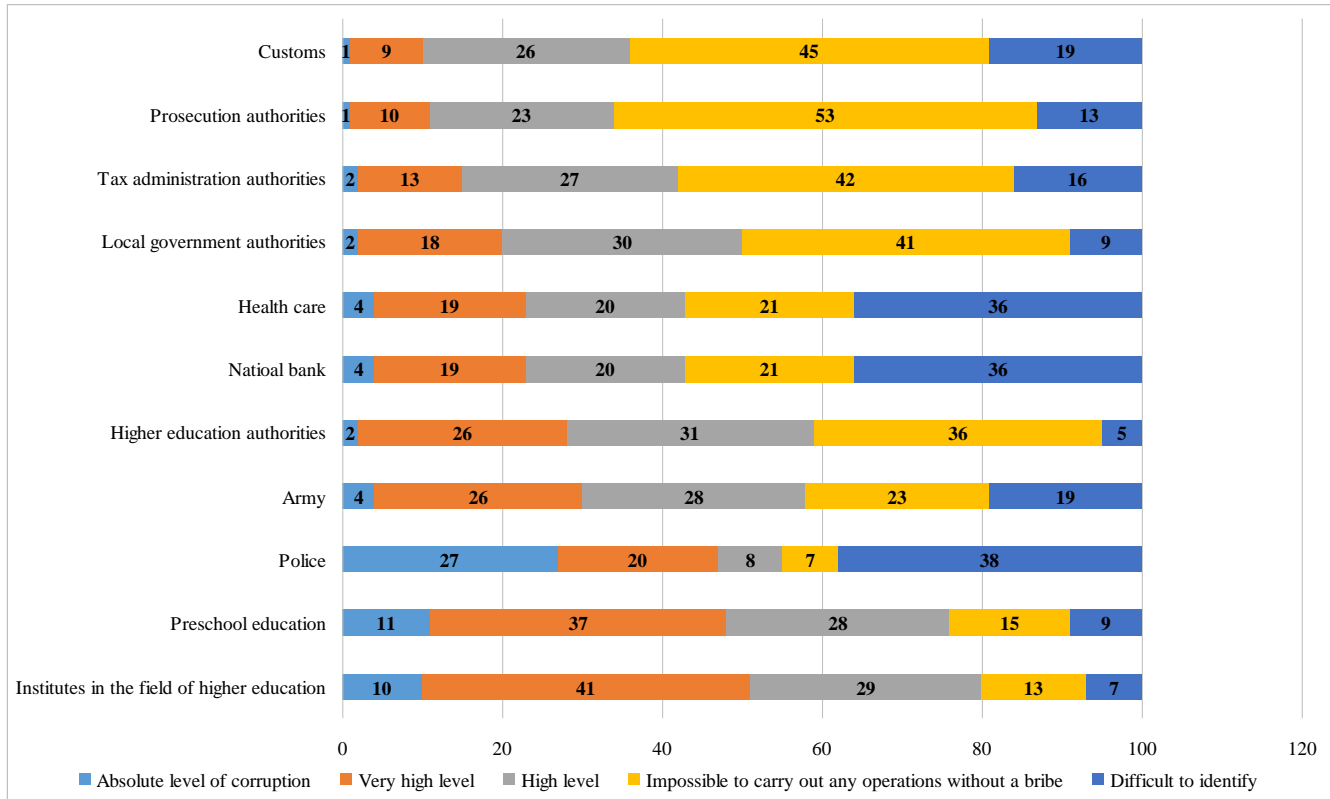


Figure 3. Corruption level in different institutions in Ukraine in 2018

Source: compiled by the authors, based on the data of National risk assessment report on preventing and countering legalization (laundering) of proceeds of crime and financing of terrorism. Kyiv, Ukraine. 2019

Let us conduct practical testing of the proposed approach to assessing the risk of income shadowing, using the example of investment channels for the withdrawal of funds. According to the State Statistics Service of Ukraine for the period 2012-2018, the volume of foreign direct investment from Ukraine amounted to USD 39 billion. Cyprus and the United Kingdom were the main investors.

The share of countries upon the volumes of direct investments from Ukraine is given in Figure 4. Considering the details mentioned above, the practical testing of the proposed approach for determination of the probability of funds legalization transactions for Ukraine will be carried out using the example of Cyprus and the Virgin Islands as the countries with the largest volume of investments from Ukraine.

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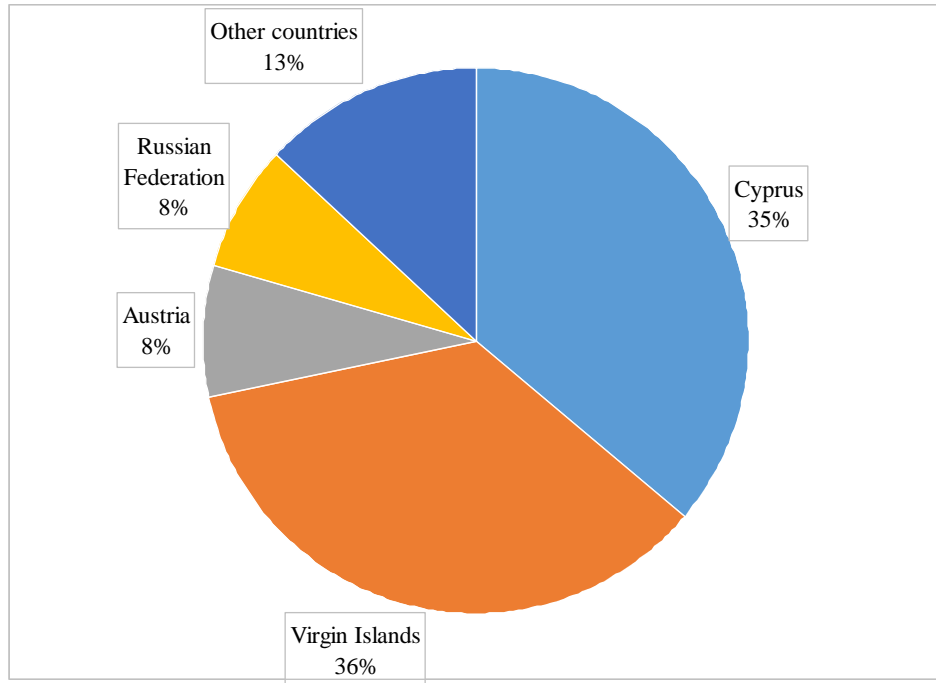


Figure 4. Direct investments from Ukraine in the economies of the world countries in 2018
Source: authors' calculations

Since, by the types or the economic activity, the largest amount of funds in Ukraine has been invested in science activities and the processing industry, the mentioned types of activity will be assessed for the probability of income shadowing risk appearance.

The results of calculations, given in Table 4, show about the intermediate-risk level of income legalization, obtained by fraud during conduction of operations in the processing industry under the participation of Ukraine and the Virgin Islands. At the same time, since the Virgin Islands and Ukraine are determined as the offshore area, which is automatically considered by us as the high-risk area, the probable risk estimate of income shadowing during operations in the area of processing industry for this group of characteristics constitutes 0,74, which indicates about a high level of risk for this operation.

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Table 4. Assessment results of the possibility of an appearance of income legalization risk, obtained by fraud under the participation of Ukraine and the Virgin Islands

Table 4. Assessment results of the possibility of an appearance of	Characteristic	Estimate upon qualitative grading scale	Score	Probabilistic estimate
Member-country	The Virgin Islands	high	0	0,27
Bodies, which participate in operations	Customs	high	24,26	0,16
Country of origin	Ukraine	high	7,3	0,0085
Type of economic activity	Processing industry	high	2	0,17
General estimator		high	55,7 (intermediate)	0,74 (high)

Source: calculated by the authors

During the implementation of these operations, we have identified local governments and customs as the bodies directly involved in them. Nevertheless, this list is somewhat relative, as there are usually many more different institutions, involved in these operations from both countries.

Thus, the operations in the area of transport, warehousing, postal and courier services, and scientific and technical activities are regarded as the least risky ones; the types of activity with high-risk level belong to metallurgical production, manufacture of finished metal products, except for machinery and equipment.

Thus, the application of this instrumentarium for assessment of the income shadowing risks makes it possible to determine the most critical operations from the point of view of illegal funds withdrawal and place them in the zone of increased attention from customs, tax, and other state control authorities.

Considering the multifaceted and multi-channel nature of the phenomenon of the shadow economy, the development of a unified approach to assessing the probability of risk of income legalization, obtained by fraud, is a rather complex task. Since the factors and causes of the shadow economy significantly differ in every country, then the determination of the extent of illegal activities depend on the functioning of the economic system. Thus, while the shadow economy in the developed countries is a determined as criminal activity, which constitutes only a small part of illegal transactions, in the countries with transformational economies, including Ukraine, it is also a share of the legal economy, without the functioning of which the official economy is impossible.

The results of the table confirm the thesis about the significant differentiation of the instruments and mechanisms of income shadowing prevention. Considering this, in our opinion, the development of a unified methodological approach and the construction of mathematical models for assessment of the volumes of the shadow economy and proposals for their substantial reduction is one of the priority areas of research.

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5. Discussion

The variety of instruments indicates about the use of an individual approach by the countries in the course of development of the economy unshadowing policy. The executive and legislative authorities should determine the reasonability for application of a particular instrument and form the respective regulatory framework of their use, depending on the level of the country's economic development, the level of income shadowing risk, and the most powerful shadowing inhibitors, typical to a particular country. One of the most important and, at the same time, most difficult elements in terms of implementation in the management system of the shadow economy is the performance evaluation of the existing shadowing tools.

In this context, the introduction of a results-oriented approach in the executive authorities during the determination of the priorities of their activity becomes particularly important. Quite often, the actual activity of public authorities in the field of the economy unshadowing does not correlate with the tasks that are declared in the legal acts of the respective direction. Nevertheless, the experience of the leading world countries shows that the inconsistency of the strategy and tactics can act as a barrier for the determined tasks.

We think that the analysis of the effectiveness of the economy unshadowing policy should consider the fact that the stage of determining the key principles of their implementation (including objectives, indices and the time horizon for their achievement) is an important step towards building the state policy. The further successful achievement of these objectives is ensured through effective governance, which can be considered as a process of making decisions by businesses, institutions, organizations, and individuals, concerning compliance or non-compliance with the determined objectives.

Thus, the assessment of the instruments' conformity to the declared objectives is one of the key phases of determination of the efficiency of the economy unshadowing policy. The introduction of the collaborative control regime, grounding on the involvement of all interested parties to the process of development and implementation of the state policy on the economy unshadowing will promote, on one hand, the improvement of understanding of the importance and rightness of the decisions, which are made as part of the implementation of the tax system in the country, and, on the other hand, will create an opportunity for reconciling of the interests of the state and society during strategic decision-making.

Conclusions

Summing up, one should mention that the availability of effective instruments for assessment of the income shadowing volumes creates favourable conditions for an increase in the country's investment attractiveness and the level of its financial potential. A prerequisite for achieving these objectives is the Timely forecasting of the potential illegal funds withdrawal abroad and the introduction of the preventive measures is an important condition for achievement of the mentioned objectives.

The offered approach makes it possible to assess the possibility of occurrence of the risk of income legalization, which was obtained illegally, both upon individual components (a type of economic activity, authorities, involved in transactions, country of origin, etc.) and the transaction as a whole. The foundation for the development of this approach included the assumption that the use of the corrupt schemes of funds withdrawal abroad takes place at every level of the economic system, and, therefore, one should assess its effects on the overall extent of risk of the operation.

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The control measures for managing tax gaps should be diversified, depending on the risk level of the business operation shadowing, which is determined based on: 1) the risk of exposure of the involved public authorities to the facilitation of shadow financial and economic relations (in Ukraine, it is the highest for the law enforcement authorities (0,55), customs (0,82), police (0,49)); 2) risk of the national economy shadowing of the countries, performance of activity of counteragents (can be identified as high for 36 offshore areas as well as 35 other countries, for example, Bulgaria (0,87), Turkey (0,75), Uzbekistan (0,65), Azerbaijan (0,84), Kazakhstan (0,71), Tadjikistan (0,73), etc.); as low – for 23 countries, for example, Germany (0,32), Sweden (0,44), Denmark (0,39), etc.); 3) risk of shadowing of the corresponding the type of the economic activity (17 types of economic activity were identified as the riskiest in terms of shadowing the national economy, for example, financial leasing operations (0,98), crediting (0,98), insurance (0,98), etc., the least risky – 16 types, for example, textile production (0,14), metallurgy (0,11), processing industry (0,21), etc.).

This approach can be used as a tool for assessing the efficiency of the state anti-corruption policy, especially in the area of shadow flows minimization both at micro- and macrolevel. Apart from that, the offered approach can be used for identification of the main stabilizing and destabilizing factors on the income shadowing level for their more profound research and transformation into controlled in a short- and long-term perspective.

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THE ROLE OF A DEFENCE INDUSTRY IN THE SYSTEM OF NATIONAL SECURITY: A CASE STUDY

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Abstract. It was determined that the existing scientific and methodological approaches to the assessment of the state of financial security of defence industry enterprises due to the specific peculiarities of this industry and the rapid changes in their external environment, currently taking place, need both the advancement in the direction of improving the level of timeliness of such assessment and expansion of the indicators list for its implementation. In the light of modern conditions, characterized by globalization and increased competition in the domestic and foreign arms markets, the defence enterprises can be competitive if they can adapt their activity effectively to the changes in the external environment, take timely preventive measures against the impact of negative environmental factors and make timely use of the opportunities, provided by the environment for strengthening of their financial security. In the research, the authors have improved scientific and methodological approaches to the complex assessment of financial security of defence enterprises – conduction of the analysis upon 3 blocks: definition of the indicators system (including the one upon the criterion of the enterprise's relations state with the subjects of the external environment; express diagnostics of the enterprise's financial security; a full-blown assessment of the financial security of the enterprise, which makes it possible to provide operational efficiency during substantiation of the administrative decisions, concerning the provision of financial security of the enterprises and consider the change of conditions of their interaction with subjects of the external environment. The development of the integration processes in the global economy, in particular defence industries, and the steady increase in competition on the global arms market, provides importers of arms and military equipment (AME) with a diverse choice of means of pressure on the exporters, directly encourage the application of the offset practices in this area. The research determines the ways and priorities of application of the offset activity by defence enterprises of Ukraine in the context of consideration of this phenomenon as a tool for strengthening their financial security thanks to the optimization of expenditures for implementation of the export-import operations and research, development, and engineering activity (RD&T).

Keywords: national security; financial security; defence industry; offset activity; express diagnostics; Ukraine

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JEL Classifications: F35, F42

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1. Introduction

The world market experience shows that the dynamic growth of the sovereign country, which can guarantee security to its residents, is not possible without functioning of the defence industry. It is impossible to provide state security without the Armed Forces and the defence industry, catering to its needs, in the light of instability of the international environment. The existence of strong defence industry is also the key success factor to the reinforcement of the international cooperation of any country: provision of conditions for its full participation in the collective security systems and systems of control over the supply of defence and dual-purpose products and technologies.

The manufacturing sector of the defence economy plays a decisive role in the production and supply of the military products to the Armed Forces and other military formations. It is a special part of the state's economy, catering to its specific military and economic needs for national security provision. Among such needs are arming, ammunition supplies, military machinery, other military property, spare parts and materials, the performance of activities and provision of services, as well as export-import delivery in the area of the military and technical cooperation of Ukraine with foreign countries.

The fundamental principles of satisfying the military and technical needs of the Armed Forces include the achievement of compliance of the level of their technical equipment with the national security needs of the state; consideration of scientific, technical, and economic capabilities of the state; maintenance of the armaments, military, special equipment and other property in readiness condition.

The Military-Industrial Complex/Defence industry is the key element in the production sector of the defence economy of the developed countries. In Ukraine, it is the defence industrial complex (hereinafter referred to as the "DIC") as an integral economic system of industries, enterprises, scientific organizations, design bureaus and service facilities of the infrastructure of this system, focusing on research, development, production, and supply of weapons, military and special equipment and property for satisfaction of the national military-economic needs.

The defence industry is critical to both the development of the national economy and the protection of public interests. Successful functioning of this strategic state industry requires specific grounded economic policy (Rajnoha, R. et al., 2019; Liao, H. et al., 2019; Lincényi, M. & Čársky, J. 2020). It is an area that nowadays operates mainly within the industry 4.0; what triggers respective specific threats, which have to be addressed at national and international level (Tvaronavičienė, M. et al., 2020; Plėta et al., 2020).

The regulation of the defence-industrial complex development, which can adapt to functioning in crises situations and threats to national security, ensure the transition to the fifth technological mode and strengthen the state's ability within the framework of achieving military and political independence by Ukraine, meets the national interests of Ukraine.

2. Literature Survey

The international practices of the world's leading countries, including Central and Eastern European countries, also indicate about the use of the diverse mechanisms for the attraction of financial resources to the defence industry, namely:

- arrangement of favourable investment conditions by granting allowances and preferences to the defence enterprises through the adoption of the consistent normative legal acts (Qureshi, F.A. (2018));

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- maintenance of cooperation with foreign enterprises, including the one, conducted through the establishment of joint ventures, without sacrificing state control over strategic enterprises (sales of no more than 25-49% of shares) (Behma, V.M., & Sverhunov, O.O. (2019));
- vigorous activity in stock markets. The analysis of the activity of the world-leading arms producers shows that a stock market is one of the most significant sources for the attraction of the investments, while the growth of capitalization of these enterprises is one of the fundamental criteria of their economic success (Lonsdale, D.J. (2019));
- the last few years have been marked by new tendencies in the offset policy. The main tendencies of the modern world in the area of offset can be regarded as follows (Nzeribe, S., & Imam, M. (2018); Kravchenko, V. (2019); Usachenko, O. (2019)): an increase in the number of countries that apply offset when purchasing the military purpose products; the growing importance of the offset programs in the tender holding; the increase in the role and share of the projects on direct offset in the development of the offset programs; the increase in the volume of the offset obligations to 100% and more from the contract cost for delivery of the defence and military goods (DMG); the importers' insisting, in the framework of indirect offset, first of all, on transference to them the knowledge-intensive technologies, developments, and "know-how" of the military, dual- and civilian purpose, on conduction of joint scientific research and training of the qualified scientific staff; the reduction in the size of multipliers (multiplying coefficient) in the determination of the offset value of the projects; the attempts to limit the transfer of critical technologies on arms production.

The main principles of government export regulation of military technologies should be as follows:

- provision of the correspondence of the state regulatory methods to the national security needs (Avanesova, N.E., Kolodyazhna, T.V., & Semenova, J.I. (2018));
- the use of scientific methods for determination of the economic practicality of the military technologies export (Momot, T.V., Avanesova, N.E., & Vinnik, I.U. (2015));
- optimal combination of instruments for limiting and encouraging of the military technologies export (Potomkina, M. (2018));
- implementation of measures or state regulation of military technologies export, based on the creation of an appropriate regulatory framework and strict control over compliance with such a foundation (Kamianetska, O. (2015));
- encouragement of the establishment and use of an individual system of intra-company export control by the corporate exporters (Reznik O., Mazievich T., Shebanits D., Puzanova G., Pyrih I. (2020));
- establishment of a high level of responsibility (including criminal liability) for non-compliance with the statutory requirements of the system of state regulation over the military technologies export (Weber, R.N. (2020)).

In paying tribute to the scientific and practical significance of the works of these authors, it should be noted that some questions of a theoretical and methodological nature have not been sufficiently studied, namely: interdependence between the state of financial security of defence enterprises and the degree of realization of national interests, influence on the development of risks and threats to the economic security of the state; identification of opportunities and problems in the provision of the financial security of the enterprises in their interaction with the external environment; the existing approaches to assessing the level of defence enterprises' financial security do not sufficiently consider the dynamics and the interrelation of factors, predetermining it; insufficient consideration of specific peculiarities of the subjects of the external environment of the defence enterprises.

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3. Methods

The research included the following methods of scientific cognition: observation, analysis of empirical science, logical generalization – for determining the place and role of the defence industry in the realization of the national interests; analysis and synthesis, comparison, structural-logical and semantic analysis – during the study of the content and peculiarities of the financial security of the highlighted companies, as well as its impact on the components of the economic security of the state; systemic and subject-oriented approach – during substantiation of theoretical formation foundations of a mechanism and tools for provision of financial security of the defence industry enterprises in interaction with the subjects of the external environment; comparative analysis – during the process of researching the international experience on the development of the defence industry in the context of its implementation in Ukraine; multi-criteria (vector) optimization, economics and mathematics (analysis and simulation) modelling – when substantiating the scientific-methodological approach to modeling and multi-criteria optimization of financial and material flows at the defence industry enterprises.

4. Results

The results of the analysis show that during the period from 2014 to 2018, the number of the enterprises and DIC organizations in Ukraine fell five-fold, while the number of employees – decreased by a factor of 7 times (in particular, the employees of the 35-45 age group) (State Statistics Service of Ukraine). The average age of qualified specialists is 40-65.

The analysis of the existing approaches towards the assessment of different aspects of financial safety of the defensive industry enterprises has confirmed that there is an urgent need for advancement and introduction of the integrated rating approaches to financial safety condition assessment of the highlighted enterprises, which levels lack existing approaches and will raise their adequacy to modern market conditions, including, first of all, expansion of the enterprises' spectrum of interaction with the external environment.

The results of the author's express diagnostics of financial security condition of 12 Ukrainian defence enterprises (3 non-governmental enterprises (private), 9 – state enterprises), held based on their statistical data (upon the data available as of 01.01.2019) with consideration of analysis, are given in Table 1.

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Table 1. The results of the integrated index of the express diagnostics of the defence enterprises' financial security condition in Ukraine for 2014-2018

Enterprise	2014	2015	2016	2017	2018
<i>Private enterprises</i>					
Private Joint Stock Company "FED"	2,3	2,4	2,7	2,5	3,0
Public Joint Stock Company "Motor Sich"	3,3	3,4	3,4	2,9	3,2
Private Stock Company "Plant "Kuznya on Rybalsky"	1,9	1,8	1,8	2,1	2,4
<i>State enterprises</i>					
<i>The cluster of armoured and automotive engineering</i>					
State Enterprise "Kharkiv Plant of Armored Tanks" (SE KPAT)	1,9	2,3	3,6	3,0	3,3
State Enterprise "Lviv Armored Fighting Vehicle Plant" (SE LAFVP)	3,6	2,7	2,4	1,7	1,4
State Enterprise "Kyiv Armored Plant" (SE KAP)	3,0	3,2	2,2	2,6	3,0
State Enterprise "Malyshev Plant"	1,6	1,5	1,3	1,8	3,0
State Enterprise "Kharkiv Automobile Repair Plant" (SE KARRP)	1,6	1,9	3,8	2,0	3,0
<i>The cluster of aircraft construction and aircraft repair</i>					
State Enterprise "Lviv State Aircraft Repair Plant" (SE LSARP)	3,4	3,2	3,0	3,4	3,2
<i>The cluster of high-precision weaponry and ammunition</i>					
State Enterprise "State Kyiv Design Bureau "Luch" (SE SKDB "Luch")	2,5	2,9	2,9	2,7	2,7
State Joint Stock Holding Company "Artem"	2,9	2,0	2,2	2,8	2,3
<i>The cluster of radiolocation, radio communication, and anti-aircraft defence systems</i>					
State Enterprise "Lviv Radio Repair Plant" (SE LRRP)	3,4	3,2	3,0	3,4	3,2

Source: compiled by the author based on the data of YouControl system is an online service

The evaluation findings show that with the beginning of the hybrid war against Ukraine, the state defence enterprises have significantly improved the level of their financial security: almost all of the enterprises under the study in 2017-2018 reached high and satisfactory levels. The only exception in the cluster of armoured and automotive engineering is State Enterprise "Lviv Armored Fighting Vehicle Plant," the level of financial security of which during 2014-2018 was at a critical level due to systemic failures of the government's defence orders execution due to "flexible" corruption scandals and stops of financing (seizure of accounts).

By contrast, the other companies in this group had the most stable financial security situation, in particular, at State Enterprise "Kyiv Armored Plant" and State Enterprise "Kharkiv Plant of Armored Tanks." Thanks to their active interaction with the external environment: the enterprise SE KPAT expands the scale of services on mechanical maintenance, while SE KAP, apart from that, constantly puts the export contracts into action.

State Enterprise "Malyshev Plant" is another enterprise, producing armoured products in Ukraine. In recent years, it has been in crisis due to the inadequacy of existing production capacity with real production orders. Nonetheless, the implementation of the export contract with Thailand in 2017 allowed it to improve the situation and achieve a satisfactory level of financial security.

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State Enterprise “Kharkiv Automobile Repair Plant” takes a separate position in the range of enterprises under the study. In recent years, the level of its financial security has fluctuated from critical to high because this enterprise practically does not receive any state orders for repair of the military equipment. Moreover, it has no access to foreign markets. Thus, it is forced to work in competitive conditions with private companies in the domestic car repair market.

The next group of traditionally stable state defence enterprises in recent years includes State Enterprise “Lviv Radio Repair Plant” (a cluster of radiolocation, radio communication and anti-aircraft defence systems) and State Enterprise “Lviv State Aircraft Repair Plant” (a cluster of aircraft construction and aircraft repair). The level of financial security of these enterprises ranges from satisfactory to high due to their practically monopolistic position on the domestic arms market and active position on the foreign market.

To this group of stable enterprises, in terms of financial security, one can also include the enterprise of the high-precision weaponry and ammunition cluster: State Enterprise “State Kiev Design Bureau “Luch” (its level of financial security over the last 5 years is regarded as satisfactory). It can be listed in this group as a result of the additional organization of independent production of defence products of its own design at a traditionally scientific and design enterprise. The majority of the mentioned products should be produced at the production capacities of State Joint Stock Holding Company “Artem,” as it specializes in the production of high-technology defence products; with which SE SKDB “Luch” is in partnership. This, alongside more vigorous activity on foreign markets and solution of problems with import substitution of components, would allow SJSHC “Artem” to improve the level of financial security to a satisfactory one (as of today, this company sits at the non-satisfactory level of financial security).

In general, in the group of state enterprises of the defence industry, one traces the influence of the extent of application of active cooperation by the enterprises with the external environment (export and import contracts, partnerships with suppliers and consumers, lobbying in relations with the state, etc.) on the level of their financial security. Different levels of financial security at the enterprises under consideration result from their industry specificity, which has differences in the legal regulation of the industry, existing business practices, organizational peculiarities of the enterprises, technological peculiarities of production (in particular, the availability and complexity of cooperative relationships), market demand, and modern needs of the Armed Forces of Ukraine, the degree of state regulation of activity, etc.

In the group of considered private companies of the defence industry of Ukraine, there is a stable high level of financial security of large enterprises: Public Joint Stock Company “Motor Sich” and Private Joint Stock Company “FED.” PJSC “Motor Sich” is the undisputed leader among them. The level of its financial security was at a high level during 4 of 5 years due to its better adaptation to market conditions, compared to the state enterprises. The previously-mentioned enterprise actively interacts with the external environment (in particular, it exports to over 100 countries and has complex cooperation links, including the EU enterprises).

PJSC “FED” has also been at a satisfactory level of financial security in recent years, primarily, due to the use of extensive cooperative ties during the sale of products and performance of the export activity with competitive products of its own production. Private Stock Company “Plant “Kuznya on Rybalsky” in 2013-2014 was in a state of crisis due to passive adaptation to market conditions (the enterprise offered a limited range of services). At the same time, over the last 2 years, this enterprise has actively joined the state defence order on the production of

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armoured personnel carriers for the Ukrainian Navy, thanks to which, the level of its financial security has increased, but has not yet exceeded the limits of the unsatisfactory level.

In general, there is a positive trend in the group of private enterprises of the Ukrainian defence industry to increase in their active participation in the production of defence products (which is a worldwide trend), including by means of the state defence order, which improves their financial situation and enhances financial security. Alongside this, there is a direct dependence of the state of financial security of these companies on their management level and the ability for a preventive response to the changes in the external environment, including, through the establishment of productive cooperation with its subjects. Figure 1 illustrates the dynamics of the production profitability of goods of the industrial enterprises.

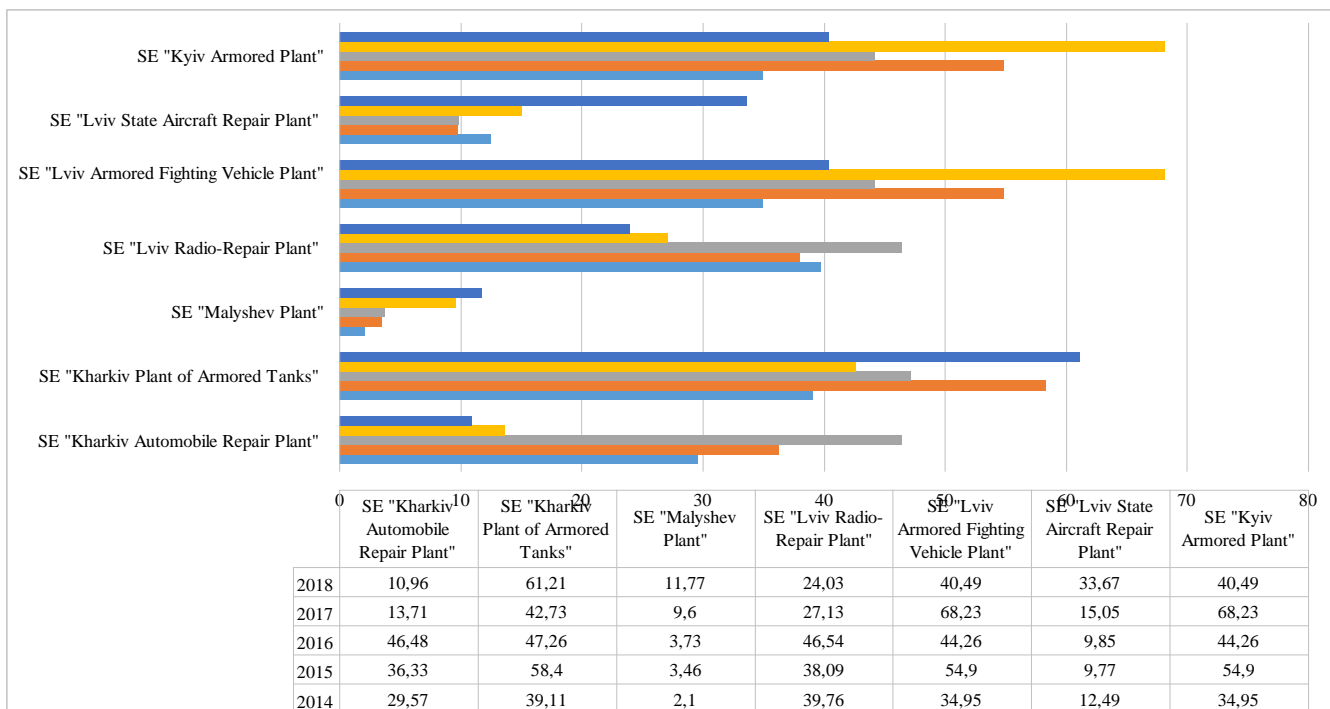


Figure 1. Dynamics of production profitability of goods of state enterprises in the defence industry in Ukraine during 2014-2018

Source: compiled by the author based on the data of State Statistics Service of Ukraine

Thus, one can conclude that production profitability of the state enterprises of the defence industry in Ukraine during 2014-2018 is gradually reducing, except for SE "Kharkiv Plant of Armored Tanks."

In this regard, the problem of objective price formation for the military purpose products (MPP) takes on particular significance. The cost of the Customer's mistake in the question of price formation is very high and leads to inefficient use of limited financial resources of the state and decrease in financial security at the enterprises.

Thus, if the planned cost in the state programs and the state defence order (SDO) is lower than the actual cost, the ordering authorities will have to review the previously drawn up defence and military goods plans (DMG) or

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refuse to purchase DMG, which will destabilize the DMG development plans and have negatively affected the combat readiness of the armed forces, the state of DIC enterprises, and, consequently, on national security.

Hence, the quality of development of the conceptual framework and the regulatory and methodological apparatus, concerning the DMG price justification is a necessary condition for achievement of the goals on the provision of the financial security of the DIC enterprises and the state.

The actual order of formation of the price for the production, works, services of defence appointment in Ukraine (in case selection of executors on supply (purchase) of such production, works, services is carried out without application of competitive procedures) was introduced by the Decree of the Cabinet of Ministers of Ukraine dated August 8, 2016, No. 517. (About the statement of the Order of formation of the price for production, works, services of defence appointment in case selection of executors on supply (purchase) of such production, works, services is carried out without application of competitive procedures (2016)).

According to it, the profit or the enterprise as a part of the price should not exceed 5% of its expenditures on the purchase of components (semi-finished products) and works (services) from other business entities, as well as 30% of other expenses in the production cost of products (works, services) of own production.

In reality, the percentage of purchased components (semifinished piece) in the latest DMG samples amounts, on average, 70% of the total number, while the rest number (own production) amounts only 30%, which affects the level of profit. Currently, the defence industry enterprises have an estimated profit level of 10%, while the real profit level is even lower, considering the inflation temps.

The established profit level significantly limits opportunities for the development of the military purpose products producers. Despite this, to save financial resources, allocated for the purchase of weapons and military machinery, the Ministry of Defence of Ukraine approved “Methodological recommendations, for unified approaches during application of certain provisions, determined by the decision of the Cabinet of Ministers of Ukraine №517 dated 08.08.2016” (upon the registered number 2591/u/2 of 18.10.2016), where the determined profit levels (5% and 30%) were reduced (About the statement of the Order of formation of the price for production, works, services of defence appointment in case selection of executors on supply (purchase) of such production, works, services is carried out without application of competitive procedures (2016)).

Thus, the Methodological recommendations reduced the acceptable level of profit, amounted to expenses from the purchase of components (semifinished products), works (services) from other business entities fivefold – from 5% to 1%, while the profit level for the rest of expenses – was reduced from 30% to 20%.

Thus, according to the standards, specified by the Methodological recommendations, the estimated profitability level of the executor of the State defence order was reduced for almost two times – to 5.4-8% (which is less than even the planned inflation rate in Ukraine) (About the statement of the Order of formation of the price for production, works, services of defence appointment in case selection of executors on supply (purchase) of such production, works, services is carried out without application of competitive procedures (2016)).

When studying the international experience on price formation, one gets an opportunity to identify its regularities and trends, and the use of the received knowledge during the formation and regulation of prices for MPP.

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In foreign countries with the developed market and mixed economies, the sphere of regulated and controlled by the state pricing accounts from 10 to 40% of the total of output. Thus, the percentage of prices, controlled and regulated by the state, in Austria reaches 10%, in Germany – up to 40%, Greece – 20%, in Denmark – 5%, Spain – 10%, in Italy – up to 30%, China – up to 30%, USA – up to 10%, France - 20%, Finland – up to 40%, Sweden – up to 40%, Japan – up to 20% (Official website of the Department of Homeland Security USA). While analyzing the methods, used by the world countries, let us group them and characterize each method (Table 2).

Table 2. Methods of price formation for MPP, used in foreign countries

Method	Countries				Method characterization
	USA	RF	FRN	Poland	
Fixed prices	+	+			The cost that is not discussed
Cost recovery	+	+			Impossible to determine expenditures, conduction of SRW and RD&T
The material incentive of producers	+				Encouraging of producers to improve quality or reduce production time
Tender (market) method			+		The method can be used when a country has a choice between producers of MPP.
Estimated reward				+	Grounds on the design and estimate documentation of the ordering party.
Firm (fixed) remuneration				+	The contractor cannot require an increase in the cost of work
Approximate price (a price that is specified)		+			The absence of data, the period of which exceeds three years of a technological cycle of the products' production or, if necessary, conduction of RD&T
Price, providing compensation for actual expenditures on production		+			Provides compensation of actual costs on production
Parametric method		+			Comparison of integrated indexes of the product and its analogue
Analogue method		+		+	Details about available analogues of this sample
Engineering method		+			Detailing of expenditures of engineering, operational, and repair documentation, statements about the cost of component parts and their operational lifetime
Actual estimate method		+			Grounds on actual data, regarding expenditures with consideration of such factors as inflation and changes in taxation, the cost of the lost opportunities, etc.

Source: compiled by the author based on the data of the Official website of the Department Of Homeland Security USA

Thus, each country uses its individual methods of price formation for MPP, and, in the author's opinion, the methods, used for price formation depend on the following factors: the degree of development of the military industry; the availability of competition for the production of MPP; the volume of the produced MPP; the number of the internal and external MPP consumers; the degree of wear and tear of the main funds of the MPP producing enterprises; the form of ownership of the MPP producing enterprises. Each of these factors influences the choice of method of price formation and the cost of MPP.

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As we can see from Table 2, there are countries (the USA, Germany, and Poland), which use a full set of the MPP cost assessment models.

In general, their approached ground on consideration of interests and risks of the ordering party and conductor, providing efficiency of use of the budget costs at all stages of design, production, and sales of MPP.

The United States Department of Defence uses contracts of different forms and purpose, including the contracts with fixed prices, remuneration of the production expenditures, and the material incentives of producers.

Germany gives its preference to tender (market) method of the DMG price formation. Poland uses the methods of estimated or firm (fixed) remuneration or both methods simultaneously.

The UK and other developed countries have a fairly strict system of government regulation in the area of DMG production in the interests of military-technical cooperation (MTC). The non-economic factors put some pressure on the price of DMG export supplies. Among them are primarily political factors, which affect not only the price itself but also the model of calculations for the products supplied. These factors play an important role and are used by all players in the DMG market.

The principle of export prices formation in the USA for new military products, the base of which is the cost of DMG delivery for the national armed forces. The law in the USA prohibits the export of DMG at prices lower than the domestic prices. Given the fact that the production of weapons in the US is many times higher than that of all other manufacturers, this requirement is understandable.

A large number of factors are taken into account when determining the contractual price of goods by a particular business. Depending on the chosen price formation strategy, the enterprise accepts the prices of the competitor firms to a greater or lesser extent.

Under the condition, when the amount of profit of the enterprise depends on the level of expenses, it is possible to get the contractor interested only when he makes a profit, no less than it was before expenditures reduction.

The expenditures reduction is advantageous for both the enterprise and the state. First of all, it increases the competitiveness of the state in the foreign markets; secondly, it provides an opportunity to transform a part of economic expenditures into profit, provides the enterprise with free financial resources for modernization of the main funds, innovation and social activity, which positively affects the quality of products, and will help to hold down the price for orders in the future.

The concise comparative characteristic of the expenditure and value-based concept of price formation is given in Table 3.

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Table 3. Comparative characteristic of expenditure and value-based concept of price formation

Typical features of comparison	Cost concept of price formation	Value-based concept of price formation
Content	Determination of the order price based on the calculation of expenses and profit of the contractor with consideration of the limit price of the ordering party	Combination of the customer's interests in the effective military and economic use of the budgetary funds and the interests of the contractor in the financial and economic attractiveness of the order. Determination of the price not only based on the costs but depending on the quality (value) of MPP for the customer, taking into account the effect of its intended purpose and costs throughout the life cycle of MPP.
Distinctive features	The use of the "hard" price models: a fixed cost and its varieties. Strict peg of the price to the requirements of the technical task for the ordered object.	The use of "flexible" price models with components of economic incentives of the Contractor for costs reduction, the introduction of innovations, the MPP quality improvement, risk insurance, etc. Simplification of the balance search between the ordering party and the contractor.
Distinctive problems	The weakness of the mechanism of reducing performer costs and optimization of customer investments. Binding of orders to individual stages of the life cycle of the MPP. It does not fully comply with the peculiarities of the development of promising high-tech and knowledge-intensive products with financial, economic, and technological risks.	For Ukraine – need for review and advancement (creation of the new one) of the normative and methodological basis.
Current state and perspectives for application	Dominates in Ukraine, keeps on functioning in other countries alongside the application of the elements of the value concept. Gradual reduction of application especially for knowledge-intensive and high-tech products with a long life cycle.	In the leading countries – as an object of application, constant development and advancement, especially for MPP, has trends to transition into dominating in the global MPP market. In Ukraine – as an object of understanding, theoretical interest, and initial discussion.

Source: systematized by the author

Thus, an important feature and advantage of the value-based approach to pricing is the interrelation of MPP value indicators for the customer with his costs, which, firstly, stimulates those who carry out the order to improve MPP and increase its competitiveness, and, secondly, excludes price increases that are not related to improving the quality of the sample.

It should be noted that the transition from a cost to a value-based pricing system requires a review of the entire regulatory framework and, most importantly, the creation of a methodological (instructional and methodological) framework that will make it possible to obtain a correlation between the MPP value estimates and the quality (effect) and possible risks of its creation. There is a need for the development of clear methods for the practical application of various price models and reviewing of the price structure.

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The implementation of the new pricing concept is comprehensive, not only in terms of the aspects of pricing taking into account the interests of the state but also in terms of realizing the interests of business entities. The transition to the new pricing concept will make it possible to significantly improve the quality of the plan documents, which are developed, the efficiency of budget allocations, and the financial stability of enterprises.

5. Discussion

The real-world effects in the area of international trade of DMG create certain conditions for suppliers and consumers: on the one hand, each country tries to arm its own army with modern DMG, including the one of foreign production, and, on the other hand, find and allocate funds for the development of its own defence industry.

When compared to the leading countries in the region, Ukraine is characterized by a range of differences in the defence industry, in particular:

- total lag of Ukraine in the defence industry (problems of the Armed Forces (AF) reformation, re-equipment, restructuring of the national DIC, etc.);
- a chronic lack of financing in the defence sphere and a disbalance of the defence budget towards “maintenance and capital decumulation.”

Thus, the Ukrainian Armed Forces have such conditions, when the Ukrainian DIC is unable to produce modern DMG systems and will have to buy them abroad. The world experience shows that the most effective economic tool under such conditions is the use of the offset schemes during import of DMG for the development of DIC.

The offsets, under which the weapons salesman is obliged not only to deliver the goods but also takes additional responsibilities on the compensation of a share of his costs to a buyer, are widely used in international military-technical cooperation. These are the directions for the development of the international military and technical cooperation today. The offset opens up significant prospects under the limited financial capabilities for purchasing modern equipment and new technologies, improvement of its own military-industrial complex and attraction of foreign investments into the domestic market for the development of industries, which are not related to the defence industry.

More than 90 countries apply offset in various forms in the defence industry. Initially, the level of offset obligations amounted 10-20% of the volume of the main export/import contract for the supply of DMG. Nonetheless, over time, as the global arms market began to shrink and supply started to exceed the demand, the requirements of the importers to volumes of compensation significantly increased.

The external factors, encouraging offset practice, include:

- the absence of the closed cycles of military machinery production;
- exhaustiveness of the design, technological, and technical developments, created in the DIC during the previous years against the background of almost no financing of the national innovative scientific and technical projects both military and civil ones;
- uncertainty of mechanisms and imperfection of the regulatory and legal framework for crediting the development of high technologies, provision of the intellectual property rights use;
- steady rise in the competition level in the global arms market, which provides the DMG importers with a diverse choice of means for putting pressure on the DMG exporters;
- the development of integration processes in the world economy, especially military-industrial sectors.

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One keeps on performing the offset transactions in the context of the military-technical cooperation between the states, and the requirements for such agreements are becoming more responsible and detailed. The weapon-importing countries improve their legal framework on the conclusion and implementation of the offsets agreements. There is a global trend when the main contracts on the import of weapons and offset agreements join together. Herewith, the importing countries are trying to establish joint production on their own territory.

Offset is a modern practice in the international weapons and military equipment trade. It allows importers to partially compensate (in various forms) their own purchasing costs. In other words, offset is understood as a special agreement, under which the exporter takes an obligation to compensate the importer, in a way agreed with it, a part of the costs, related with purchasing military products. That is why such contracts are often regarded as compensation contracts.

The projects upon the following directions can turn into real offset programs in Ukraine:

- the establishment of service centres on collection and production, service and repair of the military purpose products, which are imported, in the home territories;
- the establishment of the production facilities on the modernization of the existing DMG, which is currently on service in the Armed Forces, as well as the production of specific types of spare parts and components for the military products, which are imported and modernized;
- acquisition and introduction of military technologies, developments, and “know-how”;
- conduction of joint scientific research, research and design, production and technological, and other works;
- implementation of training and retraining programs for specialists of different fields of activity for the importing countries;
- investments in scientific organizations and production enterprises of the Ukrainian DIC and civil industries, which are of particular significance for the national security.

The priorities for military and technical cooperation in Ukraine should be as follows:

- the development of scientific and technical and production cooperation of defence enterprises with foreign companies;
- introduction of offset and leasing into the practice of export/import of defence products;
- joint use of existing military objects and construction of the new ones;
- lobbying of measures of the military and technical partnership of Ukraine with foreign countries at the state level, the advancement of information support and exhibition activities.

Ukraine has already started to create a legislative basis for work in the direction of implementation of the offset schemes during import of DMG. One has already approved the amendments to the Law of Ukraine “On State Defence Order,” which introduce new notions of the compensation (offset) contract and terms of its application to the legislation of Ukraine, as well as the peculiarities of purchasing products, works, and services of defence purposes upon import.

According to this Law, the receiving of compensation is carried out through conclusion of a compensation (offset) agreement between the central executive body, authorized by the Cabinet of Ministers of Ukraine, and a foreign economic entity of a compensation (offset) agreement, which is a foreign economic agreement (contract). The implementation of the agreement is carried out following the terms of the state contract for supply and purchase of products, works, and services.

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Conclusions

The results of the author's express diagnostics of financial security condition of 12 Ukrainian defence enterprises (3 non-governmental enterprises (private), 9 – state enterprises), held based on their statistical data (upon the data available as of 01.01.2019) show that with the beginning of the hybrid war against Ukraine, the state defence enterprises have significantly improved the level of their financial security due to growth of state financing of the production/repair of weapons and military machinery: almost all of the enterprises under the study in 2016-2017 reached high and satisfactory levels.

In general, in the group of state enterprises of the defence industry, one traces the influence of the extent of application of active cooperation by the enterprises with the external environment (increase in the number of the export and import contracts with order parties, the establishment of partnerships with suppliers and consumers, lobbying in relations with the state, etc.) on the level of their financial security. Different levels of financial security at the enterprises under consideration result from their industry specificity, which has differences in the legal regulation of the industry, existing business practices, organizational peculiarities of the enterprises, technological peculiarities of production (in particular, the availability and complexity of cooperative relationships), market demand, and modern needs of the Armed Forces of Ukraine, the degree of state regulation of activity, etc.

In general, there is a positive trend in the group of private enterprises of the Ukrainian defence industry to increase in their active participation in the production of defence products (which is a worldwide trend), including using the state defence order, which improves their financial situation and enhances financial security. Alongside this, there is a direct dependence of the state of financial security of these companies on their management level and the ability for a preventive response to the changes in the external environment, including, through the establishment of productive cooperation with its subjects.

Thus, the interrelation of the DMG value indicators for the client with his expenditures is an important peculiarity and advantage of the value-based approach to the price formation. This, first of all, stimulates executors to advance DMG and improve its competitiveness; secondly, the cost increases, related to the sample's quality improvement, are excluded.

The real-world effects in the area of international trade of DMG create certain conditions for suppliers and consumers: on the one hand, each country tries to arm its own army with modern DMG (including the one of foreign production), and, on the other hand, find and allocate funds for the development of its own defence industry. The Ukrainian Armed Forces have such conditions when the Ukrainian DIC is unable to produce the necessary DMG systems and will have to buy them abroad. The most effective economic tool under such conditions is the use of the offset schemes during import of DMG for the development of DIC and strengthening of financial security of defence industry enterprises.

The offsets, under which the weapons salesman is obliged not only to deliver the goods but also takes additional responsibilities on the compensation of a share of his costs to a buyer, are widely used in international military-technical cooperation. The offset opens up significant prospects under the limited financial capabilities for purchasing modern equipment and new technologies, improvement of its own military-industrial complex and attraction of foreign investments into the domestic market for the development of the industry.

Ukraine does not yet have a state body, which carries out coordination and expert functions in the course of development of the offset query packages, as well as organizational and administrative and control functions

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during the implementation of the offset programs (the Offset Commission, established under the Ministry of Economic Development, Trade and Agriculture of Ukraine cannot cover the entire scope of works on this question).

It was determined that the main efforts of the state, regarding the provision of favourable conditions for the implementation of the offset projects in the defence sector of Ukraine, should focus on:

- the development and implementation of the offset programs, which contribute to the development of the scientific and technological and production and technological potential of the country, transfer of modern technologies and know-how, an increase in labour productivity, a decrease in the resource and material consumption of the domestic products, and an improvement of their quality;
- acceleration of organizational changes in the national economy, directed at the creation of powerful integrated research and production structures, capable of developing and producing competitive MPP independently or in cooperation with foreign companies, in particular, EU countries;
- the development of international cooperation, including active participation in the activity of transnational corporations, conquering own segments of the world market during the international division of labour, cooperation in research and development works on creation of modern pieces of armament and military equipment;
- provision of the investment attractiveness of the defence enterprises;
- the development of the export-import activity of the enterprises of the national DIC and development and implementation of the effective organizational and economic mechanisms on the realization of foreign economic activity, the development of cooperation with foreign corporations for joint promotion products into the world markets;
- active introduction and use of modern information technologies in marketing and creation of the military and civilian purpose products.

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LEGAL MECHANISM TO ENSURE NATIONAL SECURITY IN THE FIELD OF USE OF NATURAL RESOURCES

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Abstract. The legal basis for the national security of Ukraine is the Constitution of Ukraine, according to which laws, doctrines, concepts, strategies, and programs are developed, which determine the targets and guidelines for the national security policy of the Ukrainian state in order to timely identify, prevent, and neutralize real and potential threats to the national interests of Ukraine. Ukraine is one of the countries with a deficit of its own natural hydrocarbon resources. Lack of necessary reserves, dependence on energy imports pose a threat to the country's energy security. The transformation of the oil and gas sector of Ukraine and the creation of an effective organizational model should provide sufficient control over the areas of activity to ensure effective resource consumption in the oil and gas sector of the economy, grouped into appropriate blocks. Blocks should include directions of action to achieve the effect and further development of the industry, as well as to ensure effective control. Conclusions on the development of the oil and gas sector in Ukraine are made, ways to improve using the SWOT analysis technique are suggested. That is, the author has analyzed the oil and gas sector from the point of view of existing and potential opportunities, threats, advantages, and disadvantages. At the same time, the requirements of the Third Energy Package for the separation of the transport function from the gas production and supply business are provided, and it is also taken into account that the operator is removed from the structure of a vertically integrated company and is not associated with it by legal, financial, and managerial ties. The success of modernization should become an important driver of reform of the entire state oil and gas sector of the Ukrainian economy and have a long-term impact on the entire society, the lives of citizens, and business.

Keywords: natural resources; national security; energy security; legal regulation; potential threat

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JEL Classifications: F35, F42

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1. Introduction

The emergence and establishment of Ukraine as a democratic, independent, and sovereign state is primarily related to ensuring its national security. Modern challenges and threats have led to a radical transformation of the world economic and social order, which are accompanied by a change in political configurations. The global financial and economic crisis has become another challenge to world civilization, caused uncertainty in the prospects of global and national economies, and intensified the search for ways to modernize social systems.

Against the background of increasing modern threats and growing instability in the world, there are new challenges to international security in the raw materials, energy, financial, information, environmental and food spheres.

Threats such as the proliferation of mass destruction weapons, international terrorism, transnational organized crime, illegal migration, piracy, and the escalation of interstate and civil conflicts are becoming more intense, encompassing new geopolitical regions and states.

The availability of natural resources is one of the factors in ensuring the national security of each country. Therefore, it is essential to explore the features of the legal mechanism for national security in the use of natural resources. This applies to Ukraine, a country on the path to European integration. Since the proclamation of Ukraine's independence, the issue of ensuring its security has always played an important role in the activities of all state bodies. The focus on the protection and preservation of Ukrainian statehood was defined by the Declaration of State Sovereignty of July 16, 1990. Subsequently, these provisions were developed in the Constitution of Ukraine. In particular, it concerns the attribution of the protection of the sovereignty and territorial integrity of Ukraine, ensuring national security to the most important functions of the state. The concept of national security, which was initially considered a political doctrine in Ukraine, was later implemented as a result of determining the relevant area of state activity.

Further development of special legislation in this area took place mainly through the legal and organizational regulation of the relevant state bodies. The system of national security was formed with the adoption of the Law of Ukraine "On Fundamentals of National Security of Ukraine" of June 19, 2003.

Subsequently, Ukraine has undergone quite frequent changes in foreign policy guidelines in the context of integration into European and Euro-Atlantic structures. In general, this negatively affected the organization of Ukraine's national security system and its ability to effectively counter threats. Numerous shortcomings in the legislation led to the extraordinary nature of the response, which caused complex legislative constructions, some of which, for a number of reasons, immediately revealed their own unsustainability, while others significantly complicated the legal regulation of public relations.

The proclamation and constitutional consolidation in 2019 of the country's strategic course towards European and Euro-Atlantic integration necessitated the adaptation of Ukrainian legislation to legal systems and standards in the field of security and defense of EU and NATO member states.

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2. Literature Survey

Analysis of the legal framework shows its specificity. This is a property of legislative acts, which in essence sometimes establish a new legal order. One example is "sanctions legislation" - that is, the introduction of restrictive measures outside the legal responsibility in the interests of national security, which has recently been embodied in Ukrainian law.

In addition, it is about a certain circle for legal regulation, which includes public relations in a particular area.

These public relations relate to the following areas of activity:

- 1) state strategic planning in the field of national security, which is perceived in practice through the prism of the needs and features of public administration for unresolved organizational and legal issues (general subjectivity of planning, grounds and relevant procedures, competence of state bodies and officials, boundaries and control procedure) (Akimova, L.N. (2018));
- 2) defense of the state and economic support of defense measures (features of conducting and implementing state policy in the field of defense, competence and procedures of subjects, standardization of special subjects that have competence only in cases of application of certain administrative and legal regimes, state regulation economic sphere for the needs of defense, the volume of public administration and public-civil partnership) (Bondar, O. (2018));
- 3) obtaining particularly important information in the interests of the state, conducting external measures of influence, counteracting subversive activities of foreign states and organizations using non-military or "hybrid" methods of achieving goals (which will be carried out in the form of legal regulation in Ukraine of intelligence, counterintelligence, and other state activities carried out by specially authorized state bodies), forms and methods of these activities (Romaniuk, M., & Smutchak, Z. (2016));
- 4) carrying out measures of influence on the state policy of other states concerning Ukraine during carrying out of measures of strategic communication, and also other similar activity (information influence, propaganda and counterpropaganda, state diplomacy and non-state cooperation in the interests of Ukraine, cultural influence, maintenance of contacts with compatriots abroad, etc) (Kovalova, O.V., Korniienko, M.V., & Pavliutin, Y.V. (2020));
- 5) carrying out temporary (special, emergency) restrictive measures in situations that threaten the security of the state (Kulish, A., Petrushenko, M., Reznik, O., & Kiselyova, E. (2018));
- 6) countering terrorism, separatism and political extremism (Bogutska, O. (2018));
- 7) state policy of protection of the state border of Ukraine (Blakyta, G., & Ganushchak, T. (2018));
- 8) certain components of the legal regime of military security (Kizian, R. (2019));
- 9) legal problems of temporary occupation of the territory of Ukraine, maintaining ties with citizens of Ukraine in the occupied territory, deoccupation and integration of territories (Serafimov, V. (2017), Serbyn, R. et. al. (2020)).

This list only outlines the range of problematic areas of relevant social relations that already exist, and therefore it can be clarified in further research. Under such conditions, a thorough study of the issue of national security and defense law on the basis of Ukrainian legislation is an important task of legal science in general.

3. Methods

The theoretical and methodological basis of the work were the provisions of economic theory, which are set out in the works of leading economists. General and special methods of scientific cognition are used: historical-logical method; method of systematization and classification of economic processes and phenomena; institutional analysis; system approach and system analysis; analysis and synthesis; statistical and graphical methods - for processing and generalization of statistical data and their display in Tables.

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The information base of the study was the laws of Ukraine, decrees of the President of Ukraine, resolutions of the Cabinet of Ministers of Ukraine, information of the State Statistics Service of Ukraine and the Ministry of Finance of Ukraine, Ukrainian and international regulations, materials published in scientific journals, information bulletins, statistical collections, monographic studies of economists, and information from the Internet.

4. Results

For Ukraine, the problem of protecting vital national interests remains extremely complex and relevant. Unfortunately, for more than a quarter of a century, the Ukrainian government has failed to make significant progress in formulating and implementing an effective national security policy. Crisis phenomena, which are inherent in almost all spheres of public life of the country and foreign relations, objectively demonstrate the lack of a clear, long-term strategy for further development and protection of the most important achievements of Ukraine.

Thus, despite the obvious importance of ensuring the state's defense capabilities, the current state of the Armed Forces of Ukraine against the background of the current Russian-Ukrainian military conflict is very critical. The actual failure of the main programs of reforming and rearming the Ukrainian army, the systematic underfunding of the needs for the maintenance and training of the Armed Forces threatens the ability of them to fulfill the main tasks of protecting the territorial integrity and inviolability of the Ukrainian state.

Currently, the processes of development of the Ukrainian state and the formation of civil society are taking place in the context of ongoing global transformations in the world, active "reformatting" of leading world players, formation of a new architecture of global and regional security, intensive search by the world community for ways out of the financial and economic crisis, and the formation of a new world economic order. It is in such periods of world history that the foundations of new world order, the place and the role of the country in international schedules are laid for the long term.

Further development and protection of Ukraine's most important achievements require a clear definition of the state in strategic priorities that must meet the challenges and threats of the XXI century, its interaction with modern systems of international and regional security.

It is the choice and success of Ukraine's foreign policy implementation that depends not only on the state of its national security but also to a large extent on the state of security and stability in the European region. Further factual uncertainty of Ukraine in the global and regional security system threatens to turn our country into a buffer zone between powerful international players who will try to use its territory to reduce their own risks and threats.

The legal basis of national security is the Constitution and other regulations that enshrine and guarantee the protection of fundamental human and civil rights, the organization of state power, and the establishment of universal values on which any society is based.

Examining the regulations in the field of national security, it should be noted that they form a complex both in structure and content dynamic system, which is a set of laws and regulations that create legal support for the functioning of the national security system of the Ukrainian state.

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Considering the current regulations in the field of Ukrainian legislation on national security, it is necessary to note the following. According to the criterion of the nature of the expression of will, regulations in the field of national security, on the one hand, can act as a direct expression of the will of the entire Ukrainian people, and on the other - be created and adopted by the state or authorized state authorities.

In the first case, they are primary because they express the will of the Ukrainian people as the bearer of sovereignty and the only source of power. Such primary regulations in the field of national security include the Declaration of State Sovereignty of Ukraine, adopted by the Verkhovna Rada on July 16, 1990, the Resolution of the Verkhovna Rada "On the Declaration of Independence of Ukraine" dated August 24, 1991, the Act of Independence of Ukraine, adopted on August 24, 1991, which received support in the All-Ukrainian referendum on December 1, 1991. These regulations became the first legal basis, the legal basis for regulating public relations of the independent, sovereign Ukrainian state and its national security.

In particular, it should be noted that the Declaration of State Sovereignty of Ukraine in Chapter IX "External and Internal Security" laid down the basic principles of external and internal security of the Ukrainian state: Ukraine has the right to its own Armed Forces; has its own internal troops and state security bodies subordinate to the Verkhovna Rada. Ukraine determines the procedure for military service by its citizens. Citizens perform active military service, as a rule, on its territory and may not be used for military purposes outside it without the consent of the Verkhovna Rada of the Ukrainian SSR; the Ukrainian SSR solemnly declares its intention to become a permanently neutral state in the future, which does not participate in military blocs and adheres to the three non-nuclear principles (not to accept, produce or acquire nuclear weapons).

In the second case, a number of normative acts in the field of national security legislation are derivatives of constitutional law, as they express the political will of the Ukrainian state. These are the regulations in the field of national security that are created, adopted or sanctioned by the state and authorized public authorities.

The legal basis for the national security of the Ukrainian state is the Constitution of Ukraine, where its supremacy in the system of other normative legal acts of Ukraine is defined as follows:

- a) The Constitution of Ukraine, consolidating the authority of the people, regulates the core of social relations that arise directly in the process of protecting national interests and guaranteeing in Ukraine the security of the individual, society, and state from external and internal threats in all spheres of life. Protection of the sovereignty and territorial integrity of Ukraine, ensuring its economic and information security, are referred by the Constitution to the most important functions of the state, moreover, it is a matter of the entire Ukrainian people;
- b) The Constitution of Ukraine defines and enshrines the basic guidelines, principles, and norms of national security, fills in the content of current laws and regulations, by which the security of the individual, society, and the state is ensured in a systematic way. In particular, fundamental concepts such as environmental security (Article 16), economic and information, state security (Article 17), interests of national security (Articles 32, 34, 36, 39), ensuring national security (Article 44), basics of national security (Article 92), national security, spheres of national security, danger (Article 106), personal security (Article 126), public security (Article 138), and human security (Article 3) have been enshrined in the Constitution of Ukraine.
- c) The Constitution of Ukraine defines the most important national interests and establishes the basic legal guidelines for the activities of national security actors. The Constitution of Ukraine takes a differentiated approach to the problems of legislative consolidation, and then the organization and activities of national security actors. The general issues of legislative consolidation, organization and activity of the subjects of national security are reflected both in the general principles (Articles 3, 16, 17, 18) and in separate sections of the Constitution

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(paragraph 1 of Article 32; Article 37; 2 Article 39, paragraph 2 of Article 44, paragraph 2 of Article 64, paragraph 9 of Article 85, Articles 22, 23, 31, paragraph 17 of Article 92, paragraphs 1, 17, 18, 19, 20 of Article 106; Article 107; paragraph 7 of Article 116).

Article 13 of the Constitution of Ukraine stipulates that the land, its subsoil, atmospheric air, water and other natural resources located within the territory of Ukraine, the natural resources of its continental shelf, and the exclusive (sea) economic zone are the objects of property rights of the Ukrainian people, and at the same time in the Code of Ukraine on Subsoil, in Article 13 it is determined that natural persons, citizens of Ukraine, as well as foreigners and stateless persons, when it is necessary to register it in the manner prescribed by law, in order to carry out such economic activity, can be users of subsoil. In addition, owners of land plots can obtain a permit for the extraction of minerals, and, in the conditions of a geological study of a subsoil plot for their own funds, obtain a permit without an auction.

In the same vein, the Resolution of the Cabinet of Ministers of Ukraine provides for the procedure for granting special permits for the use of subsoil by issuing a permit without holding an auction.

Only how is it possible to combine equal rights of citizens to the subsoil when distributing land plots where there is no subsoil?

Then for whom and why were these corruption norms prescribed. Probably, so that the persons in power would receive plots of mineral resources, and the state would redeem in them, so that such landowners would oppose the development of oil and gas and other minerals.

Thus, the availability of natural gas and oil (natural resources) is a component of the country's energy security.

One component and a guarantee of energy security and independence of Ukraine is an efficiently operating gas industry, on the state of which the development of the economy as a whole, industry, agriculture, services, utilities, and the like depends. The structural rebuilding of the industry and the attraction of investments are the basis of the activity, which is entrusted with an important role to meet the needs of residential and industrial consumers in fuel and energy resources.

The subjects of the gas market in Ukraine are the operator of the gas transportation system (GTS), the operator of the gas distribution system (GDS), the operator of the gas storage facilities, the operator of the LNG plant, the customer, the wholesaler, the wholesale buyer, the supplier, and the consumer. The transportation of natural gas through the territory of Ukraine is carried out by the GTS operator, and the storage of natural gas in underground gas storage is carried out by the gas storage operator. The dynamics of the gas sector development are shown (Table 1).

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Table 1. Dynamics of development of the gas sector in Ukraine

Indicators	Years				
	2015	2016	2017	2018	2019
Natural gas production (billion cubic meters)	18,89	19,12	19,42	19,28	19,75
Imports (billion cubic meters)	16,45	11,08	14,05	10,59	11,55
Change in gas storage reserves (billion cubic meters)/the difference between the volume of extracted and injected gas from/to gas storage facilities	-2,53	2,01	-2,71	0,82	-5,16
Gross consumption (billion cubic meters)	32,81	32,28	30,77	30,68	28,84
Technical capacity of interstate connections at the entrance to the GTS (million cubic meters/day)	915,22	902,18	902,18	902,18	904,6
Technical capacity of interstate connections at the exit of the GTS (million cubic meters/day)	443,23	443,60	473,60	473,60	473,60
Active capacity of gas storage facilities (billion cubic meters)	30,95	30,95	30,95	30,95	30,95
Length of gas transportation networks (thousand km)	35	35	35	35	35
Length of gas distribution networks (thousand km)	295	309	292	285	290
Final consumption of natural gas (billion cubic meters)	29,81	29,30	27,47	27,49	25,04
Household consumers	11,28	11,88	11,23	10,63	8,33
Number of consumers (thousand people):	12394	12271	12397	12436	12570
household	12294	12169	12288	12322	12459
non-domestic	100	102	109	114	111

Source: built on Energy. State Statistics Committee of Ukraine

There are 12 underground gas storages in the natural gas market of Ukraine, two of which are created on the basis of aquifers, and the rest - on the basis of depleted gas fields, the total active capacity of which in 2019 was 31 billion cubic meters. The largest gas storage facility is Bilche-Volytsia UGS - 17.05 billion cubic meters (55.09% of the total maximum storage volume (design capacity)). The maximum (design) capacity of gas injection into gas storage facilities is 252 million cubic meters/day, and the maximum (design) capacity of natural gas extraction from gas storage facilities is 260 million cubic meters/day, Annual Report of the National Commission for State Regulation of Energy and Utilities for 2019 (2020) (Table 2).

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Table 2. Technical characteristics of gas storage facilities in Ukraine

Name of gas storage facility	Active gas volume/amount	Buffer gas volume/amount	Design pumping capacity	Design selection capacity
	million cubic meters	million cubic meters	million cubic meters/day	million cubic meters/day
Uherske	1900	782	17	17
Bilche-Volytsko-Uherske	17050	6780	120	102
Dashavske	2150	1803	26	26
Oparske	1920	2228	14	14
Bohorodchanske	2300	0	26	50
Olyshivske	310	260	2	2
Chervonopartizanske	1500	1474	11	14
Solokhivske	1300	746	8	10
Proletarske	1000	653	10	10
Kegychivske	700	380	7	9
Krasnopopivske	420	190	5	4
Vergunske	400	303	6	3
Total	30950	15599	252	260

Source: built on Annual Report of the National Commission for State Regulation of Energy and Utilities for 2019 (2020)

The total reserves of natural gas as of January 1, 2019 are 882,600,000,000 cubic meters, which will provide Ukraine for 42 years, given the current rate of natural gas use. Ukraine produces only 2.4% of its natural gas annually from its total reserves, while more developed countries produce about 6% (Annual Report of Naftogaz of Ukraine for 2018 (2019)).

In 2019, for the first time in Ukraine's historic existence, the government initiated a transparent process to attract investors to search for and explore new oil and gas fields through the use of international best practices. The State Service of Geology and Subsoil has prepared more than 30 oil and gas licensed spots with a total area of 4.63 thousand sq.km for their phased submission for electronic online auctions (ProZorro) scheduled for 2019. The government approved the tender conditions for 12 spots for the conclusion of production sharing agreements (PSAs) with an area of almost 20 thousand sq. km. (Annual Report of Naftogaz of Ukraine for 2018 (2019)). It can be concluded that the Naftogaz Group is working hard to reform and improve its enterprise, strengthening all technological divisions.

All data of tables and figures, which will be given in the study, do not contain information about the temporarily occupied territories of the Autonomous Republic of Crimea and the city of Sevastopol and parts of the temporarily occupied territories in Donetsk and Luhansk regions.

Ukraine's energy balance is shown (Table 3).

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Table 3. Energy balance of Ukraine in the natural gas sector

Types of fuels/sectors	2014	2015	2016	2017	2018
The share of natural gas in the total supply of primary energy, %					
Natural gas	31,6	28,9	27,1	27,4	27,5
Internal supply of natural gas, TJ					
Natural gas	1554778	1212422	1191064	1142240	1193373
Meeting the needs of natural gas of own production, %					
Natural gas	45,0	56,9	59,3	63,0	64,3
Net imports of natural gas, thousand tons of oil equivalent					
Natural gas	15720	13288	8809	11262	8459
Natural gas consumption by sectors, thousand tons of oil equivalent					
Own consumption by the energy sector	961	957	897	959	947
Industry	3324	2762	2482	2627	2927
Transport	2273	1572	1399	1612	1455
Others	12708	9406	10009	9564	9677
Non-energy use	2650	2281	1784	1168	884

Source: built on Energy State Statistics Committee of Ukraine

Table 3 shows that the main share of natural gas in the structure of fuel consumption for conversion compared to 2017 has not changed - 23%. In 2018, compared to the previous year, the volume of natural gas use increased by 0.4%. The main consumers of natural gas were enterprises and organizations of 11 regions, the volume of use of which (taking into account the volume of sales to the population) accounted for almost 73% of the total volume in Ukraine. Consumers of Dnipropetrovsk region accounted for 10.6% of natural gas use, city of Kyiv - 10.4%, Kharkiv region - 8.5%, Poltava region - 7.2%, Cherkasy region - 6.7%, Donetsk region - 6.2%, Kyiv region - 5.8%, Odessa region - 5.4%, Lviv region - 5.3%, Zaporozhye region - 3.7% and Nikolaev region - 3.3%. The enterprises of 18 regions reduced their natural gas consumption, including Ivano-Frankivsk (by 14.3%), Lviv and Zakarpattia (by 12.4%, respectively), Rivne (by 10.1%) and Volyn (by 9.3%) regions (Energy. State Statistics Committee of Ukraine).

Ukraine's gas sector, operating in the context of the democratic transformation of Ukrainian society, needs to be improved in many respects. "Ukraine is a world leader in the level of liquefied gas consumption in the transport sector. Today, the share of autogas in the total basket of consumed motor fuels in Ukraine is about 25%, which is 2 times or more than the level of, for example, Turkey (12%) and South Korea (less than 10%). The Ukrainian market has long surpassed the use of autogas not only in any of the European countries but is the absolute world leader in the use of the product in transport by a share in the basket of used fuels with a double gap from the second country (Energy. State Statistics Committee of Ukraine).

This is due to the population and the number of vehicles in each country that use petroleum products and liquefied natural gas. Ukraine ranks fifth in the consumption of liquefied natural gas in transport in the world with a figure of 1,800,000 tons. First place - in Turkey, followed by South Korea, Russia, and Poland. The first three countries are significantly superior to Ukraine in terms of population, and Poland is significantly ahead of the number of cars (Ukraine ranks first in the world in terms of autogas consumption (2019)).

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The capacity of cross-border gas pipelines is used for transportation (transit) of natural gas through the territory of Ukraine to neighboring countries. During 2019, natural gas was not exported from Ukraine, but the volume of natural gas transit through the territory of Ukraine in 2019 increased by 3.3% compared to 2018 (Ministry of Energy of Ukraine). The volumes of natural gas imports, transit, and transportation in recent years are given (Table 4).

Table 4. Volumes of import, transit and transportation of natural gas for 2014 - 2019, billion cubic meters

Indicators	Years					
	2014	2015	2016	2017	2018	2019
Volume of transit	62,20	67,08	82,18	93,46	86,78	89,61
Volume of transported natural gas to direct consumers and to GDS	38,12	30,40	29,31	27,49	27,61	25,63
Imports	19,47	16,45	11,08	14,05	10,59	11,55

Source: built on Energy State Statistics Committee of Ukraine

Due to the fact that most of Ukraine's large gas fields are depleted, Ukraine's "blue fuel" production will not increase in the coming years and will remain at a stable level. The general reason for this situation is that all smaller deposits are already depleted. Most of them are developed from 1960-1970, and equipment and technology are used for another 40-50 years. Therefore, new large deposits are needed to increase production.

Indeed, the development of renewable energy sources is one of the most important areas of energy development in Ukraine. Non-traditional energy sources are components of Ukraine's energy potential. The country's energy balance is dominated by Natural gas, coal, and nuclear energy. The attraction of non-traditional types of energy in Ukraine is still slow. The dynamics of the introduction of renewable energy sources are given (Table 5).

Table 5. Dynamics of introduction of renewable energy sources in Ukraine

Types of fuels/sectors	1990	2000	2010	2015	2016	2017	2018
The share of renewable energy sources in the total supply of primary energy, %							
Hydroelectricity	0,4	0,7	0,9	0,5	0,7	0,9	1,0
Wind, solar energy, etc.	0,0	0,0	0,0	0,1	0,1	0,2	0,2
Biofuels and waste	0,1	0,2	1,1	2,3	3,0	3,3	3,4
The structure of renewable energy sources in the total supply of primary energy, %							
Hydroelectricity	71,5	78,7	43,3	17,2	18,3	19,7	20,9
Wind, solar energy, etc.	0,0	0,0	0,2	5,0	3,4	3,8	4,6
Biofuels and waste	28,5	21,2	56,5	77,9	78,3	76,5	74,5
Structure of biofuel and waste in the total supply of primary energy, %							
Solid biofuel	100,0	100,0	100,0	99,2	98,8	98,6	98,5
Liquid biofuel	0,0	0,0	0,0	0,1	0,0	0,1	0,0
Biogas	0,0	0,0	0,0	0,7	1,2	1,3	1,5
Waste/other	0,0	0,0	0,0	0,0	m	0,1	0,0

Source: built on Energy State Statistics Committee of Ukraine

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The growth in the supply and consumption of energy from renewable sources indicates that the implementation of state policy in the areas of efficient use of fuel and energy resources, energy conservation, renewable energy sources and alternative fuels is gradually being ensured, albeit at a very slow pace. Due to the availability of land resources that can be allotted for the production of biofuels in Ukraine without much harm to food production and the provision of livestock feed, Ukraine can potentially be an important player in the European biofuel market.

From the foregoing, the following conclusions can be drawn: the gas sector of the Ukrainian energy sector is the most problematic for the economy due to the high gas intensity of GDP, which, in turn, gives rise to even greater gas import dependence and contributes to the spread of corruption. The main problems of the sector include the monopoly position of the National joint stock company Naftogaz of Ukraine, the need for a large-scale modernization of the GTS in the absence of funds in the National joint stock company Naftogaz of Ukraine, absence of the “liberalized” and organizationally formalized natural gas market, the lack of membership of the system operator of supplies in ENTSO-G, lack of economically justified tariffs, economically justified rates of payment for the use of subsoil, unsatisfactory pace of reorganization of enterprises, separation of enterprises for the distribution and supply of gas, and unsatisfactory conditions for attracting investors.

Also, the main problems of the oil and gas sector are imperfect legislation, corruption, shadow business, overregulation of the licensing system, unstable rental, and tax rules. To ensure economic security and overcome security threats in the energy sector, the state should develop effective mechanisms and tools to develop and improve the efficiency of the industry. The priority tasks should include optimization of production, diversification of supplies and production, modernization of existing facilities, formation of a unified legal framework, taking into account international standards, implementation of an effective system of state regulation and control, activation and stimulation of innovation and investment activities, implementation of Euro environmental norms and international standards, etc. A special attention has to be paid to security of critical infrastructure (Plëta, T., Tvaronavičienė, M., & Della Casa, S. 2020; Plëta, T., Tvaronavičienė, M., Della Casa, S., & Agafonov, K. 2020; Tvaronavičienė, M., Plëta, T., Della Casa, S., & Latvys, J. 2020).

It is possible to draw conclusions on the development of the oil and gas sector in Ukraine in more detail and in a qualified manner and propose ways to improve it using the SWOT analysis technique. That is, we will analyze this sector in terms of existing and potential opportunities, threats, advantages, and disadvantages. At the same time, we assume the requirements of the Third Energy Package to separate the transport function from the gas production and supply business and also assume that the operator is removed from the structure of a vertically integrated company and is not associated with it by legal, financial and managerial ties, in accordance with the Directive (Table 6).

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Table 6. SWOT-analysis of the oil and gas sector in Ukraine

Strengths	Weaknesses
<p>Compliance with requirements based on property relations «ownership unbundling».</p> <p>Greater independence in setting quality standards and virtue in the operations of the GTS operator.</p> <p>Separating the operator and increasing transparency and economic attractiveness.</p> <p>Opportunity for Ukrgasvydobuvannya to better prepare for the end of the special duties regime and possible privatization.</p> <p>Reducing the risk of political influence.</p>	<p>Vertical integration of Naftogaz.</p> <p>Preservation of Naftogaz Ukrainy's great influence on the gas market.</p> <p>The State Property Fund of Ukraine does not solve the problem of complete independence from the government vertical.</p> <p>Significant time to estimate the cost of GTS separately, as well as to create a new GTS operator.</p>
Capabilities	Threats
<p>Great commercial attractiveness of GTS as a purely business assets.</p> <p>No need for significant legal transactions with GTS assets.</p> <p>No tax implications.</p> <p>The emergence of a competitive market for natural gas storage services.</p> <p>Increase in the volume of activities in the field of gas exploration and production.</p> <p>Creation of a reliable and flexible organizational structure for faster decision making.</p> <p>Development of the retail business group Naftogaz.</p> <p>Creation of additional gas reserves in case of possible zero transit and import failures.</p> <p>Receiving compensation for performing special duties (PSO).</p>	<p>Decrease/termination of transit through the territory of Ukraine.</p> <p>Continuation of the Regulation on the imposition of special duties (PSO) on conditions unfavorable for the company and the continuation of gas sales through regional gas salers.</p> <p>Insufficient liquidity.</p> <p>Failure to obtain new licenses and expropriation (loss) of gas production licenses.</p> <p>Emergency situations due to the presence of outdated equipment and a high level of human factors.</p> <p>Loss of access to cushion gas stored in underground storage.</p> <p>Lack of regulation of legislation.</p> <p>Political instability.</p> <p>Great vulnerability to external influences, including from Russia.</p> <p>The use of GTS distribution in information warfare as evidence of transit unreliability ("Nord Stream Factor 2).</p> <p>Potential need to assign the transit agreement with the Russian Federation and other existing agreements to the new operator of GTS.</p>

Source: built by the author

The table shows that Ukraine has both strengths and weaknesses. But the implementation and development of the country's strategic oil and gas sector make it necessary to anticipate all threats (risks) that stand in the way of development. Threats (risks) can be divided into: strategic (reduction/termination of transit through the territory of Ukraine) through the launch of the Turkish Stream and Nord Stream-2; financial (insufficient liquidity). It is necessary to take measures to postpone the payment of credit obligations to banks, to allow the payment of dividends in installments, etc; regulatory (failure to obtain new licenses, expropriation (loss) of gas production licenses). Additional online auctions for the sale of special subsoil use permits should be introduced, which in turn will ensure environmental openness, transparency, occupational safety and health. It is necessary to conduct staff training and advanced training in compliance with national and international standards and practices on occupational safety, modernize existing facilities and implement the world's best practices of operation and diagnostics in this area.

Operational threats (loss of access to the buffer gas in underground gas storage facilities due to incorrect removal from the structure). It is necessary to finalize and agree on a new restructuring plan, according to which activities related to natural gas storage will remain in the structure of the Naftogaz Group.

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Therefore, the transformation of the oil and gas sector of Ukraine and the creation of an effective organizational model should provide sufficient control over the areas of activity grouped into appropriate blocks, with appropriate tasks and objectives. Blocks should also include areas for action to achieve effect (individual responsibility for results, identification of key positions and strengthening of responsibilities, ensuring national interests, proper consideration of operating costs, etc) and further development of the industry, as well as to ensure effective control.

5. Discussion

In general, Ukraine has sufficient natural, scientific, technical, technological, and human resources to provide natural gas for its own production. The increase in gas production in Ukraine is possible due to two main directions, firstly - the use of modern technologies, and secondly - the expansion of the resource base by finding new deposits and drilling a large number of wells. It is necessary to conduct an inventory, re-certification, and illustration of the operational fund of wells and deposits. It is also essential to provide for effective and efficient mechanisms for regulating the exploration and production of hydrocarbons, namely: transparent competitive licensing procedures; to settle the issue of a single fee for subsoil use; to determine clear and comprehensive grounds for granting a license outside the auction and revoking the license, etc. That is, it is necessary to mobilize the available scientific, technical, financial, and administrative resources in the country, to improve the legislation on subsoil use.

The main problems of resource security of the gas sector of Ukraine include imperfect legislation, corruption, shadow business, over-regulation of the permitting system, unstable rent and tax rules.

To ensure economic security and overcome security threats in the energy sector, the state must develop effective mechanisms and tools to develop and improve the efficiency of the industry.

Regarding the market of oil and oil products, the filling of the domestic oil market, in recent years, was carried out both at the expense of domestic production resources and through oil imports. For the first time in 12 years, the negative trend of oil and condensate production was reversed. At the same time, despite the improvement of Ukrnafta's indicators, the general trend of oil production remains negative due to the problem of accumulated tax debt, which, in turn, makes it impossible to invest in the development of the company's reserves.

Conclusions

The study of the constitutional and legal foundations of national security of Ukraine provided an opportunity to make a number of conclusions, generalizations and develop appropriate proposals that, hopefully, will not only significantly improve the field of conceptual analysis of theoretical and methodological problems of national security but also a unified methodological approach to its components, as well as analysis, evaluation and forecasting, making management decisions to ensure the national security of our state. The obtained results can be the basis for the creation of a holistic theory of national security and will provide scientific support for the realization of national interests of Ukraine in the modern geopolitical dimension.

Summarizing the above, we can conclude that it is necessary to create minimum reserves of oil and oil products in Ukraine, which is due to: insufficient production of its own hydrocarbons, dependence on imports, limited opportunities for increasing volumes, the existing threat of crisis in the oil and oil products market, and the like.

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The authors have analyzed and concluded that the oil and gas complex of Ukraine occupies a leading place among the basic industries of the fuel and energy complex (FEC), and the lack of its own energy resources, their supply from outside destabilizes the political and economic situation. One component and a guarantee of energy security and independence of Ukraine is an efficiently operating gas industry.

One of the key events of recent years is the very low volumes of Russian gas supplies to Europe. Unlike the Ukrainian transit route, other routes for the transit of Russian gas to European countries were operating at maximum rates. However, since the only transport corridor that has sufficient capacity and flexibility is the Ukrainian transit corridor, the transportation volumes of the Ukrainian GTS began to gradually grow and at the end of March 2018 amounted to 155 million cubic meters/day at the Uzhgorod/Velke Kapushany point, which in turn was almost three times higher than at the beginning of February. In addition, there were also difficulties with resource provision. That is, Naftogaz, pursuant to the decision of the Stockholm Arbitration, made an advance payment in favor of Gazprom for the volumes of gas stipulated in the contract but Gazprom did not supply the prepaid gas to Naftogaz, for which there was a critical situation with the supply of gas to consumers in Ukraine and Naftogaz. This problem was eliminated only due to the urgent purchase of gas in Europe, an increase in gas withdrawal from UGS facilities and due to the "flexibility" of the pipeline system in Ukraine.

The total reserves of natural gas as of January 1, 2019 are 882.6 billion cubic meters, which will provide Ukraine for 42 years under the current rate of natural gas use. Ukraine annually produces only 2.4% of the total natural gas reserves, while more developed countries produce about 6%. In general, the gas sector of Ukraine, which functions in the conditions of democratic transformation of Ukrainian society, requires improvement in many aspects.

To ensure economic security and overcome security threats in the energy sector, the state should develop effective mechanisms and tools to improve the efficiency of the industry in the context of globalization, taking into account world development trends. The priority tasks should be: optimization of own production and development and production of oil from new fields both in Ukraine and abroad, reducing the level of dependence on imports through diversifying sources of external oil supplies, modernizing and increasing the competitiveness of the oil refining industry, consolidating a positive image of Ukraine in the international system, the formation of a single legal framework, taking into account international standards, the introduction of an effective system of state regulation and control to ensure fair competition, the activation of the scientific potential of the industry and the implementation of state policy to stimulate innovation and investment in the oil industry, the modernization of existing capacities of oil refineries and construction of new facilities to increase the production of high-quality petroleum products, review and improvement of the technical specifications for compliance with EU standards, implementation of Euro environmental standards in Ukraine, creation of the strategic reserve of oil and oil products, viewing and setting competitive tariffs for transportation and oil transshipment services, attracting analysts and scientists to the coverage of topical and problematic issues of the industry, and the like.

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PROBLEMS OF INTELLECTUAL PROPERTY IN THE NATIONAL SECURITY SYSTEM OF THE COUNTRY

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Abstract. The problems of intellectual property as a component of intellectual security in the national security system of the country have been considered. A statistical analysis of the registration of intellectual property in Ukraine for 2015-2019 has been carried out. The assessment of the level of intellectual security of Ukraine has been carried out on the basis of the calculation of the integrated index of intellectual security of Ukraine, which is based on the methodology of integrated assessment, the theory of factor analysis. The results confirmed that the level of intellectual security of Ukraine is low. The integrated index is in the range of the lower limit, which indicates that the state underestimates the importance of preserving, developing and increasing intellectual potential. The low level of intellectual security of Ukraine is largely due to the destructive influence of inhibitory factors, which over time can take the form of real threats. Given the diverse nature, sources and forms of manifestation, the threats of regulatory, institutional, organizational and managerial, economic, subjective, social, global and related nature, which have a destabilizing effect on the state of intellectual security of the state have been distinguished. Special attention was focused on structuring threats to intellectual potential as a strategic resource for strengthening the economic security of Ukraine. In order to achieve the strategic goals of innovation development of the state, the Strategy of development and rational use of intellectual potential to strengthen economic security of the state has been proposed. The main purpose of this strategy consists in strengthening the economic security of Ukraine on the basis of development and rational use of intellectual potential harmonized with intellectual security threats in the economic security system of the state.

Keywords: intellectual property; national security; intellectual security; regulatory support; intellectual potential

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1. Introduction

The problem of national security in a transitional economy becomes particularly acute, as the latter is characterized by numerous negative consequences of reform, manifested in the disintegration of production structures, rupture of economic ties, imbalance between extractive and processing industries, domestic market reduction, regional development imbalances, significant reduction of expenses on research and innovation activities and, as a consequence lowering the level of inventive, patent, licensing and innovation activity, loss of competitiveness of domestic producers, increasing the level of counterfeiting and piracy, etc.

The problem of economic security of Ukraine is decisive in the context of the existence and development of Ukraine as a sovereign state. Economic security is a multifactorial phenomenon that can be considered as a system consisting of such functional components as: financial, social, information, intellectual, technological, military security, environmental security, etc.

Intellectual property is a key aspect of intellectual security in the national security system of each country. Ukraine should continue to create effective mechanisms for the protection and enforcement of intellectual property rights.

At the present stage of formation of the innovation model of economic development of Ukraine, the main driver of economic growth is the intellectual potential as a strategic resource and economic power of the state. Economic stability of highly developed countries is ensured by the introduction of scientific and technological developments and high breakthrough technologies. This objectively puts before Ukraine the task of strengthening scientific, educational and innovation competitiveness, more effective use of intellectual potential as a precondition for economic security of the state.

Elimination of Ukraine's technological lag behind advanced countries is actualized by the influence of destructive factors that take the form of potential and real threats. These include, first of all, the processes of devaluation of moral and spiritual values in society, the real decline in purchasing power and deterioration of the quality of life of the population, extremely slow reform of Ukrainian science and education, the delay in creating a national innovation system.

One of the preconditions for intensifying the development of the national economy is the development and implementation of state policy of development and use of intellectual potential to ensure economic security of the state as a set of software to counter security threats to the cultural, spiritual and scientific-educational base of the national economy. At the state level, a national strategy for the development of science has not yet been developed.

The scientific sphere is characterized by low innovation activity and slow integration of modern organizational forms and methods. When reforming higher education, it is necessary to take into account global trends: intensification of competition between universities for leadership in the global market of educational services, revival of international scientific cooperation, diversification of funding mechanisms for education and research with the state, development of new technologies to improve educational services. These factors determine the relevance of the development and implementation of state policy for the development and use of intellectual potential using a functionally integrated set of tools to counter potential and real threats and outline strategic priorities for strengthening the economic security of the state.

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The purpose of the paper is the formation of methodological foundations, theoretical and methodological approaches and scientific and practical areas to substantiate the strategic priorities and means of development and use of intellectual property and intellectual potential and strengthening the economic security of Ukraine.

2. Literature Survey

There has been made a significant contribution to the theoretical substantiation of the economic nature of human labor and intelligence, scientific thought, business cycles and innovations.

Theoretical and methodological principles of the development of intellectual potential as the main productive force of society are substantiated in the works of Agostini, L., et.al. (2017), Holgersson, M., & Aaboen, L. (2019), Miyashita, S., Katoh, S., Anzai, T., & Sengoku, S. (2020), Laužikas, M., Miliūtė, A., & Khalili, M. (2021) etc.

Economic, philosophical and social aspects of intellectual and human capital are covered in the works of Kim, S. Y., & Kim, E. (2018), Torre, R. D. L., Alcaide-Muñoz, C., & Ollo-López, A. (2019), Tekic, A., & Willoughby, K. W. (2020), Laužikas, M., & Miliūtė, A. (2020) etc.

The studies of theoretical and methodological points and practical problems of economic security of the state in the strategic aspect, including scientific and technological, investment and innovation components are presented in the works of Peng, M. W., Ahlstrom, D., Carraher, S. M., & Shi, W. S. (2017), Efendioglu, N., & Woitsch, R. (2017), Baran, A., & Zhumabaeva, A. (2018).

Given the significant scientific achievements of scientists, today research into the role and place of intellectual potential in the system of economic security of the state, quality development and rational use of intellectual potential, determining the impact of intellectual potential on the level of economic security of the state taking into account its dualistic nature is gaining relevance. Also, there become urgent the issues of substantiation of the conceptual foundations of the study of intellectual security in the economic security system of the state, the development of a set of social and motivational programs for young scientists, borrowing positive world experience in strengthening the economic security of the state. All this conditioned the choice of the subject of the paper, determined its purpose and objectives, as well as the logic of the presentation of the material.

3. Methods

In the process of research there was used the theory of systems, and there was constructed the hierarchical concept of research including the following: the methods of scientific abstraction, induction and deduction, analysis and synthesis, and historical and logical methods (for the generalization of scientific theses and the development of the terminological framework of the theory of security science); comparative analysis (for the comparison of the scientific foundations for the interpretation of the concepts of "intellectual property", "intellectual potential", "intellectual security of the state"); structural and axiological analysis (for outlining the architecture of intellectual potential and the relationship between system components); systematization, theoretical generalization and aggregation (in substantiation of theoretical and methodological approaches and principles to assess the level and threats to the development of intellectual potential of Ukraine); economic and mathematical, analytical and forecasting calculations, in particular, the methods of the theory of sets and mathematical logic, mathematical programming (for calculations of the level of intellectual potential of Ukraine and identification of the dominant trends in its development); data envelopment analysis (in determining the effectiveness of the use of intellectual

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potential in the process of strengthening the economic security of Ukraine); system dynamics modeling (for the identification of causal relationships between motives and factors of effective use of intellectual potential); integrated assessment (for the calculation of the integrated index of intellectual security of Ukraine); fuzzy logic (for the identification of the impact of systemic threats on the level of economic security of the state); system analysis (for the identification of the key trends and achievements in the educational, scientific, cultural and spiritual spheres of developed countries and Ukraine; graphic method (for the visualization of the results of assessment of the development and use of intellectual potential and the level of intellectual security of Ukraine).

The information base of the study is the laws of Ukraine, decrees of the President of Ukraine, resolutions of the Cabinet of Ministers of Ukraine, materials of the State Statistics Service of Ukraine, official publications of international economic organizations (UN, IMF, World Bank, OECP, World Economic Forum), strategic and program documents on the issues of development of national education and science, reform of the national economy, scientific literature, official statistical and analytical-forecast materials, online publications, individual studies and results of the author.

4. Results

The main results of the study. The analysis of the intellectual property market requires a systematic approach taking into account the environment of use of the intellectual potential of the population:

- Analysis level I: analysis of the level of innovation development of the country and its regions aiming to define the structure of the economy based on technological modes, the importance of science-intensive products in GDP, the competitiveness of the economy in the world, etc.; analysis of the intellectual potential of the population, the number of people employed in knowledge-intensive areas of economy, trends of intellectual migration in different spatial scales (global competition for "brains");
- Analysis level II: analysis of the intellectual property market itself, in particular its entities (of business and research, including educational, environment that can be producers and consumers), and objects (results of intellectual activity and their juridical security);
- Analysis level III: analysis of the management environment of the intellectual property market, in particular the participation of the state in the protection and promotion of intellectual activity;
- Analysis level IV: analysis of commercialization of intellectual property items and reflection of this process at the level of innovation development of the country (thus a closed cycle of analysis with level I is formed).

Analysis level I is necessary in the conditions of formation of the world economic space. A wide range of international indices, including the Global Innovation Index, the Global Competitiveness Index, the Global Index of Intellectual Property Protection and others allows determining the level of innovation development of a country on a global scale.

According to the Global Innovation Index, there is a positive dynamics for Ukraine in the rating. Information in this regard is widespread in the Ukrainian media. However, if we take the Global Index of Protection of Intellectual Property Rights, the situation for Ukraine is quite problematic. Among the 125 countries analyzed, Ukraine occupies a very backward position (100th position in 2018). To understand the reasons for this situation, it is necessary to analyze the indicators that form this index in more detail.

The ratings of the Global Index of Intellectual Property Protection have been published annually since 2007 by the International Property Rights Alliance. The index includes indicators of protection of physical and intellectual property rights; in the context of the latter, three factors are the measures of quality and perfection of the

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protection system. They are the protection of intellectual property rights, protection of patent rights, and the level of "piracy" (violation of property rights) (Global Index of Intellectual Property Protection).

Table 1 summarizes the main trends in terms of indicators that form the Global Index of Intellectual Property Protection for Ukraine for 2007-2018. This allows forming a general idea of the key issues and strengths of the national intellectual property market.

Table 1. Ukraine in the Global Index of Intellectual Property Protection ranking

No.	Indicator	Score/position in 2018	Change trend for 12 years	Main positive factors	Main destabilizing factors
1	General index	4.282/100	The highest positions in 2009 and 2014 with significant positive dynamics in 2017	Physical property rights	Political and economic factors
2. Subindexes					
2.1	Political and legal environment	2.685/120	Deterioration in 2014-2016	Legislation	Political situation
2.2	Physical property rights	5.726/98	A sharp decline in 2017 with further growth	Property registration	Access to credit and protection of physical property rights
2.3	Intellectual property rights	4.436/92	A sharp improvement in 2014 with a further decline to the previous stable level	Patent protection	Piracy and copyright infringement

Source: author's study

It should be noted that the current legislation of Ukraine in the field of protection of intellectual property rights is relatively highly valued by international experts. However, the problem lies in compliance with regulations, the manifestation of a sufficient level of legal culture of persons engaged in intellectual activity. Given this, there are also many problems in the legislative field and they are reduced to their practical validity.

Thus, in order to develop the intellectual property market in Ukraine, it is necessary to stabilize the political situation, strengthen lending mechanisms in the field of intellectual activity, as well as fight against mass piracy and copyright infringement. The latter entails many problems that are institutionalized into a global problem. One of the risky manifestations of piracy is the production and trade in counterfeit products, which pose a threat to economic development, health and consumer safety on a global scale, resulting in loss of budget revenues, negative impact on foreign investment, loss of reputation of producers; often such production comes under the control of criminal organizations; software companies estimate annual losses due to illegal duplication of programs up to 13-15 billion US dollars, annual losses of owners of well-known brands from the sale of counterfeit products — up to 100 billion US dollars (Global Index of Intellectual Property Protection). The global nature of this problem encourages Ukraine to be more actively involved in its solving and counteracting piracy in the intellectual property market.

Within the powers provided by the laws of Ukraine "On protection of rights to inventions and utility models", "On protection of rights to industrial designs", "On protection of rights to layout of semiconductor products", "On protection of rights to semiconductor integrated circuit layout design" , "On legal protection of geographical indications", Ukrpatent performs the functions defined by the Ministry for Development of Economy, Trade and

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Agriculture as the authorized government body, including examination of applications for industrial property units, prepares information for state registration of security documents, performs technical administration of state registers.

In 2019, Ukrpatent received about 3.9 thousand applications for inventions, 8.5 thousand applications for utility models, 2.7 thousand applications for industrial designs, and almost 42.2 thousand applications for marks for goods and services (including more than 33.7 thousand applications according to the national procedure) (Figure 1).

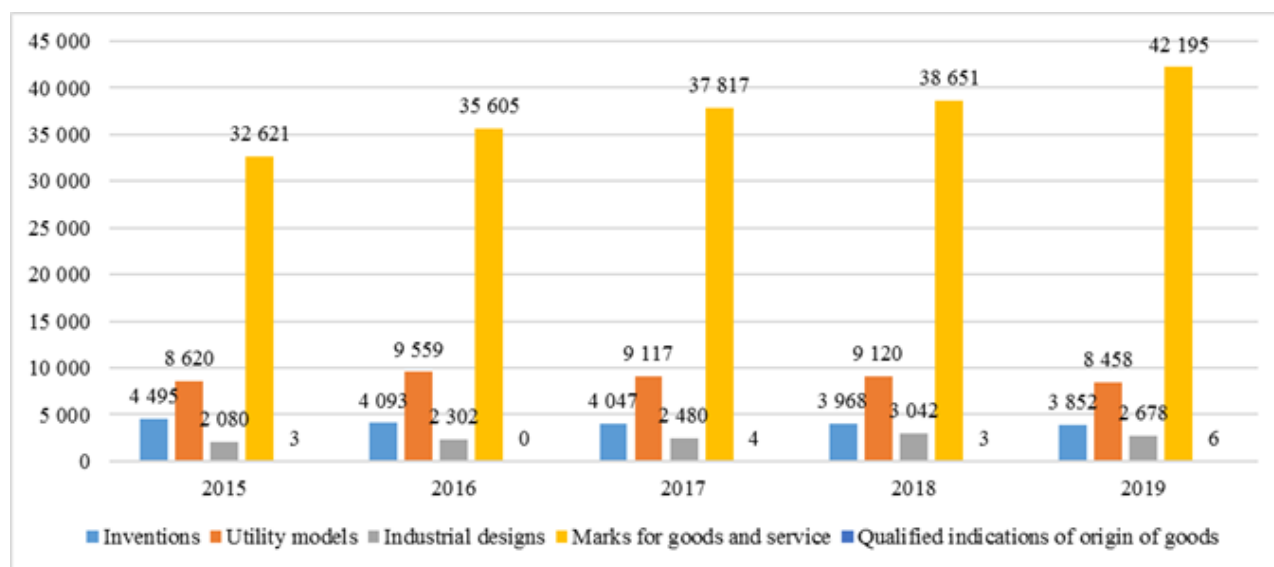


Figure 1. Receipt of applications for industrial property units in Ukraine for 2015-2019

Source: based on the data of the State Enterprise Ukrainian Institute of Intellectual Property (UKRPATENT) (2019)

In 2019, using the system of electronic submission of applications for industrial property units, 14 998 applications were submitted, including 939 (6.3 % of all electronic applications) applications for inventions, 722 (4.8 %) applications for utility models, 771 (5.1 %) applications for industrial designs, and 12 566 (83.8 %) applications for marks for goods and services (Figure 2).

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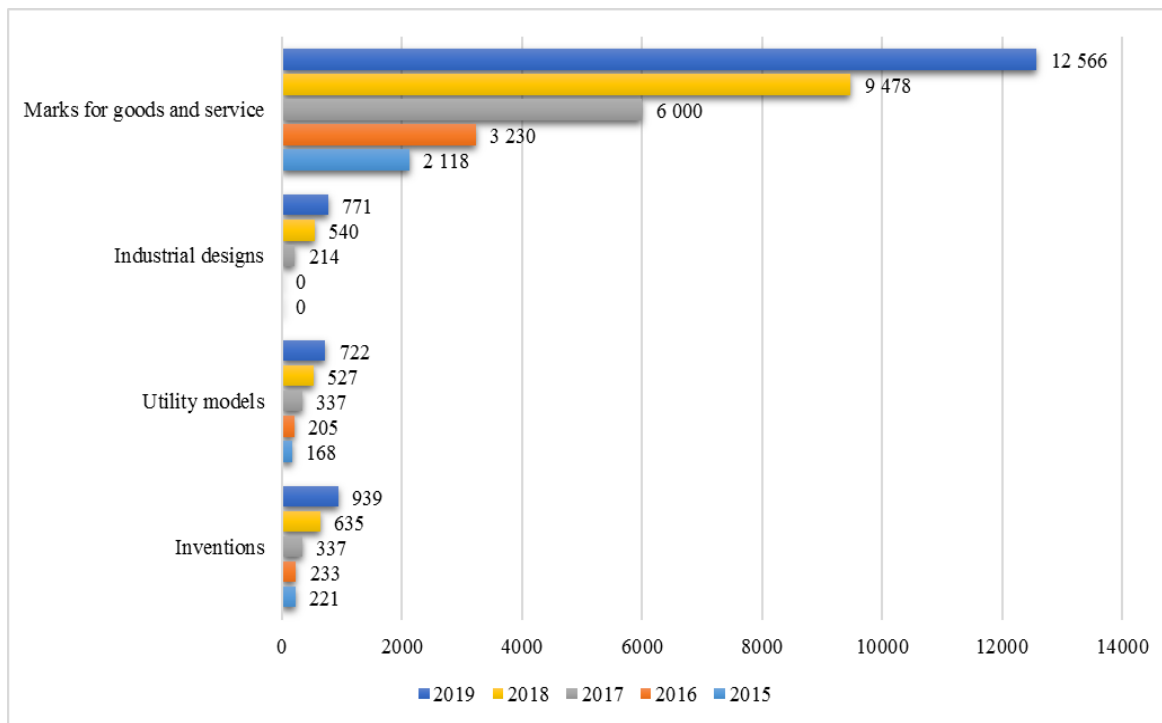


Figure 2. Receipt of electronic applications for industrial property units in Ukraine for 2015-2019

Source: based on the data of the State Enterprise Ukrainian Institute of Intellectual Property (UKRPATENT) (2019)

The activity of national applicants in submission of applications for marks for goods and services increased by 9.1 %, that of foreign ones — by 9.5 % (Figure 3).

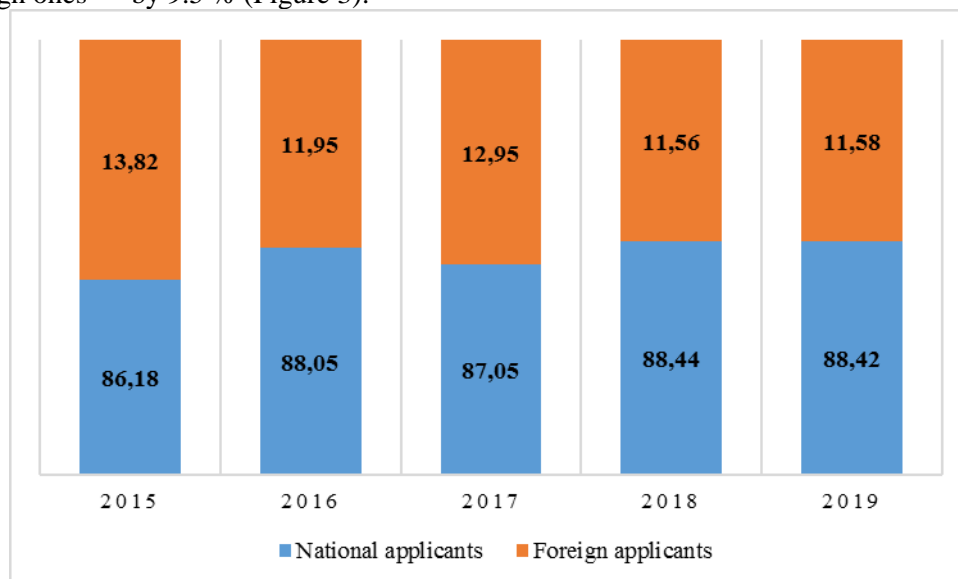


Figure 3. Receipt of applications for marks for goods and services according to the national procedure in Ukraine for 2015-2019

Source: based on the data of the State Enterprise Ukrainian Institute of Intellectual Property (UKRPATENT) (2019)

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The globalization processes of recent decades and the implementation of Ukraine's European integration strategy in the face of adverse external factors and weak protection of Ukraine's intellectual potential raise the issue of guaranteeing Ukraine's intellectual security. The state must ensure the security of intellectual development, because it is intellectual security that serves as a stabilizer of society and determines the ability of the state to mobilize internal intellectual resources to build an innovation model of national economy. This emphasizes the great importance not only of theoretical understanding, but also of empirical study of the problem of strengthening intellectual security, which will allow to clearly define national interests and security objects in the intellectual sphere, and on the basis of thorough analysis of destructive factors to identify real and potential threats.

The system of indicators of intellectual security of Ukraine, which is based on the above principles and fully reflects the state of intellectual security items are shown in Table 2.

Table 2. Ukraine in the Global Index of Intellectual Property Protection ranking

No.	Intellectual security objects	Indicators of intellectual security of Ukraine	Character of influence on security level
1.	Intellectual goods (services)	Volume of output (production) of goods and services in professional, scientific, technical activities and education, % of GDP	Stimulant
2.	Intellectual investments	Share of investments in intangible assets in total capital investments, %	Stimulant
3.	Intelligence bearer	Number of highly qualified specialists per 100 thousand people	Stimulant
4.		Number of highly qualified specialists who left for permanent residence abroad per 100 thousand people	Disincentive
5.	Intellectual institutes	Number of higher education institutions and research organizations per 100 thousand people	Stimulant
6.	Intellectual property items	Coefficient of patent activity (number of issued protection documents: patents for inventions, utility models, industrial designs, certificates for marks of goods and services in the name of national applicants per 10 thousand people)	Stimulant
7.		Number of crimes committed in the field of intellectual property per 100 thousand people	Disincentive
8.	Intellectual potential	Integrated intellectual potential index	Stimulant

Source: author's research

The initial data for further calculations are presented in Table 3, which contains eight main indicators that will determine the integrated intellectual security index of of Ukraine.

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Table 3. Intellectual security indicators of Ukraine

Table 3. Intellectual security indicators of Ukraine Years	Volume of output (production) of goods and services in professional, scientific, technical activities and education, % of GDP	Share of investments in intangible assets in total capital investments, %	Number of highly qualified specialists per 100 thousand people	Number of higher education institutions and research organizations per 100 thousand people	Coefficient of patent activity (number of issued patents for inventions, utility models, industrial designs) per 10 thousand people	Integrated intellectual potential index	Number of highly qualified specialists who left for permanent residence abroad per 100 thousand people	Number of crimes committed in the field of intellectual property per 100 thousand people
2009	12.80	2.8	169.78	3.92	2.31	0.201	0.112	1.02
2010	12.89	3.1	179.92	3.84	2.65	0.204	0.092	1.73
2011	12.79	2.9	187.31	3.78	2.91	0.206	0.112	2.28
2012	12.83	2.3	196.64	3.73	2.87	0.209	0.065	2.30
2013	13.41	3.1	206.76	3.68	2.81	0.213	0.067	2.39
2014	12.44	3.7	214.99	3.61	2.74	0.214	0.085	2.09
2015	11.45	3.6	218.86	3.51	2.87	0.207	0.116	4.12
2016	13.35	2.9	227.53	3.39	2.76	0.215	0.123	3.33
2017	13.80	4.0	234.58	3.23	2.94	0.216	0.062	1.86
2018	7.73	3.4	225.24	2.81	3.17	0.215	0.108	2.90

It should be noted that the character of influence of each indicator on the level of intellectual security of the state will be determined through the identification of each indicator in relation to its direct or inverse influence on the value of the integrated index. In the case of direct dependence, or unidirectional effect of increasing the values of factor indicators on increasing the level of intellectual security, such indicators are called indicators-stimulants. If the increase in the actual values of some indicators reduces the level of security, they are called indicators-disincentives.

The calculated weighing coefficient and values of the integrated intellectual security index for Ukraine are given in Table 4.

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Table 4. Integrated intellectual security index for Ukraine

Years	Volume of output (production) of goods and services in professional, scientific, technical activities and education, % of GDP	Share of investments in intangible assets in total capital investments, %	Number of highly qualified specialists per 100 thousand people	Number of higher education institutions and research organizations per 100 thousand people	Coefficient of patent activity (number of issued patents for inventions, utility models, industrial designs) per 10 thousand people	Integrated intellectual potential index	Number of highly qualified specialists who left for permanent residence abroad per 100 thousand people	Number of crimes committed in the field of intellectual property per 100 thousand people	Integrated intellectual security index for Ukraine
	Normalized values								
2009	0.5555	0.6790	0.1680	0.8445	0.6030	0.8910	0.2013	0.0979	0.4029
2010	0.6150	0.7781	0.2053	0.8501	0.6390	0.8729	0.2037	0.0578	0.3957
2011	0.5754	0.8542	0.1682	0.8437	0.6653	0.8581	0.2063	0.0439	0.3791
2012	0.463	0.8444	0.2910	0.8464	0.6984	0.8481	0.2090	0.0435	0.3858
2013	0.6150	0.8245	0.2791	0.8846	0.7344	0.8354	0.2126	0.0419	0.4109
2014	0.7341	0.8053	0.2209	0.8206	0.7636	0.8199	0.2145	0.0478	0.4076
2015	0.7142	0.8436	0.1621	0.7551	0.7774	0.7966	0.2070	0.0243	0.3605
2016	0.5754	0.8112	0.1531	0.8803	0.8082	0.7691	0.2150	0.0300	0.3654
2017	0.7936	0.8645	0.3054	0.9102	0.8332	0.7342	0.2160	0.0537	0.4337
2018	0.6685	0.9310	0.1742	0.5098	0.8102	0.6384	0.2090	0.0344	0.3566
Weighing coefficient	0.212	0.1045	0.0727	0.0929	0.1612	0.1614	0.1595	0.1278	X

Source: author's calculations

We perform an integrated convolution for intellectual security indicators based on the calculation of the time series of the integrated intellectual security index for Ukraine and integrated indices of limit values in a multiplicative form. We notice that the definition of limit values involves calculating the optimal values of the indicator (lower optimal, upper optimal), which characterize the allowable range of values within which the most favorable conditions for economic development are created. In our case, it is the intellectual sphere of the national economy.

For clarity of substantiation of limit values, we use the technique of 't'-criterion: lower limit value — 0.01–0.38 (zone of losses); lower optimal — 0.39–0.59 (threat zone 1); upper optimal — 0.6–0.75 (threat zone 2); upper limit value — 0.76–1.0 (security zone). In order to increase the level of visualization of the obtained time series of the integrated intellectual security index, as well as to establish a relationship with the obtained limit values, we build Figure 4.

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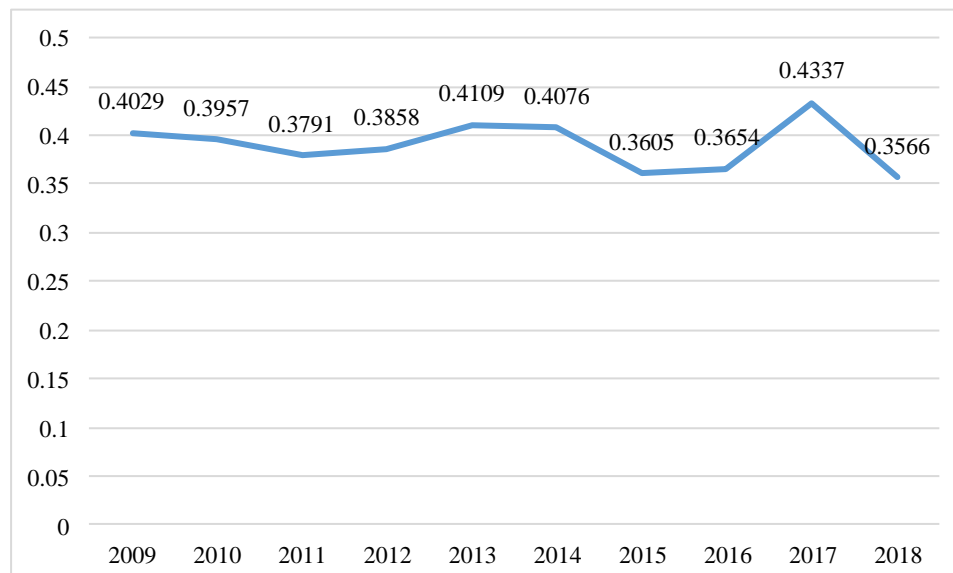


Figure 4. Dynamics of the level of the integrated intellectual security index for Ukraine in 2009-2018

Source: author's research

As can be seen from Figure 4, the intellectual security is at the level of the lower limit value. In our opinion, the intellectual security of Ukraine is at the forefront of other components of economic security, as it covers the educational, scientific and high-tech spheres that represent any country at the international level. In Ukraine the intellectual security is responsible not only for training high-quality specialists, but also for developing strategic priorities in the leading sectors of the national economy. Thus, the intellectual security of Ukraine is the basis for the transition of the economy to an innovation type of management, higher technological modes, the unifying element that, on the one hand, integrates education, science and industry into a single innovation mechanism, and on the other — can provide a higher level economic security of the state.

At the same time, it should be emphasized that, in modern transformation processes, intellectual security objects are the most vulnerable to the destructive influence of threats. In particular, threats to the intellectual security of Ukraine have different origins and sources, are characterized by various forms of manifestation and multilevel structure. It should be noted that the process of identifying threats is preceded by the step of their typology. A thorough analysis of the existing preconditions and factors that can intensify destabilizing actions in the field of intellectual security allowed to identify several types of threats to the intellectual security of Ukraine according to certain criteria.

A separate block of threats to the intellectual security of Ukraine is formed by threats of a regulatory nature due to the lack of legislative initiatives to regulate relations in the field of intellectual security of Ukraine. The most dangerous of them are:

- imperfection of national legislation to ensure national economic security and intellectual one in particular;
- lack of regulatory and legal support of the system of state regulation of intellectual security of Ukraine;
- the absence of the Concept of intellectual security of Ukraine, the implementation of which will minimize the latest threats to the intellectual security of Ukraine, prevent intellectual catastrophe due to ignoring national interests in this field and the lack of an effective management mechanism.

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Significant destabilizing influence on the state of intellectual security of Ukraine is posed by threats of an institutional nature, including:

- the absence of a state institute or a network of institutes that would study the development and implementation of the Strategy of the intellectual momentas of Ukraine in the XXI century;
- insufficient development of the national innovation system with weak relationships of education, science and business. The main lever of the transition of the economy to the intensive growth of social production is the acceleration of innovation processes. The function of generating new ideas and their further commercialization should be performed by an innovation system with a branched organizational and functional structure. Unfortunately, the processes of building a national innovation system are still at an early stage;
- imbalance of powers between state authorities and local self-government, inconsistency of inter-budgetary relations regarding the establishment and delimitation of budgetary powers, financial resources, rights, duties and responsibilities during the budget process;
- corruption loyalty, which becomes the basis of systemic corruption in all branches of government;
- lack of interest of government institutions in establishing "transparent" rules for market participants in the process of regulation of economic relations between state institutions, firms and households, bureaucratic delays in registration of property rights to intellectual and industrial property. The lack of an appropriate institutional environment based on the principles of general moral consciousness of market participants and formal rules of conduct leads to an increase in transaction costs in carrying out economic activities.

A number of threats to the intellectual security of Ukraine are associated with the insufficient level of organizational and managerial decision-making due to:

- low efficiency of state administration, incompetence of state authorities, transformation of corruption into a basic social mechanism for solving public affairs, performance of functions of external influence agents by many government officials and politicians resulting in mass distrust of existing state institutions;
- low intellectual level of state decision-making; insufficient level of qualification of decision-makers in the field of state powers; high degree of influence of lobby groups on government decision-making;
- lack of an effective system of reproduction and thus enrichment and development of the intellectual potential of the state aimed at strengthening the economic security of the state;
- lack of effective organizational and managerial mechanisms to stimulate intellectual activity at the micro and macro levels;
- inefficiency of the system of control over the spending of budget funds, in particular for scientific purposes, financing of scientific and technical projects.

Of particular concern are domestic threats of an economic nature resulting from ineffective macroeconomic policies. Negative trends are strengthened by such destructive factors as:

- growth of economic crimes of intellectual content, shadowing of the national economy in terms of unauthorized access to information sources, pirate copying and distribution of items copyright and related rights;
- lack of state policy on the use of intellectual resources, deintellectualization of society and government in general;
- lack of investment resources and, as a consequence, limited innovation development as a guarantee of strengthening the intellectual security of Ukraine;
- uncontrolled and illegal outflow of intellectual and human capital outside Ukraine, a decrease in the level of "intellectualization" of exports accompanied by an increase in the import dependence on high-tech goods of the country;

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- lack of intellectual security policy.

5. Discussion

In modern conditions, the intensification of the processes of accumulation of intellectual potential of Ukraine requires the development of scientifically sound state policy, the adoption of effective measures to combat threats to its development. Active participation of the state in the regulation of processes related to preventing the process of degradation and destruction of intellectual potential involves the development of adequate mechanisms to combat numerous threats. In our opinion, the state policy of development and use of intellectual potential of Ukraine should be implemented in the context of the state policy of protection of national interests and strategy of national security.

The current legal framework partially defines national priorities and strategic directions of state policy in the system of protection of national interests, however, such important issues as preservation and development of intellectual potential of Ukraine, minimization of threats in the intellectual sphere, taking measures to intensify innovation processes, etc. remain unaddressed. The recently adopted National Security Strategy of Ukraine envisages the main directions of the state policy of national security of Ukraine. In our opinion, the most important of them are the following: minimization of threats to state sovereignty and creation of conditions for restoration of territorial integrity of Ukraine within the internationally recognized state border of Ukraine, guarantee of peaceful future of Ukraine as sovereign and independent, democratic, social, legal state; affirmation of human and civil rights and freedoms, ensuring a new quality of economic, social and humanitarian development, ensuring the integration of Ukraine into the European Union and creating conditions for joining NATO (National Security Strategy of Ukraine (2015)).

According to Art. 6 of the Law of Ukraine "On Fundamentals of National Security of Ukraine" the priorities of national interests include: preservation and strengthening of scientific and technological potential, approval of an innovation model of development; development of spirituality, moral principles, intellectual potential of the Ukrainian people, strengthening of physical health of the nation, creation of conditions for the expanded reproduction of the population. At the same time, Art. 7 presents a number of threats to national interests in the intellectual sphere (On Fundamentals of National Security of Ukraine (2003)), which, of course, highlights the need for formation of state policy of development and use of intellectual potential of Ukraine.

The decisive role in intensifying innovation processes on the basis of effective use of existing intellectual potential belongs to the state, which must reasonably shape macroeconomic policy taking into account the specifics of the national economy. In our opinion, the state policy of development and use of intellectual potential of Ukraine as a component of the national policy, which is carried out according to the declared purposes and objectives, is based on general scientific and organizational-administrative principles and is implemented by means of the mechanism of combating the threats to development of intellectual potential of Ukraine.

We emphasize that the key idea of the state policy of development and use of intellectual potential of Ukraine is conditioned by the inward nature of potential and real threats, the nature of their occurrence and the form of manifestation. It should be implemented with the help of appropriate tools and conditioned by certain functional tasks.

1. Monitoring and identification of potential threats through a set of observations on the condition of a security object, development of threat profiles.

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2. Application of effective preventive methods of combating threats with the use of modern information technologies, means of communication, etc.
3. Localization of realized threats to the development of the intellectual potential of the state with the purpose of preventing their deepening and causing serious damages and losses.
4. Preventing further decline of intellectual potential and deepening of the intellectual crisis in society by adopting appropriate legal documents, reviving the investment and innovation climate, improving the social protection of intellectual workers, etc.

The above tasks of the state policy of development and use of intellectual potential of Ukraine are intended to promote the earliest possible decision-making on prevention and/or neutralization of threats and to create a positive environment for fast restoration of national intellectual potential and transition to the stage of its enrichment.

The implementation of the above directions of accumulation of intellectual potential of Ukraine will be enhanced by the action of such factors: recognition as a priority area of intellectual development through the adoption of an appropriate strategy or program; increasing the public assessment of knowledge and prestige of creative work and intellectual activity in general through the encouragement of invention, the award of scientific scholarships, assistance in obtaining Ukrainian and international grants for research; creation of favorable conditions for active implementation of technology transfer, Ukrainian and foreign investment in priority knowledge-intensive industries (status of free economic zones, tax benefits, tax credits, government orders, state guarantees of copyright protection, assistance in patent activities, guaranteed return on investment, etc.); state support of knowledge-intensive and high-tech industries and priority sectors of the national economy; creation of favorable conditions for growth of competitiveness of national economy; rational use of available intellectual resources, creation of conditions for commercialization of scientific knowledge, stimulation of investments in intangible assets; support for social partnership institutions that provide sustainable, effective relationships with employers, educational institutions and the population.

Conclusions

Intellectual security, as an integral part of the system of economic security of the state reflecting the degree of development and use of intellectual potential, tactically characterizes the state of the intellectual environment of society and strategically has a positive impact on macroeconomic indicators. Substantiation of the collocation relationship of intellectual potential with the system of economic security proves that intellectual security serves as a basis for the formation of national competitiveness on the basis of innovation development of education and science, institutional infrastructure, entrepreneurship.

According to the object-subject approach, the intellectual security of the state is structured into objects and subjects, which are influenced by destructive factors and threats, and on this basis an integrated set of indicators for assessing the level of intellectual security of the state is formed and methodological points for determining the integrated intellectual security index of the state is substantiated. The obtained results demonstrated that the calculated index values are between the lower limit and the lower optimal values, which reflects the ineffectiveness of state education and research and innovation policy and underestimation by state authorities of their role in strengthening economic security in the global environment, which is the main reason for the low level of intellectual security (36% in 2018 against 40% in 2009) as confirmed in the paper.

In order to achieve the strategic goals of innovation development of the state, the Strategy of development and rational use of intellectual potential to strengthen the economic security of the state is proposed, the main purpose

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of which is to strengthen the economic security of Ukraine on the basis of the development and rational use of intellectual potential harmonized with the means of combating threats to intellectual security in the system of economic security of the state. The priority directions for the implementation of the Strategy include: modernization of the system of training of specialists for the high-tech industries; reform of the scientific sphere of Ukraine with the purpose of integration into the global scientific space; raising the cultural and spiritual level of the nation to harmonize social relations; development of high-tech industries as a basis for building a competitive innovation economy.

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MEASURING EFFICIENCY BY USING SELECTED DETERMINANTS IN REGIONAL SMEs*

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Abstract. In comparison to other EU countries, Slovakia is characterized by increased business activity and the highest representation of micro-enterprises in the business sector. In the years 2017/2018 -, up to 75% of companies in the SME segment conducted business activity in the field of industry, accommodation, trade, transport and construction. The collected data clearly indicates a growing trend in providing accommodation services, business and information services, business and brokerage services. The main objective of the study is to assess the sectorial structure of SMEs and managerial determinants of their efficiency. The research sample of the enterprises has shown that even these methods can better warn against bankruptcy by predicting whether business will or will not be sustainable. In comparison to EU-28, Slovakia has a significantly higher representation of industry and civil engineering in the sectorial structure of SMEs, while the service sector is under-represented. We conducted a research focusing on our defined area of business in the SME segment. The evaluation of efficiency is most often performed by ratios, which are based on current financial statements of companies. The disadvantage of these measurements is the focus on a certain quantified range of parameters that do not significantly affect the overall efficiency of the unit. Based on the DEA methodology, a selected segment of services in individual regions of Slovakia was analysed in details. The SME sector in individual regions of Slovakia is showing differences. This work presents the results of the clearly defined efficiency of business entities. The main part of this work is about the exact determination of factors that need to be changed in order the specified entity shows signs of efficient management

Keywords: small and medium enterprises; regions; DEA; models; correlation

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1. Introduction

One of the most important discussions of scientific literature is related to the factors that determine the efficiency SMEs, analyzing different specific factors and selected determinants SMEs. Only the precisely processed and evaluated data are helpful to address the issue of business development in the SME sector. Identifying the factors that cause this segment to have a competitive advantage is a high research priority. Differences need to be identified and the determinants of low economic performance in all regions of our country has to be removed (Dellis et al. 2016; Lambert 2017; Selivanova-Fyodorova et al., 2019; Chehabeddine & Tvaronavičienė, 2020). There are several studies available in the scientific literature that are addressing the issue of SMEs. There are different approaches about the definition and characteristics of SMEs. There are also numerous criteria either qualitative or quantitative to decide what form of enterprise we talk about. Undoubtedly, we can say that these forms of businesses are an important element of the market that cannot be replaced by large companies due to their robustness (Anyakoha, 2019; Chunling, 2019; Hudáková & Masár, 2018). SMEs form the basis of a market economy, employment, added value or international trade, and are a prerequisite for stable growth of the global economy (Zauskova, Reznickova, 2020; Cooper, 2017; Peracek, et al., 2017; Chrenekova et al., 2016; Csikosova, Culkova, 2012). They are a strategic source of jobs that create entrepreneurship, especially at regional level and contribute to innovation in the EU, therefore the most important entities promoting competitiveness, employment and business efficiency (Harabi, 2005; Kordos, 2018; Poór et al., 2020; Dvorský et al., 2020).

Considering further scientific studies and literature, our ambition is to focus on firm-specific factors potentially influencing efficiency. The aim of our study is to identify the influence of the selected efficiency factors in the SME sector. The choice of specific sector orientation is motivated by the effort to capture individual effects on efficiency. The paper is organized as follows: presents literature review on the topic connected with measuring efficiency determinants of firms: introduce data and methodology: assess empirical results and their discussion within conclusions.

2. Theoretical background

Several research studies emphasize the importance of measuring the effectiveness and evaluating the degree of innovation performance of SMEs (Brocki, 2019; Meyer, Kot, 2019). The influence of institutional factors on ensuring the innovative performance of SMEs deserves attention. SMEs have become an important field of research in the last years of our century (European Commission, 2016 a, b). The aim of this research is to reveal the influence of orientation on the interaction of individual inputs and the effective operation of companies in the service sector (European Commission, 2017). Business development is very important in terms of macroeconomic development of the state (Janoskova, Culkova, Csikosova, 2018). This has an impact on GDP and reducing the number of unemployed in regions showing weak economic performance (Cepel, 2020, Remeikiene et al., 2020; Haviernikova et al., 2019; Cera, 2019). We define the performance of SMEs primarily in quantitative terms. Factors with a direct impact affect the results in the field of finance, quality of production, revenue increase, reduction of costs, increase in profits, company liquidity and stock levels (Huggins, 2015; Raisová, Regásková, & Lazányi, 2020; Zavadská, Zavadsky, 2020). The previous factors focus on quantitative assessment of companies, but the qualitative aspect is also important, such as setting and meeting the company's strategic goal, potential customer satisfaction, innovation, but also product and service promotion and marketing development (Pisar, 2019; Lakner, 2018).

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The scientific literature mentions a wide range of environmental factors potentially influencing the performance of SMEs. An increased attention is paid to a stable size of the business (Vekic, 2020; Belas et al., 2020; Gupta, 2016; Virglerová et al., 2017; Kotaskova, Rozsa, 2018; Dyduch, 2019), business staff and human resources practices, sales networks, products, processes, marketing innovations, as well as the sustainable management (Kotulic et al., 2017; Lazikova et al., 2018; Tingvall, 2018; Durda & Kljucnikov, 2019). Exports, market orientation and planning flexibility have been identified as priorities in SME studies in terms of transformation into efficient economic units (Sheehan, 2013; Bencikova, Mala, Minarova, 2013; Wallsten, 2000; Jašková, 2019; Dvorský, et al. 2019). Sustainable development in the field of services is closely related to the level of business development in the country (Kozubíková & Kotásková, 2019). Our government targeted to develop this segment (Horvath and Machyniak, 2016; Cibik, and Melus, 2019). It is backed by the existence of a relatively wide range of institutions, which focus exclusively or at least to some extent on supporting policies to create a favorable business environment for small businesses (Altuntas, 2018; Tamulevičiene, 2020).

Sustainability entrepreneurship is directly related to the financial situation of the enterprise (Cvetanovič et al., 2014). The importance of factors enhancing the firm's efficiency was initially discussed in the work of Wernerfelt (1984) and later significantly developed by Barney (1991). The size of SME proved to have no impact on the efficiency. Most works have proved that larger businesses generate higher profits and thus showed positive relation between the size and business performance (Pratheepan, 2014). On the other hand, some studies found evidence of a negative size-profitability relationship. In order to maintain the market position and competitiveness, companies must constantly adapt to market changes, whether it is a change in consumer preferences or in the behavior of competitors. Thus, the competitiveness of enterprises is affected by a numerous of factors, which affect the efficiency of business.

The evaluation of efficiency is most often performed using financial indicators, which are based on parameters from financial and annual reports on the management of the company (Mikhaylova, 2019). The disadvantage of these measurements is the focus on a certain number of financial factors that assess the overall effectiveness of the examined business units insufficiently. We used the quantitative DEA method for this assessment (Fernandes, 2018; Wei, 2012).

3. Research objective and methodology

DEA methodology is the selection of the investigated units from the aspect of their efficiency. The unit is efficient when it consumes a small number of inputs, while generating a large number of outputs. Data wrapping method is an optimization method classified as a method of multicriteria decision-making. In comparison to statistical models, comparing units with respect to average efficiency, DEA is based on the theory of linear programming. When evaluating the effectiveness of units, it is necessary to introduce a hypothetical (virtual) unit, which is characterized as a weighted average of effective units. A hypothetical unit becomes the basis for evaluating real units. A real unit will be inefficient if it produces fewer outputs or consumes more inputs than the hypothetical unit. Sometimes it is difficult to identify common units, which involve various inputs and outputs. The DEA method generalizes the calculation of the relative efficiency rate and allows different weights of input determinants and output determined key factors for individual units of the model. These weight values are not connected to price but to item technology, and the term of relative technical efficiency is used. The DEA model is considered an important management tool for determining efficiency. The basic task is to compare organizational units within a certain specified reference group.

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The DEA methodology has the principle of comparing inputs and outputs. Accordingly, we distinguish models focusing on these aspects, where influence directly interferes with management of the surveyed company or operation. In general, efficiency is expressed as a ratio of the output values to the input values. Its value is considered to be less than or equal to 1. The mentioned ratio of output and input units expresses the value of the efficiency of the units. Relative efficiency DMU_j , $j = 1, \dots, n$ are defined as a function of the determined factors as follows (Simar, 2007; Ramanathan, 2011):

$$E_j(u, v) = \frac{y_j^T u}{x_j^T v} \quad (1)$$

$$E = \{DMU_j \mid E_j(u, v) = 1; j = 1, 2, \dots, n\}$$

Assuming we have m input items and s output items, we have determined individual DMU_j from a set of n units we will record input data (x_{1j}, \dots, x_{mj}) in the matrix X and output data (y_{1j}, \dots, y_{sj}) in the matrix Y . Then it has matrix X size $(m \times n)$ and matrix Y size $(s \times n)$ (Charnes, 1984; Mardani, 2017):

$$X = [x_1, x_2, x_3, \dots, x_n] = \begin{bmatrix} x_{11} & \dots & x_{1n} \\ \vdots & \dots & \vdots \\ x_{m1} & \dots & x_{mn} \end{bmatrix} \quad (2)$$

$$Y = [y_1, y_2, y_3, \dots, y_n] = \begin{bmatrix} y_{11} & \dots & y_{1n} \\ \vdots & \dots & \vdots \\ y_{s1} & \dots & y_{sn} \end{bmatrix} \quad (3)$$

$$\text{Purpose function: } \max_{v, u} \theta = \frac{u_1 y_{1o} + \dots + u_s y_{so}}{v_1 x_{1o} + \dots + v_m x_{mo}} \quad (4)$$

$$\text{Restrictive conditions: } \frac{u_1 y_{1j} + \dots + u_s y_{sj}}{v_1 x_{1j} + \dots + v_m x_{mj}} \leq 1 \quad j = 1, 2, \dots, n \quad (5)$$

$$\text{Non-negative condition } v_1, \dots, v_m \geq 0; u_1, \dots, u_s \geq 0 \quad (6)$$

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CCR DEA model - input-oriented CCR model based on standardization of the value of $x_j^T v=1$ assesses the efficiency of units.

The DMU_j is considered to be effective in the case $E_j ((u_{(j)})^*(v_{(j)})^*)=1$ and $u > 0, v > 0$. The use of declared conditions is justified by the type of tasks, because each task aims to maximize the efficiency of the DMU. Zero price means that the given input or output is neglected. If these zero prices suppress unfavourable inputs or outputs, the DMU can become effective.

$$\begin{aligned} \max_{u \in R_+^p, v \in R_+^m} & Y_j^T u - X_j^T v \\ Y_j^T u - X_j^T v & \leq 0 \\ u & \geq 1, v \geq 1 \end{aligned} \quad (7)$$

The BCC DEA input model also focuses on a detailed analysis of inputs, with both positive and negative trends. The model is the following (Tsai, 2016):

$$\begin{aligned} \min_{\theta, \lambda, s, e} & \theta - \epsilon(1^T s + 1^T e) \\ Y\lambda - s & = Y_j \\ -X\lambda + \theta X_j - e & = 0 \\ 1^T \lambda & = 1 \\ \lambda & \geq 0, e \geq 1, s \geq 0 \end{aligned} \quad (8)$$

The result of solving problems “n”, but not necessarily “n” different levels, since the level that belongs to the effective DMU_j may be the closest level for any with inefficient DMU_j. The input CCR and BCC models assume total independence of the inputs (or outputs), so the input (or output) of any given DMU does not affect the input (or output) of other units.

4. Results and discussion

The SME segment has its own precisely defined rules for the inclusion of companies in a given structure. The relevant data are very important. We can state that there were 542,525 active business entities in our country at the time of the research. The sectoral structure is presented in Figure 1. After 2010, the development of the number of micro-enterprises has stabilized and currently reaches almost 96,8% of the total number of active entities. The relationship between small businesses and large development companies is in favor of doing business in small businesses. The trend is a 3% annual increase. The growth rate of large companies leveled off.

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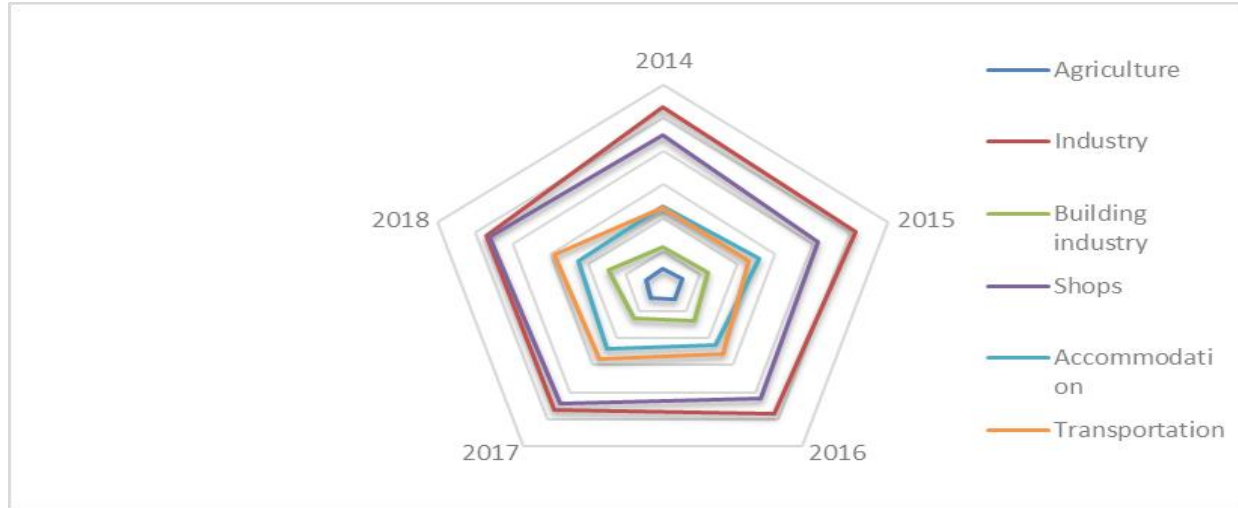


Figure 1. Sectoral structure

Source: own processing

The research conducted focused on processing statistical data of eight regions in Slovakia. We will use the following abbreviations for each region: Bratislava region (BA), Trnava region (TR), Trenčín region (TN), Nitra region (NI), Žilina region (ZA), Banská Bystrica region (BB), Prešov region (PO), Košice region (KE). Almost one fifth of the SMEs (19.0%; 106,643, respectively) carried out their main business activity in trade sector. This is followed by the construction sector, where representation of SMEs was 17.0% (95,315). A total of 76,454 SMEs performed their main activity in the industrial sector, which represents a share of 13.7%. Approximately, every fifth active small and medium-sized enterprise can be found in BA region. In other regions, the representation of SMEs is lower (Table 1.). After the BA region, most of the surveyed companies are concentrated in the ZA region. Their ratio reached 13.69%. TN region is the lowest represented by SMEs. The most significant drop in the number of SMEs by 3.09 % was recorded in BA region. In absolute terms, this represents a decrease of 3,898 business entities. In the case of other regions, the number of SMEs decreased by 1.1% to 2.4% annually. The number of SMEs increased only in PO region by 2.2%, and ZA region by 0.5%.

Table 1. Number of business entities by region

Regions of SR	Micro-enterprises	Small enterprise	Medium enterprise	Large enterprises
Bratislava region (BA)	73022	3342	895	225
Trnava region (TR)	18862	1299	273	60
Trenčín region (TN)	16381	1325	303	91
Nitra region (NI)	22561	1498	346	65
Žilina region (ZA)	21939	1587	329	75
Banská Bystrica (BB) region	19406	1179	252	52

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Prešov region (PO)	19343	1468	284	56
Košice region (KE)	21948	1364	258	55
Total	213462	13062	2940	679

Source: our processing

There are 122,576 active SMEs registered in BA region. Micro-enterprises accounted for 96.39%, which represent the lowest share of all regions of the Slovak Republic (Hudáková et al., 2017; Haviernikova et al., 2018; Peracek, 2019). Small enterprises accounted for 2.69%, and the least represented were the medium-sized enterprises with 0.69%. The attractiveness of BA region for large companies is confirmed by high representation of small, medium and large companies compared to the size structure of companies at national level. The largest concentration of SMEs was recorded in Bratislava district (22.2%). The service sector has a high importance in Slovakia, since it can be considered as a key to tourism sector development. The volume of revenues in tourism sector produced by SMEs reached 22%, while this ratio was 9% in the case of self-employed. Based on the assumption of economic growth in Slovakia, development of services sector is a priority. The volume of revenues in this sector accounts for up to 85% of the total volume of profits in the small and medium-sized enterprises segment. We focused on companies that provide accommodation in individual regions. The efficiency of these facilities would bring increase in tourism activities and employment in tourism sector of Slovakia. Today, this segment is characterized by low labor productivity and low qualification of employees in the sector. The employment in this segment is presented in Figure 2., according to years and regions.

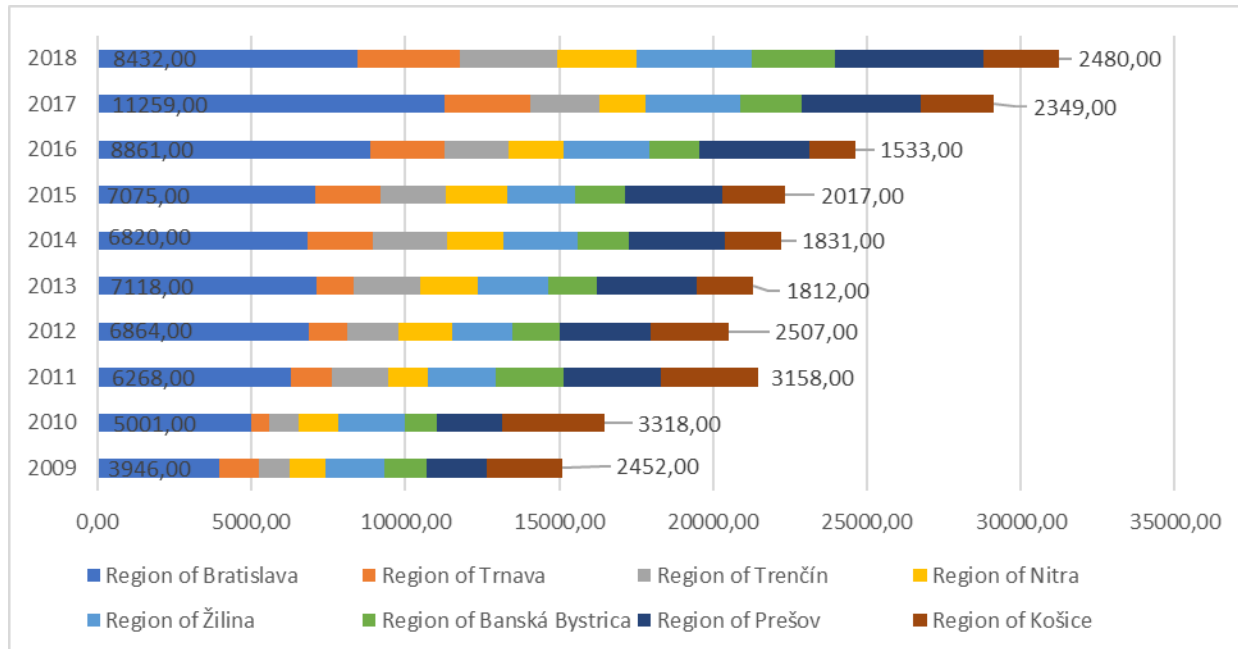


Figure 2. Share of employment in the accommodation and services segment

Source: own processing

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Efficiency model

During the efficiency assessment of the particular segment within the regions, we chose the suitable DMU units from each region. It was a sample of 34 accommodation units, which we randomly selected from different regions of Slovakia. We examined the sample over a period of six years (2014-2019).

We made 204 observations, which were analyzed in terms of time series. From each region, We selected and compared five accommodation facilities characterized by the same parameters from individual regions of Slovakia. We achieved to maintain the homogeneity of the individual DMUs. The next step in the implementation was to determine the inputs and outputs for the DEA methodology in order to calculate the efficiency. The trend in our segment is to increase outputs, while maintaining the same inputs, or to increase outputs when decreasing inputs. We have chosen the following parameters as input parameters: employees, receivables, total assets. As output variables, we determined the following: restaurant revenues, equity, accommodation revenues. For clarity, we named the individual DMUs by regions and serial number. We marked the researched accommodation facilities by regions.

Based on these data, efficiency can be calculated using DEA CCR models, which assume that subjects have constant revenues of scale, and DEA BCC, which assumes variable revenues of the scale as the efficiency limit is not linear for BCC, can envelop more DMUs. Thus, the results of the efficiency measurement according to the DEA BCC model are better. The DEA CCR and DEA BCC models can be further divided into input and output. The input model is focusing on minimizing inputs at a given volume of outputs; the output model on maximizing outputs at a given volume of inputs. It should be emphasized that the resulting values of input and output efficiency are inverse values. If we want to explain the efficiency values using a regression model, it is necessary to determine these explanatory variables, which could be the determinants of the efficiency calculated in the first step. The second step is the actual implementation of the regression model. Therefore, such an approach is called a two-step DEA. Table 2. shows the basic characteristics of possible determinants of the efficiency of accommodation units.

Table 2. Basic statistical indicators for a set of possible determinants of efficiency

Indicator	Customer evaluation	Capital-Ownership	Accommodation category	Business time period	Region of SR
N	204.00	204.00	204.00	204.00	204.00
Min	71.00	1.00	1.00	6.00	1.00
Max	96.00	3.00	2.00	35.00	3.00
Standard deviation	0.51	0.85	0.46	14.12	0.80
Average	83.51	2.11	1.33	20.52	2.00

Source: our processing

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The input efficiency values are in the closed interval 0 to 1. The output efficiency values are in the left closed interval 1 to infinity. The DMU is effective if its efficiency is equal to 1 for both models.

Table 3. shows the results of the DEA models for the whole sample of accommodation facilities during the research period.

Table 3. Basic statistical indicators efficiency of DEA models

Variable	Average	Standard deviation	Spread	Min	Max	Lower 95% int. of reliability	Upper 95%- int. of reliability
CCR output model	0.8915	0.1311	0.0253	0.6384	1.0000	0.8795	0.9212
BCC input model	0.9621	0.0911	0.0191	0.6232	1.0000	0.9454	0.9684
CCR output model	1.1231	0.0944	0.0430	1.0000	1.7895	1.1819	1.1843
BCC output model	1.0930	0.1093	0.0126	1.0000	1.5846	1.0549	1.0890

Source: our processing

The average value of our sample in the case of input CCR model is 0.89, while the value in the case of BCC of the input model is approximately 0.96. If we would like to determine the extent average of the basic set with a probability of 95%, it can be said that for CCR efficiency will be an interval of 0.88 to 0.92. In the case of the BCC model, it will be 0.95 to 0.97, which are relatively good values. However, it should be emphasized that these are average values, the lowest efficiency achieved in the case of the CCR of the input model was 0.62 and in the case of the BCC model 0.64.

Our study provided the statistically significant impact of some determinants, namely evaluation of customers, ownership-capital, category of accommodation, length of conducting business, region. Thus, we can agree with Grasserová et al. (2012) that the variable of efficiency depending on the determinants is used to measuring. Our findings can be explained by several arguments.

In this chapter, we will deal with the evaluation of the effects of individual determinants of the efficiency of accommodation units. Based on the performed analysis, we used the double bootstrap methodology. The purpose of this methodology is that the dependent variable becomes a variable of a stochastic nature. We applied truncated regression to the achieved results. The results are summarized in Table 4.

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Table 4. Summary results

Regressor	CCR efficiency		BCC efficiency	
	Dependant variable		Dependant variable	
Intercept	0.856718	***	1.341728	**
Evaluation of customers (β_1)	0.005575	**	0.000385	***
Ownership-capital (β_2)	0.183561	***	0.170011	***
Category of accommodation (β_3)	-0.904269	**	-0.205118	**
Length of conducting business (β_4)	0.008558	**	0.007768	**
Region SR(β_5)	-0.035853		-0.023846	*
Sigma	0.070846	***	0.061322	**
R-squared	0.7587		0.7133	
LogLikelihood	91.752		97.875	
Note:	*p<0,1,**p<0,05,***p<0,01			

Source: our processing

From the point of view of the influence of individual factors on efficiency of accommodation facility, the following findings can be observed in both models. Reviews of accommodated guests are very important. The evaluation of customers has a positive effect, so increasing the positive evaluation, the efficiency of the accommodation facility also increases. This indicator acquires greater significance in both BCC models (Figure 3.). Ownership - the variable 1 in resampling expresses purely domestic ownership and 3 expresses purely foreign ownership. The higher value tends to increase efficiency faster, and therefore we state that accommodation facilities with solely foreign ownership are more efficient than accommodation facilities 100% or in a certain proportion owned by domestic and foreign owner. The variable is statistically significant in both models at the significance level of 0.01. The category of accommodation facility is a factor, where value 1 is indicating a guesthouse, while value 2 refers to hostels. If this variable has a negative effect, it can be said that a lower value will reduce efficiency less, which means that guesthouses are more efficient than tourist hostels. The predictive ability of the model is higher in the case of the BCC model based on the Log likelihood and R-squared indicators, while this model describes 71.33% of the variability of the basic set. The main part of our research is to build a model for the efficiency of accommodation units.

$$model = 1.341728 + 0.000385 * \beta_1 + 0.170011 * \beta_2 - 0.205118 * \beta_3 + 0.007768 * \beta_4 - 0.023846 * \beta_5 + \varepsilon$$

The evaluation model that is the outcome of this research, especially in the form of implementing in practice can be an excellent tool for a more objective evaluation of the effectiveness of the surveyed business entities. It is an objective method, and can be used to measure business entities.

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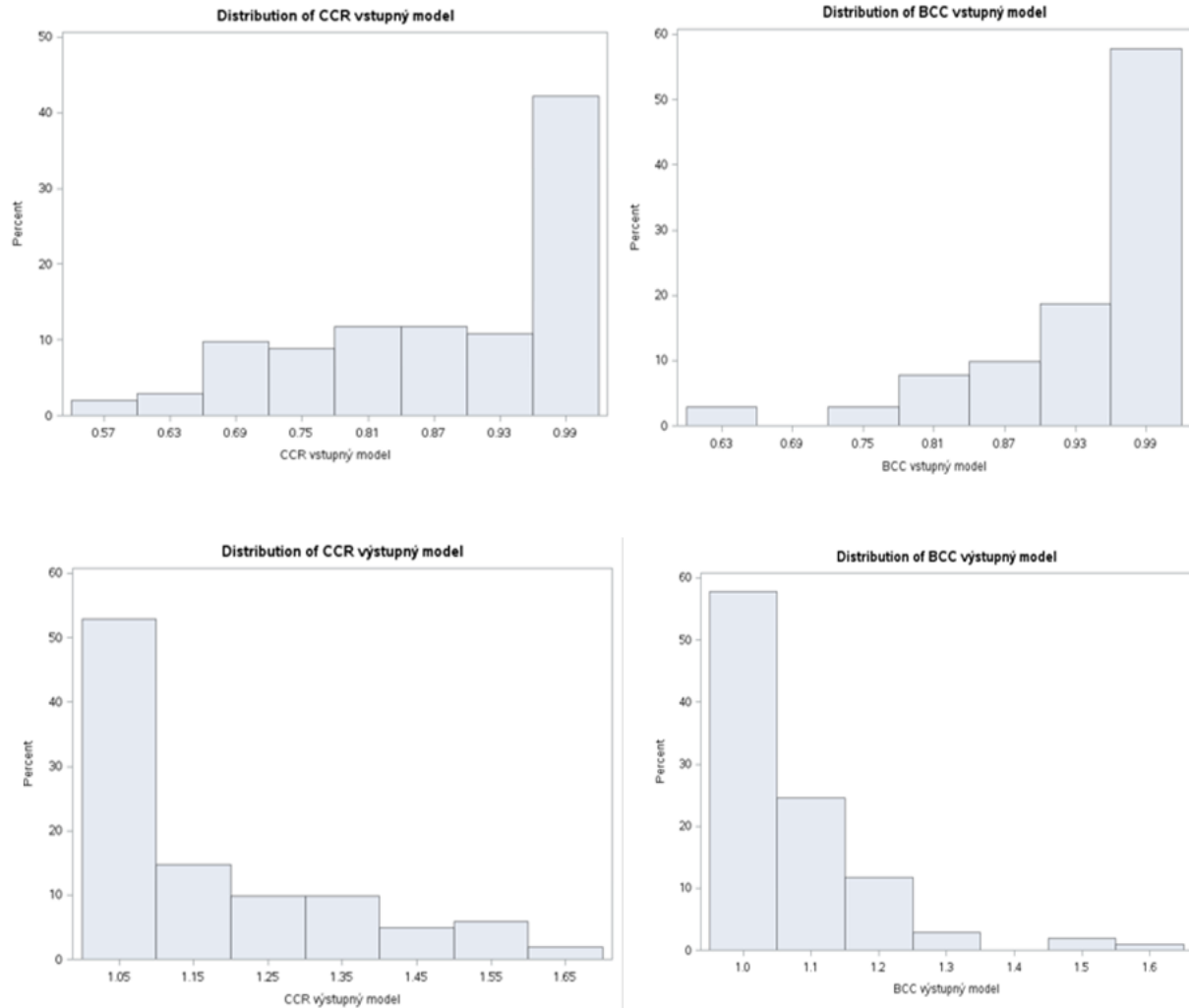


Figure 3. Histogram of the distribution of the efficiency frequency

Source: our processing

In the context of services, efficiency is understood very similarly and to achieve it, it is necessary to achieve the desired effect, which is measurable. A study by Haber and Reichel (2005) focused on finding current performance measures more specifically in accommodation services companies, which identified 26 performance indicators. The provision of accommodation services often enters the saturation phase (Doležal et.al, 2000) and it requires the experts to address the sustainable model of these business units.

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Conclusions

In the current era of globalization it is very important to look at the discussed issue in terms of economic growth. In order to fulfil the main aim of the study, analysis with fixed effects models was applied on a sample of 34 accommodation units, covering the period from 2014 to 2019. The results of the conducted analysis supported the hypothesis that a country like Slovakia must set itself the primary goal of revealing hidden reserves in the segment of services provided. In the last six years, up to about 83% of new jobs have been created in this segment. This research focused on the area of services on regional scale in Slovakia. Using the implementation of the DEA method, and individual models focusing on inputs, we were able to identify the inefficient units in the field. As an output of our research, we want to emphasize that each inefficient unit, we were able to accurately quantify need to be changed with respect to the efficiency of the processes that take place in it. Knowing the degree of efficiency or inefficiency will help to identify the weaknesses of the production unit and at the same time will help to identify the shortcomings that affect the economic result of the company.

The results of our study provide guidelines for managers of Slovak companies to understand how to run their small businesses in the SME segment effectively. Our model points to the factors that affect the efficiency of business as much as possible.

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MANAGING THE INSTITUTIONAL ENVIRONMENT AND IMPACT ON THE COMPETITIVENESS OF TRANSITIONAL ECONOMIES

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Abstract. The main unsolved issue in the qualitative research of the "new" institutional economics in the area of the institutional impact on economic growth is how productive institutions occur, i.e., which variables explicitly "stand" behind the institutional "infrastructure" impact on economic growth. The research presents the postulates of the "new" institutional economics, claiming a connection between the institutional structure and the movement of economic growth. Furthermore, the impact of institutional quality on economic growth was analyzed on examples of individual national economies. The comparative method of the assessment based on six criteria: voice and accountability, political stability, government effectiveness, regulatory quality, the rule of law and control of corruption, and the comparison of the GDP per capita of the same as one of the most significant economic indicators, tested the primary hypothesis (H1) in this work: institutions are the fundamental determinant of the long-term success in economy, and the importance of government effectiveness is seen through economic growth, especially long-term growth. The conducted research showed a high level of correlation between institutions' success and the gross domestic product with indications of equal returns per ratio and the fact that the advancement of institutional quality, indirectly through GDP, can lead to the growth of the relative significance of economies.

Keywords: institutional economics; quality of institutions; GDP per capita; economic growth

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1. Introduction

The effect of institutions, their "quality" and capacity on the level of economic growth is the research object of institutional economics, and in the last twenty years of the "new" institutional economics as well, and the theoretical postulates and cognitions which rose from the theoretical and empirical research of the same will be

presented and analyzed. According to institutional economics, institutions have an essential role in increasing society's functionality, especially economic effectiveness (Vasconcelos, 2021; Lincényi & Čársky, 2021). They are the constituent part of the social capital as the critical factor of economic growth and economic success (Trofimov, 2017; Iacobuta et al., 2019; Mazzanti et al., 2020).

The core of the “new” institutional economics research is the emergence of institutions and their comparative effectiveness and impact on economic growth, economic behavior, success, and division problems. The theoretical and empirical research of the NIE affected the regulatory, macroeconomic, and other public policies.

Central and Eastern European transition countries are one more example of the influence of the institutional development on economic growth, and the question of why certain transition countries had developed faster than others when all went through a similar process of reforms (stabilization of the economy, market liberalization, and privatization) comes as reasonable.

This paper will present the postulates of the "new" institutional economics and the qualitative and empirical research inside it, claiming a link between the institutional structure and the economic growth movement. Furthermore, examples of individual national economies, emphasizing transition countries show the impact of institutional infrastructure on economic growth analysis. The comparative method of the assessment of government effectiveness based on six criteria: voice and accountability, political stability, government effectiveness, regulatory quality, the rule of law and control of corruption, and the comparison of the GDP per capita of the same as one of the most significant economic indicators, tested the primary hypothesis (H_1) in this work: institutions are the fundamental determinant of the long-term success in economy, and the importance of government effectiveness is seen through economic growth, especially long-term growth.

Literature in the field of institutional economics is vast but there is a gap concerning the institutions' role in economic growth for transitional economies. Institutional transition process in former planned economies largely differs across ex-socialist countries. The nature of the transitional process, specifically, institutional transitional process dynamics, nature and its impact on competitiveness and growth is missing in the literature. This paper addresses the gap by studying the transition process of the institutional environment for selected transitional economies. Empirical results obtained from the panel vector autoregression estimation later compares to the institutional environment change in advanced economies. This study addresses the issue of institutional environment efficiency impact on economy competitiveness and economic growth in the long run. Empirical results support the thesis that the institutional environment is a significant driver of a country's competitiveness and growth.

Study results prove that government effectiveness' is a key competitiveness factor in an economy. GDP dynamics is not essential for building institutional efficiency (no Granger causality). Voice and accountability as an institutional factor have a limited impact on the country's competitiveness. Freedom of thought and government accountability is vital for a level of competitiveness but not essential. Political stability is significant for the level of competitiveness. Regulatory quality is essential as an institutional factor for competitiveness but not that determinant as government effectiveness and political stability. The rule of law is also crucial for the country's competitiveness, but we find the same long-run relationship as for the regulatory quality. Thus, the rule of law is necessary but not a sufficient condition for competitiveness. Corruption control is a pre-requisite to achieve and increase the level of competitiveness. We can see that after government effectiveness and political stability, corruption control is at the top level of competitiveness determinants. The dummy variable as a proxy for the financial crisis of 2008, as we expected, had a significant impact on the competitiveness across the panel. We can see financial crisis (and financial cycles) significantly negatively impact a country's level of competitiveness.

2. Literature review

In the last twenty years, the scientific and professional literature has been dealing with the incorporation of the institutional impact and institutional structure in economic growth theories, and economic policies and the adaptation to economic movements are strongly dependent on institutional construction (North, 1990; 2003; Myhrman & Weingast, 1994; Coase, 1998; Torsten Persson, 2001; Powell, 2003; Acemoglu, 2004).

In the broader sense, institutions are formal and informal rules that determine human interrelations (North, 1990). In a narrower sense, institutions are organizational units, procedures, and the regulatory framework (Williamson, 2000). The primary division differentiates exogenous institutions (external, given) and endogenous institutions (internal) to the economic system (Williamson, 2000; Jutting, 2003).

North (1994) divides institutions according to the level of formality to "informal" and "formal" and divides the "formal" ones further on into constitution, statutes, common law, regulative and other state decisions and regulations, political system: structure of power, civil rights, economic structure: inheritance rights, contracts, the coercion system: legislation, police; the author divides informal institutions to traditions, customs, moral values, religious beliefs and other behavioral norms acquired during a time, the prevailing fears and attitudes of the community toward the world, the knowledge collected from the past and the prevailing number of values, the common inheritance (culture) and the informal coercion system: being expelled from the community, criticism, loss of respect.

Moreover, North claims that both types of institutions are present in all countries, but the informal ones are more prominent in "poorer" countries because formal institutions are weakly developed or do not exist. He emphasizes that institutions determine "the rules of the game" in economic, political, and social interactions, as well as "social organizations (2003). The influence of institutions on transnational multinational firms' strategies has increased enormously. The wide range of studies on the impact of institutions on international policy were covered in the review. In recent international strategy research, it has achieved a much better overall understanding of multinational firms' activities (Xu et al., 2021). The results of (Wu et al., 2019) suggest while it is important for emerging-market governments to develop preferred strategies that encourage their domestic companies to participate actively in global competition, it is also crucial for them to significantly improve the quality of policies that can provide institutional support for these companies to internationalize in various foreign markets and provide innovation advantages.

According to Kasper and Streit (1998), institutions create stimulating structures for individuals and organizations' behaviors and coordinate their activities. Although institutions have to provide predictable and coherent rules, what is also necessary are institutional changes and adaptations to social preferences, technologies, political and socio-economic structures, and external factors. It is also essential to differentiate the institutional environment, a set of fundamental political, social, and legal rules from the institutional organization (agreement among economic units about collaboration and competition). Innovations have an essential role in determining the country's competitiveness in international markets (Awang et al., 2019). Del Olmo-García et al., (2020) indicate a negative relationship between the quality of formal institutions, the entrepreneurial culture, social norms, and efficiency in the markets for goods and services to entrepreneurship failure rate. A positive relationship is shown with respect to high status assigned to successful entrepreneurs.

Institutional economics developed at the turn of the 19th to the 20th century. There are the "old" institutional economics and the "new" institutional economics (Hodgson, 2003). The new institutional economics (NIE), whose leading representatives are North and Williamson, developed around the middle seventies of the 20th

century to answer the prevailing, neoclassical, and liberal economic thought. Nadeem et al., (2020) study indicate that participation in gross value chains positively affects GDP per capita, and this effect is greater when participation is facilitated by an institution. This data suggests that the inclusion of domestic institutions in strong gross value chains can greatly enhance a country's economic growth.

At the beginning of the 1970s, Douglas Cecil North (1971) developed institutions' theory to modify the neoclassical theoretical model. However, North distanced himself more and more from the neoclassical economic theory and significantly modified the whole approach in the research of the long-term economic growth in the USA and Europe and the analysis of the role and significance of institutions. In that way, he became the founder of NIE. There is a consensus among researchers that poor institutions greatly hinder progress; however, it is widely recognized that this idea is of little use without explanations on how they can be improved and made to self-sustain a "good equilibrium" (Blažys, 2020).

NIE theoreticians consider neoclassical theory as an inadequate tool for the analysis and determination of policies that would stimulate the growth and development since in the neoclassical analysis, it is usually assumed that transactions cost nothing, that information is at free disposal, and that countries are benevolent. NIE thus relies upon the contribution given by Ronald Coase (1937, 1960), who showed that market use has its actors for a price, and "when transactions cost, institutions are important" (North, 1990). Sun et al., (2020) examine how social legitimacy and economic efficiency are associated with corporate philanthropy (CPG). (CPG) is viewed as a cost factor necessary to gain power, and as a resource to achieve efficiency. The paper suggests that state ownership increases the positive effect of infrastructure investment on (CPG) but decreases the positive effect of human capital on (CPG).

NIE's core belief is that institutions are also crucial for economic success and are, therefore, susceptible to economic analysis. In contrast, economic history and development's central task is to consider the evolution of political and economic institutions that form the economic environment stimulating increased productivity (North, 1991). Godlewska and Morawska (2018) found that the size of the territory or the level of debt did not affect the behaviour of local and regional formal institutions (LGU) in their support for the development of entrepreneurship, while the geographical location of the LGU had no influence. The value of supporting entrepreneurship was the way the company was run, the type of company and the number of companies in the area to which the LGU is subject.

According to North (1999), there are three characteristic weaknesses of neoclassicism: first, there are no institutions; second, the assumptions about the acting parties' behavior are inadequate; third, there is no consideration of time. Moreover, North claims, "institutions and technology interact. One without the other cannot lead to economic growth."

Field states that while in the standard neoclassical theory exogenous variables encompass preferences, stocks of factors, technologies, and institutions, NIE attempts to make the latter endogenous to the first three (Field, 1981).

Institutions, as North claims (1997), fundamentally determine how society and economy work. Institutions are the social rules of the game – limitations created by people that shape their interactions. They give a structure to stimuli in exchange, whether political, social, or economic. Institutions responsible for banking regulation and supervision must focus their attention on promoting good corporate governance practices in banking institutions and on providing an appropriate legal and institutional framework to give stability and confidence to the banking system, which is crucial for the proper functioning of the economy as a whole (Arias et al., 2020).

The essence of NIE is the attempt to incorporate the theory of institutions into economics. What is left behind is instrumental rationality – the assumption of neoclassical economics, which made it a theory without institutions.

As an interdisciplinary economic thought direction, NIE combines economics as a science, law, theory of organization, political sciences, sociology, and anthropology to explain social, political, and economic institutions. At the same time, the transaction costs represent the key to understanding the economy's success (Ahrens, 2002).

NIE "challenges" the neoclassical economic theory and its assumptions about the perfect information and rationality. This recognizes the potential advantages of institutions to solve the consequences of imperfect information and limited rationality. Moreover, it introduces the games' theory, where individuals are not thinking about maximizing their benefit. However, opportunistic, i.e., they try to achieve their interests based on deception, where institutions' role is in decreasing insecurity, giving a structure to everyday life. Simultaneously, institutional limitations include actions forbidden to individuals and define circumstances in which individuals can take specific actions.

Campos and Coricelli (2002) claim that transition countries' growth relates to the GDP per capita's short-term dynamics. Most researchers of growth in transition countries used as a dependent variable the average of the real GDP growth rate during 15 and more years.

Moers (1999) concluded that the broader contribution to the improvement of institutions is higher in transition countries, while Campos (2000) says that the rule of law is the most critical element of public administration quality for the growth of transition countries.

The assessment (Kornai, 2006:3-4) about the significant features of transformation which occurred in the period after the breakup of the former socialist system is relevant:

1. The changes follow the main directions of Western civilization's development: in the economic sphere in the capitalist economic system and politics in a democracy.
2. A complete transformation occurred, which was parallel in all spheres: in economics, in the political structure, in the world of political ideology, in the legal system, and the social stratification.
3. The transformation was not violent.
4. The transformation process occurred in peaceful circumstances; it was not preceded by war.

La Porta (1999, p. 225) claims that in the transition, some political theories about the development of institutions got confirmed: those in power shape institutions to remain in power and direct their resources toward themselves.

Some authors claim that poor public administration is a characteristic of countries with a low level of real GDP per capita (Hall & Jones, 1999; Kaufmann & Kraay, 2002; Acemoglu et al., 2004), whereas Glaser et al. (2004) claim growth can be initiated without massive institutional changes, but good institutions are necessary for maintaining long-term growth rates.

To assess the "quality" of institutions, some authors use their empirical research indicators of the base "Doing business – measuring business regulations" of the World Bank. It collects data about good management as part of the set of data about doing business. They can be classified as objective measurements of economic institutions because they express the real costs of resources while doing business, like the time or money spent on administrative proceedings. The ten indicators forming this set of data are:

- a) Initiation of business – the average number of procedures an entrepreneur has to deal with to start a business activity, the number of days and height of costs necessary to conclude the process, and the lowest amount of capital necessary to initiate a business activity

- b) Release of permits – procedures necessary to do business in the construction industry to build a standard warehouse, as well as the time and costs needed to terminate the procedures
- c) Regulation of the labor market – (or employment of workers) a combination of three different circumstances: flexibility and costs of hiring and dismissing employees, and working conditions
- d) Registration of assets – procedures, including time and costs, necessary for the transfer of property from the seller to the purchaser in cases when land or business facilities are bought for the need for economic activities
- e) Obtaining loans – lessor and lessee's legal rights which facilitate loans, based on the law of bankruptcy and collateral, as well as coverage, quality, and availability of credit information through public and private loan registers
- f) Protection of investors – protection of minor shareholders from the abuse of directors linked to company assets, protection of investors and degree of transparency
- g) Payment of taxes – corporate income tax which a medium enterprise has to pay in the second business year and efficiency of tax administration, based on the number of payments and time spent to fill in tax forms
- h) Cross-border business activities – efficiency of customs and trade transport in a country, as well as the number of documents and days necessary to do the customs import and export procedures
- i) Implementation of contracts – number of court proceedings, duration, and expenditures for the execution of a contract by which the efficiency of a court or administrative system for the charge of due debts is measured
- j) Termination of business activities – difficulties in “turning off” an economic activity, time and costs included in the proceedings in case of insolvency, as well as the charge rate.

3. Institutional infrastructure on the example of national economies and economic growth

Some societies are organized to support the rule of law, support investments in machinery, better technology, and human capital, and facilitate citizens' intensive participation in economic and political life. This means that such societies have "good institutions" ensuring property rights and stimuli for investment and participation in economic life, limitations to elitist, political and other influential groups' actions, i.e., the disabling of profit expropriation and creation of inequalities in the division (of income, goods...), as well as the equalization of possibilities for all the citizens – enabling investments, especially in education, and participation in productive economic activities.

IMF (2018, p. 52) has ranked the United Kingdom and the USA the highest, and Albany and Belarus the lowest when it comes to institutional quality (Figure 1).

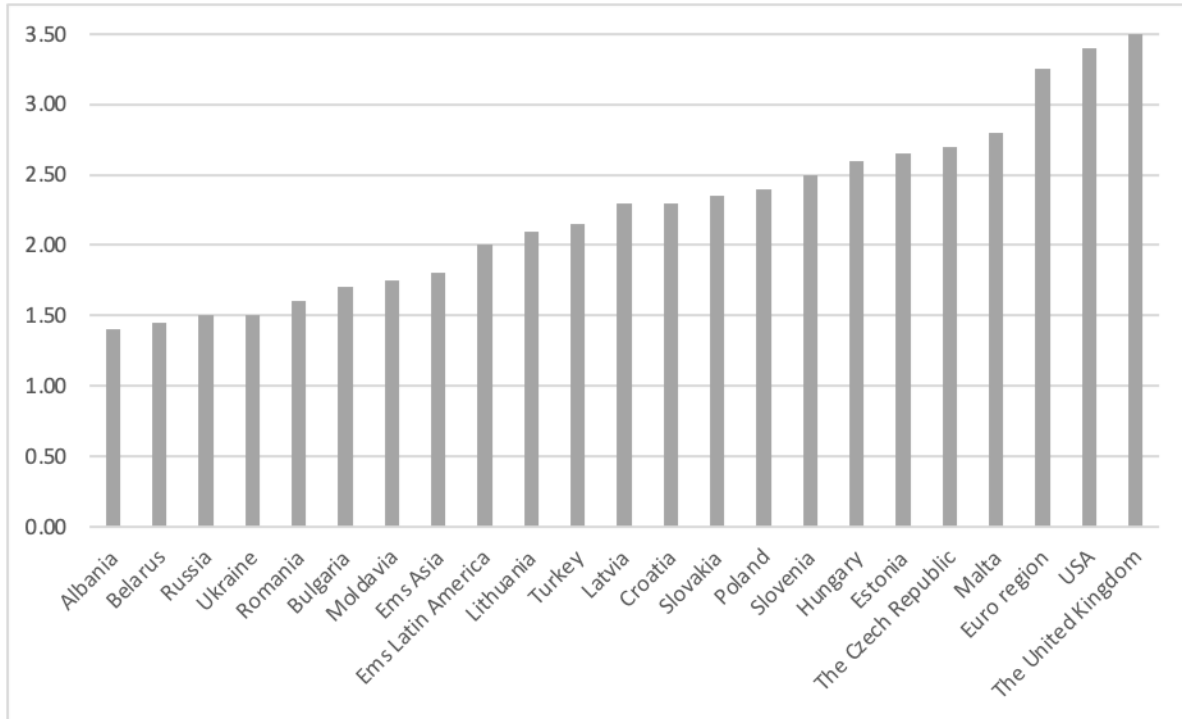


Figure 1. Representation of the institutional quality of individual countries in 2018

Source: IMF Regional Economic Outlook: Europe (2018:52)

One of the "simplest" examples of national economies linked to institutional quality and public administration and narrowly connected to the impact on economic growth and proof of the *primary hypothesis* is the example of North and South Korea (Figure 2).

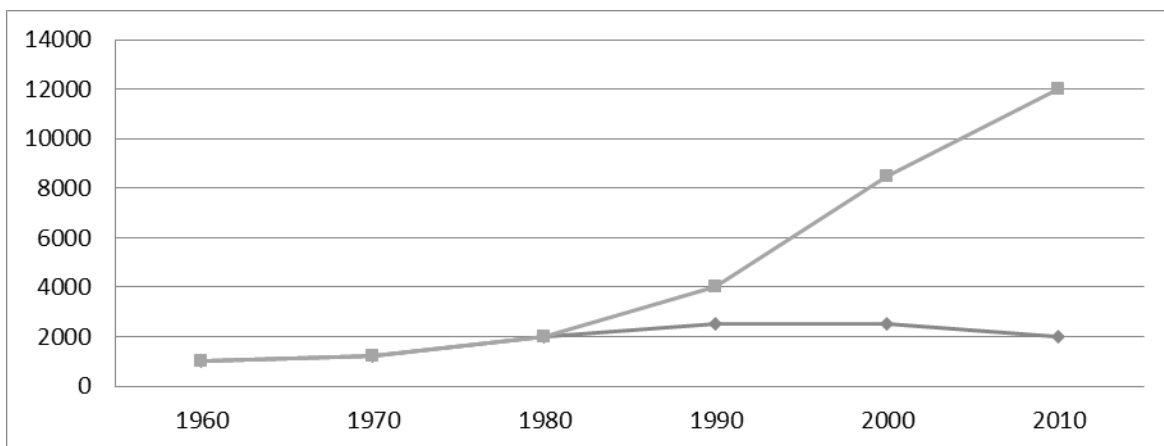


Figure 2. GDP per capita movement in North and South Korea since their "separation."

Source: Authors' calculation

What followed in Korea was the divergent economic growth so that South Korea became the "Asian miracle," a developed country with GDP per capita of 31,363 \$ (2018), while North Korea lagged behind the substantial economic and social "gap" with a GDP per capita of 583 \$. Institutional differences led to considerable differences in growth and development, and the dysfunctional institutions of the "North" remain unchanged due to the governing political elite's interests.

3.1. Developmental characteristics of transition countries

Transition countries represent a particular "case" linked to the research on the link between economic growth impacts. Namely, institutions became part of econometric research of transition countries' growth only at the end of the 1990s. However, any research encompassing transition countries is limited in advance, not only due to the short period for which data are available, but because not all the countries had the same tempo of reform conduction. In this sense, these countries could have different models of growth. Research studies show uncertainty whether the dependent variable of the empirical analysis of economic growth should be the growth rate or its level.

The institutional vacuum that followed the fall of socialism was at the source of economic reforms' success and failure. It showed that there should have existed minimal institutions for developing the market at the beginning of the transitions, limiting unwanted human behaviors and diminished insecurity. The transition brought a set of exogenous shocks that gave greater power to some social groups, and their organizational ability depended on the institutions which were existent at the time.

Transitional changes which started in the area of central and Eastern Europe co-occurred at two levels:

- a) an intense process of democratization of those societies by creating an institutional base for a democratic life (political parties, strengthening of the non-governmental sector of institutions), and
- b) at the same time, and often present conviction that these general political context changes will internally and externally, almost automatically, form the conditions for efficient market economics.

The European Bank for Reconstruction and Development (EBRD, 2006) identified the problematic areas of transition and stated their institutional solutions:

- a) for economic growth, it is necessary:
 - to introduce political institutions that support constitutional stability, political and civil freedoms and ensure efficient legislative and executive power, and have to be based on the will expressed by most citizens. In this sense, the establishment of a broad spectrum of institutions is not sufficient – their functioning presupposes a consensus about the fact that they serve for the mutual control of those in power
 - to evaluate the contribution in creating income and ensure its fair distribution
 - to set the institutional framework which ensures the implementation of contracts and reforms.
- b) for the success of companies:
 - the institutional framework has to stimulate technological growth, privatization, and creation of new private companies, higher direct foreign investment, quality of the business environment, and competition
- c) for the development of the labor market in order to diminish unemployment, it is necessary:
 - to introduce new, adequate institutions on the labor market which will increase the employment of laborers
- d) the strengthening of the financial sector needs:

- the privatization of the banking sector and large national companies and the consolidation of smaller banks.

4. Data and methodology

In the group of transitional countries, one can differentiate between those who became EU members and those who strive to become members. Namely, the starting position of new member states in the EU convergence process is characterized by their economic and political transition systems. The existence of different forms of national or public property, relative isolation from the influence of international competition due to protectionist trade policies and the non-convertibility of national currencies, economic policies directed toward the maintenance of the nominal full employment, and the insufficient incentives for reconstruction aiming at the increase of export and technological development are the standard features of transition EU member states at the beginning of their accession process.

In all countries, the accession process stimulated the bearers of policies, citizens, and business sectors to reach a consensus that it is necessary to conduct a fast institutional transition. For this purpose, the EU offered guidelines in the form of *acquis communautaire* and the Copenhagen criteria. According to those EU guidelines, the states' governments in the accession process met the membership conditions and acquired credibility to introduce institutional changes.

The institutional model developed in new EU member states was described by Ahrens (2006) as a combination of institutional shock - therapy and new governments' introduction modeled on western countries.

Transitional reforms were the first phase in transforming countries, which, simultaneously with institutional, legal, and organizational changes, created the preconditions for a successful accession to the EU. The fact that new member states have at their disposal institutions, regulations, and market mechanisms identical to those in EU-15 states does not imply that these countries' transition process is complete.

The first consequence of the described reforms' conduction was the "transformation recession," during which transition economies lost up to 60% of the pre-transition 1989 GDP. The most advanced transition countries, the new EU member states, reached the 1989 DP level only at the end of the nineties. The economic growth rates of new member states, when compared to old EU-15 members, were 2 to 5% higher, with economies of Baltic countries, Slovakia, Romania, and Bulgaria having the fastest growth. Simultaneously, these were the economies with the worst initial positions since these were small and very closed countries in which reforms ended a few years later than in, for instance, Hungary and Poland. The achieved success is ascribed to the economy's maturity, and readiness to attract significant foreign direct investment (FDI), stimulated fast economic growth.

The fastest move in the available indicators of institutional quality has occurred since the World Bank started to make public the public administration quality indicators globally. Today, they are considered unavoidable aggregate indicators of institutional quality. The indicators of public administration quality of the World Bank are calculated in six areas, namely:

- 1) Freedom of thought and accountability of public administration (voice and accountability)
- 2) Political stability
- 3) Government effectiveness
- 4) Regulatory quality
- 5) The rule of law
- 6) Control of corruption

These indicators can determine the quality of legislative, administrative, and judicial institutions and compare them to other countries' indicators.

To prove the paper's *primary hypothesis*, the comparative analysis of the legislative, administrative, and judicial institutions will be used, and it measured by the indicators of government effectiveness published by the World Bank.

To analyze the institutional impact on countries' competitiveness, we use using the panel vector auto-regression model (PVAR) in the reduced form:

$$z_{it} = \Gamma_0 + \Gamma_1 z_{t-1} + \varepsilon_t \quad (1)$$

following (Abrigo and Love, 2016), we use

with

Y_{it} = (1 x k) vector of dependent variables from table 1

X_{it} = (1 x l) vector of exogenous covariates

u_i, e_{it} = (1 x k) vectors of dependent variable-specific panel fixed-effects and idiosyncratic errors

$A_1, A_2, \dots, A_{p-1}, A_p$ = estimation parameters

matrix B (1xk) = estimation parameters

assuming innovation $E(e_{it}) = 0$, $E(e_{it}e_{it}) = \Sigma$, and $E(e_{it}e_{is}) = 0$ for all $t > s$. Following (Abrigo and Love, 2016) we do not demean the panel data before estimation prior to helm transformation.

List of variables in the model:

(ge) = government effectiveness,

(via) = voice and accountability,

(stab) = political stability,

(reg) = regulatory quality,

(rule) = rule of law,

(cont) = corruption control,

(cris) = dummy variable for the financial crisis of 2008 effects having value 1 in time of GDP fall and 0 in time of GDP rise.

We use (PVAR) for original data and reports (PSVAR) results with GMM (generalized moment method) in the following section.

5. Results

According to the indicators of government effectiveness published by the World Bank by which the comparative representation of all countries in the world can be obtained, a comparative graphic representation was created in line with the indicators of public administration quality by the World Bank for Austria, Bosnia and Herzegovina, Croatia, France and Poland from 2008 to 2018. These countries are selected because Austria and France are historically economically developed countries, Poland and Croatia as examples of developing countries, and Bosnia and Herzegovina are examples of independence (Figure 3).

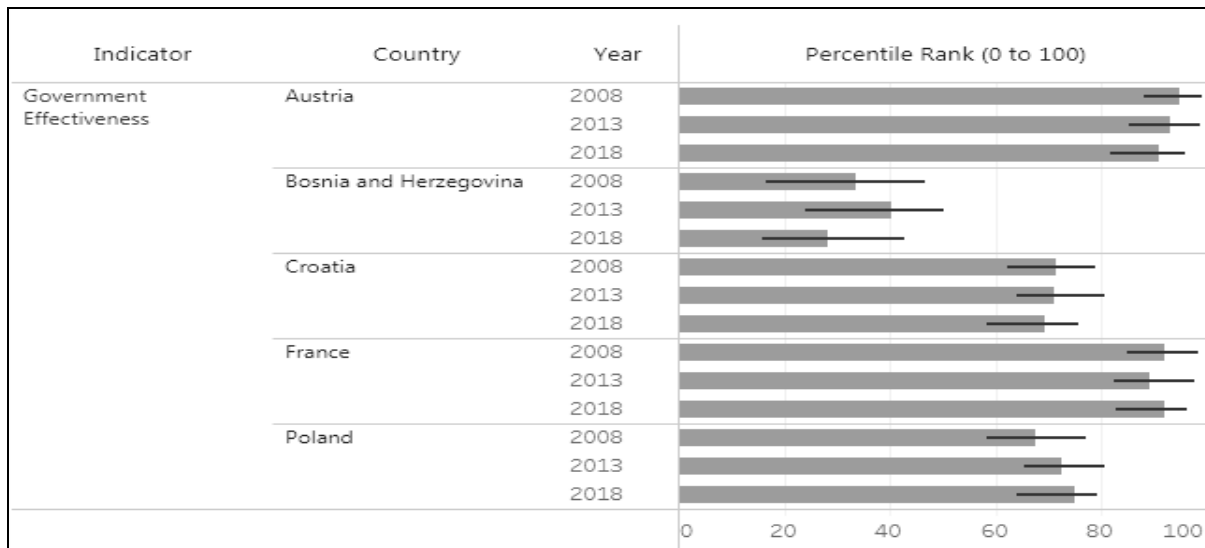


Figure 3. Government effectiveness in chosen countries from 2008 to 2018

Source: Authors' calculation according to data of the World Bank, Governance Indicators (2019), available on <http://info.worldbank.org/governance/wgi/index.aspx#reports>

The comparative graphic representation of government effectiveness shows that Croatia as a new EU member state made "small" steps of progress in the governance area from 2008 to 2018, that it is very advanced in comparison to Bosnia and Herzegovina, and that it lags behind Poland only a little, but also that to Austria and France these differences are enormous and extremely visible (Figure 4).

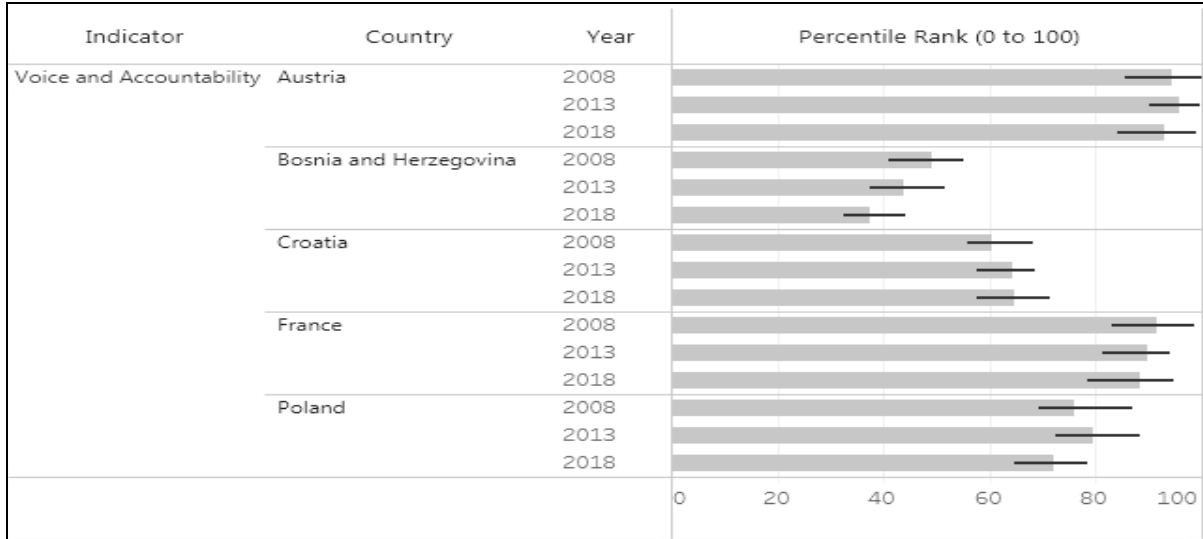


Figure 4. Voice and accountability of the chosen countries

Source: Authors' calculation according to data of the World Bank, Governance Indicators (2019), available on <http://info.worldbank.org/governance/wgi/index.aspx#reports>

Figure 4 shows that freedom of thought and government accountability in Austria and France are high. Croatia records minor growth or stagnation in the freedom of thought from 2008 to 2018, but the differences are still expressed. It lags behind Austria, France, and to a lower extent Poland, and is better than Bosnia and Herzegovina only (Figure 5).

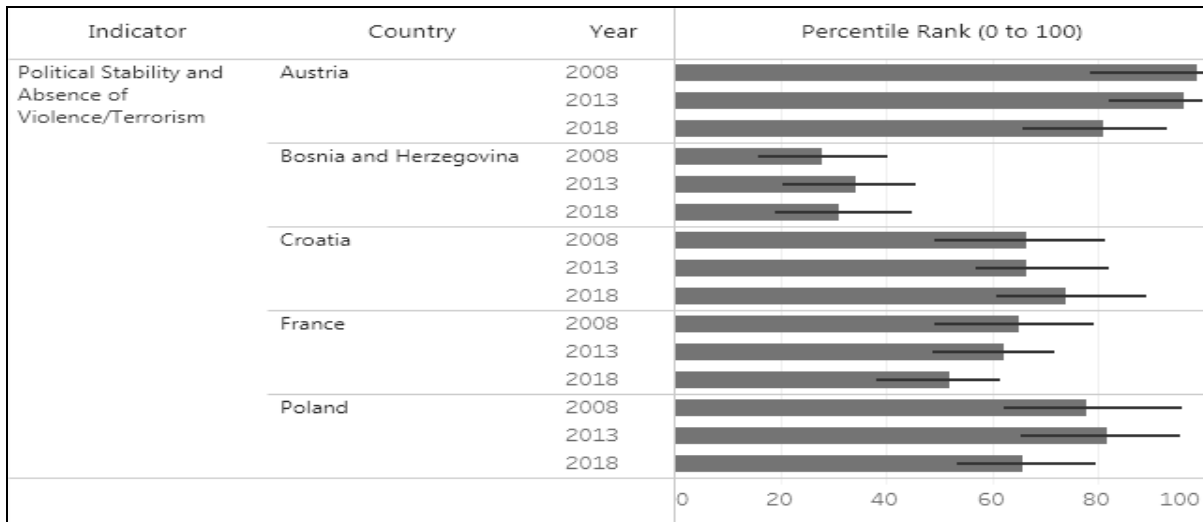


Figure 5. The political stability of chosen countries from 2008 to 2018

Source: Authors' calculation according to data of the World Bank, Governance Indicators (2019), available on <http://info.worldbank.org/governance/wgi/index.aspx#reports>

The political stability chart shows that Austria has the highest level of political stability. Although its political stability has significantly deteriorated in years, it is still ahead of other countries. Croatia has been making advancement in this area for years and is the only country among the analyzed ones with constant growth. In the period 2013 to 2018, a significant advancement could be noticed. The comparison with other countries puts Croatia in a good position, immediately after Austria and Poland. France showed a significant downfall, whereas Bosnia and Herzegovina, although with small steps forward, is still accounted as bad when it comes to political stability and absence of violence (Figure 6).

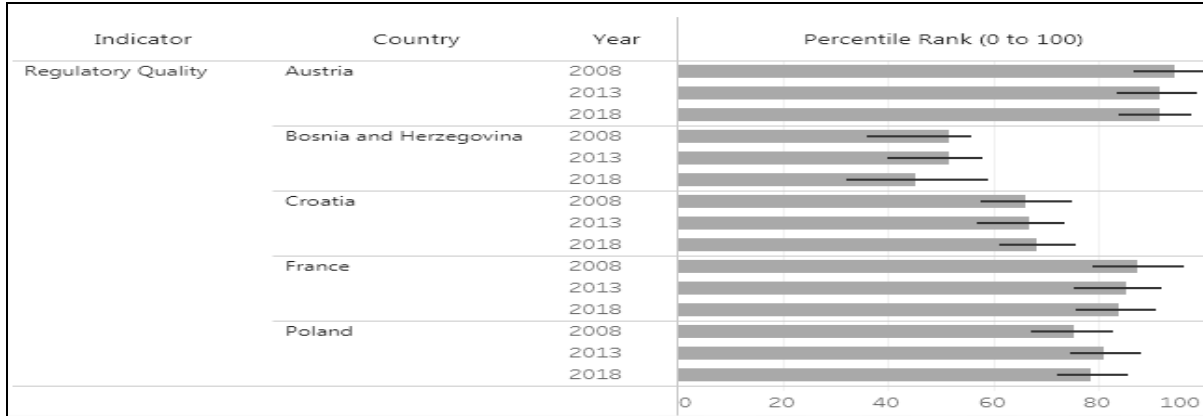


Figure 6. The chosen countries' regulatory quality from 2008 to 2018

Source: Authors' calculation according to data of the World Bank, Governance Indicators (2019), available on <http://info.worldbank.org/governance/wgi/index.aspx#reports>

The comparative chart proves that Croatia is making small steps forward regarding the quality of legislation. Besides more significantly lagging behind Austria and somewhat less behind France, Poland is a close second. It is followed by Bosnia and Herzegovina, which shows quite a decline (Figure 7).

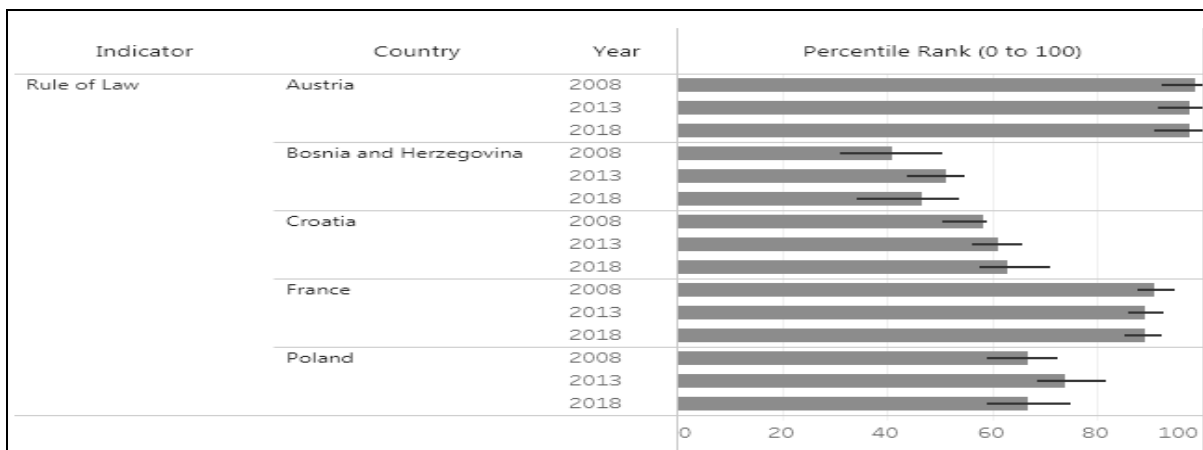


Figure 7. The rule of law in the chosen countries from 2008 to 2018

Source: Authors' calculation according to data of the World Bank, Governance Indicators (2019), available on <http://info.worldbank.org/governance/wgi/index.aspx#reports>

When it comes to the rule of law, Croatia shows a small shift forward from 2008 to 2018, but it still significantly lags behind countries such as Austria and France. It is a close second behind Poland, while Bosnia and Herzegovina are still at the end of the line (Figure 8).

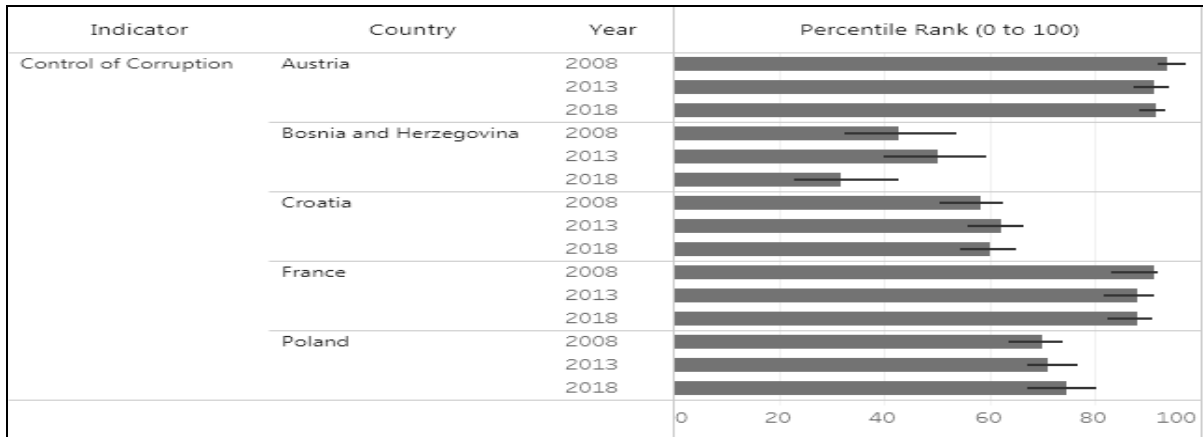


Figure 8. Corruption control in chosen countries from 2008 to 2018

Source: Authors' calculation according to data of the World Bank, Governance Indicators (2019), available on <http://info.worldbank.org/governance/wgi/index.aspx#reports>

The chart about corruption control from 2008 to 2018 shows that it is high in Austria and France. In this period, Croatia was a bit oscillating, while Poland recorded a mild growth. In 2018 Bosnia and Herzegovina recorded a severe downfall in corruption control and seriously lagged behind other countries (Figure 9).

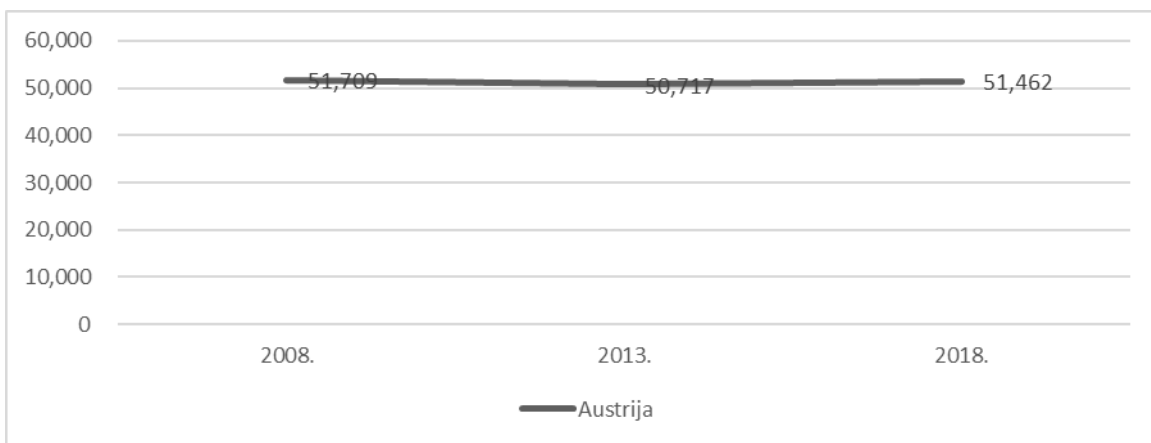


Figure 9. GDP per capita movement in Austria

Source: Authors' calculation according to data of the World Bank, Governance Indicators (2019), available on <http://info.worldbank.org/governance/wgi/index.aspx#reports>

In 2008 the GDP per capita in Austria was 51,709 USD, and five years later (2013), it underwent a small decline to 50,717 USD. Economic growth was recorded in 2018 when the GDP per capita equaled 51,462 USD.

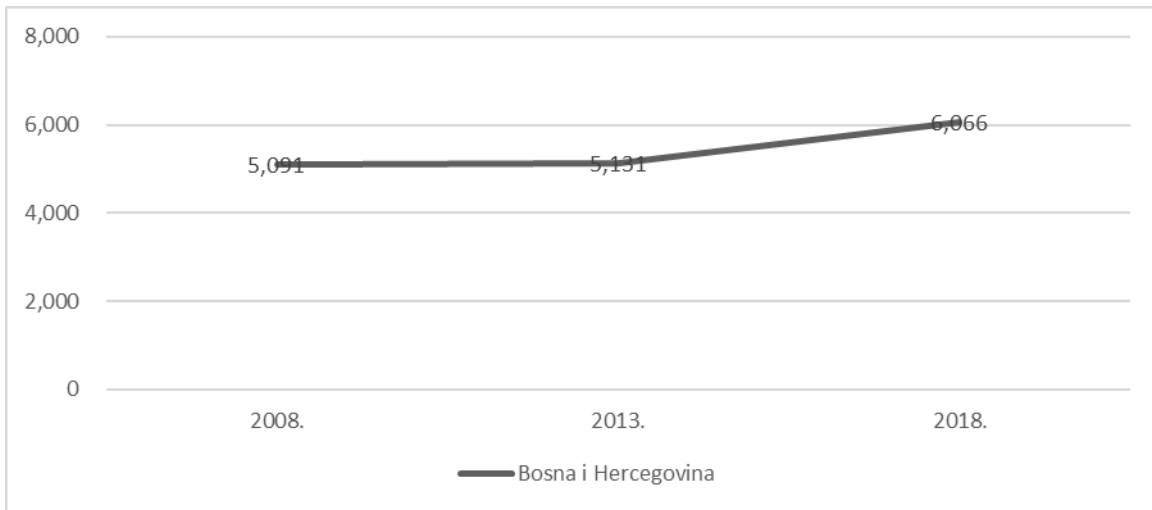


Figure 10. GDP per capita movement in Bosnia and Herzegovina

Source: Authors' calculation according to data of the World Bank, Governance Indicators (2019), available on <http://info.worldbank.org/governance/wgi/index.aspx#reports>

According to the World Bank data, in 2008, the BDP in Bosnia and Herzegovina equaled 5,091 USD. In 2013 that number grew to 5,131 USD, and in 2018 the GDP per capita was 6,066 USD. This shows that Bosnia and Herzegovina achieved economic growth (Figure 10).

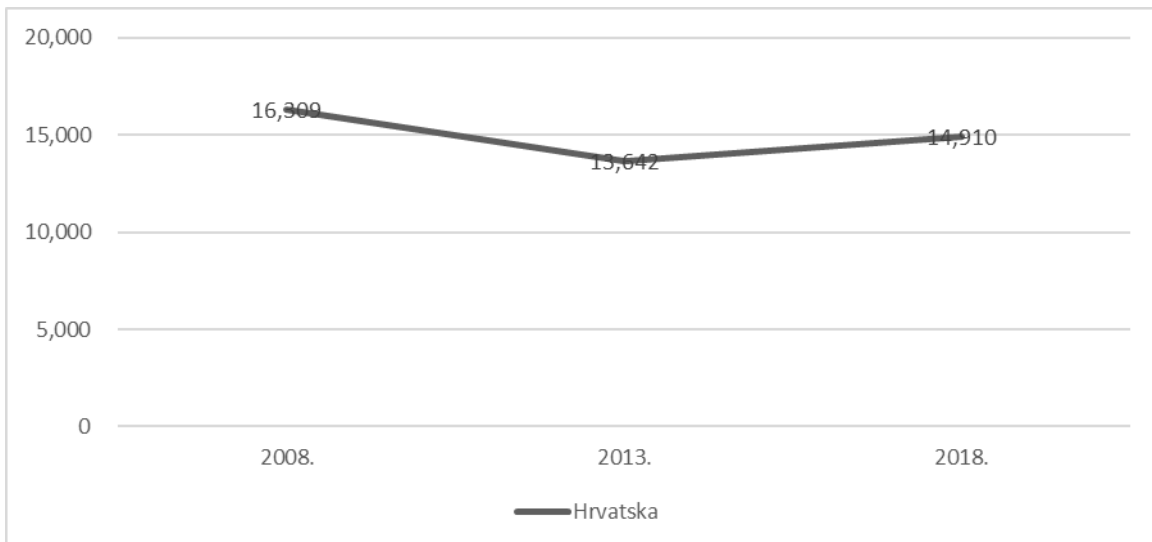


Figure 11. GDP per capita movement in the Republic of Croatia

Source: Authors' calculation according to data of the World Bank, Governance Indicators (2019), available on <http://info.worldbank.org/governance/wgi/index.aspx#reports>

In 2008 the Croatian GDP per capita was 16,309 USD, and after that, in 2013, an economic decline to 13,642 was registered. In 2018 the GDP per capita in Croatia grew to 14,910 USD (Figure 11).

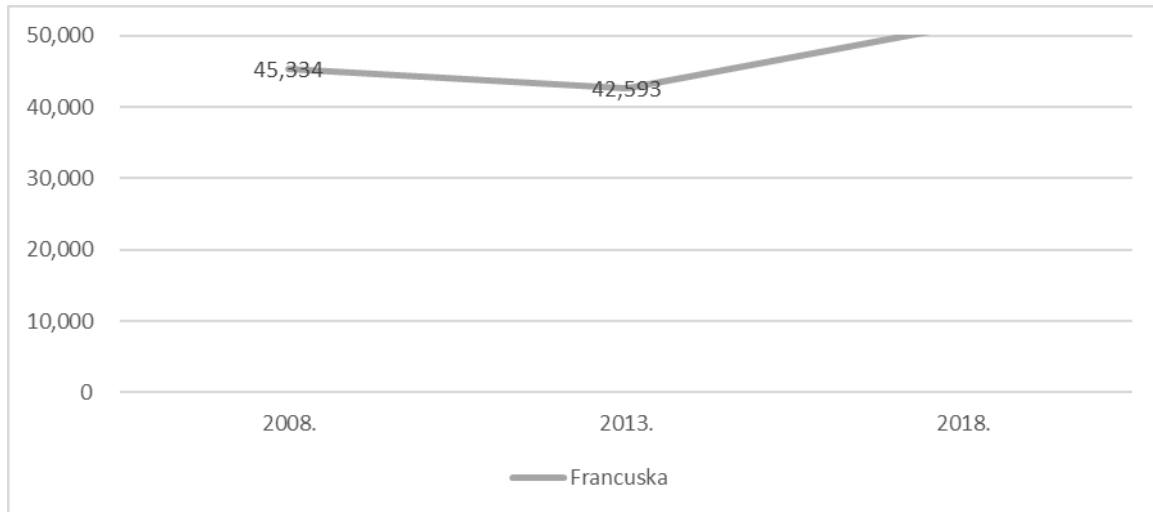


Figure 12. GDP per capita movement in France

Source: Authors' calculation according to data of the World Bank, Governance Indicators (2019), available on <http://info.worldbank.org/governance/wgi/index.aspx#reports>

During the years, France has shown an economic decline. In 2008 the GDP per capita equaled 45,334 USD. In 2013, it was 42 593 USD, and 2018 continues with a mild decline trend with 41, 464 USD (Figure 12).

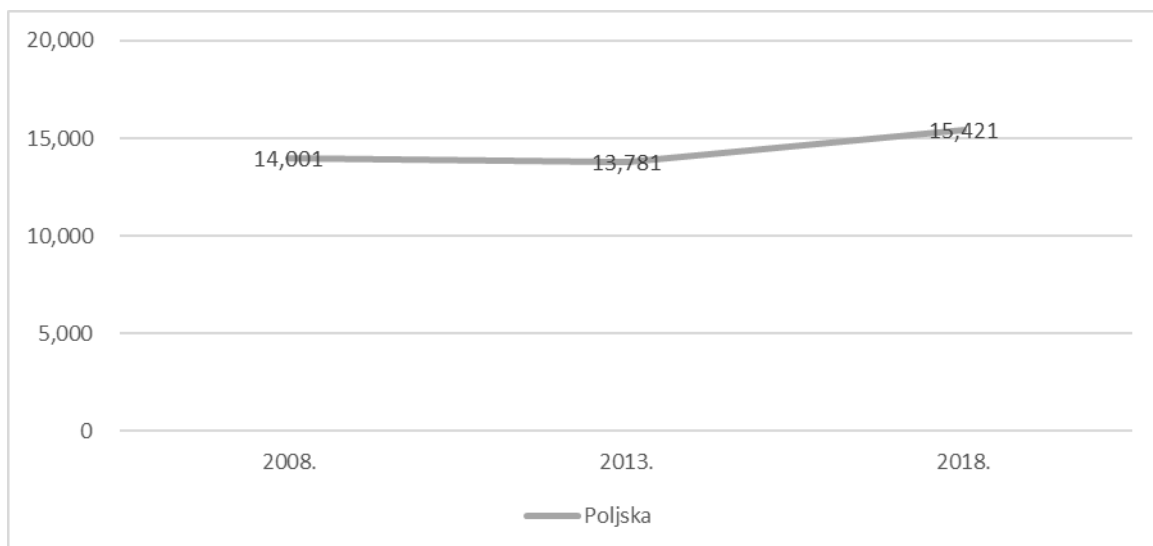


Figure 13. GDP per capita movement in Poland

Source: Authors' calculation according to data of the World Bank, Governance Indicators (2019), available on <http://info.worldbank.org/governance/wgi/index.aspx#reports>

In 2008 the Polish GDP per capita was 14,001 USD. In 2013 this amount decreased to 13,781 USD, followed again by a visible growth in 2018 when the GDP per capita was 15,421 USD (Figure 13). The comparative analysis of the quality of legislative, administrative, and judicial institutions was measured by indicators of government effectiveness published by the World Bank. Comparison of the GDP per capita as an indicator of economic growth confirmed the primary hypothesis. *Institutions are the Fundamental Determinant of the Long-Term Success of Economy*. Namely, the example of Austria, Bosnia and Herzegovina, France, Croatia, and Poland, which were the comparative analysis object, compared the GDP per capita. It was proved that countries with the highest level of economic growth and GDP per capita are those countries which in the given ten-year period had an enviable level of "successful institutions existence," i.e., Austria and France. Simultaneously, the "golden mean" was filled in by the transition country Poland followed by Croatia, whereas Bosnia and Herzegovina are lagging with substantial economic and institutional discrepancies.

We are showing Granger causality Wald tests for each approximate underlying equation (PVAR) model (Granger 1969). Here we use countries' GDP as a proxy for the level of competitiveness. Results of the (PVAR) Granger causality Wald test we present in table 1.

Table 1. (PVAR) Granger causality Wald test for competitiveness

Equation/Excluded	Chi2	Df	Prob> chi2
lgdp			
ge	10.328	1	0.001
ALL	10.328	1	0.001
ge			
lgdp	1.069	1	0.301
ALL	1.069	1	0.301
lgdp			
via	1.656	1	0.198
ALL	1.656	1	0.198
via			
lgdp	1.776	1	0.183
ALL	1.776	1	0.183
lgdp			
stab	4.821	1	0.028
ALL	4.821	1	0.028
stab			
lgdp	1.225	1	0.268
ALL	1.225	1	0.268
lgdp			
reg	1.483	1	0.223
ALL	1.483	1	0.223
reg			
lgdp	2.279	1	0.131
All	2.279	1	0.131
lgdp			
rule	1.486	1	0.223
ALL	1.486	1	0.223
rule			
lgdp	0.236	1	0.627
ALL	0.236	1	0.627
lgdp			
cont	2.789	1	0.095
ALL	2.789	1	0.095
cont			
lgdp	0.357	1	0.550
ALL	0.357	1	0.550
lgdp			

cris	3.086	1	0.079
ALL	3.086	1	0.079
cris			
lgdp	1.803	1	0.179
ALL	1.803	1	0.179

Source: Authors' calculations

The results above show whether the coefficients on the institutional variables appearing on the lgdp equation are jointly zero. The null hypothesis is (excluded variable does not Granger-cause Equation variable), or institutional variables do not Granger-cause country's competitiveness measured by GDP growth.

6. Discussion

(PVAR) Granger causality Wald test results in table 1 support the thesis that the institutional environment is a significant driver of a country's competitiveness. Since the panel data series are non-stationary as unit root test results show (not presented here due to space constraint), we use the first differenced variable series to achieve stationarity; we need to run a stable (PVAR) model. First, we test the Granger causality between a country's competitiveness (lgdp) and institutional environment variables using two lags. Test results on ALL show the Granger-causality test results for all lag coefficients. Test results support the hypothesis that institutional factors are essential for competitiveness, but there is a degree of difference between them (some are more important than others).

The first test shows government effectiveness (ge) Granger cause competitiveness (lgdp), and the null hypothesis of no Granger-causality is rejected at a 99% confidence level. Our results prove that government effectiveness' is a key competitiveness factor in an economy. GDP dynamics is not essential for building institutional efficiency (no Granger causality).

Voice and accountability (via) as an institutional factor have a limited impact on the country's competitiveness. We accept the H_0 hypothesis of no Granger causality at the 78% confidence level. Freedom of thought and government accountability is vital for a level of competitiveness but not essential.

Political stability is significant for the level of competitiveness. We can see that political stability (stab) Granger causes competitiveness at the 95% confidence level. Political stability significantly affects the macroeconomic conditions having an impact on the level of competitiveness. We find evidence of the positive impact of political stability conditions on the level of competitiveness. The higher the level of political stability, the higher the level of a country's competitiveness.

Regulatory quality (reg) is essential as an institutional factor for competitiveness but not that determinant as government effectiveness and political stability. We can see that (reg) impacts the level of competitiveness (lgdp) at a lower confidence level (89%).

The rule of law is also crucial for the country's competitiveness, but we find the same long-run relationship as for the regulatory quality. The rule of law does not Granger cause competitiveness at the confidence level higher of 78%. Thus, the rule of law is necessary but not a sufficient condition for competitiveness.

Corruption control is a pre-requisite to achieve and increase the level of competitiveness. We can see that corruption control (cont) Granger causes competitiveness at a 90% confidence level. We can see that after government effectiveness and political stability, corruption control is at the top level of competitiveness determinants.

The dummy variable (cris) as a proxy for the financial crisis of 2008, as we expected, had a significant impact on the competitiveness across the panel. We can see that (cris) Granger causes competitiveness at a 93% confidence level supporting the thesis that financial crisis (and financial cycles) significantly negatively impact a country's level of competitiveness.

Our results support the study results from Rusu and Roman (2018), Djeri et al. (2018), and Radulescu et al. (2019).

7. Conclusion

The mentioned empirical research and literature review concluded that the overall results are that "institutions make the difference." However, it remains unsolved whether the given institutions are the source of economic growth or has growth incited by an adequate economic policy led to the formation of new institutions.

By the conducted research of correlation of institutional quality and economic growth, it can be concluded that economic institutions can contribute to a better understanding of the good and bad sides of an economic quality which aims at improving economic success and that institutions can be significant for the global position of an economy.

The research showed a high level of correlation between institutions' success and gross domestic product with indications of equal returns per ratio. The advancement of institutional quality, indirectly through GDP, can lead to the relative significance of economies.

The research limitations are that the indicators of government effectiveness of the World Bank do not reflect certain permanent institutional features. However, the results of a particular country's policies in the former period and specific governance dimensions are measured very widely.

Moreover, it is evident in the research that institutional quality is vital for growth. However, the cognitions about the relative significance of institutions compared to other determinants of growth and development, such as the historical heritage or trade, i.e., the foreign trade exchange, is unclear, representing a recommendation for future research.

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TOWARDS SUSTAINABLE DEVELOPMENT: RISK MANAGEMET FOR ORGANIZATIONAL SECURITY*

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Abstract. Controlling risk and skilful planning of the continuity of the organization's operation positively influences the value of the organization, its image and the ability to achieve the planned goals in the economic, social and environmental dimensions. This article presents risk management as a determinant of the implementation of sustainable development assumptions in an organization. The process consisting of: identification and analysis of stakeholders, setting partial goals and relations between the key perspectives of the organization's functioning (legal, economic, social and environmental), risk identification, its measurement, regulation, monitoring and control contributes to the improvement of the organization's safety. Thanks to the focus on the concept of sustainability, organizations manage risk in a systematic manner. One of the basic assumptions of the "triple bottom line" concept is the organization's focus on economic goals, i.e. profit maximization. The second foundation is focusing on the human aspect in the organization and achieving goals under the assumption of corporate social responsibility. The third is to focus on environmental goals and eco-efficiency. The aim of the research was to identify critical variables for improving risk management in the organization in the context of the implementation of the concept of sustainable development, and to indicate the approach applied to risk management by organizations that manage many aspects in a systemic manner. The research was carried out in 150 organizations in Poland that have at least one certified management system, e.g. ISO 9001, ISO 14001. It was determined that such a number of surveyed organizations is representative, taking into account the fact that the ISO 9001 certificate in Poland can be found in almost 15,000 organizations.

Keywords: management; risk; risk management; sustainable development

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1. Introduction

“We have changed our environment so radically that we have no choice but to change ourselves and adapt to this changing environment” (Wiener, 1989).

The complexity of the organization’s environment, the need to flexibly respond to changes occurring in it, determine a new approach to management. The new quality of management is strongly associated with innovation, creativity, the ability to analyse the organization’s environment and a quick response to emerging opportunities and threats. One of the key tasks of the organization is to cope with uncertainty and volatility and continuous improvement of functioning, which is possible thanks to a strategic approach to risk management.

“The effect of improving the organization is to make the organization resistant to disruptions, increase efficiency and develop the ability to achieve system goals and objectives of individual participants” (Masłyk – Musiał, 2002).

Risk management is a key process that contributes to the improvement of efficiency and the achievement of the organization’s goals. Systematic application of management procedures and practices to activities in the area of identifying, analysing, evaluating, dealing with risk, monitoring and reviewing risk leads to the improvement of the process of establishing the organization’s strategy, increasing the probability of achieving economic, social and environmental goals and improving the decision-making process.

Risk management is a determinant of the implementation of the assumptions of sustainable development in the organization, and thus the improvement of economic, social and environmental security.

2. The essence of risk management in standardized management systems

Risk management can be considered a phenomenon of the future. It is an important element of an effective and comprehensive corporate governance system. Organizations, more than ever, should recognize, assess and respond to all forms of risk they face. Organizations and corporate leaders must learn from failures by developing risk management practices. Effective risk management can be considered a leading competitive advantage that determines the survival and success of enterprises in an uncertain global environment (Miloš, 2014).

In order to effectively manage risk, an organization should develop a risk model, the design of which must go through several stages, i.e. identification of measures, risk development, model and assessment of the risk model (Ibnugraha, Nugroho, Santosa 2020).

The assessment of operational risk management becomes important due to organizational and infrastructural changes, as well as the business and technological environment. Risk management is a management process that covers all techniques and methods of risk assessment and analysis. It is represented by various processes, such as measurement, control, reporting or selection of decisions that lead to the reduction of all risks (Prasad, Sekhar, 2019).

Effective company management may be based on the requirements contained in standardized management systems regarding the following aspects: quality, environment, health and safety at work, but also on finding solutions to improve the effectiveness and efficiency of quality control in the risk management process, when the results achieved are not consistent with the goals set. Risk, as a result of uncertainty, affects the goals of almost all human activities, thus implying the risk of loss. Risk is present in every aspect of our lives; therefore, risk management is universal, but is fully based on estimates and predictions made with inherent uncertainty that takes into account the extent of the probability that a given condition may or may not exist (Bowers, 2016).

The PN-EN ISO 9001:2015 Quality management systems standard. Requirements, introduces a key concept in this regard, which is risk-based thinking.

According to the dictionary of the Polish language, risk is defined as “the possibility, the probability that something will fail, a venture which outcome is unknown, uncertain, problematic” (Szymczak, 1989).

According to ISO 9001, risk is the effect of uncertainty that causes a positive or negative deviation from expectations. Uncertainty is the state of lack of information related to understanding or knowledge about an event, its consequences or probability (PN - EN ISO 9001, 2016).

The ISO 31000 standard defines risk as: “the effect of uncertainty on objectives”. According to the indicated standard: uncertainty causes a positive or negative deviation from expectations, goals may relate to various aspects and be implemented at various levels, risk is determined in relation to potential events and consequences or their combination, and uncertainty is the lack of information about an event, its consequences or probabilities.

The ISO 31000 standard defines risk as: “coordinated activities related to the management and supervision of an organization in relation to risk”. According to the requirements of the ISO 31000 standard, risk management should be an integral part of all processes in the organization, it should contribute to the achievement of goals and continuous improvement, it should be systematic and timely, it should be adapted to the context of the organization, the risk analysis should be constantly updated and react to changes (PN- ISO 31000, 2012).

By implementing the risk-based approach, the organization should plan and implement activities that take into account risks and opportunities, which leads to an increase in the effectiveness of the quality management system and improvement of the organization’s performance.

At the stage of planning the quality management system, the organization should take into account external factors influencing the functioning of the organization. A strategic analysis of the organization should be carried out. Strategic analysis is a stage of strategic management involving the use of appropriate methods to identify factors influencing the organization’s future operations. The analysis of the environment consists in identifying the processes and events in the environment as well as the activities of other organizations, which may create opportunities or pose a threat to it (Gierszewska, Olszewska, Skonieczny, 2013).

Canton (2007) believes that strategic planning is the cornerstone of a crisis management program – and binds the various elements of the program together and ensures that the resulting actions are properly aligned with the shared vision of the organization’s stakeholders (Canton, 2007). Strategic planning is an adaptable set of concepts, procedures, tools and practices designed to help people and organizations decide what to do, how and why (Manning, 2020).

It is very important to analyse the legal, technological, competitive, market, cultural, social, economic, as well as international, national, regional or local environment. It is also necessary to analyse internal factors regarding issues related to the organization’s potential, values, culture, knowledge, processes taking place in the organization, those factors that are important for the purpose and strategic direction of its operation, and to identify the needs and expectations of its stakeholders.

The organization is responsible for the application of the risk-based approach and for the actions it takes to address the risk, as well as for the management of the necessary documentation in this regard. Top management plays a key role in risk management, and should demonstrate leadership and commitment to promoting a process-based and risk-based approach within the organization.

The organization shall plan actions to address risks and opportunities, how to integrate and implement these actions into the processes of the functioning quality management system, and how to evaluate the effectiveness of these actions.

It is very important that top management takes action to ensure that risks and opportunities that affect product and service compliance and the ability to increase customer satisfaction are identified and addressed (ISO 9001, 2015).

The ISO 31000 standard helps organizations to develop a risk management strategy to effectively identify and reduce risk, and thus increase the degree of achievement of the assumed goals and ensure the safety of the organization in the economic, social and environmental area.

The implementation of ISO 31000 also helps organizations to see both the positive opportunities and the negative consequences associated with risk and allows for more informed and thus more effective decision making, especially when allocating resources. Moreover, it can be an active element in improving the organization's management and ultimately its performance (Wisianto, 2020).

The following risk management principles according to ISO 31000: 2018 can be indicated:

- Integrated – Risk management is an integral part of all organizational activities.
- Structured and comprehensive – A structured and comprehensive approach to risk management contributes to consistent and comparable results.
- Adapted – The risk management framework and process are aligned and proportionate to the organization's goals.
- Inclusive – Inclusive adequate and timely stakeholder involvement enables the inclusion of their knowledge, views and insights.
- Dynamic – Risks can appear, change or disappear as the external and internal context of the organization changes.
- Best available information – The risk management inputs are based on historical and current information as well as future expectations.
- Human and cultural factors – Human behaviour and culture significantly influence all aspects of risk management at every level and stage.
- Continuous improvement – Risk management is continuously improved through learning and experience (Wilbanks, Byrd, 2020).

3. Risk management and business continuity management

In order for the organization to comprehensively implement the risk management approach, it should identify the key processes and resources that will become necessary to ensure business continuity and fulfilment of its obligations towards stakeholders in the event of a risk.

Ensuring the organization's consistent operation in the event of disruptions in any part of it is possible thanks to the implementation of the Business Continuity Management (BCM).

Business Continuity Management complements the risk management framework. BCM is a broader concept than risk management. In addition to identifying the products, services and processes that determine the survival of the organization and performing risk assessment and related activities, in line with the BCM idea, it is also important to identify what the organization needs to continue to fulfil its obligations in the event of a risk. Maintaining

business continuity is a much broader issue than risk management. The activities performed in the scope of risk management constitute the basis of the business continuity management system.

Business Continuity Institute defines business continuity management as a holistic management process that aims to identify the potential impact of disruptions on the organization and create conditions for building resilience to them and the ability to respond effectively in the protection of key interests of owners, reputation and brand of the organization, as well as the values achieved in its activities to date (Standard BS 2599).

Thanks to BCM, the organization is thus able to recognize what needs to be done before a possible event occurs to protect its employees, site, technology, information, supply chain, stakeholders and reputation.

Currently, the approach to risk management is evolving towards ensuring business continuity. Business continuity is understood as an organizational procedure that creates the organization's ability to respond effectively in the event of a disruption as a result of a specific interaction of threats with the vulnerability of the organization's internal infrastructure or resources. In this sense, ensuring business continuity is the subject of operational management and is the last link in operational risk management (Rot, Pękala, 2016).

Business Continuity Management (BCM) ensures that processes and resources are available after a business disruption to ensure that you continuously meet your critical goals. Business Continuity (BC), by definition, aims to maintain critical business continuity. Business Continuity Management (BCM) ensures the availability of processes and resources after a business interruption to ensure the continual achievement of critical goals (Hiles, Andrew, Noakes-Fry, 2014).

ISO 22301 is the world's first international standard for business continuity management. ISO22301 is a standard for the implementation of the BC management system and the continual improvement of the BC capability based on management priorities and feedback. The purpose and intention of the standard is to plan, establish, implement, operate, monitor, review, maintain and continuously improve the documented management system in order to protect against any disruptions that may arise, reduce the likelihood of occurrence, prepare for, respond to an incident causing disruptions and repair it. The standard contains auditable requirements, such as certification that shows that an appropriate BCMS exists. Organizations that have obtained ISO 22301 certification demonstrate BC compliance and commitment to customers and other stakeholders.

The following international standards apply to business continuity management:

- ISO 22301:2019 Security and resilience – Business continuity management systems. Requirements. This document specifies the requirements for the implementation, maintenance and improvement of the management system in order to prevent, reduce the probability of disruptions, prepare for them, respond to them and repair them after their occurrence (ISO 22301, 2019).
- ISO 22313:2020 Security and resilience – Business continuity management systems. Guidance on the use of ISO 22301. The document contains recommendations for the application of the requirements of the Business Continuity Management System (BCMS) contained in ISO 22301. The guidelines and recommendations are based on good international practice (ISO 22313, 2020).
- ISO 22300:2018 Security and resilience. Vocabulary. The standard defines the terms used in Business continuity management systems (ISO 22300, 2018).

Requirements of ISO 22301:

- Clause 4: Context of the Organization
- Clause 5: Leadership

- Clause 6: Planning
- Clause 7: Support
- Clause 8: Operations
- Clause 9: Performance Evaluation
- Clause 10: Improvement.

BCMS (Business Continuity Management Systems Standard) can help an organization build its management system in a clear and specific way through the creation, implementation and training of management system requirements and procedures (Roskoski, 2020).

The following principles of business continuity management can be identified: long-range Focus, leadership, governance, good business practice, multidisciplinary function, communication, value preservation, adaptation (Wong, Shi, 2015).

The ISO 22301:2019 Security and resilience standard — Business continuity management systems — Requirements contains a framework for identifying key risk factors affecting the organization and for maintaining its operations in the most difficult conditions – thus it concerns the business continuity management system (BCM). (ISO 22301, 2019). ISO 22301 can be a valuable tool that will help an organization achieve stability and management efficiency by creating a business continuity program (Roskoski, Maureen, 2020).

ISO 22301 combines international best practices to help organizations effectively respond to and recover from disruptions. This means lower costs and less impact on business results in the event of disruptions. Additionally, for organizations with multiple locations or divisions, it provides a consistent management approach across the organization.

By implementing the requirements of the ISO 22301 standard, the organization achieves the following benefits:

- gains the ability to reassure customers, suppliers, regulators and other stakeholders that they have robust systems and processes to ensure business continuity,
- achieves better business results and increases its organizational resilience,
- by analysing critical problems and sensitive areas, it is easier to manage the organization.

It can be concluded that business continuity management is a holistic management process aimed at determining the potential impact on the organization and creating conditions for building resistance to them and the ability to respond effectively in the protection of the key interests of the owners, reputation and brand of the organization, as well as the values achieved in the current activities (Wołowski, Zawila-Niedźwiecki, 2012).

At the end of 2019, 6231 business continuity management system certificates in accordance with the ISO 22301:2012 Societal security standard - Business continuity management systems – Requirements were awarded. In Poland, this number is 101 certificates. The leader in terms of the number of ISO 22301 certificates granted is India with 1966, United Kingdom of Great Britain and Northern Ireland – 609, United States of America – 406, Japan – 301, Singapore – 300, China – 291 (ISO, 2020).

ISO 22301 provides a comprehensive approach to protecting business continuity and employee safety, and presents good practices and guidelines for:

- identification of threats,
- assessment of the potential effects of their occurrence,
- development and testing of emergency plans,
- management support, communication, resources.

Business continuity management provides a comprehensive approach to the risk management process. When characterizing both processes, it can be concluded that the main method used in the risk management process is risk analysis, and in the case of Business Continuity Management, the weight of losses is analysed. The main analysis parameter in risk management is the event and the probability of its occurrence, while in business continuity management – the event and the time of its occurrence and duration. Another difference between the two processes concerns the type of events, in risk management they are all types – however, they can be classified and not always clearly affecting the business, while in business continuity management – various types of events significantly affecting the company's imbalance. When making a comparison in terms of severity and size of events, risk management adopts – different sizes – but estimable costs, and in business continuity management – a strategy designed to overcome each difficulty regardless of the severity of the event. Another aspect of the comparative analysis is the scope of both processes, in the case of risk management – a characteristic feature is the focus on risks relating mainly to the core business of the enterprise, and in the case of business continuity management – focusing primarily on events having a potential or real impact on business – mainly outside the core activities of the organization. The final aspect of the comparison is the strength and impact of the processes, in relation to risk management – the range from increasing problems to sudden incidents, while in the case of business continuity management – mainly sudden and quick events; culture that allows to overcome growing problems (Kaczmarek, Ćwiek, 2009).

4. Implementation of the goals of sustainability and the safety of the organization

The concept of *corporate sustainability* has been defined as a business approach that creates long-term value for shareholders through the use of opportunities and risk management related to economic, environmental and social development (PWC/ SAM - The Sustainability Yearbook 2008).

In the literature on the subject, the following terms are used interchangeably: *global sustainability*, *sustainable word*, *sustainable development*, which emphasize the global aspect of the issue. Similarly, the following terms are often used interchangeably: *sustainable enterprises*, *corporate sustainability*, *enterprise sustainability*, referring to the enterprise level. *Corporate sustainability* is a concept that involves the organization's commitment to achieving a competitive advantage through the strategic adaptation and development of ecological and social processes supporting the production of ecological and social products and services as well as innovative human resource management practices (Dunphy, Griffiths, Benn, 2003).

Corporate sustainability consists in achieving a state of development of the organization in which it meets the needs of stakeholders, without compromising its ability to meet their needs in the future. An organization implementing the concept of corporate sustainability must be sure that its activities are balanced in relation to its economic, social and environmental results (Hockerts, 1999).

Organizations wishing to adapt to the changes taking place in the environment should implement sustainable development (Adamczyk, Nitkiewicz, 2007).

Some organizations see the two goals of profit maximization and sustainability as mutually exclusive. Organizations are increasingly realizing that long-term profitability requires greater involvement of organizations in creating sustainability. A sustainable enterprise is one that contributes to sustainable development while offering economic, social and environmental benefits (Hart, Milstein, 2003).

The concept of sustainability is business means sustainable development of the enterprises by ensuring economic, social and environmental benefits – the so-called triple bottom line (Elkington, 1994). Sustainable development: “is the process of achieving human development in a fair, reasonable and safe manner” (Gladwin, Kennelly,

Krause, 1995). It is a development that meets the needs of the present generation without compromising the ability of future generations to meet their needs.

It means integrating the organization's goals of ensuring high quality of life, health and well-being, taking into account social justice and preserving the potential of the Earth. These social, economic and environmental goals are interdependent and mutually reinforcing.

Sustainable development can be seen as a way of expressing the broader expectations of society as a whole. Sustainable development has three dimensions – economic, social and environmental – which are interrelated, for example, eradicating poverty requires promoting the ideas of social justice and economic development and environmental protection (ISO 2010).

Regarding sustainable development and the role of business in this respect, the World Business Council for Sustainable Development (WBCSD) states that... the world's leading organizations of the future will be those that provide goods and services and focus on the need to solve the world's greatest problems: poverty, climate change, resource scarcity, globalization and demographic change (WBCSD – World Business Council for Sustainable Development, 2006).

Organizations implementing the concept of sustainability constantly strive to achieve a balance between economic, environmental and social goals, and this balance is the key assumption in formulating their strategies in terms of improving the security of the organization.

Security is an interdisciplinary term. It is of interest to many fields of science, including management, economics, history, psychology, sociology, legal sciences, politics science and many others.

Security also means quality or the state of safety, freedom from danger, fear (<http://merriam-webster.com/>). Security defined in a narrow sense means the ability of the entity to resist threats, and in a broad context it means the ability of the security entity to survive and develop. Security has accompanied mankind since the dawn of history and is an elementary, primary need of individuals, social groups and nations, as well as created institutions (Wojtaszczyk, Materska-Sosnowska, 2009).

In the literature, safety is perceived as:

- guarantee of inviolable survival and free development of the security entity (Stańczyk, 1996);
- the state of peace, certainty, no threat and protection against it (Zięba, 2007);
- preservation of sovereignty and territorial integrity, free choice of the country's development path, achievement of individual well-being and social development (Czaputowicz, 2003);
- appropriate state of organization of defense and protection against military and non-military threats in various areas of state activity (Szubrycht, 2006; Genys, Krikštolaitis, 2020; Tvaronavičienė et al., 2020; Chehabeddine, Tvaronavičienė, 2020).

Security is treated as a specific state or feeling, a synonym for the absence of threats, as a certainty of the absence of threats, a state of peace and existential certainty of individual and collective entities, but also in a dynamic aspect as a process.

Ryszard Zięba states that the most general definition of security is included in the UNESCO Dictionary of Social Sciences. The definition contained there, by Daniel Lerner, reads: "In the most literal sense, safety is virtually identical with safety and means no physical danger or protection against it". Ryszard Zięba suggests adopting the definition formulated by Franz-Xaver Kauffman, who defines the threat as: "the possibility of one of the negatively valued phenomena occurring" (Zięba, 1999).

The implementation of the sustainable development goals allows organizations to achieve a high level of economic, environmental and social security.

5. Approaches to risk management in an organization – experiences of Polish organizations

Research methodology

The aim of the research was to identify critical variables for improving risk management in the organization in the context of the implementation of the concept of sustainable development, and to indicate the approach applied to risk management by organizations that manage many aspects in a systemic manner.

Earlier research conducted by the author, using a two-tier cluster analysis, confirmed the assumption that organizations that have implemented quality, environment and occupational health and safety management systems take into account a wide range of aspects focused on quality, environment, safety and hygiene and use a wider range of methods and management techniques (Wysokińska-Senkus, 2013). Therefore, when conducting research for this study, the focus was only on a sample of organizations with two or more management systems. The research for this study was carried out in 150 randomly selected organizations in Poland that have at least two certified management systems, e.g. ISO 9001, ISO 14001. It was determined that such a number of surveyed organizations is representative, taking into account the fact that the ISO 9001 certificate in Poland is owned by has approximately 15,000 organizations.

Characteristics of the research sample

Among the organizations covered by the research, the largest group – 71% were limited liability companies, followed by partnerships – 15.8% and joint-stock companies – 13.2%, as shown in Figure 1.

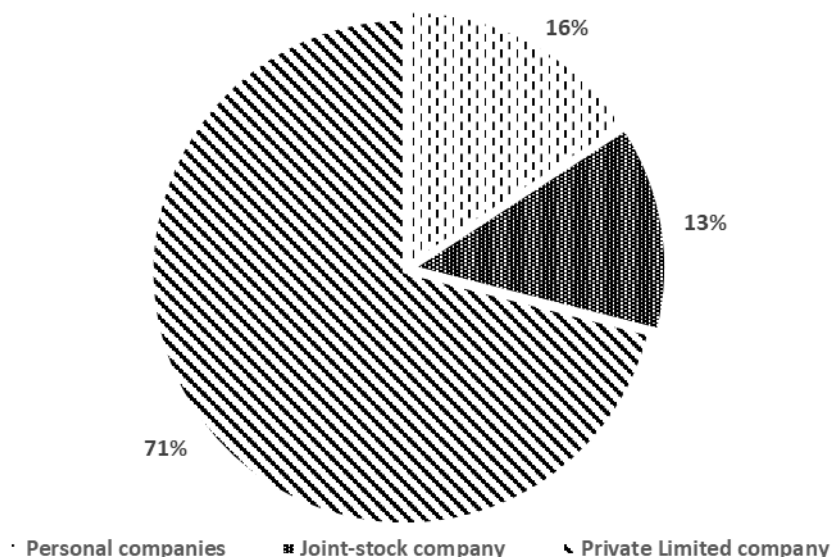


Figure 1. The legal form of the organization

Source: Compiled by authors

As for the size of the organizations, the largest group were medium-sized organizations – 52%, followed by small – 27%, large – 15.8 and micro-enterprises – 5.3 (Figure 2).

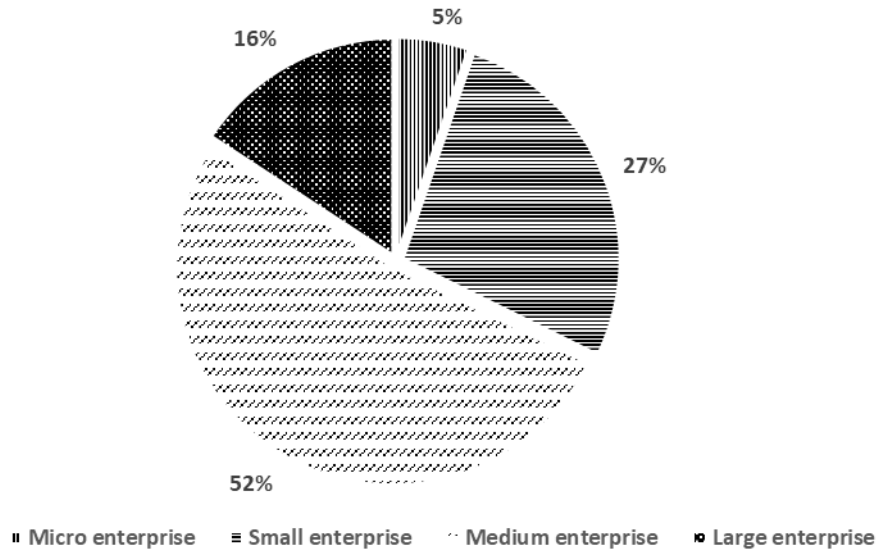


Figure 2. Organization size

Source: Compiled by authors

Figure 3 presents the characteristics of the research sample according to the criterion of the dominant sectors of activity. The most numerous were production enterprises – 38%, service – 11%, construction – 10%, representing the following sectors: logistics and warehousing – 6%, banking services – 5%.

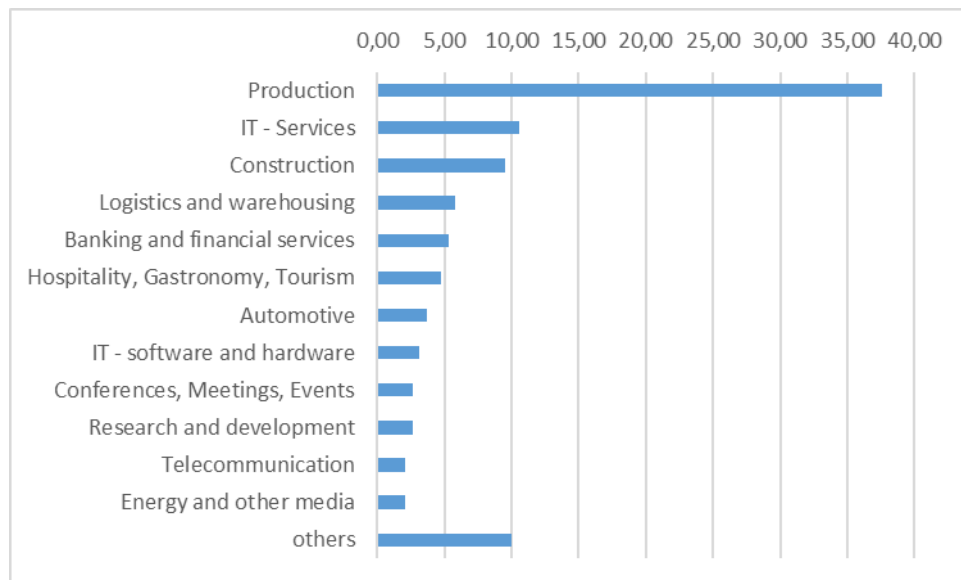


Figure 3. Dominant sectors of activity

Source: Compiled by authors

Figure 4 shows how top management approaches risk management. The analysed organizations use various approaches to the risk management process, the following were most often used: acceptance of the risk resulting from the implementation of new products, methods, management systems (80.9%), focusing on securing against possible losses (80.9%), conducting a risk analysis and implementation of preventive actions (80.9%), diversification of the organization's activities (53.3%), transferring the business risk to other entities, for example, through: insurance, guarantees, sureties, forward transactions (50%). The conducted research showed that 38.8% of organizations do not take the risk related to the implementation of new products, methods and management systems.

Although the analysed organizations manage many aspects: economic, social, ecological, the approach to risk presented by them should be indicated as requiring continuous improvement.

Organizations should conduct ongoing risk analysis, which should form the basis of all decision-making in the organization. The decision-making process is very complex, therefore organizations should focus their attention on providing a comprehensive set of data and information that will help reduce the risk of making a wrong decision.

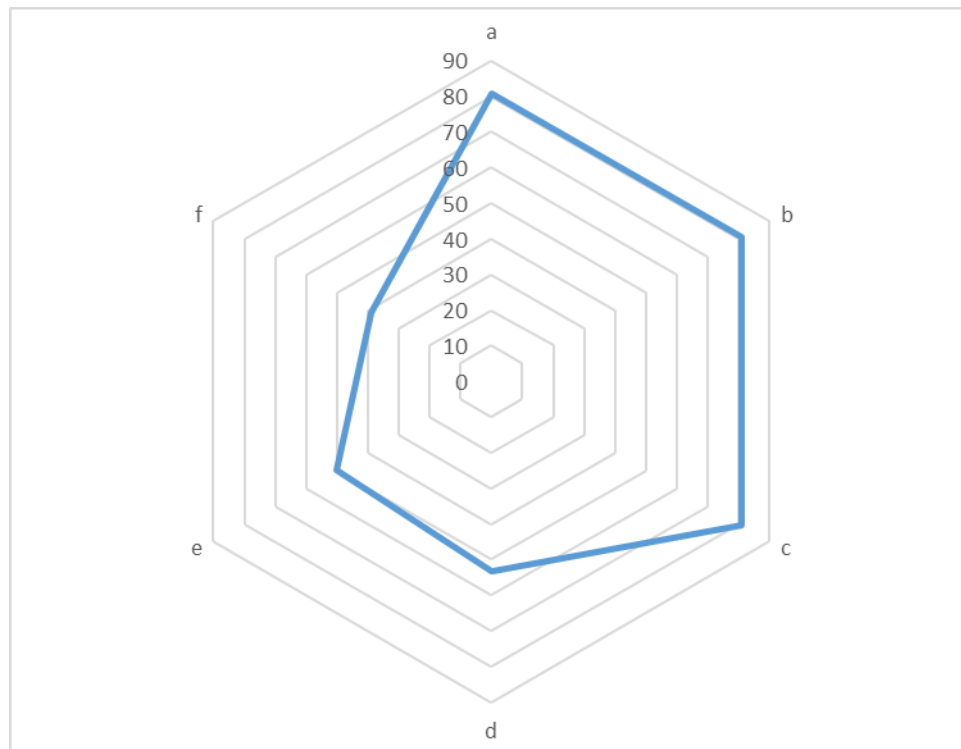


Figure 4. Approach to risk management

Source: Compiled by authors

- a – accepts the risk arising from the implementation of new products, methods and management systems,
- b – focuses on securing against possible losses,
- c – conducts a risk analysis and tries to implement preventive measures,
- d – diversifies the activities of the organization,
- e – transfers the business risk to other entities, for example through: insurance, guarantees, sureties, forward transactions,
- f – does not take risks related to the implementation of new products, methods and management systems.

The conducted research allowed to identify critical variables for the improvement of risk management in the organization in the context of the implementation of the concept of sustainable development. The determinant of improving risk management in the organization is monitoring the degree of achievement of goals and a thorough analysis of problems arising in the organization. The analysis of the causes of the occurring inconsistencies contributes to finding new, effective methods of solving them and making the right decisions, the main goal of which is to maximize the company's profit while maintaining a balance between individual elements of the organization.

Top management reviews individual aspect which leads to minimizing the risk of errors and non-conformities and is a preventive method that eliminates the causes of problems before they occur. According to the conducted research, the frequency of monitoring of individual aspects presented in Figure 5 takes place at least once every six months and more often.

The most frequently monitored aspects include: project budgets (88.8%), action plans (84.2%), economic goals (82.1%), organizational effectiveness measures (76.3%), description or course of processes (74.3%), production and marketing goals (73.7%), opportunities the organization has to face, resulting from trends in sustainable development (65%), social goals (64.5%), risks facing the organization, resulting from trends in terms of sustainable development (63.8%) and environmental goals (51.3%).

It should be stated that good management practices recommend regular management audits and reviews. The frequency of management review depends on the specificity of the organization's functioning, but it is usually performed at least once a year. The surveyed organizations have implemented standardized management systems. The study recognizes the impact of the implementation of management systems on the safety of the organization by identifying and removing potentially dangerous practices, developing formal preventive and corrective action processes, and institutionalizing routine management audits and reviews. However, it should be recognized that the frequency of monitoring individual aspects should be greater, as organizations focus to the greatest extent on measuring economic aspects. In 2013, the author of the study conducted research in a group of organizations that have implemented at least 3 management systems, the analyses showed that among the measured and monitored indicators in the field of investment security were: ACC – Internal Financial Audit Results (79.4%); QIAR – Results of Internal Quality Audits (78.3%); CADR – Credit Rating (46.7%); EIAR – Results of Internal Ethics Compliance Audits (29.4%); LINR – Results of Internal Legal Audits (e.g. Software) 23.3% (Table 1).

Table 1. Characteristics of the studied indicators – investment security

Symbol	Name	QMS,EMS, OHSAS	QMS
		% index	% index
ACC	Results of Internal Financial Audits	79.4	68.9
QIAR	Results of Internal Quality Audits	78.3	80.0
CADR	Credit Rating	46.7	42.2
EIAR	Results of Internal Ethics Compliance Audits	29.4	22.2
LINR	Results of Internal Legal Audits (e.g. Software)	23.3	21.7

Source: *Compiled by authors*

At the same time, according to the research, the most important indicators were: Results of Internal Quality Audits (WRO – 0.88), ACC – Results of Internal Financial Audits (WRO – 0.86). In the case of organizations with only QMS implemented, all indicators, except for Internal Quality Audit Results (QIAR), were much less popular. Similar results were obtained in the current research.



Figure 5. The frequency of reviews of specific aspects by top management

Source: Compiled by authors

- a – project budgets,
- b – action plans,
- c- economic goals,
- d – organizational effectiveness measures,
- e – description or course of processes,
- f -production and marketing purposes,
- g – opportunities for the organization resulting from trends in sustainable development,
- h – social goals,
- i – risks the organization faced arising from trends in sustainable development,
- j – environmental objectives.

The organization should take into account economic, social and environmental aspects when building a strategy, setting mission and vision, and measuring. In addition, a mechanism for monitoring the degree of achievement of the indicated objectives should be designed. When formulating an organization's strategy, one should focus on identifying key processes, formulating goals for each of them, developing a set of indicators of the degree of achievement of goals. The implementation of process orientation at this stage will contribute to an increase in the efficiency of the organization.

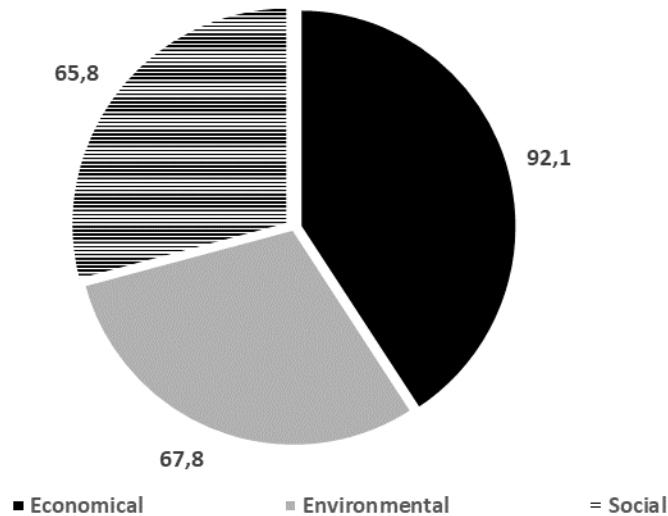


Figure 6. Key determinants of building an organization's strategy (number of organizations that rated the significance of the indicated aspects as high and very high in %)

Source: Compiled by author

A very important factor that organizations should take into account when designing a strategy is risk analysis in relation to economic, social and environmental aspects. Figure 6 shows the extent to which the surveyed organizations take into account economic, environmental and social aspects when building their strategies. Economic/market aspects were identified as the most important – 92.1% of organizations assessed this aspect as important and very important, then environmental – 67.8% followed by social – 65.8%.

According to research carried out in 2013 in a group of organizations that have at least 3 management systems implemented, all aspects are also very important when building the organization's strategy: economic, ecological and social, but the most important were economic/market aspects with the number of indications 96.7% (WRO – 0.88), followed by environmental – 96.1% (WRO – 0.78), and then social – 88.9% (WRO – 0.74). In this case, the number of responses completely coincided with the hierarchy of the relative assessment indicator (Wysokińska-Senkus, 2013).

Organizations should focus to a greater extent on the implementation of social and environmental goals, as a strategic approach to these goals can be an effective tool for managing the risk of their business (in relation to threats related to the impact on particular groups of stakeholders) and the implementation of the principles of sustainable development.

Conclusions

Risk management is a key process that contributes to the improvement of efficiency and the achievement of the organization's goals. Risk management is a determinant of the implementation of the assumptions of sustainable development in the organization, and thus the improvement of economic, social and environmental security. Currently, the approach to risk management is evolving towards ensuring business continuity. Business continuity management is a holistic management process that aims to identify potential impacts on an

organization and create conditions for building resilience to them. The implementation of the sustainable development goals allows organizations to achieve a high level of economic, environmental and social security. Organizations that have implemented quality, environmental and occupational health and safety management systems take into account a wide spectrum of aspects focused on quality, environment, safety and hygiene and use a wider range of management methods and techniques.

The conducted research has shown that organizations use different approaches to the risk management processes, as many as 38.8% of the analysed enterprises do not take the risk related to the implementation of new products, methods and management systems, and about 20% do not have an opinion on this subject. Therefore, it is recommended to be more actively involved in risk management and to develop a comprehensive management approach in this aspect. The surveyed organizations take into account economic, environmental and social aspects when building their strategies, the most important were economic/market aspects – 92.1% of organizations assessed this aspect as important and very important, then environmental – 67.8%, and then social – 65.8%.

According to the conducted research, the most frequently monitored aspects include: project budgets, action plans, economic goals, measures of organizational effectiveness. It should be recognized that the frequency of monitoring individual aspects should be greater, as organizations focus to the greatest extent on measuring economic aspects. The review of individual aspects by the top management minimizes the risk of errors and non-compliance, and thus determines the improvement of the risk management process. Management reviews give senior management the opportunity to assess the effectiveness of the organization and make any changes that could improve economic, social and environmental security.

Summing up, it should be mentioned that the analyzed organizations did not sufficiently analyze and monitor the risk. There was no comprehensive approach to risk management and the perception of a given risk as an opportunity or a threat. The limitation in risk management was the complexity of the organization's environment, the dynamics of changes taking place in it, and the lack of appropriate methods in this area. The solutions that is proposed in the study, indicated in the ISO 22301 standard for business continuity management, enables organizations to adopt a modern, comprehensive approach to risk management.

Moreover, the solution for the organization may be integrated with other available risk management standards, among which the following can be distinguished, developed by: Federation of European Risk Management Associations (FERMA), Committee of Sponsoring Organizations of the Treadway Commission (COSO II). The use of these standards by the organization allows the organization to accept the existing risk and take appropriate action if it occurs.

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DIRECT SUBSIDIES AND COMPENSATION FUNDS IN FINANCING OF UNIVERSAL POSTAL SERVICES

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Abstract Member States of the European Union are obliged to ensure access to universal postal services for all citizens. The aim of the study is to assess the effectiveness of direct subsidies and compensation funds as basic methods of financing universal postal services in the scope of incurred net cost on the example of selected postal operators in Europe and to indicate the results of application of such solutions. The scope of the study includes an evaluation of the direct subsidy mechanism applicable in Europe on the example of Belgium. A characterization of the legal framework of operation of the compensation fund and an analysis of the impact of the adopted financing mechanisms on the achieved level of profitability of the entity obliged to provide universal postal services in Poland were made. The thesis of the current study is that the mechanism of compensation for provision of universal postal services by means of a compensation fund on the Polish example is defective and ineffective from the point of view of market regulation and the designated postal operator. The study concludes by stating that the preferred form of net cost financing should be a full budget subsidy and that it is unjustified to charge the full value of the net cost as additional commitment to the operator. The research methods used include analysis of scientific literature, collection, comparison, classification and generalization of data and expert evaluation.

Keywords: postal sector; net cost of universal service; loss on universal service; direct subsidies; compensation fund; unfair financial burden

Reference to this paper should be made as follows: Borowiśec, L. 2021. Direct subsidies and compensation funds in financing of universal postal services. *Entrepreneurship and Sustainability Issues*, 8(3), 545-564. [http://doi.org/10.9770/jesi.2021.8.3\(34\)](http://doi.org/10.9770/jesi.2021.8.3(34))

JEL Classifications: G38, D43, L51

1. Introduction

Universal postal services are considered services of general economic*interest (SGEI), that is, their provision is in the public interest (they implement public service mission). They are entities which would not be provided otherwise (or would be provided under less favorable conditions) on the market without public intervention

* According to point 12 of the 2012 SGEI framework agreements, subsidies may be granted for an actual and correctly defined service of general economic interest (EU Treaty 2002, art. 106).

because the postal operator would consider them unprofitable (Commission Communication, 2011). Public intervention usually involves imposing obligations on a particular enterprise to ensure access to services of general economic interest for all citizens at affordable prices and of specified quality.

The operator designated to perform the obligations included in the scope of universal postal services shall bear the costs related to the obligations imposed on it independently, which may negatively influence its financial performance. The calculation of the net cost is intended to determine whether the designated operator's financial performance is affected by the obligations imposed. In the case of a positive net cost value, a significant problem arises as to how the additional costs should be compensated for by the operator designated in the universal service sector in order not to impair its market position in fully commercial service areas, without using prohibited public aid which distorts market mechanisms. According to the 3rd Postal Directive (Directive, 2008), application of any financing mechanism currently depends on fulfilling the following conditions: (1) universal service obligations entail a net cost for the operator responsible for providing the universal service, (2) the net cost represents an unjustified financial burden for that operator.

The article analyses alternative ways of financing the universal service obligation. Although there is no single model mechanism for universal service obligation financing, it may be possible to combine several alternatives to ensure that the postal service has sufficient revenue to cover the costs of universal service provision. In addition to the forms of universal service financing listed in Table 1, such as direct subsidies or compensation funds, in practice (Accenture, 2015), a diversification method that allows postal operators to develop other areas of activity that will financially support their core postal activities can still be applied. Moreover, on monopolistic markets, price regulation of postal services may be considered to ensure that the requirements of the universal service are met.

Table 1. Possible forms of universal service provision financing

Form of financing	Description	Assessment
Direct subsidies	This includes all direct funding made by the government to cover the cost of commitments. For foreign postal services, payments are targeted to specific obligations.	The most appropriate funding mechanism for European postal services. It has relatively low administrative costs. Policy makers are responsible for both the definition of USO levels and their financing.
Compensation fund	A fund used to compensate for the cost of universal service obligations. The fund is paid by other service providers or customers.	Administering funding processes is costly and complicated. Raising sufficient funds is unlikely, as the dominant operators will co-finance USOs.
Universal service contracts	USO elements are publicly auctioned; the winning operator receives a minimum subsidy to provide the service.	The method is not practiced. In a market with a dominant position it is difficult to ensure competitiveness in individual orders.
State liability for irreversible costs	It is not a direct financing mechanism. It consists of the state taking responsibility for costs which were incurred when the operator was a state institution.	This is temporary instrument to compensate for excessive labor costs during privatization. The disadvantage is the lack of transparency of settlements.

Source: Own elaboration based on Dieke, Junk (2015b)

As the analysis carried out in Table 1 proves that two methods have the potential to fulfil an appropriate role in universal postal services financing. These include central funding in the form of direct subsidies or compensation funds. In the current study, they will be analyzed using selected national operators in the EU as examples, with particular reference to the period of implementation of these solutions in each country. A multi-year perspective regarding the functioning of the solutions provides a more complete view that allows to conclude on the effectiveness of the applied solutions and the possibilities of their development in the postal and related industries (telecommunications, media, transport services, etc.). The remaining forms of financing described in Table 2 have

only some of the characteristics desired for the mechanism of universal services financing and may be an attempt to improve the financial situation of operators rather than the system itself.

2. Literature review

In order to correctly estimate potential additional costs of the universal postal service obligation, it is necessary to determine the net cost of these services incurred by the designated operator. In theory, the determination of the net cost of universal service obligations is relatively simple - it is the difference between the net cost of a designated universal service provider covered by universal service obligations and that of a non-universal service provider. This definition of net cost of the universal service obligation was introduced in 2008 by the 3rd Postal Directive, which is relatively late. In earlier studies, the concept of net cost was also used, but it was not necessarily the same as the concept of net cost of the universal service obligation within the meaning of the 3rd Postal Directive.

The available studies on the determination of the net cost of universal service obligations distinguish three main methodologies for the calculation of net cost, with modifications (Dietl, Grütter, Lutzenberger, 2001): 1) Net Avoidable Cost (NAC) 2) Entry Pricing (EP); 3) Profitability Cost (PC). Each of the methodologies presented in Figure 1 takes a different approach to net cost calculation and assumes a different market situation of the postal operator. In the currently available studies, it is possible to find the Commercial Approach (CA) methodology, which in Figure 1 would be in PC's place. According to the author, the approach to estimating of the net cost of universal service obligations according to the CA method is not a separate methodology, but only a more detailed and developed version of the PC method.

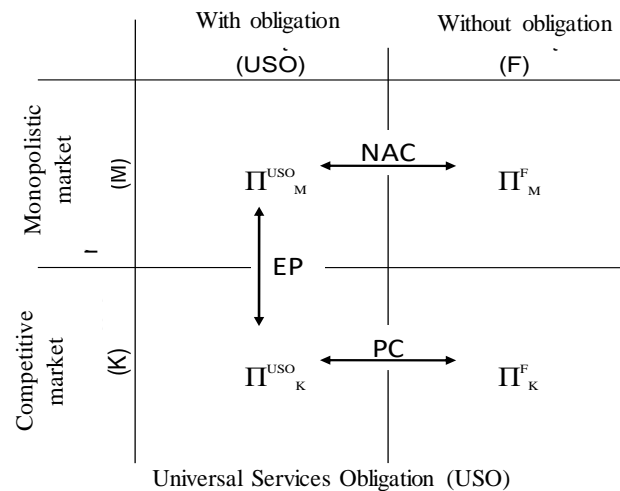


Fig. 1. Links between methodologies of universal service obligations net cost calculation

Source: Dietl (2001)

NAC (Net Avoidable Cost) methodology (OFTEL, 1995; NERA, 1998) may be used to calculate the additional costs to be borne by the designated operator as a result of universal service obligations on a monopolistic market. According to the NAC methodology, calculation of the universal service obligation net cost consists in estimating the cost of those postal services which are obligatory for universal services, and would not be provided without the obligation to do so. In European Union countries, the NAC methodology was used in the UK in 2001 by the consultancy firm Andersen, commissioned by the UK market regulator Postcomm (Postcomm, 2001).

Entry Pricing (PwC 1998; Rodriguez, & Storer, 2000) can be used to calculate the additional costs of universal service obligations to be borne by the operator designated in the process of market liberalization. In European Union countries, the EP methodology was used in Belgium in 2009 by the consultancy firm KPMG, commissioned by the Belgian market regulator BIPT (Belgian Institute for Postal Service And Telecommunications) for the Belgian operator (KPMG, 2009).

Profitability Cost methodology (Panzar, 2000; Cremer, Grimaud, & Laffont, 2000) may be used to calculate the additional costs to be borne by an operator designated as a result of universal service obligations in a competitive market. Examples of practical application of PC can be found in many European Union countries, including Poland, Great Britain or Denmark (Frontier Economics, 2008; Copenhagen Economics, 2008). In some studies, the aforementioned methodology is also referred to as NAC methodology for a competitive market.

In calculating the net cost of universal service obligations, the CA (Commercial Approach) is also mentioned. It is included in the CERP (Comité Européen des Régulateurs Postaux) and in a document on USO cost calculation in Denmark (Copenhagen Economics, 2008). The authors state that it can be described as PC method with a broader perspective because: 1) it assumes that the operator is to a large extent dependent on senders; 2) it considers the effects demand and substitution when comparing alternative options; 3) it considers weighted average cost of capital (WACC) when calculating the net cost of services; 4) estimates the costs avoided in the absence of the USO obligation; 5) it compares avoidable costs with revenue that would be lost in the event of discontinuation or change in the way postal services are provided.

It should be noted that none of the above elements are excluded from being included in the PC methodology, where all possible aspects of a postal operator's activity in a competitive market have to be considered, which also includes demand and substitution effects. In this light, the CA approach is only a detailed version of the existing PC methodology and, as a rule, both the PC methodology and the CA approach are correct and comply with the provisions of the 3rd Postal Directive (Directive, 2008). The correct application of the PC methodology, including all the requirements imposed by the Directive, does not make a substantive difference between the net cost value of USO obtained using the PC methodology and the CA approach.

Table 2. Review of practices and use of methods for calculating the cost of universal service obligations

Methodology	Scope of application	Practice	Indirect benefits	Comments
NAC	Cost of USO on a monopolistic market	Great Britain (2001)	Reported not assessed	Does not meet the requirements of the 3rd Postal Directive
EP	Cost of USO in market liberalization	Belgium (2009)	Reported not assessed	Does not meet the requirements of the 3rd Postal Directive
PC	Net cost of USO in an open market with and without USO	United Kingdom (2008) Denmark (2008)	Not included Reported and assessed	Meets the requirements of the 3rd Postal Directive

Source: Own elaboration

As shown by European practice presented in Table 2, different methods for calculating the cost of universal service obligations have been applied in particular countries. It should be noted, however, that not every method can obtain the net cost within the meaning of the provisions of the 3rd Postal Directive (Directive, 2008). The described examples of NAC and EP do not meet the requirements of the Directive. This results directly from the assumptions of the methodologies used and confirms the conclusion that only the use of the PC methodology,

which covers all effects on both the cost and revenue side, results in an estimate consistent with the definition of the net cost of universal service obligations.

For the financing mechanism to trigger, the following need to occur: the net cost of the universal service and an unjustified financial burden on the operator. As it was mentioned, the definition of net cost is included in the 3rd Postal Directive and the methodology is described precisely in the literature (e.g. Frontier Economics, 2008; Jaag, Koller, & Trinkner, 2009; Jaag, 2011a). Most models of the universal postal service are exogenous, and scientific studies boil down to the analysis of their implementation in individual countries (see e.g.: Cohen, Mc Bride, & Panzar, 2010; Bergum, 2008; Anton, VanderWeide, & Vettas, 2002; Bourguignon, & Ferrando, 2007; Calzada, 2009; Choné, Flochel, & Perrot, 2002; Foros, & Kind, 2003; Gautier, & Mizuno, 2011; Gautier, & Paolini, 2011; Gautier, & Wauthy, 2010; Jaag, 2011; Borowiec 2012; Borowiec 2013; Rozbiecki, & Rosiak, 2014; KPMG, 2010). However, the 3rd Postal Directive does not explain what the term "unjustified financial burden" entails (Borowiec, 2011). The literature (Boldron et al., 2009) often refers to situations where the burden exceeds a certain percentage of the designated operator's profits, prevents a 'reasonable profit' (Frontier Economics, 2012) or suggests to consider its financial situation (ERGP, 2012).

Issues related to the need to finance universal service obligations are the subject of numerous studies as well (Boldron, Borsenberger, Joram et al., 2010; Borsenberger, Cremer, De Donder et al., 2010; Panzar 2008; Mirabel, Poudou, & Roland, 2009; Chone, Flochel, & Perrot, 2002). However, they serve classification and review purposes. They refer to the potential possibilities of introducing different financing instruments. There is no practical verification of the effectiveness of implemented mechanisms with the use of empirical data from individual markets in which universal postal service is provided, designated operators bear an unjustified burden and there is an implemented (operating) compensation mechanism for this. There is a lot of research into the impact of pricing policies in the market where universal service operator is present (Pardou, & Roland, 2014; De Villemeur, Cremer, Roy, et al., 2003). Research often addresses theoretical issues in pricing and competition behavior mechanisms in imperfectly competitive markets (Anderson, De Palma, & Kreider, 2001; Hoering, 2006; Armstrong, Doyle, & Vickers, 1996; Bloch, & Gautier, 2008; De Donder, 2006).

The latest research on operations of the postal services market, where universal services are provided, are focused on an attempt to redefine the scope. Analyzes are mainly undertaken in order to limit the most important components of the net cost, which directly affects the amount of unjustified burden on the operator, and therefore the amount of necessary compensation. This applies primarily to research on the availability of the postal network for customers and its impact on the quality of services provided (Mercier, Souche - Le Corvec, & Ovtracht, 2020; Mostarac, Kavran, & Rakic, 2019; Hostakova, 2018; Sarac, Unterberger, Jovanovic et al., 2017). There are also studies in which the postal network is examined from the point of view of the postal operator, in the framework of not necessarily an access for the customer, but of its profitability assessment and reorganization in order to increase its effectiveness (Blagojevic, Ralevic, & Sarac, 2020; Milutinovic, Markovic, Stanivukovic, et al., 2020; Sarac, Kopic, Mostarac et al., 2016).

At the same time, it should be noted that new means of electronic communication and consumer needs undermine the economic justification and traditional scope of the postal universal service obligation (Lewandowski, Mlodkowski, & Wrobel, 2019). In the future, individual countries will adapt their postal universal services to take into account the availability of electronic substitutes, changes in customer behavior and declining number of postal items, similar to the telecommunications market. Other areas of current research focus on comparing the efficiency of postal operators in EU countries (Ralević, Dobrodolac, & Švadlenka, 2020), or in individual countries such as Ireland (Cahill, Palcic, Reeves et al., 2018) or Serbia (Dobrodolac, Blagojevic & Draskovic, 2016; Dobrodolac, Ralević, Švadlenka, et al., 2018). Other areas of current research focus on comparing efficiency of postal operators in EU countries (Ralević, Dobrodolac, & Švadlenka, 2020), or in individual

countries such as Ireland (Cahill, Palcic, Reeves et al., 2018) or Serbia (Dobrodolac, Ralević, Švadlenka et al., 2018).

As indicated by the literature review, there is a research gap in the field of empirical verification of the application of individual instruments for financing the excessive burden on the universal service operator. If there are already studies based on the experience in implementing the universal postal service, they address problems with estimating costs or components of the universal service itself (e.g. network of post offices). This article fills this gap by presenting the advantages and disadvantages of the two basic financing arguments, which are the compensation fund and the direct subsidy, based on the experience of selected EU countries.

The aim of the current study is to assess the effectiveness of the direct subsidy and compensation fund as basic methods of financing universal postal services provided in the scope of incurred net cost on the example of postal operators in Europe and to determine the results of application of such solutions. The scope of the study includes an evaluation of the direct subsidy mechanism applicable in Europe on the example of Belgium. A characterization of the legal framework of operation of the compensation fund and an analysis of the impact of the adopted financing mechanisms on the achieved level of profitability of the entity obliged to provide universal postal services in Poland were made. The study also provides a brief overview of the solutions applied in other EU countries. The current study presents a thesis that the mechanism of compensation of the provision of universal postal services through compensation funds is defective and ineffective from the point of view of market regulation and the designated operator. The research problem also applies to other areas of public service provision, where a social need to provide universal services at the desired level exists (telecommunications, transport, media provision). Based on the aim and thesis of this paper, the following research questions were formulated:

- 1) what is the output of scientific literature in terms of the net cost of universal postal service, and in particular in relation to the use of compensation instruments for postal operators of unjustified burden,
- 2) what are the main advantages and limitations of using direct grants as a form of compensation, based on the example of Belgium,
- 3) how the compensation fund was implemented and operated in the process of granting compensation to the universal postal service operator, based on the example of Poland,
- 4) what are the directions of financial support for activities of postal operators in selected European countries,
- 5) what is the preferred form of effective support for universal postal service providers to achieve the objectives of the Third Postal Directive.

The research methods used include analysis of scientific literature, collection, comparison, classification and generalization of data and expert evaluation. In the study, the active research method was also used, as the author possesses extensive experience in the area of activity-based costing used by postal operators, among others, in estimating the net cost of universal services. The case study method was used to analyse the application of direct subsidies and the compensation fund in financing excessive burden on the designated operator of selected European countries. It is often used for research in the postal market, due to special circumstances of the activity of operators designated to provide universal postal services in individual countries.

3. Direct Subsidies in Universal Postal Services on the example of Belgium

The postal market in Belgium has been fully opened to competition since the beginning of 2011. Despite this, the competition is still small. Bpost is the designated postal operator in Belgium and provides universal and additional services resulting from the entrusted mission. TBC Post is their sole competitor. At the end of 2014, it was estimated that it shares less than 1% of the market in domestic postal services. The postal services market is regulated by BIPT.

Table 3. Legal requirements of the universal postal service in Belgium

Scope of services	Timeliness	Delivery frequency
National and international services: <ul style="list-style-type: none"> • letters up to 2kg • registered and insured letters (no weight limit) • domestic parcels up to 10 kg • incoming parcels up to 20 kg 	<ul style="list-style-type: none"> • domestic letters: 95% (d+1), 97% (d+2) • international letters: 85% (d+3) and 97% (d+5) 	<ul style="list-style-type: none"> • 5 days a week

Source: Elaboration based on the Act (1991); Management Contract (2013)

Belgium is a country that offers a wide range of universal service benefits, as shown in Table 3. All available postal services (except unaddressed advertisements) are part of the universal postal service. Unlike most European countries, legislation in Belgium provides additional public interest services in addition to the universal service. Table 4 presents the main bpost tasks, which go beyond the basic standard of universal service adopted in the EU.

Table 4. Additional public service objectives of bpost

Postal network density (higher than required by USO)
<ul style="list-style-type: none"> • The obligation to maintain retail outlets, at least 1300 postal service points and 650 post offices (more densely than required by USO, at least one post office in each of the 589 Belgian municipalities) • Additionally, access to postal service points with a minimum range should be provided: for a minimum of 95% of residents 5 km away; for a minimum of 98% of residents 10 km away
Services offered to consumers at a specific time (day after day service)
<ul style="list-style-type: none"> • Delivery of newspapers and magazines (delivery before 7:30 am during the week) • Financial postal services (e.g. bank accounts) • Pension delivery
Additional services available
<ul style="list-style-type: none"> • Postman social services (e.g. spending time with people living alone) • Delivery of addressed/unaddressed electoral leaflets at reduced cost • Delivery of correspondence sent by non-profit organizations at reduced prices • Delivery of public institution mail, paid by the addressee • Printing, promotion, return and replacement of fishing license

Source: Elaboration based on the Act (1991); Management Contract (2013)

In Belgium, postal law does not provide for the financing of postal services by means of compensation funds, although this was still possible until 2010. Currently, the net cost of the universal service and the cost of additional public services can only be compensated by public funds. The government has opted for direct subsidies from the budget due to the instability of other funding mechanisms such as the compensation fund, which has more procedures in place. It is also important that direct government funds have a neutral impact on competition.

For the calculation of the net cost, bpost should have a cost accounting system that clearly shows the differences between the various services falling within the scope of the universal service, public service missions and other postal services. The fully segregated cost method, to which Activity Based Costing (ABC) is applied, should be used for these estimates. For universal service, bpost must first calculate the net cost of universal service using the net avoidable cost method (the difference in operating result between the existing universal service obligation and its absence) and take into account other relevant elements, including indirect benefits. The net cost calculated this

way must be verified by the BIPT. If the net cost of the universal service exceeds 3% of the universal service provider's trade turnover, this represents a reasonable burden which must be compensated by the central budget.

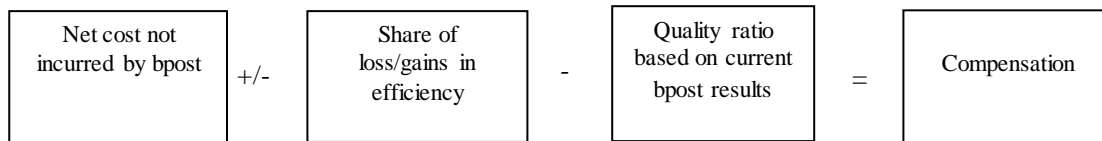


Fig. 2. Compensation mechanism for universal service obligations in Belgium

Source: Own elaboration based on Management Contract (2013)

The compensation mechanism shown in Figure 2 contains an incentive for bpost to increase the efficiency and quality of the universal service provided by including in the loss or gain factors of efficiency and effectiveness, which are based on bpost's current performance. The value corresponding to the profit or loss due to efficiency must be calculated on the basis of the effective reduction of all costs (or increase in total costs) over the entire duration of universal service obligations provided by bpost, compared to the reference year. Gains and losses from efficiency changes are divided between state (33%) and bpost (67%). Universal services financing in Belgium is provided in Figure 3 below.

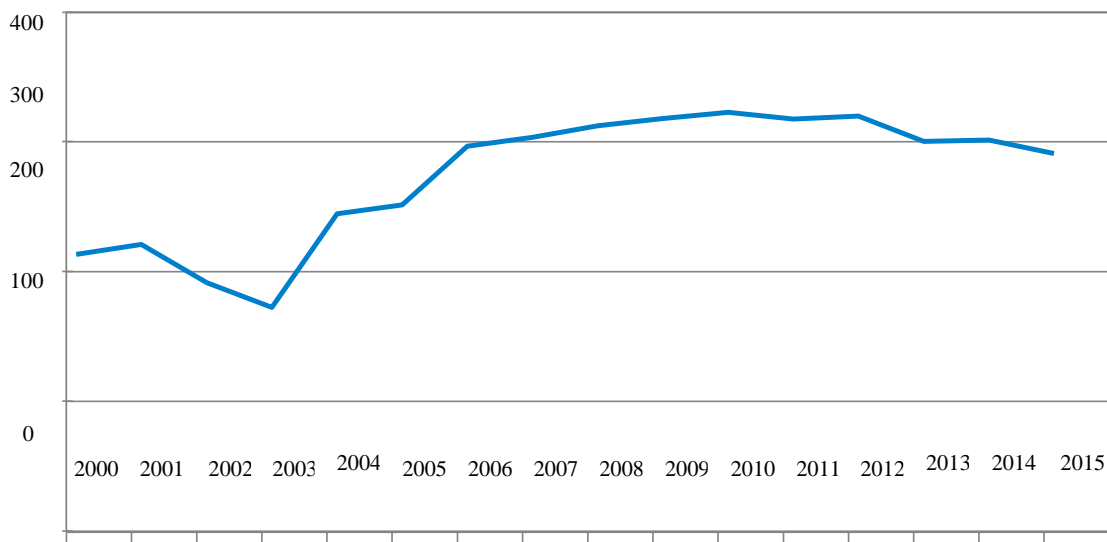


Fig. 3. Universal services financing in Belgium [mln €]

Source: Own elaboration based on Decision 2012/321 (2012); Management Contract (2013)

The net cost calculation presented is verified ex-post by the Board, which consists of four persons (commissioners): two bpost shareholders and two from the Court of Auditors. Given that the scope of the universal service provided is greater than in other European Union countries, the amount of financial compensation is also much greater than in other countries. In 2009, the European Commission launched an investigation into the state funds paid out to bpost in 1992-2010. It was revealed that annual compensation of up to €5.2 billion between 1992 and 2010 was granted to bpost for the supply of newspapers and magazines, partly exceeding the net cost of services estimated on the basis of general economic interest. The European Commission

ordered the reimbursement of €417 million in 2012 for unjustified support. This decision was challenged by bpost and Post Invest Europe. In 2013, the court found both motions to be unfounded.

In March 2013, Belgium informed the Commission of a planned annual grant of €300 million to finance the services of general interest entrusted to bpost under the 5th Management Contract for the period 2013-2015. The European Commission has positively assessed the method used to estimate the net cost of universal services. It has determined that the compensation did not exceed the costs of the services and can therefore be transferred within the framework of the permitted public aid.

After the bpost subsidies increased significantly after 2003, they started to decrease slightly from 2012 as a result of the operator's productivity increase. Their value fluctuates around 12% of annual bpost turnover. In practice, the operator receives more compensation for the provision of the public service mission entrusted to it than for the provision of the standard universal service.

The possibility of introducing a compensation fund to finance the net cost of universal services was eliminated by the postal law. The BIPT identified the advantages and disadvantages of public subsidies and the universal service fund. The Belgian Government chose public funding because of the uncertainty in other funding mechanisms, as is the case with compensation funds (for example, more complex procedures). In addition, their neutral impact on competition is important. However, through high compensation payments (12% of turnover), bpost is currently the most profitable postal operator in Europe. This raises doubts whether budget subsidies are needed at all.

4. Compensation Fund in Poland

In the case of the Polish postal market, the obligation to provide services of general economic interest in 2013-2015 was imposed on Polish Post (Poczta Polska) in the form of statutory provisions, (Act of 2012, art. 178, sec. 1) to provide universal postal services. Since 2016, the Polish Post (Poczta Polska) has also won the competition for the designated operator for the next 10 years. No universal service which has quality parameters above the standard regulated at European level occur, contrary to Belgium's case. In Poland, financing of the net cost of the designated operator is possible only if the provision of universal services is carried out at an accounting loss. It must be concluded that such an assessment of the unjustified financial burden is in line with the principles underlying the 3rd Postal Directive as it is objective, transparent and accurate, for its appropriate allocation of revenues and costs necessary for the calculation of the loss is guaranteed by the regulatory accounting obligation imposed on the designated operator (Commission Communication, 2016).

In order to possibly compensate the net cost incurred by Polish Post (Poczta Polska), the Polish authorities established a compensation fund mechanism, which was notified to the European Commission. It allows for compensating the costs of Polish Post (Poczta Polska) through contributions from postal service providers (including Polish Post) operating on the universal postal service market and those services which are interchangeable.[†]If necessary, these contributions may be supplemented by subsidies from state budget.

The designated operator shall estimate the projected net cost of the universal service obligation and the accounting loss it expects to incur in connection with the performance of the universal service obligation in a given financial year. The operator is also obliged to submit, by 31 March of the reference year, a corrective action plan to avoid the occurrence of the forecasted loss (if any) in the provision of universal service (at least to minimize it). The recovery plan includes various initiatives to increase business efficiency.

[†]The Postal Law Act art. 3 point 30 contains the definition of "services within the scope of universal services" called "exchangeable services".

The Office of Electronic Communications (Urząd Komunikacji Elektronicznej [UKE]), as the market regulator, verifies the probability of a loss resulting from the provision of universal services, understood as a negative result on the sale of these services, which, under Polish law, confirms an unjustified financial burden for the designated operator. If, in a given financial year, the operator has incurred accounting losses as a result of the universal service obligation, it shall submit to the President of UKE, within seven months, a net cost calculation and the incurred accounting loss together with supporting documents and request for compensation. The President of UKE appoints an independent auditor to verify the documents submitted and within 4 months issues a decision specifying the verified amount of net cost and accounting loss and determining the amount of compensation.

The President of UKE determines the amount of contribution to the fund of postal operators. According to art. 108, sec. 2 of the Postal Law Act, postal operators providing universal services or interchangeable services are obliged to contribute to the compensation fund if their revenue from these services in the reference year exceeded the amount of € 0.23 million. The amount of contribution due from each postal services operator is a product of a uniform percentage index (whose level does not exceed 2%) and the amount of relevant revenue of each operator obtained in a given year. The market regulator (UKE) considers that the 2% ceiling is not a significant barrier to the development of postal operators. If the amount of the contributions is not sufficient to cover the entire amount of compensation, the State shall cover the missing part from its own budget.

If there is an accounting loss in the provision of universal service and the net cost of the universal service obligation (calculated in accordance with the net avoidable cost method) is lower than the accounting loss incurred, a value up to the net cost shall be compensated. Conversely, if the net cost is higher than the loss, the designated operator shall be compensated only for the loss (underfunding). Table 5 shows the calculation of the compensation for 2013.

Table 5. Result on universal service obligation in 2013 -2015 [€ mln].

Content	2013	2014	2015
Revenues from universal services	756.3	683.0	619.5
Universal services cost	778.4	675.0	561.9
Results from universal service	-22.1	+8.0	+57.6
Net cost of universal services	32.5	33.00	33.0
Including market benefits	42.4	42.4	42.4
Result on sales	6.3	20.0	8.3

Source: Own elaboration based on the Polish Post (Poczta Polska) (2017); Commission Communication (2017)

Data included in Table 5 indicate that the net cost components in 2013 for Poczta Polska constitute a burden of about € 75.1 million per year. This is partly offset by indirect benefits from being a designated operator, which amount to around €42.6 million per year. This leads to the conclusion that if Polish Post (Poczta Polska) did not fulfil the obligation to provide universal postal services, its operating result was €32.6 million higher per year than the current one, and would amount to over €47.9 million. The net cost of universal services (including indirect benefits) in Table 5 in the years 2014-2015 has been estimated at a similar level until 2013 as there was a positive result on universal services which releases Poczta Polska from the obligation to calculate the net cost in those periods. The relatively low net cost of universal services in Poland compared to Western European countries is noteworthy. According to the author, one of the reasons may be relatively low labor costs in Poland and quite optimistically estimated indirect benefits due to the role of the designated operator.

In the future, however, the development of the postal market towards e-substitution and e-commerce will reduce the benefits of the universal service obligation in all countries. The decrease in demand for postal services increases the cost of providing the universal service as the decreasing number of items to be delivered increases

delivery cost. This means that the difference between costs and benefits of universal service obligations will increase over time, resulting in significant costs - not only to the operator but also to society (Copenhagen Economics, 2018).

Net settlement for 2013 can be found Table 6 below, which includes potential contributions of operators. In years 2014-2019, no analysis of the settlement of the fund has been made, as Poczta Polska reported positive results on universal services. In 2013, there were 71 alternative postal operators (currently about 80) in the segment of interchangeable services, whose total market share was 4.9% in terms of revenues. However, only 10 postal operators (including PP) met the revenue threshold and were therefore obliged to contribute to the fund.

Table 6. Settlement of the compensation fund for 2013.

Analytic positions	Amount [mln €]	Comment
Net cost components (including change in costs and revenues)	75.0	Liquidation of unprofitable points, reduction in the frequency of delivery in rural areas, cost of capital
Indirect benefits	42.5	Estimated total for those listed in Table 1
Net cost of universal services for 2013	32.5	Net cost components minus indirect benefits
Level of compensation	22.1	Universal service loss size
Polish Post participation in the compensation fund	19.7	2% of Polish Post revenue from universal services and replacement services to total market revenues
Payment amount for PP	2.4	The difference between loss and "own contribution" to the fund
Alternative operators	1.0	2% of revenues of alternative operators, namely: PLN 219.8 million [UKE, 2014, p. 27]
State budget	1.4	Missing amount after alternative operator payment

Source: Own estimates.

The data contained in Table 6 confirm that even if there is a loss on universal services, a significant part of this loss has to be covered by Polish Post (Poczta Polska) on its own, due to the market share (over 95%). Only €2.3 million is compensated, while the additional burden on the operator exceeds €74.4 million. In turn, the financial condition of the Polish Post (Poczta Polska) deteriorates. In 2016, for the first time in 10 years, it recorded a balance sheet loss. At the same time, the Polish Post (Poczta Polska) has not received any aid from the State budget in recent years. The situation varies in other EU countries. Germany invested so much in Deutsche Post that it does not even need to establish a designated operator. Deutsche Post is the world's largest logistics and postal group, which enters foreign markets and provides a higher standard of services than that provided for universal postal services (Instytut Pocztowy [Postal Institute], 2014).

5. Discussion

Two basic approaches of universal service net cost financing be identified. These include financing through direct subsidies from the public sector or using a compensation fund usually financed by postal sector entities. Universal services may also be partially financed through public procurement. It should be noted that this is not a method for financing the universal services in the strict sense of the term, but rather a form of contracting and delivering them. In theory, one can also consider the model of monopolization with the possibility of price regulation and product diversification, however they are a form of financing within the postal industry. In practice, these methods are not applied because they would restrict competition.

Public funding from the budget seems to be the preferred solution. The state, when defining the scope of the universal service, shall also bear its costs in this respect. This increases the reliability of the services but it entails the risk that the universal service provider will assume that all losses will be compensated for by state subsidies,

which will not provide an incentive to reduce costs. However, as indicated by the research, the creation of compensation funds leads to the conclusion that without a significant participation in the proceeds of public funds, it is not possible to effectively finance the costs of the implementation of universal postal services in the amounts constituting an unjustified burden on the designated operator.

Financing of the universal services by the state is particularly justified for countries where the burden of the net cost of postal services is high in comparison with the funds that can be obtained from charges from operators or their customers. Undoubtedly, direct subsidies that reimburse additional costs incurred are effective and do not significantly affect market competition. By financing the universal service by means of budget contributions, the costs of the universal service are shared by society as a whole, not just market participants. In addition, if government subsidies are financed by progressive taxes, the mechanism may be more socially fair. There are obviously risks and temptations of overcompensation, which will have a negative impact on competition in which the operator functions. Where the government plays the dual role of investor and supervisor, budgetary financing must be transparent with regards to the estimation of the net cost and implementation of subsidies.[‡]

In Italy, a compensation fund method is used. Payments from postal operators collected through the fund between 2000 and 2010 amounted to 0.01% of universal postal service net costs (Fratini, 2016). For example, the contribution to the compensation fund of other service providers was only € 111,000 in 2005 (representing 0.04% of the net cost of universal service). Contributions paid to the compensation fund proved to be insufficient to cover the costs of the universal postal service. As a result of state intervention, budget subsidies of approximately 370 million per year for the provision of the universal postal service were transferred to Poste Italiane. The European Commission verified the compensation for Poste Italiane in the years 2000-2011 (European Commission Decision, 11.2012) and ruled that the payments were in line with the internal market, as the net cost of the provided universal services significantly exceeded the value of the subsidy (e.g. in 2010, the net cost of the universal services was € 689 million and the compensation was € 364.5 million).

A formal verification of the net cost of the universal postal service of the Italian market regulator (AGCom), performed for the first time in 2014 for the years 2011 and 2012 using the net unpaid method, indicated that it amounted to € 709 million and € 704 million respectively. This means that the compensation of € 380.6 million for 2011 and € 327.3 million for 2012 covered only half of the net costs of the universal postal service. For the period 2015-2019, government subsidies for the provision of the universal postal service have been set at €262.4 million per year regardless of the net cost estimates of the universal service.

In Germany, a universal service compensation fund was not set up as no universal service deficiencies were observed. The universal postal service is financed by revenues generated by Deutsche Post DHL. In addition, Deutsche Post receives substantial subsidies for its pension costs, which have been the subject of an in-depth investigation by the European Commission. Pension subsidies increased from € 151 million in 1995 to € 3.2 billion in 2010, which means that they amounted to around € 37 billion over the period 1995-2010 (Commission Decision 2012/636). Deutsche Post voluntarily deals with the provision of universal services and their financing, mainly by building a positive image. It is estimated that the image loss, defined as indirect benefits, could be greater than the expected savings after the abandonment of universal service. In addition, Deutsche Post would probably lose its VAT exemption.

Postal services market in France were fully opened up to competition in early 2011. La Poste receives two types of public subsidies: compensation for the reduced rate for the press and subsidies for maintaining a dense postal network. La Poste received compensation for the reduced press rate of €242 million a year in the period 2005-2011. Later, the French government reduced compensation by 50 million € in 2014 and 2015. The compensation

[‡] In order to meet the legal requirements, the funding must meet the four criteria set out in Altmark (2003).

for maintaining adequate network density is approximately € 150 million. The net cost to La Poste of maintaining a dense postal network is set at €269 million for 2010 and €277 million for 2011. Unlike the compensation payments for lower press costs, the subsidy to provide a dense postal network increases. The European Commission has accepted the subsidy given to La Poste to maintain a dense network of postal services for the period 2008-2012, since it represented only a part of the net cost of the relevant public service tasks (Commission Decision, January 2012).

Great Britain was one of the first countries in Europe to introduce competition on the postal services market in 2006. The Postal Services Act of 2011 provides that the UK Government is taking over part of Royal Mail's (RMPP) commitments. A pension system has been established which is a burden on the UK Government. As of 31 March 2012, Royal Mail is only obliged to pay pension contributions to employees who still work for Royal Mail. As a result, it is only responsible for new pension rights acquired after March 2012 (Commission Decision 03.2015).

Royal Mail and Post Office Ltd. (POL), which also deals with retail sales, receives financial support for maintaining the rural network, subsidies for transforming the network of post offices and exemption from pension costs. POL has received annual compensation for the maintenance of the network in rural areas which amounted to up to £ 150 million by 2010. The compensation increased to £280 million between 2015 and 2016. The Government has granted Royal Mail a debt reduction of £ 1.089 billion over the period 2010-2015, and £184 million for the costs of closing down post offices on the basis of restructuring plans. The European Commission has reviewed both programmes, declaring them legal (Commission Decision 03.2012; Commission Decision 11.2007). The European Commission has also adopted a £32.2 billion scheme to relieve Royal Mail of pension costs.

The postal market in Spain was liberalized in 2011. Correos is obliged to provide universal postal services by the end of 2026 (Postal Law, 2010). In 2011, a compensation fund for universal services was established. Although has not been implemented yet, the methodology has already been defined. The fund shall be paid for from various sources. Government subsidies, postal operators' fees, license fees and interest on the collected funds will be the basic source of funds. Correos will be the only exempt operator. Once the net cost and unjustified burden for a given year have been determined, the designated operator shall receive their value. In the event that the components of the fund are not sufficient to compensate for the costs of providing universal service, the difference will be paid by the central budget. In addition, since 2008, Correos has been receiving capital subsidies (€ 5-20 million per year) and subsidies for employee training. The total amount transferred decreased from € 627 million in 2008 to € 171 million in 2014 (Annual Reports, 2008-2014).

Correos receives compensation payments for the provision of universal services in advance on the basis of net cost calculations from previous years. After the end of a given year, the actual net cost of providing the universal service shall be estimated and a final settlement shall take place. For example, in 2013 Correos received outstanding payments for 2009 (€ 148 million) and 2010 (€ 121 million). For the 3-year period 2011-2013, a payment of € 518 million was transferred in 2014. The value of compensations paid out has been increasing in recent years, from € 40 million in 2011-2012 to € 337 million in 2014.

When considering the methods of universal postal service financing, direct subsidy is proving to be the most effective source of financing on European markets. The advantage of this alternative is the clear responsibility of the central budget for ensuring an adequate level of universal service and its financing. A direct subsidy provides full financing of the universal service based on the estimated cost of the obligation, but is often difficult to determine reliably. These difficulties can be eliminated by linking subsidies to additional activities of postal operators, as is the case on European markets. In the UK, the Government provides a subsidy to enable Royal Mail to maintain post offices in rural areas. By limiting the subsidy to dedicated activities, it facilitates the linking

of the subsidy to specific costs. The French government is compensating the national operator La Poste for the reduction in payments for press. In Belgium, the subsidies mainly concern non-standard public service mission. All these solutions lead to strong support of national postal operators. In this context, the situation of Polish Post (Poczta Polska) is different because in practice, through the application of the compensation fund, it does not receive any financial support for the provision of universal services. This deteriorates its financial situation and competitiveness, especially on international markets in the area of e-commerce.

The ineffectiveness of financing through the compensation fund is also confirmed by the fact that, the Polish Post (Poczta Polska) has not yet received any amounts to cover the net cost due to the settlement of the compensation fund for 2013, despite the positive opinion of the European Commission on the justification of granting such aid. Adoption of a compensation fund model through subsidies of postal operators as the preferred solution for financing the net cost leads to a situation in which the designated operator is obliged, almost independently, to finance the burden resulting from the net cost. Consequently, the designated operator is destined to operate in a much less friendly regulatory environment than other entities, which should be considered a significant shortcoming of the postal market liberalization process in Poland. Moreover, as indicated by other studies (Borowiec, 2018), postal operators which function simultaneously on regulated universal services and fully competitive markets, by using a single cost calculation model (e.g. ABC) may have distorted information about the result on universal services. The author proves the existence of the so-called universal services result paradox, which causes an improvement in operating result with decreasing volumes of services and constant regulatory requirements. On the basis of this evidence, further consideration was given to the need to modify the ABC model together with a proposal for a methodological basis determined using the net cost of universal service. The consequence of which is an overstatement of the result on universal services, which results in limiting the potential amount of co-financing, either from a direct subsidy or a compensation fund.

Conclusions

In the case of the postal market, the regulations at EU level provide for the possibility to finance the activities of the operator within the framework of the imposed obligation, but without any absolute obligation on the part of public authorities to finance those services. For the universal service net cost financing, a distinction can be made between financing through direct subsidies or compensation funds usually financed by postal operators.

In almost all Western European countries (e.g. Belgium, France, Italy, Spain and the UK), the designated operator receives direct or indirect payments from the public sector. Subsidies can directly finance the cost of the universal service (Spain, Italy), maintain the postal network (UK, France and Belgium) or support selected processes, for example press delivery (France and Belgium). A positive aspect of financing the postal service by the public sector is responsibility or greater availability of funds. This method ensures secure funding, which increases the reliability of compensation paid to the operator (this was the reason why the fund was abandoned in Belgium). It is also characterized by relatively low administrative costs. However, it does not provide an incentive to reduce the costs of universal service, as it is financed by the government. Excessive compensation may have a negative impact on competition as it may be open to abuse by the service provider. Through public funding, the cost of service provision is shared by society on a larger scale. The risk of public financing lies in a potential allegation by the European Commission of unjustified financing of the postal operator, although in the case of the compensation fund there is also a necessity to notify the EC of the potential financial aid.

The compensation fund shall be financed by contributions imposed on postal service providers or their users. Almost all countries (Poland, France, Germany, Italy, Spain and the United Kingdom) have the legal basis to establish a compensation fund. Contributions to the fund are usually limited, as they represent several percent of the universal service provision net cost (e.g. in Poland, Italy). As the study demonstrates, there are difficulties in collecting contributions from operators. In practice, the compensation fund is not sufficient and must be

supported by public funds. The disadvantage of the compensation fund is that the net cost has to be compensated by market participants, which may lead to a situation where the beneficiary will have to finance itself to a large extent. Moreover, it sets high requirements for all postal operators due to the requirement to keep separate accounting and the obligation to submit annual reports. The compensation fund is administratively expensive (examination of financial data of all operators, calculation of base contribution, fund management). The pros compensation funds lie in the fact that universal services are financed by the industry, without burdening public finances. The results of the research carried out in this study and European experience suggest that compensation funds are not an appropriate mechanism for financing the net costs of postal services.

The study has shown that the preferred form net cost financing should be fully paid from state budget. Additionally, it should be considered unjustified to charge the full value of the net cost to the operator as the actual burden and not only the amount of the loss on universal service. It should be stressed that the mechanism for subsidizing services of general economic interest (SGEIs) implemented directly from budget resources is already in place (in the rail, postal and telecommunications sectors). A similar financing mechanism should apply to services of general economic interest (SGEIs) in the entire postal market, namely, for universal service net cost financing.

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DEVELOPMENT OF DIGITAL AND ENTREPRENEURIAL COMPETENCES FOR THE FUTURE LABOUR MARKET NEEDS *

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Abstract. This article aims to identify what digital and entrepreneurial competences are required in a concept of New Work orientated labor market. To achieve this, the research takes a two-folded approach by breaking down how digitalisation changes the role of employees in a digital and automated world, which competences and organisational structures are required for a successful adaption of digitalisation in the company and what the digital awareness and the current transformation status in small and medium-sized companies in Bavaria (Germany) and Lithuania looks like. The research methods chosen to deal with a scientific problem in the theoretical part include an analysis of literature sources, systematisation, synthesis, generalisation, and comparison. The status of the research findings shows that digitalisation has arrived in companies, but especially small and medium-sized companies have to overcome various barriers. The focus on employees as stakeholders is crucial to these adaptation processes. Primary research has shown that the employer's and employee's sides have recognized the importance of implementation. Nevertheless, there is room for adjustments. Both sides also need to find their own path to adapt requirements and expectations, to start a successful cooperation. It could help adapt to rapidly changing market trends and link stakeholders via user-friendly technology, just because this technology is created through strategic collaboration activities (Laužikas, Miliūtė, 2020).

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JEL Classifications: J2, J5

1. Introduction

The global megatrend of emerging technologies is colliding to disrupt both - business and society. This revolution increases productivity, shifts economics, foster industrial growth, and especially modifies the profile of the workforce. This paper analyzes digital and entrepreneurial competences needed to create and manage a business emerging from the technological transformation.

The megatrend digitalization is a booming worldwide phenomenon, one we must be involved in shaping (Degryse, 2016). To face challenges such as increasing uncertainty and volatility, agility and digitalization can be implemented (Hulla, Ramsauer, 2020). “Digitalization” means using digital technologies to change a company’s business model (Westerlund, 2020), changing the way of communication and nature of professional and personal relationships in the company (Ritter, Pedersen, 2020). Digitalization implicates changes in job roles and new processes, work and employment conditions, and industrial relations (Cijan, Jenič, Lamovšek, Stemberger, 2019). Digitalization requires a new type of business operation and organization, understanding the urgent need of rethinking work systems and the role of workforces in the context of digital transformation (Ruohomaa, Salminen, 2019; Feller, Amann, Müller at all, 2016), the impact on nature of work and the skills required (OECD, 2019) is gaining importance and is broadly discussed these days. According to Ware (2003) the very nature of work has changed and continues to evolve; the ‘Information Revolution’ is real, and industrial-age management practices are no longer adequate or appropriate for knowledge-based work and workers. Understanding the urgent need of rethinking work systems and the role of workforces in the context of digital transformation, the authors of the article describe the change of work nature by the term New Work.

Although digitalization and the changed nature of work and skills are fundamentally and rapidly changing existing businesses and organisations, the combined field of both, however, still remains scarce; especially with regards to small and medium-sized companies. Small and medium-sized companies are not very represented when it comes to digital transformation and new working systems, even though they should. SMEs generate 54.4% of overall value-added and 63.7% of overall employment in the German ‘non-financial business economy’ (SBA Fact Sheet – Germany, 2019). SMEs play an important role in Lithuania’s non-financial business economy; in 2018, they generated 69.4% of value-added and 75.9% of employment, exceeding the EU averages of 56.4% and 66.6% (SBA Fact Sheet – Lithuania, 2019). 3 out of 4 jobs in Lithuania were created by small and medium-sized enterprises, which is as much as 10 percent, more than the EU average (Activity Report of the Ministry of Economy of the Republic of Lithuania for 2019, 2020). At the same time, small and medium-sized companies face the problem of a very tentative adaption to digital innovations and New Work. Typically, they have a lack of financial resources and specialised experts, and they can’t easily afford mistakes and failure. However, the readiness of SMEs to keep pace with technological progress and innovation is crucial for sustainable economic growth.

Another important precondition for sustainable economic growth is the successful inclusion of intergenerational workers in the lifelong learning process, ensuring a balanced strengthening of their entrepreneurship and digital competences. The baby boomers, the largest age group, will retire in the next two decades. This will consequently lead to an increased shortage of skilled workers and a large number of older employees (Immerschitt, 2019). Consequently, the inevitable demographic change no longer allows to deny the necessity of changes and

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adaptions. It is not enough for high digital and entrepreneurial competences to be demonstrated by workers representing the Millennials who have grown up with modern technology. The integration of the silver agers, their needs, and the demands on them should be taken into consideration when planning the social sustainability of business under conditions of the digital economy. By doing this, it is essential to always have in mind the continuously influencing megatrends, which affect the corporate world significantly.

The scientific problem can be formulated by a question: how is the labor market need for digital and entrepreneurial competences changing in the context of technological advances in business and demographic changes in the labor market?

The aim of the research is to identify what digital and entrepreneurial competences are required to a concept of New Work orientated labour market. Referring to this perception, this research aims to understand how digitalisation changes the role of employees in a digital and automated world. Secondly, it will focus on answering the question of which competences and organisational structures are required for a successful adaption of digitalisation in the company. And finally, the study will figure out the digital awareness and the current transformation status in small and medium-sized companies in Germany/Bavaria and Lithuania.

The novelty of the research: the study not only helped to determine how SMEs perceive digitization processes in business but also enabled the comparison of employers' and employees' attitudes in assessing the need for digitization and entrepreneurial competences in the German (Bavarian) and Lithuanian labor markets.

The methods applied in the research include analysis of literature sources, systematization, synthesis, generalization, and comparison in the theoretical part, and quantitative research, i.e., a questionnaire survey and data processing methods, in the empirical research.

2. Analysis of literature

Megatrends describe trends that influence and affect the entire society and economy globally and sustainably in the long term. The megatrends have long influenced the corporate world and will continue to do so, resulting in an increasingly dynamic environment. That is why general conditions such as leadership styles and other organisational structures will continue to have to be constantly adjusted (Enste, 2013). Organizational culture could help adapt to rapidly changing market trends and link stakeholders via user-friendly technology, just because this technology is created through strategic collaboration activities (Laužikas, Miliūtė, 2020).

A topic of big interest is how digitalisation is changing the economy and especially the labour market. In the context of global digitalization, various changes take place in organisational management structures and processes (Davidavičienė, Raudeliūnienė, Kaušinis, 2019). Digital innovations can increasingly replace humans and their workload at various levels; therefore, digitalisation raises questions about the cooperation between machines and humans. It is often alleged and feared that the technical transformation, especially when it comes to Artificial Intelligence, will destroy jobs (Clauberg, 2020). The term Substitutional Potential describes exactly this scenario. It stands for the proportional activities of a job which can be replaced by computers or computer-controlled machines by today. This term only relates to technical feasibility which does not necessarily mean that it will be realised in practice (Dengler, Matthes, 2018). The three megatrends (AI Everywhere, Transparently Immersive Experiences, and Digital platforms) show that the more companies are able to make technology an integral part of employees', partners', and customers' experiences, the more they will be able to connect in new and dynamic ways to employees', partners', customers' ecosystems, and platforms (Jari, Lauraeus, 2019). Digitalization is transforming the locus of entrepreneurial opportunities and entrepreneurial practices (Autio, 2018). Due to the increasing use of digital technologies, there were built new forms of socio-technological working systems which lead to massive changes in working organisations and working forms. The increasing autonomy and intelligence of technical systems are changing the requirements for human-technology interactions. Today there is broad agreement that business potential can only be fully exploited through a successful partnership between humans

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and technology. Human-technology interfaces will be of central importance in the future. The future of work lies in the intelligent and creative linking of human potential with the growing technical possibilities. These must enable close cooperation between people and technologies so that the strengths of technologies - such as repeatability, accuracy, and endurance - and the special human skills - such as creativity and flexibility - complement each other optimally. For autonomous and self-learning systems, in particular, there is hardly any certainty about how human-technology interactions can be designed to create human-friendly working conditions that promote satisfaction and personal growth (Bauer et al., 2018)

The term New Work is often mentioned in the literature in connection with digitalisation and modern working models. The more complex the digital world and the companies get, the less suitable seem to be the traditional hierarchies and working structures. For that, the organisation needs to be reinvented. Digitalisation, on the one hand, is seen as a driver of the New Work movement and enables a rethinking of old structures. On the other hand, New Work can be seen as necessary to adapt to the changing working world; this might can be seen as an interrelation between both developments (Stuck, 2020; Breidenbach, Rollow, 2019). Digitalisation, for example, enables flexibility in terms of time and space: home office, remote work, flextime, and co-working spaces are slowly becoming the norm and enable new forms of collaboration on the regional, national or international level. The association between network-level collaboration patterns and innovation may be sensitive to the geographic area set for analysis (Galaso, Kovářík, 2018). But also, executives have to adapt to changes: they have to internalize transparency, trust work, and agility, and they must actively involve the employees. Employees need more autonomy. In the frenzied competition, it is not possible to control complex companies with instructions from above. This works better with autonomous teams that have the means and the freedom of making decisions and trying things out. The desire for independence and freedom is growing. Instead of rigid hierarchies, team spirit, community spirit, and the will to work together are paramount.

Development in information and communication technology have been among the key drivers of change in working life over the past two decades. However, the ability to work anywhere and at any time can lead to greater work intensification, competition, and work-on-demand. Changes in the profile of competences that are in demand in the labor market will lead to significant changes in the structure of employment, as well as to the formation of portfolios of competences based on the assessment of the expected demand of companies (Romanova et al., 2017). But because of the constant availability, the boundaries between work and private life are slowly blurring. Therefore, there is also a desire for a better work-life balance (Vargas, Weber, 2020).

The productivity of employees is essential for every company and it is a common prejudice that decreases with age. With suitable educational training and similar measures supported by the company, productivity can be increased, also for senior employees (Walla, 2006). Strategic leadership and the development of innovation capability is of critical importance for product design and manufacturing as emerging digital technologies increasingly challenge conventional practice (Walden et al., 2020). As the stereotype of losing skills and abilities with age is even more widely spread, workers over 50 are often not offered enough training. However, there is scientific evidence that skills change with age but do not get lost. The development depends on the individual, his or her intrinsic motivation, and external influences. It is therefore not possible to generalise the assessment of the productivity of senior employees and it is not a loss of effort to invest in training measures. If a company wants to be successful in the future, it has to create an environment in which employees can grow, in which they are perceived as a human being and not as a humane resource. The movement work 4.0, in particular, has given more importance to intellectual, knowledge based and communicative activities. Knowledge preservation is becoming more and more essential, but the type of knowledge demanded is also changing faster and faster. Hence, new professional and social skills will be required of employees in the future.

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3. Methodology

To determine what digital and entrepreneurial competences are required to a concept of New Work oriented labor market was conducted. Qualitative research is undertaken to attain a greater understanding of a relatively unknown phenomenon (Murshed, Zhang, 2016). During the evaluation, in-depth or qualitative interviews reveal different perspectives, detailed assessments, attitudes, motivation.

The design of the study follows a systematic approach to the study of social problems, which is based on the premise that the study of the efficiency and quality of the phenomenon/process requires a variety of research methods, both quantitative and qualitative, that complement each other at different stages of research.

Organization of research. *In the first stage* of the research conducted qualitative interviews, to understand how the company's representatives perceive the digital status of transformation, the adaption of the employees to the new digital environment, and the status of New Work models in their own company.

Using the elements of target sampling, informants belonging to the territorial units of the survey geography were interviewed, no statistical generalization was sought because in qualitative surveys it is sometimes difficult to reach the respondents. The general population of the qualitative research is the managers of SMEs in Bavaria and Lithuania.

The qualitative research was conducted in form of personal interviews (face-to-face or via the phone). During the period from the 9th of January to the 14th of February 2020. 14 interviews were conducted with companies from various sectors from the SME-environment in Bavaria and 14 interviews were conducted from the SME-environment in Lithuania.

The interviews aimed to clarify how the representatives weigh the trend digitalisation and digital adoption in general and relating to their companies. Furthermore, the experts were asked to draw a picture of the current digital status with technological systems within the company. On the one hand, these questions concentrated on the steps that were already taken in the past and on the other hand, the steps that were planned for the future; with the focus on technical adjustments in the administrative area and the offices. The subsequent questions then focused on the positive and negative effects of the digital transformation on the leadership of the employees and the organisational structure that was perceived in the own firm.

Afterwards, the questions aimed to gain an understanding of the changing role of the leaders and managers as well as the employees and their competences that are increasingly required due to times of transformation.

In the second stage of the empirical research, a qualitative study was implemented, the aim of which is to understand how employees perceived the status of digital transformation in their daily work life and their company. The research questions that were set before, built a guideline for the survey and its content. The questionnaire was developed in collaboration with the project team members.

The expected result should therefore clarify how the employees saw the current digital status and its influence on their working structure. Additionally, it should give a closer look at the perception of new working models and modern organisational structures of leadership. The comparison of the actual status and the intrinsic wishes and expectations intends to indicate what companies can improve for themselves.

Leading questions of the research:

- 1) How does digitalisation change the role of employees and employers in a digital world?
- 2) Which competences and organisational structures are required for a successful adaption of the digital transformation?
- 3) What is the digital awareness and the current transformation status in small and medium-sized companies?

The general population of Quantitative research: SME employees in Bavaria and Lithuania. In total 192 attended employees in Germany (Bavaria) and 184 employees in Lithuania were asked to their opinions and perceptions.

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The quantitative study was conducted in form of an anonymous online survey with the technical program EvaSys. The link was published on the economic social media platforms Xing and LinkedIn was distributed by the IHK Niederbayern and by Klaipeda University. The survey period took place from the 16th of December 2019 to the 17th of February 2020. The evaluation of the survey was done via EvaSys and SPSS.303.

Research ethics. The study followed the basic ethical principles of scientific research.

The principle of goodwill. Respondents are assured that they are not exposed to any risk associated with the research process or results that participation in the research will not lead to greater anxiety or fear.

The principle of respect for the dignity of the person. All study participants participated in the study voluntarily, and each participant's consent to use a dictaphone to record the conversation was obtained. It is stated that the data will be used in aggregate, for research purposes. Before the research, the essence of the research was presented, the purposes for which the answers would be used were explained, and the course of the interviews were explained (how they could behave, how long the interview would take, etc.).

Principle of justice. It was explained to all study participants that the confidentiality and confidentiality of the data of each study participant would be ensured. The research procedures are explained using everyday language terminology. The analysis of the results contains only depersonalized information, statements that would at least theoretically allow the identification of the study participant are excluded, and the transcription text is not provided.

Analysis of research data. The results represent an evaluation in form of qualitative content analysis. The evaluation methods (by Mayring, Frenzl, 2019) that were used are processes texts that are produced in the context of social science research projects like transcripts.

The research has several limitations. The nonprobability sampling has been used as it was not possible to acquire the sampling frame and ensure that all representers of the target group had a reasonable opportunity to be invited to participate in the study. Although relevant references are included, some research data interpretation aspects are mainly driven by the opinions of the authors. The scope of the research is limited to digital and entrepreneurship competences, other competences are not included as a part of New Work and entrepreneurial ecosystem.

4. Results

A change in values within the society leads to new needs on the part of companies and employees. Furthermore, the rising influence of individualisation should not be neglected when developing an optimal business environment. An increase in opportunities and the desire for self-realisation, also at a professional level, is present. Therefore, it is increasingly important for companies to remain attractive to employees and to offer diversity and the opportunity for self-realisation within the company itself. More individuality, also in form of autonomous, independent work and personal responsibility is desired and demanded. For the employee, this might be fulfilled with the possibility of freely organising work. The company should implement a goal-oriented concept in which there are still defined responsibilities to have a minimum of structure.

Despite everything, interdepartmental cooperation should be strengthened and a "we" culture should be created. A mutual understanding towards young and old as well as employees and managers will be essential. This will probably be the biggest challenge, because up to now senior employees have been used to hierarchies and a clear division of tasks. Better cooperation in general and especially between young and old should be promoted that valuable knowledge is passed on more easily and automatically. This is highly relevant since valuable expertise could be lost with the retirement of the baby boomers. Further, it is even more important, when imagine they are to be employed after retirement and the skills of the younger generations are to be passed on to them. A respectful intergenerational relationship should be created and be seen as normal.

New training measures, such as (reverse) mentoring, coaching and tutoring programmes to support everyday learning might be helpful. Senior employees would suit well for such advisory tasks. To achieve the desired

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competences, open departments and mixed teams might be the solution. Through the cooperation of mixed generations, the strengths of the individual generations become visible again and again to the others and could be adopted. Furthermore, the competences of the different generations could be mutually dependent and complementary and therefore profitable. Also, the general conditions, such as contract constructs, working time regulations, workplace design, and other special agreements should be more tailored to the individual in the future. A rethinking has to take place in which employees are again seen more as value-adding creators and, in times of a shortage of skilled workers, senior employees in particular. Especially for SMEs, it is important to offer an attractive environment to their employees because they are more affected by the effects of demographic change and the lack of skilled workers. However, it is easier for them to introduce new approaches than for large companies.

Assessing how does digitalization change the role of employees and employers in a digital world, the employees mainly wished and expected the leadership to support flexible working systems; but also, a personal feedback culture, lifelong learning opportunities and agile organisational structures. There was mainly a similar rating for the importance and the occurrence of the competences. Looking at the answers of the company's leaders or managers, it became clear that there were important and generally expected competences and that the opinions about them were similar. But on the other hand, the satisfaction with their presence in the working world was not equally high. It can therefore be assumed that there is a need to catch up here, regarding the development of the competences.

Summary of companies' leaders' insights:

- Cloud solutions were not considered as trustworthy. The selection of suitable systems seemed to be a challenge. Problems were also seen in an ineffective system landscape and in the dependency of others (company's partners; legal regulations).
- Companies were mainly satisfied with their current digital status (some still saw room for improvement)
- Some companies already introduced a digital responsible position or department. Reasons for adaption mainly were customers/business partners (first adaptations in the interface areas); for this the priority was mostly on the expansion of the interface technologies (to customers and partners). Automatisational supporting systems and communication platforms for employees were often already implemented. Suspected threats for the employees such as fear of job loss could not be confirmed by the companies' leaders.
- SMEs seemed to have an easier digital integration start than the others (because of independency and smaller organisational structures). Companies often stressed the importance of the communication skills and of personal relationships/feedback.
- Managers and leaders must give up responsibility, build up trust and rely more on the employees and their freedom of opinion, autonomy and responsibility as well as expand the personal feed-back-culture and the error culture for increasing the innovation.
- An open and convinced attitude, "lifelong learning", mobility, sensitivity and empathy/humanity, empowering nature were listed as important for a manager's character and leadership style.
- It seemed like the bigger companies had better current conditions facing the flexible working structures. Many companies seemed to have bigger struggles with the flexibility of work than with agility. This was often justified by the fact that implementation would be difficult in terms of positions and company orientation and that the human contact between the employees would suffer.
- It was striking that the entrepreneurs mentioned autonomy and error culture often together (a closer relationship can be suspected). For the areas of autonomy and error culture, no extraordinarily strong assignments to the companies sizes could be observed.

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- The most common competences mentioned were empathy/knowledge of human nature (personal interaction in teams and with customers) and adaptability/compatibility. Followed by logical/analytical thinking, networking/team ability, and risk/responsibility readiness.
- The choice of the competences seemed to make sense, considering the change due to increasing autonomous and independent working culture among the employees.

The current situation in the companies showed that there was room for improvement for democratic business decision culture with more influence of the employees and the lifelong learning opportunities. A better offer can be seen for flexible working structures and agile organisational structures. This means that companies were working on implementing these models, but the employees would like to see even more commitment for the future (regarding the wishes). In general, most of the competences for the future work-life were rated as especially important. On the other side, only the competences of self-reliance and intrinsic motivation were mainly considered as “strongly present” as a self-assessment of the employees. The competence with the poorest self-assessment was self- and external stress management.

Data collected on the third leading question “**What is the digital awareness and the current transformation status in small and medium-sized companies?**” revealed that Regarding the German and Lithuanian companies leaders, most of them seemed to be satisfied with their current digital status, even if some of them still saw some room of improvement.

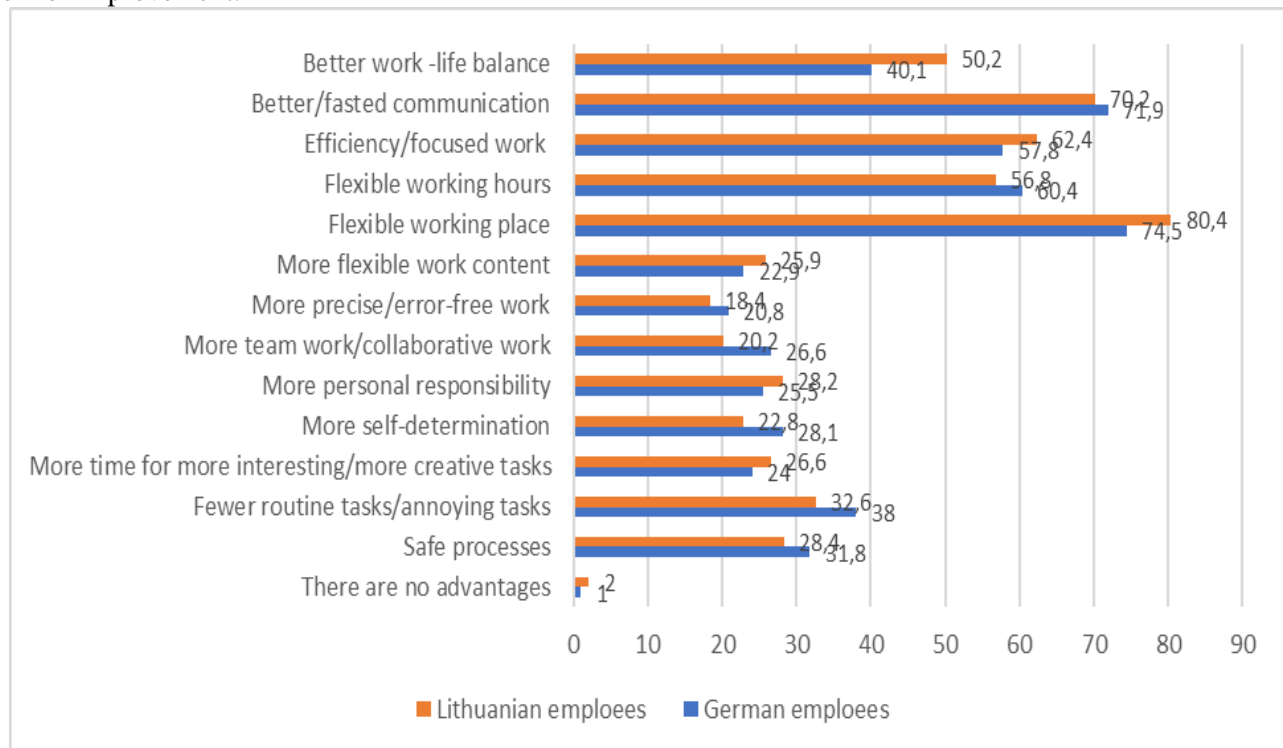


Figure 1. Personal benefits working with digital media.

The pressure of adaption was mainly perceived by the outside world. It, therefore, comes as no surprise that companies saw the incentive of digital adaption caused by their customers or business partners (first and foremost not with the employees and the improvements of internal processes). German SME executives indicated that the starting points for a digital transformation were therefore largely in these areas, e.g., many companies have

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adapted or were planning to adapt their entire surfer landscape (with interface formation) and their CRM systems in the first place and wanted to use this as a competitive advantage or the main vision of the company. The main challenges for a successful digital integration were mostly seen to lie firstly in the selection of suitable systems by the selection of either own technical systems or innovations by external providers. Managers of Lithuanian SMEs noted that topics that have been given higher priority were the automatisisation of processes in the administrative era (for employees 'support in daily tasks) and the (almost) paperless office. In this context, some companies were also sure that the fields of activity of almost all employees will change. German SME executives pointed to another aspect for the assistance of the employees was the provision of technical communication support (especially with the intention of fast and location-independent data access). For further strategic adjustments regarding the digital transformation, some companies even appointed a responsible department or person for the digital strategy.

The data from the quantitative survey complemented the information gathered during the qualitative survey on how employees view the transition to digital business, highlighting the transition to digital business work systems (Figure 1).

Comparing the benefits that were confirmed the most, the advantage of a "Flexible place of work" was chosen by three quarter (80,4% of Lithuanian respondents and 74.5% of German respondents). This response was followed by a "Better/faster communication" (71.9% of German respondents and 70,2% of Lithuanian respondents), "Flexible working hours" (60.4% of German respondents and 56,8% of Lithuanian respondents), "Efficiency/focused work" (62,4% of Lithuanian respondents and 57.8% of German respondents) and a "Better work-life balance" (50,2% of Lithuanian respondents and 40.1% of German respondents).

Summarizing the research data of the second leading question "**How does digitalization change the role of employees and employers in a digital world?**" German and Lithuanian SME managers indicated that regarding the positive and negative effects of digital adaption on the employee's management, issues like different age structures among the employees, the preferences of digital and analog work as well as the importance of communication skills, personal relationships, and feedback were mentioned. According to representatives of German SME companies, there would be a danger that employees who don't belong to the digital natives, but who have a strong knowledge of the organization/process structure, would be left behind. Therefore, it seems to be important that the implementation of a digital transformation takes place according to the top-down principle and to a fitting organisational structure. Representatives of Lithuanian SMEs mentioned that communication and integration of employees are crucial. Also, flexibility must be maintained, and the employees must be involved with their opinions (responsibility, autonomy). Autonomous teams and short distances in the organization must be supported. According to German companies' executives, facing new tasks, the role of leaders was seen to change due to increasing autonomous and independent working culture among the employees. Therefore, they were expected to support, motivate and expand the independence and autonomy. Lithuanian SME executive ideas support this position.

Furthermore, leaders must learn to give up responsibility, build up trust and rely more on the employees and their freedom of opinion. Using the example of the increasing home office work, this meant that work (nevertheless) must be appreciated (personal feedback-culture) and that the employees must be trusted. The role of a successful leader includes the ability to let the employees 'opinions change the organization and expand the error culture for increasing innovation. The views of German and Lithuanian SME managers coincided that an open and convinced attitude was demanded in addition to "lifelong learning", mobility, open-mindedness, sensitivity, and empathy/humanity. Generally, the lead role was rated to be more of an empowering nature to help the employees to become more independent and self-responsible.

The results of the quantitative study helped to identify the expectations of SME employees for leadership and managerial work style.

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Figure 2. Expectations regarding leadership in a company.

Respondents singled out these Expectations regarding leadership in a company (Figure 2): “Agile organizational structures” (43,8% of German respondents and 42,6% of Lithuanian respondents). Also, the approval rate for wishing “Lifelong learning opportunities (through mentoring/supervisor/coaches)” (52,6% of German respondents and 48,8% of Lithuanian respondents), “Personal feedback/personal promotion” (53% of German respondents and 51% of Lithuanian respondents) and “More flexible working (time, place, content)” (54,7% of German respondents and 52,4% of Lithuanian respondents) were close to each other. The last one was the most common wish for modern leadership and the working environment overall.

The third leading question „**Which competences and organisational structures are required for a successful adaption of the digital transformation?**” From the competences that were listed before, both Lithuanian and German informants indicated the two most common ones were empathy and knowledge. They were followed by a high agreement for logical/analytical thinking, networking/team ability, and risk/responsibility readiness. During the interviews, it was noticed that some companies had the opinion that the employees were increasingly acting like their own entrepreneurs with autonomous and independent work activities. Logical and analytical thinking as well as readiness for risk and responsibility were underlining this opinion. Another conjecture that was expressed by the German interviewees was that the tasks or the execution of the work were becoming more specific for each employee. Therefore, employees would rely more on coordinated project groups and teamwork (everyone brings specific skills with him/her). According to representatives of Lithuanian SMEs, the characteristic of strong communication and the idea of cooperation/teamwork was particularly important for teamwork. Regarding the internal processes as well as the contact with customers, German employers wanted their employees to be solution-oriented, self-confident, and risk-taking in a way of not being afraid of doing mistakes. Most of the participants agreed that agile work would increase. The growing independent/autonomous work would assume more personal responsibility and “being the own entrepreneur”. According to their statements, the German and Lithuanian companies have mainly adapted to this. Many companies even promoted their employees to get involved in decision-making processes. In this connection, a lived error-/experimental culture should promote motivation and innovation and was inserted in some firms. Due to agility and flexibility, many companies introduced digital communication channels and mobile devices as support. One topic that could be regarded with the most skepticism, was flexibilization. Specific task management/area of activities, industries,

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dependence on customer times or positions within the company were the biggest barriers for full implementation. Only some of the participants could therefore claim to have implemented it broadly. Some were also actively against it because they feared human alienation. This statement is appropriate since many companies also (increasingly) valued personal contact. So have some companies also implemented a personal feedback culture and career planning for their employees.

The results of the quantitative study helped to identify the importance and occurrence of competences in a labor market (Figure 3).

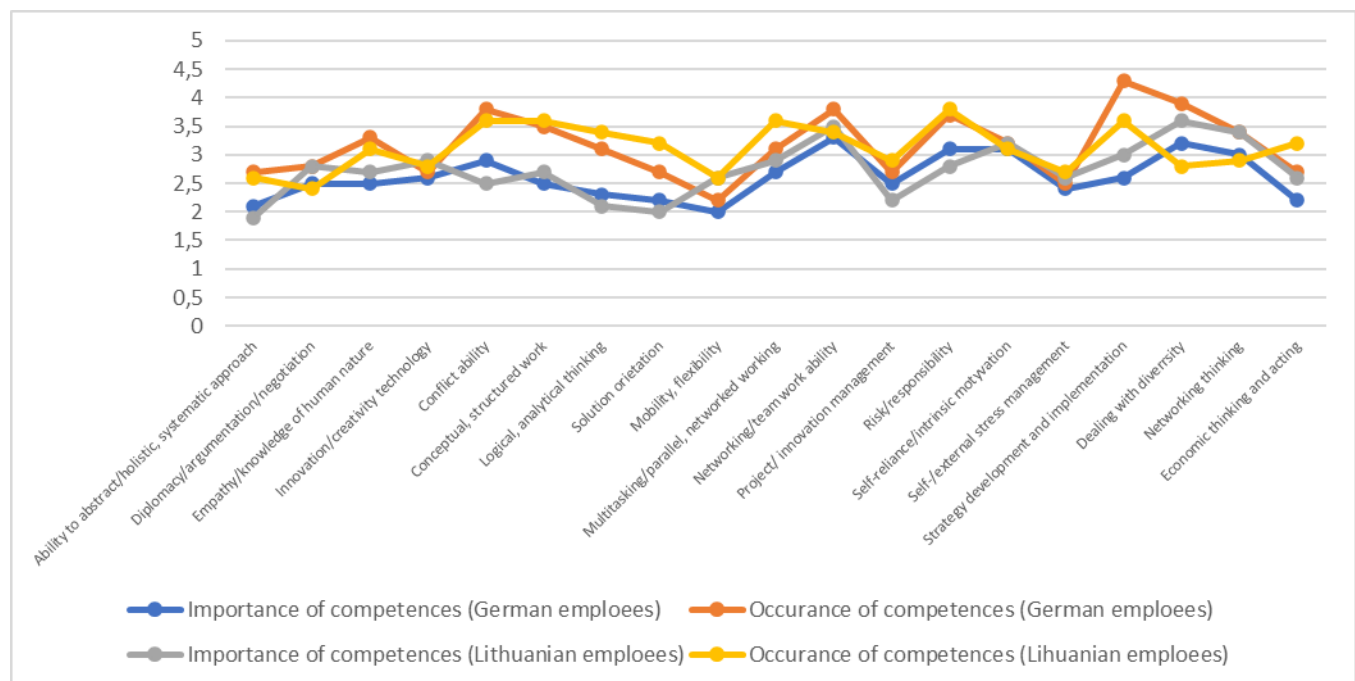


Figure 3. Assessment of importance and occurrence competences.

Starting with the similarities, almost the same responses comparing the importance and occurrence mentioned by the German respondents could be seen for the competence “Self-reliance/intrinsic motivation“ (arithmetic average of importance 3,1, the arithmetic average of occurrence 3,2), “Innovation/creativity technology“ (arithmetic average of importance 2,6, the arithmetic average of occurrence 2,7) and “Self-/external stress management“ (arithmetic average of importance 2,4, the arithmetic average of occurrence 2,5). Lithuanian respondents named the following competences, where the gap between importance and occurrence is the smallest: “Mobility, flexibility“ (arithmetic average of importance 2,6, the arithmetic average of occurrence 2,6), „Innovation/creativity technology“(arithmetic average of importance 2,9, the arithmetic average of occurrence 2,8) and “Self-/external stress management“ (arithmetic average of importance 2,6, the arithmetic average of occurrence 2,7), “Self-reliance/intrinsic motivation“ (arithmetic average of importance 3,2, the arithmetic average of occurrence 3,1). On the other hand, the highest disparity of importance and occurrence in the assessments of German respondents could be seen for the consequences of “Conceptual, structured work” (arithmetic average of importance 2.5, the arithmetic average of occurrence 3.5). The assessment of Lithuanian respondents differed the most in the competence “Risk/responsibility” (arithmetic average of importance 2.8, the arithmetic average of occurrence 3.8). The average of the people rated this competence less important than it is available to them.

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After summarizing the results of qualitative and quantitative research, the main digital and entrepreneurial competences for the future labor market were identified (Table 1).

Table 1. Summary for the results of digital and business competences needs.

Results	Digital competences	Entrepreneurial competences
Results of quantitative research	<p>The employees mainly wished and expected the leadership to support flexible working systems, personal feedback, lifelong learning opportunities, and the ability to create agile organisational structures.</p> <p>There was a clear room for improvement for democratic business decision culture with more influence of the employees and the lifelong learning opportunities as well as an error/experimental culture.</p>	<p>In general, most of the competences for the future work life were rated as particularly important (communication skills, personal relationships/feedback, high agreement for logical/analytical thinking, networking/team ability, risk/responsibility readiness). On the other side, only the competences of self-reliance and intrinsic motivation were mainly considered as „strongly present” as a self-assessment of the employees.</p> <p>The competence with the poorest self-assessment was self- and external stress management.</p>
Results of qualitative research	<p>Companies often stressed the importance of communication skills and of personal relationships/feedback.</p> <p>Managers and leaders must give up responsibility, build up trust and rely more on the employees and their freedom of opinion, autonomy, and responsibility as well as expand the personal feedback-culture and the error culture for increasing innovation.</p> <p>An open and convinced attitude, „lifelong learning”, mobility, sensitivity and empathy/humanity, empowering nature were listed as important for a manager’s character and leadership style.</p>	<p>The most common competences mentioned were empathy/knowledge of human nature (personal interaction in teams and with customers) and adaptability/compatibility. Followed by logical/analytical thinking, networking/team ability, and risk/responsibility readiness.</p> <p>The choice of the competences seemed to make sense, considering the change due to increasing autonomous and independent working culture among the employees.</p>

Based on the results of the study, the employees and employers surveyed found a very similar view of the importance of digital and entrepreneurial competences for the future labor market and changes in leadership competences, giving more freedom of choice and autonomy to the employee to act proactively and responsibly.

Discussion

The collection of secondary data showed that many experts, leaders, and studies were sure that there is a need to adapt to new organisational structures and the new world of work. The term New Work was therefore a common expression in this discussion. The secondary literature saw that the term New Work covered various aspects of how the world of work should change for employees. In general, New Work can be explained by the changing demands and roles of employees and employers. In New Work the employee, as a human, represents the center of the company in entrepreneurial ecosystem (Figure 4).

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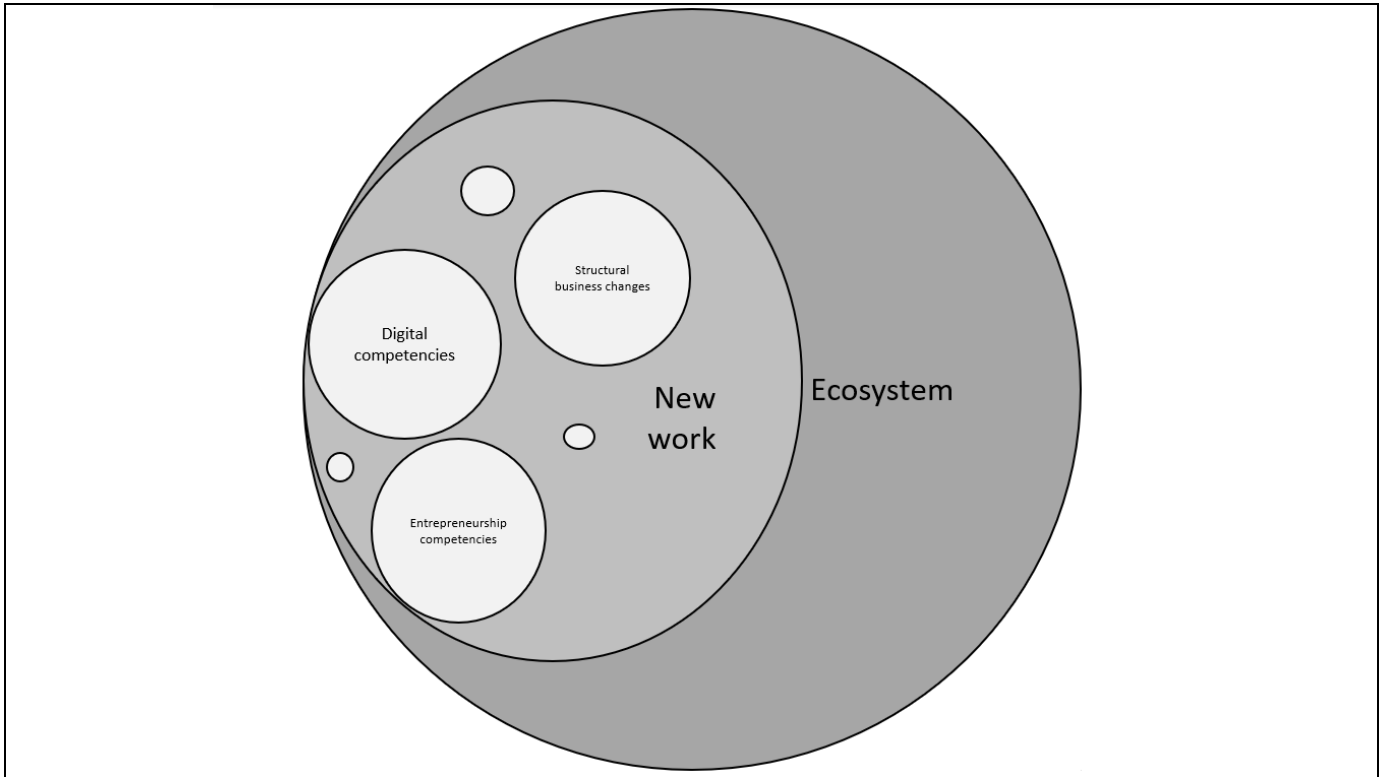


Figure 4. Competences for the future labour market needs as a part of New Work and entrepreneurial ecosystem.

On the one hand, this means that the employee should be increasingly involved in important company processes/decisions. On the other hand, the employee is more and more seen as an independent and self-organized person, an own entrepreneur. The leaders, therefore, need to promote and motivate the employees to this position. They need to reflect a coaching mentality and a supporting role towards corporate culture and employees' growth. Additionally, they must be able to give up control and spread trust towards employees, but also open for transparency and strong communication. Teamwork and the "wisdom of many" as well as a de-hierarchized and decentralized organization must be supported. This should then lead to more creativity and innovations with a living error and feedback culture, according to the secondary literature. Two terms that go along with New Work and that represent the main elements of entrepreneurship competences were agility and flexibility. Regarding to secondary data, the design of work is becoming more and more flexible in terms of time and space. Asking the companies' managers and leaders in the qualitative interviews, they expressed a similar opinion: autonomous teams and short distances in the organizations were seen as important to support. Additionally, strong communication skills, a personal feedback culture, expanding independence and autonomy were often mentioned. Generally, the leaders' opinion was pretty similar to the secondary data.

Conclusions

The future labor market associated with business digitalization processes operates in a New Work culture environment, which provides good incentives for making companies more employee-friendly and for bringing people into the center. The demands and requirements for special competences facing the employees, has also changed. To enable an agile and flexible work culture, employees need to take responsibility, independence and

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act like entrepreneurs. At the same time, it is becoming more and more important to be cooperative and highly communicative when working in an agile, networked company. The “wisdom of all” stands in the center of innovative work and must therefore be used by everyone. As a result, it can be said that German and Lithuanian companies and employees are in general open to digital changes under conditions of a New Work model. It can also be detected that companies have already initiated changes in both areas, but the full potential has not yet been realized. Even if SMEs face challenges of internal adaptation, the time of rapid change and the increasing focus on the human side can be seen as an advantage over the big players. Short organisational ways, clear structures, and a family- and people-oriented corporate atmosphere can reflect decisive advantages for small and medium-sized companies. This should be exploited even more in times of digital change and newly developing employees’ models.

Assessing how does digitalization changes the role of employees and employers in a digital world and their expectations for digital and entrepreneurial competences, the employees mainly wished and expected the leadership to support flexible working systems; but also, a personal feedback culture, lifelong learning opportunities, and agile organisational structures. There was mainly a similar rating for the importance and the occurrence of the competences in the evaluations of employers and employees representing the Lithuanian and German labor markets Looking at the answers of the company’s leaders or managers, it became clear that there were important and generally expected competences and that the opinions about them were similar. But on the other hand, the satisfaction with their presence in the working world was not equally high. It can therefore be assumed that there is a need to catch up here, regarding the development of the competences.

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Abstract. Tennis as a sport has undergone significant improvement in the past few decades in the former socialist countries. The study is going to introduce the historical background, where exactly East-European Women Tennis Players in large numbers, belonging to the world elite originated from. The article reviews the motivational theories valid in sports and focusing on female players defines the doctrine. The study based on an empirical research which was targeted to reveal the factors behind the motivation of women tennis players. The research was implemented among (n=31) elite women tennis player. Data collection was implemented both by questionnaires and half structured interviews. The outcome of the research will be introduced through 5 dimensions. Satisfaction of East-European elite women tennis players with their (a) career, (b) the amount won at prize money tournaments (c) the relationship between the invested time, money and energy during their sport career and their results, (d) the opinion on the possible restart of their career, (e) the after retirement plans of tennis women players. One of the major consequences of the study is that women tennis players of the world elite have different approach concerning the successfulness of their career, a large percentage of them agree, their prize money won in tournaments they can create material goods for themselves will establishes for their further lives. Tennis today not only provides them with a sporting opportunity, it is also a career model. Their passion for the sport makes many of them work around tennis, even after the end of their players lifeway.

Keywords: tennis; history; post socialist elite players; motivation

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JEL Classifications: I10, H30, O15

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1. Introduction

Tennis the ball game of Anglo-Saxon origin was introduced to a country by a British aristocrat in 1873. Right after setting up the licence document, the first code has been issued on the rules of the game called 'lawn tennis'. Tennis became soon popular among women as well in aristocratic circles. They gathered in clubs and became addicted to this kind of leisure activity. The Wimbledon tournament was organised in 1877 for the first time (Gáspár, 2012). Athens, the first location of modern Olympic games, had only men both in the single and double games. Women only grab the racket for the first time at the London Olympics in 1908. After the end of World War I. in Antwerp in 1920, later in Paris in 1924 tennis was a part of the Olympic games. In all sports the champions were West-European or players from the overseas (Kahlich et al. 1972). Next occasion when tennis moved back to the program of Olympic games was in 1988 in Seoul. In tennis it was never the Olympic games that counted the most. Grand Slam tournaments, the winning of one of the four major tournaments meant the real appreciation. These major tournaments are Australian Open, Roland Garros, Wimbledon and US Open. Those who managed to meet the criteria of these four tournaments and won, were completing the classic Grand Slam. Among women players there have been only three who accomplished this winning serial: Maureen Conolly (1953), Margaret Court (1970) and Steffi Graf (1988). (Record and Record Keepers in the White Sport History, 2013). Professional tennis was established at the introduction of the „open era” in 1968, where professional players were also allowed to participate at tournaments. Tennis has been switched step by step from amateur to professional sport. From this point we consider tennis as a modern sport, and we register world rankings, statistics and other records since then. The Association of professional women tennis players WTA (Women's Tennis Association) was founded in 1973 (WTA Media Guide, 2020). There are nearly 1300 players listed on the adult women world rank list. Sponsors select among them based on various aspects, whom to support and why during their career. A tennis fan, that follows tournaments through the tv screen may not notice much difference between these players. Apart from the physical parameters he may prefer one player to the other based on certain aspects. Not taking into account the objective fact of being successful, he/she might have no clue of the reason of the place on the ranking list. For a fan like this, the world rankings could be upside down, as there may not be sensed major differences concerning the skills of the players. Ladies hit the ball strongly, their serves are excellent, they are quick and fight with heart and hand on the court. The only difference can be noted in playing the significant scores, however, some minor momentum favours only one of them. The player with more routine with more experience in this case is more confident and relaxed than the opponent.

In the research we used our experience collected during the past decades. Our basic goal was to verify by empiric tests that in the background of the success of post socialistic elite women players there are various motivational factors. Hereby we would refer to our former studies performed in the subject. One of them was examining the successfulness of the already retired (n=25) and still active (n=22) Hungarian elite women tennis players in the light of tennis becoming a business. The findings of the above study are currently under printing. In the following parts hereby, we wish to introduce a part of the overall and wholesale research in the subject.

This study monitors the satisfaction of the players by five dimensions, and the role of prize money won during their career. Our research questions seek answers to, whether the elite tennis ladies throughout their careers, what sums they aim to win? Through this prize money do they consider, it possible to continue work around tennis after the end of their sports career and realize it as a lifeway? In the first chapter we are review the most commonly known motivational models in sport. In the second chapter we took those female world class tennis players who managed to reach the top due to their excellent talent from those socialistic countries that were not supporting tennis at all.

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2. Motivational peculiarities

In most societies young girls and women show a high proportion in participation in sports, although comparing their number to boys and men this number is much lower. This difference in sexes came about during evolution, women have always shown less interest in sport. The motivation of sportsmen and sportswomen usually differs in competitiveness and risk taking. Women are seemingly interested in sport, but only in participation (Deaner et al. 2016).

Examining young female and male team players it was established that the ice-hockey, football, water-polo and volleyball players' motivation skills show a great difference regarding the two sexes. The trainers of young teams should pay special attention to organising their education mostly to processes that team members perform together. According to results, male athletes are able to perform better under pressure, in circumstances that focus on the aim and the task. They are mentally more prepared, more self-confident and have a higher level of concentration than their female peers (Geczi et al. 2009). The study concerning the Bulgarian elite athletes demonstrated that the sport motivation scale (SMS) filled by figure skaters, skiers and boxers show differences in the motivation affecting performance (Chantal et al. 1996). However, the research dealing with fantasy sport showed that women are as motivated in participation as men. Female sports fans enjoy the content of sports media. This world is rather called "boys-club", still millions of women enjoy the entertainment offered by these games. Fantasy sport fulfils women consumers' special demands (Ruihley et al. 2013). Examining Palestine women's habits, taking social hindrance into consideration, it was clear that they possess a high level of inner motivation and are dedicated to sport. The research referring to basketball, volleyball, table-tennis players and track and field athletes showed that their coaches can provide such atmosphere that they are happy to participate, enjoy sport movements and also themselves (Younes et al. 2013). The results of questionnaires filled by female teenage softball players reflect that precise aims are to be set at an early age. In this motivating atmosphere both the parents and the coach help the kids' goal orientation more developed and sophisticated during the socialization process. They always recommend new goal elements to reach (Waldron, Krane. 2005). Sarrazin and his colleagues observed and tested French volleyball players during their research. They recommend the acceptance of the three elements of inner motivation. The knowledge the player has ensures satisfaction and pleasure gained with playing sport. With practice and a lot of training, the newly established goals become achievable, accomplishment is reached for the player's happiness. The player experiences the stimulating feeling which provides entertainment, esthetical experience, and sensory pleasure (Sarrazin et al. 2002). Sweden is known about its imposing, results connected with equality between the sexes. However, girls and women are more sensitive than men. Based on research regarding junior players, competitive tennis is less attractive for girls because there is fight in the rallies on the court. Mental struggle. Women's characters are different, they are not aggressors, thus this sport is not really suitable for them. They rather enjoy trainings, practicing together, team events to competitions. To become first-rate, one must have a strong personality (Bykanova-Yudanov, 2018). An Australian study tested the role of parents among professional tennis players on the WTA rankings. Inductive content analysis proved that caring and respectful environment at home meant serious support for the development of the talent, for pursuing a career in tennis (Young, Pearce, 2011). Tennis requires different types of psychological characteristics. From these the most important is the motivation affecting the results. Players are continually adjusting to circumstances during matches; to the opponent's tactics, to the surface of the court, to the wind and sun. The concepts connected to motivation are getting stronger, like the wish to win, sustaining competitiveness, the will to participate, the passion and enjoying the game. In modern approach, to understand motivation in tennis, the aim perspective theory plays the leading role. The player determines her personal competencies on her own personal references. These are the aspirations for effort, the continuity of learning, the

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developing of skills. They adjust their trainings to the goals to be achieved. The studies revealed that the task oriented motivational environment has a positive effect on self-confidence, boosts the feeling of satisfaction, forms the real sports personality. To achieve and sustain all the above, coaches and parents play an undeniable role (Crespo, Reid, 2007).

3. Post-socialist countries and female superstars

Sport managers of the post socialistic countries have been focusing on the Olympic sports for long decades. They have been thinking in 4-year cycles and measured their national proudness and prestige in golden medals won. Elite sport policy has always preferred pure domestic aspects while the international trends count on success achieved both at home and in the world (Haut et al. 2019).

Between 1950 and 1988 on the summarized charts of the Olympic medals there were numerous East-European countries among the best 10 nations. The State paid all costs related to the sport. Perfect conditions were created in well-equipped institutions in order to achieve worldwide quality sport results. Leading athletes enjoyed financial benefits, bonuses and special attention. They travelled through sports, they saw the world. In the beginning of the 1990s, due to the economic changes, organisations responsible for sport sponsorship had to be reformed. New legislation was established by considering the changes all over the world. Top-class sportsmen were leaving their countries in masses for the sake of a better living. In their countries full time sport activity was not a well-paid job any longer (Poupaux, 2005).

At the Seoul Olympics at 1988 the Soviet Union was represented with the most sportsmen right after the USA. They reached the first place on the medal table, and won the most medals in athletics, gymnastics, wrestling and weightlifting. Two women tennis player nominated in singles, but both have lost in the second round.

Women tennis delivers good players continuously, and the new generation have their icons to respect. In the past 40 years there have been numerous talents appeared. In the end of the 1970's and in the beginning of the 1980's the United States of America has become a dominant tennis power. Europeans were dropped behind. Among the best 100 female players of the world ranking list 59 were Americans. We have not noticed such proportion since then. Between 1980 and 1986 they won 23 Grand Slam victory in women singles.

In 1980 none of the women tennis players in Russia were among the best 100 players in the world rank list. In 1990 there were 5, later in 2000 already 7, while in 2010 there were already 16 players listed among the bests. Apart from the Russian ones, there were significant players from Kazakhstan, Uzbekistan, Latvia, Lithuania and Estonia. Anna Kournikova was the first Russian woman player noticed and known all over the world. She struggled herself among in the first 10 in the beginning of the 1990's (Marshall, 2011).

Kournikova was a real phenomenon on court. She was likeable both in appearance and behaviour. She was from a post socialist country where tennis as a sport was not admitted at all. She was very successful on the tennis court: played tight matches with the best players and they got really squeezed. Some of them were even beaten in enormous matches. Despite all, she did not win a real tournament – Grand Slam trophy in single – ever. Never has she headed the women tennis world rank list. However subsidizing companies saw potential in her, assessed her promising in respect of added value. During several years she was granted with the best sponsorship contracts. Companies took bigger risk for the sake of higher profit. Kournikova has not always won at her tournaments, but organisers kept on putting her to the central court, where she could play in front of crowded audience. Her matches were broadcasted live by TV channels, and these were sometimes played for more than two hours in front of millions of spectators. Sponsors not always go after the best results from sport aspect, but they have marketability approach, they consider the 'object' saleability. Anna Kournikova highly met these criteria in her career.

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Most former socialistic countries could not manage to uphold the pre-world war status of tennis. The only possible exemption was Czechoslovakia, where they managed to keep up and maintain the tradition. The National Association established 6 tennis centres, they employed full-time coaches who trained excellent players with the most up to date coaching techniques. From the late 1970's talented players showed up one after another. The greatest Czechoslovakian woman tennis star was Martina Navratilova. She started to play tennis for family impulse, her stepfather was her first coach. As early as at her 13s she played against foreign opponents, and not much later managed to win amateur Europe Cup in Vienna. After the tournament she defected - left the country, as we used to say at that time - and settled in the USA. The professional environment diverted her career in the right direction. (Oltványi, 1986). Her first world famous success was in 1978, when she won Wimbledon woman single. Other victories were followed up, she collected altogether 18 Grand Slam trophies in single, 31 in women double, and 10 in mixed double. She won the most in Wimbledon, where she managed to get into the finale 12 times in single and won 9 times as a champion. She retired in 1994 from single games and continued in doubles. She even won a mixed double in Wimbledon when she was 47-year-old. 3 years later, at her 50, she won through over the US Open. In 2008 she announced to open a tennis academy in her motherland, then already called Czech Republic. (Martina Navratilova Biography, 2019). Martina Navratilova headed the world rank list in July 10th, 1978. for the first time and remained there for 27 weeks. During her career she headed the WTA women ranking lists for 332 weeks through, 156 times without a break. (WTA The History of Tennis Rankings, 2019). In her whole career she hit almost 22 million USD altogether, and with this amount of prize money, she is on the 15th place on the world ranking list. This is taken a prominent place, since the prize money consumed her time, were far away from the one, we have today (Career Prize Money Leaders, 2020).

Monica Seles was born in 1973, in the former Yugoslavia, in Újvidék-Novi Sad. Her father started to teach her tennis in a parking lot, above an extended rope. She was 13 when the whole family emigrated to the USA. At that time, she was considered the best junior tennis player in the world. At her 16 she won the Roland Garros women singles as the youngest player, and at her 17 she was heading the world ranking list. In her best years she seemed to be almost unbeatable. Between 1991 and 1993 she won 33 out of the 34 tournaments she played at, the 6 Grand Slam trophy was one of them. Altogether she won at 9 Grand Slam championship, with 53 times victory in singles. (Monica Seles Biography, 2019). Monica Seles got to the top of the world ranking list in March 11, 1991. and remained there for a further 21 weeks. During her career she was heading the WTA women ranking lists for 178 weeks, 91 times without a break. (WTA The History of Tennis Rankings, 2019). She won during her tennis career almost 15 million dollars and took the 28th place on the world ranking list. Though she joined the circle 15 years later than Navratilova, it is still an extraordinary feat to take such a place on the ranking list together with the prizes earned (Career Prize Money Leaders, 2020).

The three genius world stars are all originated from less prosperous families, from those socialistic countries where tennis as a sport was hardly supported at all. Nevertheless, these girls managed to struggle themselves among the bests. Their families sensed certain signs early enough that was worth to build on. From the promising talent, they became devoted to reach their goals by utilizing their specific skills. An extraordinary creativity was also necessary to implement their tasks. With the circumstances given, they kept on practicing hardly and utilised the chances granted by their life. Also due to good fortune they could obtain appreciation for themselves and for their surroundings. They were at good time at the right place to be influenced positively and become real sport talents (Hódi, 2009).

The player with extraordinary talent is able to sell his/her skills as a service at a higher price due to his/her inner abilities since the price and quantity together with the higher quality will show that talent has a great impact on

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the award. (Rosen, 1981). All three players rose from the mass and became successful sport personalities. They always foregone things and were able to control them. They were purposeful to plan their future and deployed their inner skills that is why they became successful sport personalities. (Takács, 2017). The Superstar feature is an explanation for the outstanding performance which is only given to the biggest talents. The Star makes the same effort irrespectively of playing in front of 100 people or of 10 thousand. And those people are willing to pay more and more for the gorgeous service (Rosen, 1981).

4. Research methods

The population examined consists of one part. The active tennis players from the former socialistic countries. We monitored the entire population. We intended to include those tennis players in our research, who were among the best 700 of the adult women on the world ranking list. We used the September 30, 2019 database and register by the Women's Tennis Association. The total of the population of the women from the former socialist countries was 209 persons. We managed to find 127 out of the 209 women tennis players by the tools of the social media and the contact provided in it.

Data collection was performed in the examined population by questionnaires. The questionnaires were set up and finalised based on test questions. Ladies on the world rank list received the questionnaire through means of social media and contacts provided by them. From the 127 pieces we sent out, 31 was received back ($n_1=31$). Altogether we received 31 answered questionnaires ($N=31$). Answering the questionnaire were performed by self-fill-up method in the population. Apart from the questionnaire there were two half structured personal interviews performed as well ($n_2=2$). The main structure of the interview was the assessment of success during the whole of the career. In the further parts of the research we will need more interviews for the interpretation of the results received, and also for obtaining new pieces of information.

In this study the processing of relevant questionnaire parts was implemented by SPSS program. Taking into aspect the element number of the examined population and assuming that the data are fully reliable, it seems, that the results show a tendency character. On the other hand, since the research was implemented in the full basic population they fully represent the judgement and opinion by the post socialistic elite women tennis players. Based on the research questions formulated earlier, the study makes the following hypotheses.

H1: Women tennis players aim to win that kind of prize money during tennis years, that will lay the foundation for their post-career lives.

H2: We assume that at the end of their player's career, many of them will stay close to the sport and see tennis as their lifeway.

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5. Results

61.3% of the elite women tennis players out of 31 post-socialistic countries hope that by the end of their career the sum of their prize money will be above 5 million USD (see Figure 1). A smaller percentage would be happy with 1-5 million USD earnings, while 16.1% of them are in the lowest category. Prize money granted at tournaments have been continuously increased in the past decades. Ladies today can earn much more even though they do not belong to the top players. Therefore the post-socialistic players today might have much more promising perspectives than their predecessors.

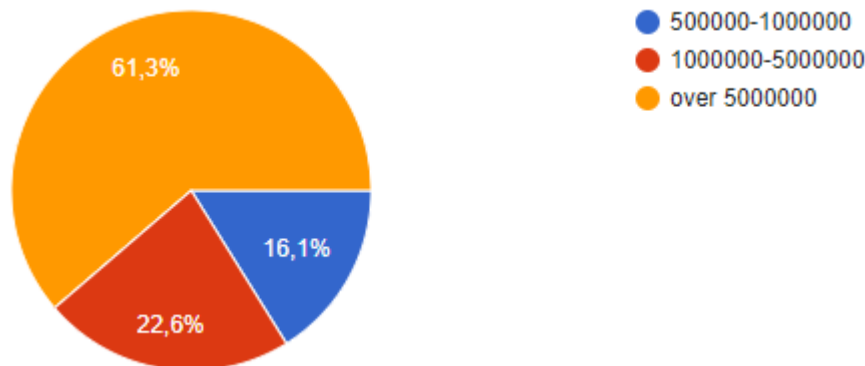


Fig. 1. Prize money expectations of ladies, in USD

Source: authors

The answers by the 31 active women tennis players from the former socialistic countries reveal, that 18 of them are still happy with their careers, and only 8 of them had a negative answer. 5 of the players have doubts concerning their results achieved, they had higher expectations before, but it seems that they still have promising goals. Therefore, they provided us with a “so-so” answer. 26 of the players voted with a “yes” saying that the invested energy, training time, travels, and money all was worth for the incredible efforts. 3 of them do not agree with this statement, in their opinion perhaps they had had to deal with something else instead of tennis. In a very high percentage, namely 27 would have started their tennis carrier again, if they had been children again.

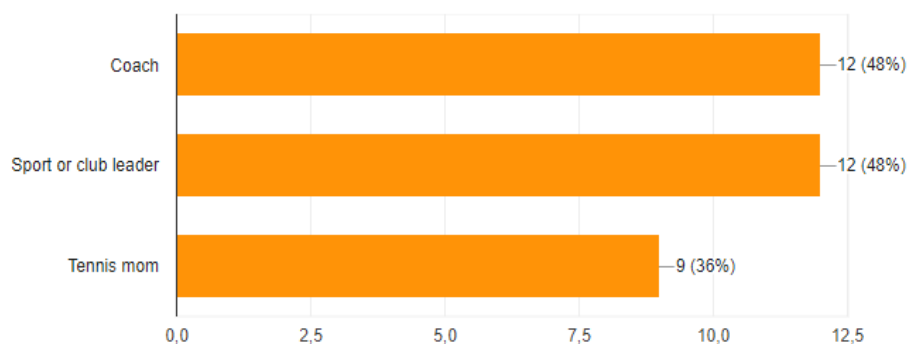


Fig. 2. The planned after career activity by post-socialistic ladies

Source: authors

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Elite women players of the former socialistic countries have different views on the finish of their tennis career (see Figure 2). 6 of them would choose a coach career, another 6 of them would direct a sport club or sport centre. 7 of the ladies would prefer to assist their own child to transfer her own experiences as tennis mothers. 4 of them think, that they would successfully harmonise both coaching and manager roles in their lives. 2 of them are the bravest ones, who think, they could be successful in all three roles in their future civil lives. The tennis ladies being happy with their career from childhood to these days is quite clear in their subjective opinion.

Conclusions

In the study we examined the motivational peculiarities of the post socialistic women tennis players. The findings of the study suggest that the players today by also respecting their domestic superstars, they prove the changed status of tennis on their homeland. The generation gaps and differences certify the enormous spreading of tennis sport in the former socialist countries. This transformation was even double, since the major changes in society also enabled the international follow up with the sport. By the split of the former Soviet Union, Yugoslavia and Czechoslovakia the former opponents now must fight against players from 24 countries instead of the former 3. From the answers of the questionnaire (namely the one that asks which club they started to play at), it turns out, that they were elite woman players from 10 different post-socialist countries participating at the research. 8 of them targeted to be the best of the world, 7 of them wanted to be among the best 10 and wanted to go on with their career up to their 30s. We accept our first hypotheses, because more than two-third of elite women players aim to win over 5 million USD, acquire such material possessions, that would be enough for the foundation of their future civil life.

The global development of the sport, the continuous increase of prize money provide opportunity for the players today to build up a career. The financial benefits available today are much more for them than for their predecessors. Our research has proven, that in addition to the external and internal motivational factors found in tennis, the persistent training work and efforts for 10-15 years pay off in tennis of prizes that can be won. The post-socialist women tennis players, with their professional activities, can also establish their lives after the end of their careers. Therefore, we also accept our second hypotheses, because most players view tennis as a lifeway and staying close to the sport intends to pass on its knowledge to future generations.

By considering the rest of the results of our overall study, it is likely that choosing professional tennis player career as a model, not only as a sport, can be evaluated as a determined profession. The findings of this latter research will be introduced at a following article.

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DETERMINATION OF OBJECTIVES AND RESPONSIBILITIES OF PUBLIC ADMINISTRATION BODIES IN CORRELATION WITH LEGAL AND MANAGERIAL ASPECTS: CASE STUDY OF THE SLOVAK REPUBLIC*

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Abstract. The sustainable growth of the Slovak Republic can only be ensured by a properly and effectively functioning public administration. In the current challenging extraordinary conditions (in the context of epidemiological, economic, financial, and sociological considerations), public power must be more efficient than ever and the management of public finances - economical, efficient, effective, and effective. Therefore, the aim of this scientific article was to carry out scientific research on the terminus technicus "public administration", to analyze the position of the most important institutions (their goals, tasks, functions, and responsibilities). The authors researched the following partial areas: mainly the pillars of efficient and proper functioning of public administration in the Slovak Republic to ensure sustainable growth; managerial foundations for the effective functioning of public administration; the legal status of public administration entities (and their responsibilities); primary goals, tasks, and tools of state administration bodies in the Slovak Republic and control in public administration. Base on research, the authors proposed *de lege ferenda* for more effective legislation in public administration for sustainable growth of Slovak Republic.

Keywords: public administration; public authorities; sustainability; goal and responsibility; Slovak Republic; UN; EU

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Additional disciplines: public administration, law, economics, management

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1. Introduction

Sustainable growth of the Slovak Republic can be ensured only by a properly and effectively functioning public (state) administration. In the current challenging extraordinary conditions (in the context of epidemiological, economic, financial, and sociological considerations), the state administration must be more efficient than ever and the management of public finances - economical, efficient, effective, and effective. A small mistake in the management of the state will result - a crisis. The current system of public administration in the Slovak Republic builds on previous historical experience and contains new elements that have been implemented not only as a result of modernization efforts, but also as part of Slovakia's commitment as a member of the European Union and the UN. If we talk about public administration as an object of scientific research or as a real social phenomenon, we understand: the sphere of society, the sphere of certain public activities, the sphere of organizations and the sphere of employees (Klimovský 2014; Cheng 2020).

The term "public administration" can be understood at the political, economic, sociological, legal, managerial, and other levels. Given the diversity of approaches to the institute of public administration, we can state (not define) that it is a social phenomenon that: a) is an integral and obligatory part of any state (as part of public power), b) ensures the administration of public affairs (state operation) - in the public interest and on public account and public accountability; c) is a system of organizations (state administration bodies, self-government bodies and other subjects of public administration), d) activities and activities of public administration is a manifestation of executive power, which is explicitly and obligatorily defined by legislation, e) is an area of social relations between various entities (where on the one hand, there will always be a public entity), f) it is personally, materially, organizationally and functionally influenced by political events (Klimovský 2014). Under the terminus technicus of "public administration" (the authors of "Britannica") understand - the implementation of public policy. Today public administration is often regarded as also including some responsibility for determining the policies and programs of governments. Specifically, it is the planning, organizing, directing, coordinating, and controlling of government operations.

The aim of this paper is to conduct scientific research of terminus technicus "public administration", its most important institutes and bodies, their goals, tasks, functions and responsibilities, and based on the analysis of scientific knowledge on current legislation *de lege lata* to offer authors' conclusions and prepare proposals *de lege ferenda*. Based on the main goal, the authors set partial tasks: 1) to determine the main pillars of effective and proper functioning of public (state) administration in the Slovak Republic to ensure continuous growth, 2) to set the managerial foundations of effective functioning of public administration in Slovakia, 3) to analyze the legal status of entities state administration and their responsibilities, 4) determination of primary goals, tasks and tools of state administration bodies in the Slovak Republic, 5) determine the main state institutions that are obliged to exercise control over the effective activities of state administration and economic, efficient, effective and effective use of public finances, 6) to prepare proposals (starting points, *de lege ferenda*) for improving the functioning of state administration in Slovakia.

2. Research methods

For scientific research of the subject of the article, we had used the following scientific methods: observation, analysis, synthesis, comparison, abstractions, generalizations, induction, and deduction. Observation method helped us to systematization of existing knowledge within the current state of the problem. It represented the theoretical and methodological basis on which this scientific article had based. Scientific method of analysis we had used for the process of thought division of the researched problem – the public administration, into individual parts, elements, features, contradictions and their research in order to reveal their essence; the task of the analysis was excluding from the whole mass of facts and contexts the main, essential, necessary ones that can shed light on

the causes of the occurrence and course of the investigated event, its essence. Synthesis – we had used it as a process of finding out the connections between the allocated elements, features, opposites, their connection, and subsequent reproduction of the investigated event with their essential features and relationships. The synthesis makes it possible to monitor the relationships between facts, the nature of the interrelationships between them, to reveal the causes, functional dependence, the sequence of stages or the tendency of the development of the financial system.

We had used method of comparison for the process of great importance in clarifying the processes of change, development, the examined relationship, revealing the tendencies and patterns of its development. In terms of the complexity and systematic nature of the research, we had used a vertical comparative analysis of aspects of the organization and functioning of the public administration in the EU and Slovak republic. Evaluation and comparison of the effectiveness of concepts and models of public administration based on management and legal analysis, confrontation of results with current innovations in the field of modern public administration. Abstractions method – when researching a specific phenomenon, it is necessary to study it step by step, one page after another and temporarily leave the other pages aside, abstract from them: identifying desirable and undesirable elements in the financial system. Generalizations method helped us to analyze the general connection of real objects and phenomena, the relationship of unique and common in all real existing events.

The induction had used to draw general scientific conclusions, based on the evaluation of basic scientific data. Deduction - helped for us to start from general assumptions and applies them to individual general or partial conclusions, and other scientific methods.

3. Literature review

The above-mentioned problems were analysed by many authors (Peters, Pierre, Holzer, Shafritz, Klimovský, and others). The Handbook of Public Administration is a landmark publication, the first to provide a comprehensive and authoritative survey of the discipline. The Handbook provide a complete review and guide to past and present knowledge in this essential field of inquiry. Assembling an outstanding team of scholars from around the world explores the current state-of-the-art in academic thinking and the current structures and processes for the administration of public policy: identifying the Antecedents in Public Performance, Bureaucratic Politics, Strategy Structure and Policy Dynamics, Comparative Administrative Reform, Administrative Ethics, Accountability through Market and Social Instruments, Federalism, and Intergovernmental coordination. A dominant theme throughout the handbook is a critical reflection on the utility of scholarly theory and the extent to which government practices inform the development of this theory (Peters & Pierre 2014).

In the book “Fundamentals of Public Administration” Klimovský (2014) analyzes: the significance of the *terminus technicus* “public administration”, the development of knowledge and approaches in public administration (from antiquity to the present), the dichotomy of public and private interest, public and private law, the state and society. The author pays great attention in his work to the normative, managerial, organizational, economic, and ethical dimensions of public administration, as well as to the current development of the system of public administration in the Slovak Republic.

Marc Holzer and Richard Schwester (2011) have written a highly engaging textbook. Their coverage is both comprehensive and cutting edge, not just including all the basic topics (OT, budgeting, HRM), but also reflecting new realities in public administration: Innovations in e-government, the importance of new technology, changes in intergovernmental relations, especially the emphasis on inter-local and shared regional resources and public performance.

The book "The Next Public Administration" explores public administration in the past, present and future, critically reviewing the modernization of public management reform. It reasserts public administration as an integral component of democratic governance and fostering a state-citizen relationship – consider issues associated with management, governance, and democracy, covers core public administration concepts and their evolution through time, etc. (Peters & Pierre 2017).

The Introducing Public Administration (9th edition) provides with the conceptual foundation - the most important issues in the field of public administration using examples from various disciplines and modern culture. This unique approach captivates and encourages to think critically about the nature of public administration today: an examination of the effect of the Barack Obama administration on the discipline, especially economic and financial management and budgetary policy, allowing to apply the theories and concepts in the text to recent US government practice; new sections on careers in public service, whistleblowing and public employee dissent, networks and collaboration across organizations, social innovation, managerialism and productivity improvement, Big Data and cloud computing, collaboration and civic engagement, and evidence-based policy and management (Shafritz et. al. 2016).

"Public Administration: Research Strategies, Concepts, and Methods" explores how scholars of public administration and institutional politics can improve their analysis by focusing on the contextual particularities of their research problems and considering the use of multiple theories and methods. The book functions as an introduction to central themes of public administration and related traditions of research, but also proposes a new pluralist approach for studying public institutions (Peters 2015).

The book "Public Administration: Concepts and Cases" offers a unique and highly regarded framework in which conceptual readings are paired with contemporary case studies that reflect real-world examples of administrative work, as well as new thinking and developments in the field. Case studies and examples cover topics such as the shootings at Columbine High School, the AIDS epidemic, and the war in Iraq, etc. (Stillman 2009).

Through contemporary case studies of strategic management at work in the US and Europe, this collection „Developments in Strategic and Public Management: Studies in the US and Europe“ shows that it can no longer be seen as a discipline for long term decisions but has become a central feature of the public sector. Individual chapters offer insights into strategic management capabilities at the national and sub-national level (Joyce et. al 2014).

Marc Holzer and Richard W. Schwester (2019) have written a textbook that is distinct from the dozens of public administration books. Their vision is a unique blend of substance and style-a text that is both informative and enlivening, capturing the evolving nature of the field. The book "Public Administration: An Introduction" explores the traditional, essential elements of public administration such as organizational theory, human resource management, leadership, program evaluation and policy analysis, budgeting, and the politics of public administration. This edition are three sections that provide a natural flow and progression of the material: section I provides the theoretical construct of public administration, section II provides actionable material for public administrators, while section III deals with the future of public organizations through the lens of performance improvement and the techniques available to achieve such improvement.

Other authors analyze some aspects of public administration in European countries, the legal status of public authorities, the activities of public institutions, the impact of public administration on sustainable development, economic growth, and legal responsibility in the public sphere (Oakland & Porter 1994; Scholl 2002; Vačok 2018; Potásch 2019; Akerlof et. al. 2021; Braun et. al. 2020; Cheng 2020; Deslatte & Stokan 2020; Döhler 2020; Siller & Cibák 2016; Špaček 2019; Vicen & Haviarová 2013; Lankauskienė & Tvaronavičienė 2012; Vozáryová & Burdová 2018; Mamojka 2016; Lysiná et al. 2016; Gorina & Hoang 2020; Hajnal 2021; Hillebrandt & Leino-

Sandberg 2021; Cepek 2018; Philipsen et.al. 2021; Šabíková & Vicen 2018; Vojtech, F. et. al. 2019; Masood & Nisar 2021; Kurilovská & Kordík 2017; Uramová et. al. 2016.; Mazzanti et al. 2020; Wanzenböck et. al. 2021).

4. Managerial bases of public administration in Slovakia

In correlation with the aim of the given analysis, we can clearly state that the organization and functioning of public power is precisely defined by law and formally (Brostl et. al. 2020; Akerlof et. al. 2021).

Therefore, it should be noted at the management level (in the context of theories: traditional public administration, public management, new public management, progressive public administration, new public service (Peters & Pierre 2014)) that: a) public administration should be politically neutral (Woodrow Wilson), b) from an organizational point of view, public administration should take the form of a centralized formal organization and from a functional point of view - a bureaucratic organization (Max Weber), c) government policy should be implemented by public administration on a top-down method, d) officials, resp. officials must be strictly limited by procedural rules and competencies (Klimovský 2014).

If public administration is to be effective, public administration bodies (their statutes) must follow the following meetings (Shafritz et. Al. 2016; Braun et. al. 2020): a) each body must have clearly and precisely defined tasks and associated measurable goals, b) public policies they must have clear and effective strategic and support plans, c) every organizational process in public administration must be planned with identifiable factors (which affect its success), in order to choose the right tools to achieve goals (or prevent failure) - each process must be implemented in the form of a "PDCA" (plan-do-check-act) cycle, d) the organizational and management structure of the body must have appropriate objectives, tasks, functions and competencies, e) identification of competent staff and their involvement in policy implementation (Oakland & Porter 1994).

In the current conditions of society development - strengthening civic participation in the creation and control over the application of public policies (Peters & Pierre 2017), and also in the modern information world (introduction of information and communication technologies into public administration) is creating a model of electronic government - eGovernment, which is electronic performance of public administration and should ensure not only the use of information and communication technologies in the provision of public services and aims to improve, improve, modernize, simplify, streamline and ensure accessibility (Klimovský 2014; Deslatte & Stokan 2020).

At the local level, eGovernment has transformed into a digital city model and a smart city model, with the latter model aiming to ensure sustainable economic development through a more prudent management of trust with the inclusion of others (Scholl 2002). In this context, we note that to ensure the effective and sustainable development of the city of the Slovak Republic, they are trying to apply the "smart city" model.

5. Analysis *de lege lata* status of state administration entities

The legal foundations of the organization and activities of state administration bodies as well as the legal status of central state administration bodies are enshrined in Constitutional Act no. 460/1992 Coll. The Constitution of the Slovak Republic and Act no. 757/2001 Coll. on the organization of government activities and the organization of the central state administration (Vačok 2018; Potásch 2019; Vrabko 2012).

The Slovak legislator correctly enshrined the legal status of state administration entities in the system of public authorities, also precisely defined their rights and obligations, their competencies, and powers, in some cases also functions and tasks (for example § 7 Act No. 757/2001 Coll. On the organization of government activities and the organization of the central state administration) (Vačok 2018).

De lege lata SR has established that each state body is a budgetary organization (legal entity), which is established by law, acts in the name, on behalf and for the responsibility of the state. The statutory body responsible for its activities acts on behalf of the state body.

But we must state that the Slovak legislator did not legislate measurable and precise explicitly defined main and related sub-objectives (policy objectives), tasks, functions, tools, indicators, competencies, and responsibilities of central public administration bodies in the Slovak Republic (neither in laws nor by-laws, nor in the statutes of state administration bodies (in which, according to § 39 of Act No. 757/2001 Coll., there should be *de jure* tasks and principles)). In some statutes of central state administration bodies, the Government of the Slovak Republic has vaguely adjusted the tasks and principles, in some cases - these are *de facto* functions and competencies of public administration bodies.

In the theory of law, we encounter the scientific definition of the tasks of the government and central bodies of state administration - to perform state administration and ensure its performance throughout the country. The Government of the Slovak Republic, as the supreme executive body of power with central state administration bodies, ensures the international, defense, political, economic, and other interests of the state (Vačok 2018; Vrabko 2012).

At the same time, we must note that in the context of European integration and in correlation with primary EU law, the only public entity in the Slovak Republic for which the Slovak legislator precisely defined a measurable main objective (ensuring price stability) is the Central Bank of the Slovak Republic. 566/1992 Coll. on the National Bank of Slovakia (Vicen & Haviarová 2013).

6. Setting the primary goals of state administration bodies in the Slovak Republic

First Commission Vice-President Frans Timmermans, responsible for better regulation, interinstitutional relations, the rule of law and the Charter of Fundamental Rights, said: "Sustainability is a European brand and sustainable development is at the heart of the European Commission's agenda" (Uramová et. al. 2016).

Therefore, in order to streamline the activities of public authorities, according to the authors, setting the main goals, tasks, developing strategies, policies, selection of tools and indicators for the Slovak Republic, we must build on the milestone: the main goals of the UN (UN 2030 Agenda for Sustainable Development) and EU objectives (Starling 2019; Gorina & Hoang 2020). Agenda 2030 and EU law are a global beacon of basic goals and values for the Slovak Republic. The goals of sustainable growth are based on the principles of the social market economy (with environmental sustainability) (Vozáryová & Burdová 2018).

The UN's 17 main objectives (which have 169 related sub-objectives) are: 1. to end poverty in all its forms (Hajnal 2021; Vasconcelos 2021), 2. to end hunger, achieve food security and better nutrition and promote sustainable agriculture, 3. to ensure healthy living and promote well-being for all in 4. ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (Masood & Nisar 2021), 5. achieve gender equality and empower all women and girls, 6. ensure accessibility and sustainable water management and sanitation for all, 7. ensure access to to affordable, reliable, sustainable and modern energy for all, 8. to support sustainable, inclusive and sustainable economic growth, full and productive employment and decent work for all, 9. to build a resilient infrastructure, to support inclusive and sustainable industrialization and foster innovation (Wanzenböck et. al. 2021); 10. reduce inequalities within countries i between them, 11. make cities and human settlements inclusive, safe, resilient and sustainable (Philipsen et. al. 2021), 12. ensure sustainable consumption and production patterns, 13. take urgent action to combat climate change and its impact, 14. conserve and sustainably use the oceans, seas, 15. protecting, restoring and promoting the sustainable use of terrestrial

ecosystems, sustainable forest management, halting and reversing soil degradation and halting the loss of biodiversity (Vojtech, et. al. 2019), 16. promoting peaceful and inclusive societies for sustainable development, ensuring access to justice for all and to build effective, accountable and inclusive institutions at all levels (Döhler 2020), 17. strengthen the means of implementation and revitalize the global partnership for sustainable development (Mamojka 2016; Lysina et al. 2016).

And each of the UN's main objectives has its sub-objectives, such as objective 8. "To promote sustainable, inclusive and sustainable economic growth, full and productive employment and decent work for all": 8.1 Maintain economic growth per capita depending on country conditions, in particular at least 7% annual GDP growth in the least developed countries. 8.2 Achieve higher levels of economic productivity through diversification, technological development, and innovation, inter alia by focusing on sectors with high added value and a high share of human labor. 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity, and innovation, and support the creation and growth of micro, small and medium-sized enterprises, inter alia through access to financial services. 8.4 Gradually, by 2030, improve the efficient use of global resources in consumption and production and do everything necessary to ensure that economic growth is not linked to environmental damage, in line with the 10-year Framework Program for Sustainable Consumption and Production, headed by developed countries. 8.5 By 2030, achieve full and productive employment and ensure decent work for all women and men, including young people and people with disabilities, and ensure equal pay for equal work. 8.6 Significantly reduce the proportion of young people not in work or education by 2020. 8.7 Take immediate and effective measures to eliminate forced labor, end modern forms of slavery and trafficking in human beings, and ban and eliminate the worst forms of child labor, including the recruitment and use of child soldiers, and eliminate child labor in all its forms by 2025. 8.8 Protecting rights and promoting safe and stable working conditions for all workers, including migrant workers - especially women and people with dangerous occupations. 8.9 By 2030, design and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products. 8.10 Strengthen the capacity of domestic financial institutions to promote and expand access to banking, insurance, and financial services for all.

Achieving this goal (sustainable and inclusive economic growth) will ensure that the economic benefits are shared by the whole population and generations (Peters 2015). To meet the 8th objective, indicators of GDP per capita, the employment rate aged 20-64, the youth unemployment rate aged 15-24, the long-term unemployment rate and the economic activity rate aged 15-64 were selected as national indicators. Slovakia ranks among the 15 countries with a higher unemployment rate of young people aged 15-24 than the EU average. The Slovak Republic has long been one of the countries with a high rate of long-term unemployment. Slovakia is one of two thirds of countries where the rate of economic activity in the 15-64 age group has exceeded 70%.

The main objectives of the European Union include (Holzer & Schwester 2011; Kurilovská & Kordík 2017): 1) promoting peace, values and the well-being of its citizens, 2) ensuring freedom, security and justice without internal borders, 3) sustainable development based on balanced economic growth and price stability, 4) a highly competitive market economy characterized by full employment and social progress and environmental protection, 5) the fight against social exclusion and discrimination, 6) the promotion of scientific and technological progress, 7) the improvement of economic, social and territorial cohesion and solidarity between Member States, 8) protection of rich cultural and linguistic diversity, 9) creation of an economic and monetary union whose currency is the euro. EU values are common to member countries in a society in which government includes inclusion, tolerance, justice, solidarity, and non-discrimination (Novotný 2018). And freedom, democracy, equality, the rule of law, human rights are an integral part of the European way of life (Lankauskienė & Tvaronavičienė 2012).

Each Agenda 2030 objective is associated with 241 global indicators (developed by IEAG-SDGs to measure progress towards the objectives), which correspond to the global objectives and are also available in official

databases. Their selection considered the relevance from the perspective of the Slovak Republic and the European Union, in particular the Strategy for Sustainable Development (EU SDS) and the Strategy for Smart, Sustainable and Inclusive Growth.

Based on the stated goals of the EU and the UN, the Slovak Republic must set its own goals, prepare strategies, policies, tasks, indicators, competencies and especially the tools that will be needed to achieve the goals of sustainable growth (Stillman 2009). We must always keep in mind: "What you cannot measure, you cannot do." (Hillebrandt & Leino-Sandberg 2021).

In conclusion, we will only state that the responsibility for Agenda 2030 in Slovakia is divided between the Ministry of Investment, Regional Development and Informatization of the Slovak Republic and the Ministry of Foreign Affairs and European Affairs of the Slovak Republic.

7. Responsibility of public administration bodies in the Slovak Republic

Legal liability is one of the basic legal institutes of the state legal system (Holzer & Schwester 2019). Liability is the obligation to bear the consequences of conduct contrary to normative rules, as well as the removal of the consequences of conduct contra legem. In general, the institute of liability is subject to the regulation of several branches of law, whether administrative or criminal law, but also civil, labor, financial and commercial law. This follows from the assumption that in every legal branch, a legal entity must bear the consequences for its unlawful conduct or inaction, i.e., it must be the holder of legal liability (Siller & Cibák 2016). At this level, the responsibility can be classified into (Vrabko 2012):

1) private: liability for damage (according to civil, commercial, and labor law), liability for unjust enrichment (according to civil, commercial, and labor law), liability for defects (according to civil and commercial law), liability for interference with intangible assets (honor, dignity), liability for damage in the exercise of public power by an illegal decision or maladministration,

2) public: constitutional liability (mixed, political-legal character), criminal liability (according to criminal law), administrative liability for administrative offenses (according to administrative law), disciplinary liability for breach of discipline in internal relations in public institutions (according to labor law).

On this basis, we can also exclude the types of compensation for damage or other harm in public administration (Vrabko 2012): liability for damage caused by an illegal decision or incorrect official procedure, liability for damage under special regulations, liability for breach of personal data protection obligations, compensation or other damage caused by the legal procedure of public administration (restriction of property rights, compensation for expropriation, material assistance, compensation in connection with the implementation of measures proven in emergencies, etc.), compensation for damage caused to citizens in the performance of public office, personal assistance and fulfillment of personal duty according to the law, responsibility for unjust enrichment in public administration.

Liability for damage caused in the exercise of public power is one of the fundamental attributes of democracy and contributes to strengthening the role of the rule of law and the efficient and proper functioning of public administration. In Slovakia, the legally regulated legal institute "responsibility for the performance of state (public) administration", which means - legal responsibility for the administrative and legal performance of public administration (Cepek 2018): for damage caused by illegal decisions, wrongful practices, illegal arrests, detentions or other deprivation of personal liberty, or a decision on punishment, a protective measure, or a decision on detention) by employees in the state administration. Responsible subjects for compensation of damage to the injured party are public authorities in the exercise of public power and territorial self-government bodies

with the right of recourse compensation against the pest in the exercise of self-government. We emphasize that the state - the Slovak Republic (Potásch 2019) is responsible for the damage caused by state authorities (in the exercise of public power).

Also, for effective control of public administration in Slovakia there are also institutes of “legal guarantee in public administration” (Cepek 2018): 1) the right to free access to information, 2) petitions, 3) complaints, 4) complaints, 4) protection against illegal inaction, 5) against illegal legislation, 6) criminal liability of officials and officials.

But we must note that there are no institutes of political or labor responsibility for failing to achieve legally regulated goals or failing to fulfill tasks (linked to goals). Of course, we must state that this is due to the fact that the legislator did not enshrine the goals and tasks of central public administration bodies, which contradicts theories of management as a scientific field: new public management, progressive public administration, new public service or good administration. We are convinced that the public administration entity will not function effectively without explicitly regulated measurable goals, tasks, deadlines, indicators, strategies, policies, tools, functions, and competencies.

In this context, we must state that it is not enough to enshrine in the constitution of the state, that we are a sovereign, democratic and rule of law, and that the rule of law is reflected in legal norms, but that public power must function in such a way that natural and legal persons can their rights and legally protected interests. Subjects of social relations rightly expect the rule of law that public authorities will deal promptly, managerially, and properly (Joyce et al. 2014): both public affairs, but also rights (freedoms) and the legitimate interests of private entities. We ask ourselves the question: “can we expect the efficiency of state management and the functioning of public power without the control bodies monitoring and controlling the indicators of achieving the goals of state bodies and self-governing bodies? According to the authors, no, that is not possible.

Take, for example, the Institute of "Law Enforcement", the Institute of "Access to Justice for All" and the Institute of "Protection of Human Rights", which are the main indicators of the real rule of law, and ask ourselves: "Are we measuring these indicators of achieving these goals?" Is the statute of a public authority responsible for achieving these goals?" We are convinced that such a sui generis approach does not exist in public administration in Slovakia.

We believe that in order to implement Agenda (UN) 2030, the Slovak Republic will have to develop National Priorities for the implementation of Agenda 2030 (which, according to LP / 2020/142 Reports on the results achieved in the national priorities for the implementation of Agenda 2030, should be developed by 31 December, 2020) and the main objectives, related sub-objectives, deadlines, tools, strategies, policies and measurable indicators of achievement of the objectives will be legislated. Then, on this basis, the control bodies will have the opportunity to infer the personal responsibility of the statutes of the state bodies for not achieving the set goals (Šabiková & Vicen 2014; Špaček 2019.).

At this point, it is necessary to state that the system of control in public administration in Slovakia is adjusted to a sufficient level. As an example, external control of public administration is exercised by the legislature (parliamentary control), the Supreme Audit Office, the courts, the prosecutor's office, the ombudsman, and other institutions. Striking indicators of sufficient parliamentary competence in the area of control are the institute of interpellation (Article 80 of the Constitution of the Slovak Republic), the institute of expressing confidence in the government or its members (Article 86 of the Constitution of the Slovak Republic) and others (Cepek 2018).

Conclusion

Based on the theory of management, theories of public administration management of democratic countries and de lege lata analysis, we can state that: 1) public administration will function effectively when precisely defined and legislatively enshrined goals, tasks, functions, principles, tools, strategies, policies, indicators, competencies and responsibilities of a public administration body, 2) the setting of goals and tasks cannot be vague (as we currently have) and must be precisely explicitly defined by legislation in constitutional or administrative norms, 3) the goal and tasks of state administration bodies must be measurable), 4) the obligation of the Government of the Slovak Republic and the National Council of the Slovak Republic to evaluate the achieved primary and secondary goals and tasks of each central state administration body must be enshrined every year and, if necessary, hold the state administration body accountable (for failure to achieve set goals and failure to fulfill tasks). Only in this case can we ensure proper, efficient, economical, efficient, and effective operation of state administration bodies.

Therefore, we propose de lege ferenda to streamline the functioning of state administration in the Slovak Republic: 1) to enshrine in the Act no. 575/2001 Coll. on the organization of government activities and the organization of the central state administration, especially the goals and tasks of central state administration bodies (implement the goals and tasks enshrined in the EU Agenda 2030), 2) enshrine the responsibility of the statutory state administration body for failure to achieve medium term).

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THE EFFECT OF REGULATORY PERFORMANCE ON ECONOMIC GROWTH*

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Abstract. The tendency to fall into a middle-income trap position due to weak regulatory performance remains a longstanding issue faced by the majority of upper-middle-income economies (UMIE). Although regulatory performance is considered as one of the most vital factors that determine the financial progression and stability of a nation, this variable is often overlooked in previous economic growth literature. Hence, this study aims to examine the important role of regulatory performance in accelerating the economic growth of 30 upper-middle-income economies countries within the timeframe of 2000 to 2018. Using the two-step system Generalised Method of Moments (GMM), the findings reported that regulatory performance is indeed essential in stimulating economic growth. The results also indicated that lengthy procedures and waiting period involved in opening and registering new businesses are a common predicament for start-up firms. This proves to be a demotivating factor for new investors, indirectly slowing down the economic performance of the UMIE. As this study leads to various policy implications, future studies can consider advancing research in this area by further examining the link between regulatory performances and economic growth for individual countries based on a time series analysis.

Keywords: middle-income trap; upper-middle-income economies; regulatory performance; economic growth; system GMM

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1. Introduction

The World Bank Group (2018a) announced that the upper-middle-income economies (UMIE) tend to fall into a middle-income trap position for a long period. This usually happens when countries are not progressing economically at a promising rate and are unable to catch up with the developmental pace of high-income economies (HIE). One of the main contributing factors to this situation is the weak regulatory performance of these countries. Generally, the regulatory performance is measured using the ease of starting business (EOSB) score. The score captures the gap of the individual economy of countries that are known for their best regulatory performance achievement (The World Bank Group, 2019). The value of the score varies from 0 (the worst regulatory performance) to 100 (the best regulatory performance). The calculation of this score is based on a simple average of four business indicators components in setting up a business, namely the number of procedures involved, the number of days involved, costs involved as well as paid-up minimum capital required to set up a business (The World Bank Group, 2019). A higher score indicates that the country's regulatory performance is at a good stage and is capable of attracting new firms to set up businesses in the country.

Reviewing the statistics on countries' classification tabulated by the World Bank Group (2019), on average, business operations are easier to handle in HIE (average score of 89.28 in 2018) due to their favourable regulatory performance. In 2018, the average score obtained by UMIE was 81.28. Although the average score for UMIE then was more than 80, nineteen countries within the UMIE received a score of less than 80. This implies the issues underpinning business operations in these countries. Among the countries that fell into this category were Venezuela (25), Bosnia and Herzegovina (59), Suriname (60) and Brazil (64). Since the regulatory environment in these countries were far from conducive, businesses were reluctant to start up or even operate there.

Attracting new investors to invest in the UMIE is a daunting task which requires the macroeconomic foundation of a country to be stable and resilient enough in confronting unexpected downturns. Both public and private sectors should assume the role as the engine of growth in transforming the nation's economy by attracting a higher level of investments into the country. This must be done to avoid UMIE from experiencing economic stagnation where they are trapped in the middle-income economy level for an extended time. When this happens, UMIE will find it even more difficult to move up from their current economic level as most investors would already be disinterested to invest in a country whose economy is stagnated.

The lower inflow of investments is bound to affect the economy of a country in various manners. Generally, the country's economy, on the whole, may experience slower technological progress as a result of a reduction in capital and investment meant for scientific research and innovation. The reliance on the public sector to inject more capital into the economy will naturally be higher (Hanif, Rakhman, Nurkholis, Pirzada, 2019). However, governments would need to prioritise the welfare of citizen over larger financial matters. The lack of progress in all areas including research innovations and infrastructure development may lead to a reduction of job opportunities for the public. Consequently, fresh graduates may be unable to secure better jobs despite having established academic background. This situation prompts migration to other countries that provide better opportunities especially for those with financial means, knowledge, skills and talent. This issue, known as "brain drain", exacerbates further the current economic crisis with the loss of local talents to lead and drive the economy. Subsequently, the income inequality between nations continues to widen, rendering it more difficult for the economies to maintain the status of UMIE when such conditions persist for an extended time. If the situation ceases to be monitored, most UMIE may not be able to accomplish the Industrial Revolution 4.0 (IR4.0) as the IR4.0 necessitates countries to equip themselves with sufficient investments in capital, technological advancement as well as human capital (Lee, Wong, Intarakumnerd, 2019).

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Therefore, this study intends to examine the importance of regulatory performance in enhancing the economic growth of the UMIE. This study is highly significant as it is closely related to the accomplishment of the fourth industrial revolution. The findings of the study can be used by policymakers to re-design the business regulatory environment to enhance the roles of the private sector, both domestic and foreign investors, as the engine of economic growth (Yacoub, Lestari, 2019).

This study contributes to the existing literature in several ways. The existing literature on growth encompasses emerging economies (Kharusi & Mbah, 2018), middle-income countries (Benali et al., 2018), lower-middle-income economies (Akhanolu et al., 2018), low-middle-income economies (Moore & Thomas, 2010), developed economies (Mencinger et al., 2015), developing economies (Karadam, 2018), industrial economies (Karadam, 2018) and mixed economies (Intartaglia et al., 2018). This study contributes to the existing literature by focusing on UMIE, which is rarely focused upon by previous researchers. Previous studies often categorise LMIE and UMIE as middle-income economies (Akhanolu et al., 2018; Benali et al., 2018).

Furthermore, the notion of EOSB was not fully utilised in the elucidation of its direct relationship with economic growth (S. Asongu & Odhiambo, 2018; Bonga & Mahuni, 2018; Ncube et al., 2019). This variable is often viewed as a less important variable in the growth literature where its direct relationship on economic growth is yet to receive significant attention (Krammer, 2015). The establishment of its link to economic growth due provides an insight into the understanding of different factors affecting the financial status and development of a country.

2. Literature review

Globally, some countries with an abundance of natural and physical resources such as Sub-Saharan Africa are still unable to achieve high economic growth (The World Bank Group, 2018b). In contrast, countries with limited resources such as Japan and Singapore charted significant rapid growth, overtaking the lead from resource-abundant countries. This implies that the abundance of physical and natural resources does not guarantee the economic growth and stability of a country. Based on this proposition, Hibbs (2001) developed the politicisation of growth theory to improve existing growth models by adding the element of the institutional quality. Since regulatory performance is an element in the institutional quality, this theory is adopted in this study to elucidate the relationship between regulatory performance and economic growth.

2.1 The politicization of growth theory

This theory is developed by Hibbs (2001) to emphasise the importance of institutions as part of economic growth. The idea was initially postulated by Adam Smith, the father of economics, in his popular book of the *Wealth of Nations*. He stressed the importance of property rights and institutions in accelerating economic growth. Adam Smith's idea was then explored by Hibbs (2001) to include politics, institutional quality and policy as additional factors in creating a conducive economic environment for businesses and investors. These variables were included because the traditional factors were identified to be insufficient in ensuring economic development.

One of the variables which demonstrate institutional quality is the regulatory performance (The World Bank Group, 2019). In measuring regulatory performance, the World Bank Group was able to initiate an index to determine the ease of business start-up partly by using the elements in Hibbs (2001). The index is used to rank countries based on their regulatory performance besides highlighting the institutional quality elements of a country. Institutional quality is defined as the quality of the public sector in running the nation's economy. The

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quality of public institutions is imposed by formal and informal constraints (Snowdon & Vane, 2005). The formal constraints can be in the form of laws and contract enforcement while the informal constraints involve customs, conventions and self-imposed conduct. Naturally, both constraints should complement each other. Certain institutions with specific constraints allow individuals and firms to conduct activities in a country by using the same repetitive procedures (Hibbs, 2001). These procedures are tedious and may hinder economic growth by distorting a country's reputation.

Countries with a good reputation will inevitably attract more business start-ups, thus leading to higher employment opportunities, national productivity and economic prosperity. On the contrary, business owners who had to succumbed to slow and tedious procedures will be affected by this bad impression and may choose to cease business ties in the country. This indirectly tarnishes the country's reputation. As a result, other potential business investors may also be reluctant to invest in the country so as to avoid the bureaucracy and tedious procedures imposed by the government (Husaini, Pirzada, Saiful, 2020). Consequently, private sectors are forced to contribute lesser to economic development due to the lack of participation from firms and investors. Undoubtedly, the ease of starting a business is one of the most important elements under institutional qualities.

2.2 Empirical review

The role of the private sector in boosting economic growth is undeniable. Increased participation of firms means more job opportunities, improved standard of living as well as an increased national income via exports, investments and private consumptions. Nevertheless, attracting more participation from firms in doing business is not an easy task and requires full supports from the public sector, especially in easing the regulatory performance such as reducing costs, time and procedures involved in starting up a business. As mentioned earlier, in measuring the ease of starting a business, The World Bank has calculated a score for each country. The best countries to start-up business are those that have the highest score value. This score indicates less complexity in conduct business, strong legal institutions as well as lower costs of regulatory processes. These costs involve both time and money in handling bureaucracy and administrative procedures.

The ease of doing business is a measure of the regulatory performance and is normally used as an independent variable to directly explain entrepreneurial well-being (Abreu et al., 2018), entrepreneurial intention (Griffiths et al., 2009), foreign direct investment (Asongu, 2013; Aziz, 2018; Bournakis et al., 2018; Corcoran & Gillanders, 2015), domestic investment (Asongu, 2013, 2015), exports (Wang & Le, 2018), business creation (Canare, 2018) as well as the growth of both small and medium enterprises (Obadić, 2015). However, within the growth literature, the ease of doing business and its direct relationship with economic growth remains underexplored (Asongu & Odhiambo, 2018; Bonga & Mahuni, 2018; Ncube et al., 2019). Investigating the relationship between these two variables is deemed vital as it involves the formation of new businesses and the role of new investors in developing the economy of a country.

The direct effect of the ease of doing business on economic growth has been investigated in the cases of the Western European and transitional countries from 1990 to 2009 (Krammer, 2015), in Russia (Matveev et al., 2018) as well as in African countries (Bonga & Mahuni, 2018; Ncube et al., 2019). Finding shows that Western countries that are more have a higher level of economic growth as compared to transitional economies as business operations tend to be easier to conduct (Krammer, 2015). Investors are happy to conduct businesses in Western countries since the business regulatory environment is uncomplicated. The conducive environment creates a positive ripple effect as new firms are attracted to join the market due to lower regulatory costs (Canare, 2018). A higher number of firms in the market will create more employment opportunities for the citizens which is a

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stepping stone to economic vitality (Asongu & Odhiambo, 2018). Although the ease of doing business is rarely used in growth models (Coe et al., 2009), its impact on the economy is large and significant. A previous study reported that the magnitude for the ease of doing business variable is even larger than other common control variables in growth models such as inflation and secondary level education (Djankov et al., 2006). This may be attributed to the fact that the ease of doing business contributes to the economy via private consumptions and private investments (Asongu & Odhiambo, 2018). Doing business in an uncomplicated and comfortable environment aid investors and entrepreneurs in focusing on inventing and innovating products based on customers' demands. With the increase in demands, higher profits can be obtained by firms, thus, allowing new employment or distribution of profits to existing employees. This, in turn, will contribute to an improved standard of living besides encouraging private consumptions. In the long run, this practice may also encourage knowledge and skills transfer between local firms and new investors, prompting a more efficient and larger production of goods and services.

3. Research methodology

The model derived in this study is based on the grand theory of the economic growth, known as the endogenous growth model (Lucas, 1988; Romer, 1986) which stressed the importance of labour, capital and human capital in accelerating the economic growth (Pirzada, 2016). Therefore, the specifications and standards developed in this study were based on this common model.

3.1 Model specification and sources of data

Based on Barro (2003), Barro and Sala-I-Martin (1992), as well as Ibrahim and Law (2016), the baseline regression for the growth model using panel data specification, is as follows:

$$\ln y_{it} = \alpha + \rho \ln y_{it-1} + \beta \ln x_{it} + \mu_i + \varepsilon_{it} \quad (1)$$

where $\ln y_{it}$ is the real GDP growth per capita (in logarithm form), α is a constant term, $\ln y_{it-1}$ is the initial real GDP per capita (in logarithm form), $\ln x_{it}$ is a vector of explanatory variables (in logarithm form), μ_i is the individual-specific effects, ε_{it} is the error term while i and t represent country and time, respectively. Meanwhile, β is a coefficient that measures the change in the real GDP growth per capita due to a unit change in the control variables, ρ measures how the countries converge to its steady-state level. In line with the convergence hypothesis (Robert Joseph Barro, 1991; Robert Joseph Barro & Sala-i-Martin, 2004), the ρ is expected to be negative. Lower-income countries with lower initial levels of technology and capital tend to chart rapid growth as compared to advanced economies. This is due to product imitation and diffusion of technology in advanced countries. This inclusion of this effect is essential as it evaluates the ability of the economy to reach its equilibrium state and develop in the long run.

In ensuring the validity of the estimation, the x_{it} as the vector of explanatory variables includes both, the variable of interest and the control variables. The variable of interest is the ease of starting business score (EOSB) which also acts as a measure of the regulatory performance. Meanwhile, the control variables included in the estimation models are parallel to the grand theory of the endogenous growth model and previous literature. The baseline growth model in equation (1) is expanded into the following model specification.

$$\ln y_{it} = \alpha + \rho \ln y_{it-1} + \beta_1 \text{EOSB}_{it} + \beta_2 \ln \text{POPG}_{it} + \beta_3 \ln \text{INV}_{it} + \beta_4 \ln \text{HC}_{it} + \beta_5 \ln \text{TO}_{it} + \beta_6 \ln \text{INF}_{it} + \beta_7 \text{DEBT}_{it} + \mu_i + \varepsilon_{it} \quad (2)$$

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where lnPOPG, lnINV and lnHC are the control variables parallel to the endogenous growth model, while the remaining variables (lnTO, lnINF and EDEBT) are the control variables following previous growth literature.

Detailed explanation of the variables is shown in Table 1.

Table 1. List of all variables and sources of data

No.	Type of variable	Notation	Description	Proxy	Sources of Data
1	Dependent variable	lny	Growth of real GDP per capita (in logarithm form)	Economic growth	World Development Indicators (WDI)
2	Convergence variable	lnyit-1	Initial real GDP per capita (in logarithm form)	Convergence variable	World Development Indicators (WDI)
3	Variable of interest	EOSB	Ease of starting business score	Regulatory performance	Doing Business Statistics, by The World Bank
4	Control variable	lnPOPG	Population growth (in logarithm form)	Labour	World Development Indicators (WDI)
5	Control variable	lnINV	Gross capital formation to GDP (in logarithm form)	Capital	World Development Indicators (WDI)
6	Control variable	lnHC	Human capital index (in logarithm form)	Human capital	Penn World Table
7	Control variable	lnTO	Sum of exports and imports to GDP (in logarithm form)	Trade openness	World Development Indicators (WDI)
8	Control variable	lnINF	Inflation rate, measured by the consumer price index (in logarithm form)	Macroeconomic stability	International Financial Statistics (IFS)
9	Control variable	EDEBT	External debt to GDP (in logarithm form)	Public debt	International Debt Statistics (IDS)

3.2 Hypothesis

Consistent with the Politicisation of Growth Theory, firms and investors would naturally be interested in conducting business and investing in a country with good institutional qualities (Hibbs, 2001), particularly, in terms of the regulatory performance. Investors prefer standard tasks and procedures for handling start-ups and business operations. Countries with the best regulatory performance will experience higher private sector participation while countries with weak regulatory performance might not have strong private sector participation. This may deplete governmental funding which is used to cater to welfare as well as the stimulation of the economy. Reviewing these arguments, the hypothesis of the current study is postulated as the regulatory performance of UMIE has a significant positive relationship with its economic growth.

3.3 Scope of study

The current study involved 30 countries under UMIE, spanning from the year 1990 to 2018. UMIE was chosen for two reasons. Firstly, limited studies have been done in specifically examining the economic growth of UMIE. Previous research grouped UMIE alongside other developing countries which belonged to the lower-middle-income economies (LMIE). Secondly, countries in UMIE remained stagnant in the middle-income trap position due to a slow growth rate. Thus, it is deemed relevant to investigate the relationship between regulatory performance and economic growth of UMIE.

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In order to avoid any structural break in the data, a non-overlapping five-year data averaging for all data points following the procedures by Ahlborn and Schweickert (2018), Ewaida (2017) and Islam (1995) was conducted. Considering the period of estimation between 2000 to 2018 and five-year data averaging, the four data (time) points of each country are (1) 2000 to 2004, (2) 2005 to 2009, (3) 2010 to 2014 and (4) 2015 to 2018.

By referring to the variables used throughout the estimation models, the subscript notation of t refers to the four-time points as stated before, while the subscript of $t-1$ in the convergence variable refers to the initial value of the per capita income. For instance, if $t = 1$ refers to 2000 to 2004, $t-1$ is the initial value of per capita income in 2000. This is in line with the procedure by Barro (2003).

3.4 Estimation method

Since this study utilises panel data that consists of a large number of cross-sections (30) with limited points for time (4), the best viable method in tackling this data type is the Generalised Method of Moments (GMM) (Arellano & Bond, 1991). GMM also allows potential heterogeneity across countries by including the specific individual effect (μ_i) in the model specification (Ibrahim & Law, 2016). Adding μ_i addresses the omitted variable bias which may arise from the unobserved characteristics of countries under investigation.

In addition, GMM permits the model to be dynamic. The dynamic model is when the lag dependent variable (y_{it-1}) is added to the regression model as one of the independent variables. In the growth model, the inclusion of the lag dependent variable is consistent with the convergence hypothesis (Barro, 1991; Barro & Sala-i-Martin, 2004). Other traditional panel models, such as POLS and least-square dummy variable (LSDV) are biased when the dynamic term is present in the estimation model (Ibrahim & Law, 2016; Nickell, 1981).

There are two variants of the GMM system namely, one-step and two-step system GMM. The difference between these two variants is on the use of weighting matrices. The one-step estimator uses weighting matrices that are independent of the estimated parameters, while the two-step estimator uses optimal matrices, in which the moment conditions are weighted by a consistent estimate of the covariance matrix. In this study, the two-step variant was employed as the results are projected to be more consistent compared to the one-step variant.

The use of the GMM system requires careful selection of instruments. By default, the instruments are selected by using all available lags. Too many lags will lead to a high number of instruments and may cause estimation bias (Roodman, 2009). To avoid this situation, the number of instruments should be lower than the number of cross-sections (Roodman, 2009). Alternatively, the number of lags can be reduced by restricting the lags or by collapsing the instruments.

In ensuring the validity of the instruments, the Hansen J test is used to confirm whether the instruments appear to be exogenous or not (Hansen, 1982). The test is to ensure that the null hypothesis is not rejected (overidentifying restrictions are valid). If this is the case, then the overidentifying conditions need to be correctly specified to ensure the instruments are valid.

Moreover, the GMM estimator only allows for the first-order serial correlation if the error terms are serially independent (Arellano & Bond, 1991). This is allowed as the model is a combination of both level and first difference variables. A higher order of serial correlation illustrates the specification error in the model. Therefore, to test for the second-order serial correlation, Arellano-Bond test is conducted using a null hypothesis of no

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second-order serial correlation for the disturbances in the first-difference equation. In order to ensure there is no specification error, the null hypothesis should not be rejected.

4 Results and discussion

Descriptive statistics were used to understand the essential information in all dataset used in this research. Table 2 shows the results of the descriptive statistics for all the variables.

Table 2. Descriptive statistics

No.	Variable	Mean	Standard Deviation	Minimum	Maximum
1	y	2.3247	3.1574	-12.5759 (Armenia)	11.2728 (Armenia)
2	yit-1	8.5216	0.5431	6.5918 (China)	9.5362 (Turkey)
3	EOSB	73.8754	13.2300	23.7500 (Jordan)	95.7200 (Jamaica)
4	POPG	1.1773	1.1354	-1.5050 (Kazakhstan)	5.2075 (Jordan)
5	INV	24.6799	6.6374	12.6640 (Guatemala)	49.9950 (Algeria)
6	HC	2.5260	0.4273	1.4676 (Iran)	3.4891 (Belize)
7	TO	72.0504	33.6360	15.5664 (Argentina)	205.5394 (Malaysia)
8	INF	1290.6270	16878.6200	-0.1210 (Argentina)	232662.3000 (Venezuela)
9	EDEBT	45.1043	26.8919	1.4447 (Iran)	166.1601 (Jordan)

As illustrated in Table 2, the minimum and the maximum values for all variables demonstrated an increasing trend. Additionally, there were huge differences between the minimum and the maximum values of TO, INF and EDEBT. This indicates the possible existence of outliers as the data might have extreme values. For instance, the minimum and the maximum values of INF were -0.1210 and 23266.3000, respectively. Since the mean is 1290.6270, outliers may exist for countries that have recorded extremely high INF values such as Venezuela (232662.30000 in 2015 to 2018), Armenia (4502.6300 per cent in 1990 to 1994) and Brazil (1667.1300 per cent in 1990 to 1994). Similarly, the maximum values for TO (205.5394) and EDEBT (166.1601) were very far from the mean values (72.0504 and 45.1043, respectively). Hence, the removal of outliers is necessary to ensure robust estimation results.

The removal of outliers was conducted using the Cook's D test. Based on the number of observations, the cut-off distance for the Cook's D test was 0.0333. It was derived by dividing four with the number of observations. Hence, five observations were removed because the Cook's D for those observations were greater than the cut-off distance, leading to a total of 103 observations. Based on the model specification as stated in equation (2), the results of the two-step system GMM are shown in Table 3.

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Table 2. Panel data estimation using two-step system GMM

	Notation	Coefficient	Robust Standard Error
Initial GDP per capita	lnyit-1	-0.1249***	0.045
Regulatory performance	EOSB	-0.0025**	0.001
Population growth	lnPOPG	-0.1801***	0.022
Gross capital formation	lnINV2	0.1007***	0.035
Human capital	lnHC	0.4109**	0.180
Trade openness	lnTO	-0.0588	0.042
Inflation	lnINF	-0.0169	0.014
External debt	EDEBT	-0.0022***	0.001
Constant		3.812***	0.347
Observations		103	
Number of countries		30	
No. of instruments		29	
AR2 p-value		0.430	
Hansen p-value		0.303	

*Note: *** and ** indicate significance at 1% and 5%, respectively. The maximum lags used as instruments were three for lagged dependent variable and other endogenous variables.*

The above results were robust due to the following reasons. Firstly, the coefficient of lnyit-1 is consistent with previous research on developing countries which claimed that the value of the convergence variable ranged between 0 to 1 (Lee, 2020). Secondly, four control variables, namely lnPOPG, lnINV, lnJC and EDEBT were found to be significant and met the expected signs. Thirdly, the number of instruments for both models did not exceed the number of countries. This indicates that both results were free from any estimation bias (Roodman, 2009). Finally, the p-values for both AR and Hansen tests were reported to be greater than 0.05. This implies that both models have no specification error and the instruments used were valid.

The EOSB, which acts as a measure of the regulatory performance (The World Bank Group, 2019) was found to have a significant negative relationship with the economic growth of the UMIE. The coefficient value of EOSB was -0.0025, and it is statistically significant at the five per cent significance level. It is surprising to find that the EOSB was negatively significant. This is because of the early postulation that EOSB would have a positive relationship with the economic growth since it reflects the quality of the public sector in improving the business environment in UMIE through law and regulations (Krammer, 2015).

Nonetheless, looking at the average statistics of EOSB in UMIE from 2004 to 2018, the score of EOSB received by UMIE was 76.03. This is comparatively low when pitched against high-income economies such as New Zealand (98.51), Canada (97.08), Australia (96.38), Hong Kong (94.49), Singapore (94.43) and Sweden (92.13). Given zero as the lowest score (illustrating the worst regulatory performance) and 100 as the highest score (representing the best regulatory performance), the score of 76.03 for the UMIE is relatively acceptable. However, a more precise analysis on individual countries in UMIE revealed that only 37.5 per cent of the countries (equivalent to 12 countries) in the UMIE has an average EOSB score which is higher than 80 in 2004 to 2018. Among these countries were the Russian Federation (91.62), Jamaica (90.55), Romania (88.93), Mauritius (88.75), Armenia (88.65) and Mexico (86.44). The remaining 62.5 per cent of countries (equivalent to 20 countries) scored an average EOSB of less than 80, with the lowest average score of 45.45 by Venezuela (The World Bank Group, 2019).

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The reason for the negative relationship between EOSB and the economic growth of UMIE perhaps lie in the difficulties in of starting businesses. The justification is supported by the claim put forth in the previous paragraph where the average EOSB for UMIE from 2014 to 2018 was less than 80. This implies that firms in the UMIE were having difficulties in starting up their new ventures. Furthermore, the sub-components of the EOSB reported that twenty countries in the UMIE had low scores in the EOSB (less than 80) due to weak regulatory performance. Most public sector in UMIE requires new firms to undergo multiple procedures in setting up businesses. These procedures are time and effort consuming. This further supported by the data in Table 4 which illustrates the weakness of regulatory performance in the UMIE based on its sub-components. There was a total of twenty-three countries in the UMIE which adopted lengthy procedures.

Therefore, consistent with the Politicisation Of Growth Theory (Hibbs, 2001), it can be concluded that tedious and lengthy procedures will hinder economic progression. New firms are less likely to be attracted to begin their business venture in UMIE with such hassles. This signifies a lost opportunity for UMIE as they lose out on new business prospects which enables the creation of job opportunities, contribution of higher tax revenues and funding for economic growth and development.

5 Conclusion and policy implications

Weak regulatory performance in the UMIE may be one of the possible reasons why UMIE experience slow economic growth and remain trap in the middle-income position. The weak regulatory performance is identified as the lengthy procedures required for new business ventures. Overcoming this issue is necessary if UMIE desires to keep its global competitive advantage. Investors would most likely choose not to invest in UMIE if it continues recording a stagnant growth rate. This will further hinder UMIE governments in implementing appropriate economic transformation plans which are aligned with the fourth industrial revolution for future progression.

The findings of this research have various policy implications. Governments should consider reducing bureaucracy and documentation to improve the regulatory performance of UMIE. Policies should be implemented where new firms are allowed to operate their businesses within a short period without the hassle of tedious paperwork and procedures. When the regulatory performance is improved and in place, both policymakers and the Central Bank need to closely monitor the inflationary condition as the improvement in the regulatory performance might lead to this issue. Should this occur, direct measures need to be imposed to minimise the effects of the private sector's contribution to economic growth. These measures can include the imposition of the price control and subsidies to control price hike. The imposition of the fiscal and monetary policy instruments should only be enforced when the inflationary condition is beyond control. This is because indirect measures as such promote adverse effects to the private sector participation in the long run.

Limitations of the study

This study is not without its limitations. Firstly, the scope of this study is limited to only 30 countries in the UMIE. It does not include all 62 countries under the UMIE due to limited data availability. Secondly, this research also did not manage to provide a comparison based on group of countries or group of economies. Thirdly, this study also used regulatory performance as an institutional variable which can influence economic growth. It does not include other institutional variables since there is only one variable which can represent the business regulatory performance (The World Bank Group, 2019), namely the ease of starting a business. The rest of the institutional variables were also not included as part of the study. Finally, the findings of this research were

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generalised for all 30 countries under this investigation. Since this study is using a panel data analysis, the researcher is unable to derive the findings for 30 individual countries separately. Therefore, it is suggested that future research extend this study by focusing on overcoming these limitations.

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FISCAL SUSTAINABILITY AND FISCAL RISK IN THE EU: FORECASTS AND CHALLENGES IN TERMS OF COVID-19

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Abstract. This study focuses on examining the relationship between fiscal and debt sustainability indicators in EU Member States, based on the multidimensional approach to estimating and forecasting different time horizons applied by the European Commission. The relationship between fiscal sustainability and the numerical fiscal rules applied at national and supranational level in the context of the Stability and Growth Pact has been established. The dynamics of medium-term risks in the Member States of the European Union for the period 2015 - 2019 is traced. The main challenges to fiscal sustainability in the European space in the context of the COVID-19 pandemic are outlined.

Keywords: fiscal policy; fiscal rules; debt; fiscal sustainability; fiscal risk; COVID-19

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JEL Classifications: E62, E63, G28, H62

1. Introduction

Fiscal sustainability as the ability of governments to sustain their current fiscal policies in the long run is largely linked to the concept of fiscal risks. To the extent that the sustainability of public finances affects intergenerational fairness and embodies principles that apply at all times and to all governments, regardless of their current indebtedness, EU Member States need to adjust to unforeseen circumstances beyond the control of the government, such as major changes in the business cycle or economic crises. The need to keep government debt under control and to maintain the ability to issue debt when needed is also essential for the smooth functioning of the economy.

Prior to the recent financial crisis, the indicators used to "measure" fiscal sustainability of EU Member States provided an opportunity to assess long-term risk. Yet, subsequent events have shown that this is not enough. Thus, there is a need to apply an approach that integrates the assessment of long-term sustainability with the assessment of more immediate issues and risks by involvement of additional indicators for measuring medium-term and short-term risk. In this line, to ensure a more efficient and coordinated fiscal policy within the European Union, common fiscal sustainability standards were introduced for all Member States.

The purpose of this research is, based on an assessment of the nature of the fiscal policy and the fiscal rules applied in the EU for its stabilization, to trace the dynamics of risk levels based on the multidimensional approach applied by the EC which brings together in a synthetic way results on debt sustainability analysis (DSA) and fiscal sustainability indicators. The last two paragraphs analyse the forecasts for fiscal sustainability and level of fiscal risk in EU Member States in the COVID-19 pandemic situation and outline the trends in the medium term.

2. Fiscal sustainability and fiscal rules in the EU

According to the OECD definition, fiscal sustainability is the ability of a government to maintain public finances at a credible and serviceable position in the long run (Gov. at Glance, 2014). Ensuring long-term fiscal sustainability requires accurate and continuous planning and correct forecasting of future values of public revenues and liabilities, taking into account the economic situation, the factors influencing economic development, etc. The unforeseen situation the governments of the EU Member States have faced since the outbreak of the COVID-19 pandemic has created preconditions for deterioration in fiscal positions of the countries, "a snow ball effect" in terms of the constantly growing debt levels and reduction of the potential for economic growth. The spending of the EU Member States in the form of recovery measures, as well as the unprecedented decline in economic activity in 2020, have posed a big challenge for governments to maintain fiscal sustainability. Ensuring fiscal sustainability and overcoming this challenge are directly related.

Fiscal sustainability largely depends on the level of debt (Prodanov & Naydenov, 2020; Vasconcelos, 2021). The question related to determining the maximum levels of government debt ratios is of interest for many economists and policy makers. The European Union follows strict rules on optimal debt and deficit levels. The Maastricht Treaty, concluded in 1992, set the requirements for keeping low levels of public debt and deficit while respecting budgetary discipline as a guarantee for ensuring fiscal sustainability (Lilova et al., 2017; Mazzanti et al., 2020). The next step towards compliance with fiscal discipline, supplementing and elaborating the provisions of the Maastricht Treaty, the European Commission took in 1997 with the adoption of the Stability and Growth Pact. Given the specifics of the fiscal systems of each Member State and the need to supplement existing treaties, the

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so-called "Two-pack " and "Six-pack" - Revision of the Stability and Growth Pact in 2005, Treaty on Stability, Coordination and Governance within the Economic and Monetary Union-European Fiscal Pact (2013) were ratified. The introduction of increasingly restrictive measures and specific fiscal rules aims to achieve fiscal sustainability and balance the needs for additional funding and public sector stability in the Member States. Anderson, B. and Minarik, J. claim that the establishment of new fiscal rules must take into account not only the levels of government debt and deficit, but also the measures applied in crisis situations for economic recovery and growth and public credibility. Authors such as Aerts J. and Bizarro P. (Aerts & Bizarro, 2020), Onofrei M. (Onofrei et al., 2020) and others call for the application of a new analytical approach to the framework for fiscal governance and fiscal sustainability with a focus on government debt levels and the ability of governments to service it. The COVID-19 economic shock in all Member States and the Spring 2020 European Economic Forecast published in May 2020, which forecasts a new average European debt level of 103% for 2020, clearly prove the need for a new approach to the fiscal frameworks of the countries and the fiscal instruments used.

The fiscal discipline in the EU is mainly the subject of empirical research and, to a lesser extent, of fundamental theoretical formulations. A number of authors such as von Hagen (1991), Bayoumi and Eichengreen (1994), Alesina and Bayoumi (1996), Bohn and Inman (1996), von Hagen and Eichengreen, (1996) in the mid-1990s investigated the effectiveness of the fiscal rules used in the United States with the idea to "adapt" them to the specifics of the euro area.

The efforts to ensure stability of the Economic and Monetary Union also requires the introduction of fiscal rules in the EU Member States (Zahariev, 2012), which shifts the focus of research to Europe. The findings of the empirical research in the last two decades have proved the need to establish fiscal rules with fixed numerical values to provide for a balanced level of public finances in the long run. Today it is rarely disputable that the effectiveness of fiscal results depends *firstly* on the type of rule and *secondly* on the mechanisms of influence in case of "deviation" from the fixed numerical value.

The concept 'fiscal rules' is defined with precision by Kopits and Symansky (1998) as a permanent constraint on fiscal policy, expressed in terms of a summary indicator of fiscal performance such as the government budget deficit, borrowing, debt and others.

The European Commission has formulated four major categories of fiscal rules in force in EU Member States: ***constraints to balance the government budget, the level of public debt, public expenditure and public revenue.*** As envisaged in the European Commission regulations, the strengths of a fiscal constraint in Member States are assessed according to the following criteria: *legal basis for establishing the rule; the type of institution that applies the rule; the presence of corrective mechanisms and sanctions for violations; media coverage of the rules and their observance or non-compliance; a body responsible for establishing a deviation from the target.* Logically, most empirical research on fiscal discipline focuses on identifying the level of debt and the risk of fiscal sustainability imbalances (Ayuso-i-Casals et al. 2009). Fewer are the rules on public expenditure and revenue: 55% (of the 113 rules currently in force) aim at balancing government budgets and 25.44% at reducing debt (Figure 1.). The expenditure rules introduced in the EU Member States constitute 16.67% of the total number and revenue rules - 2.63%.

The supranational fiscal rules, which account for 61.6% (Figure 2), are based on the preventive and corrective clauses in the Stability and Growth Pact, the effectiveness of which is directly dependent on the envisaged non-compliance sanctions (Ayuso-i-Casals, Gonzalez Hernandez, Moulin and Turrini, 2009). The fiscal rules in force at national level are largely in line with the provisions of Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (Comisión Europea, 2011), concluded in 2013. The main requirement is the

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introduction of a fiscal rule to ensure a balanced budget in the medium term and a mechanism for correction of significant deviations.

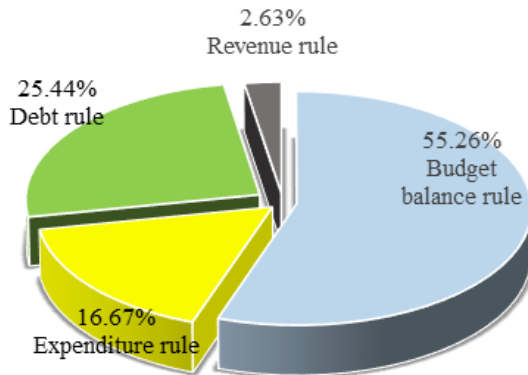


Figure 1.

Fiscal sustainability framework: a multidimensional approach (1)

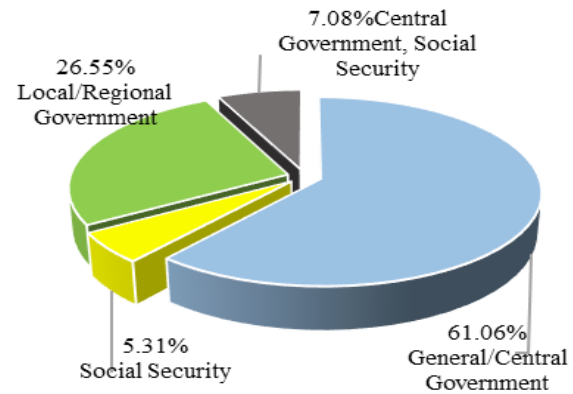


Figure 2.

Fiscal sustainability framework: a multidimensional approach (2)

Source: An official website of the European Union, author's interpretation

Note: The chart is based on the latest available update (2018) of the European Commission's fiscal governance database

The development of common fiscal rules allows for the coordination of fiscal policies - a circumstance essential for the functioning of the EU, as well as for the analysis, assessment and forecast of fiscal sustainability of the Member States. The established horizontal framework for assessing fiscal sustainability (European Commission, 2015) brings together in a synthetic way results on debt sustainability analysis (DSA) and fiscal sustainability indicators. Based on a set of fixed transparent criteria, the framework allows for gaining a consistent horizontal overview of fiscal sustainability in the short, medium and long term*, as well as across the EU Member States.

3. Indicators for assessment of the fiscal risks faced by the EU Member States

Fiscal risk is mainly defined as "a source of fiscal stress that could face a government in the future" (Polackova et al., 2002) or as "the possibility of deviations in fiscal variables from what was expected at the time of the budget or other forecast" (Cebotari et al., 2009). Fiscal risks, the presence of which affects fiscal sustainability, arise from "macroeconomic shocks and the realization of contingent liabilities" (Cebotari et al., 2009). The presence and the scale of fiscal risks are also affected by the time horizon, insofar as the factors causing "shocks" in economic systems may manifest themselves in the medium or in the long term.

The fiscal sustainability risks faced by the EU Member States are assessed by means of a comprehensive horizontal overview of fiscal sustainability challenges across time horizons (short, medium and long-term) and across countries based on a set of transparent criteria that bring together in a synthetic way results on debt sustainability analysis (DSA) and fiscal sustainability indicators.

* The time horizon of the short-, medium and long-term is respectively the upcoming year, the next 10-15 years and the infinite horizon (in practice, with fully-fledged projections up until 2070, and assuming that the main variables remain constant thereafter).

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The multi-dimensional approach used by the European Commission to assess fiscal sustainability comprises three sustainability indicators of different time dimensions (S0, S1 and S2) which are jointly used with a debt sustainability analysis including government debt sensitivity tests and alternative scenarios (Figure 1). The set of indicators is used as part of the Commission's assessment of EU Member States budgetary plans in the context of the Stability and Growth Pact. The fact that the fiscal sustainability assessment indicators are the same for all EU Member States and are computed using the same methodology, allows for comparative analyses of the level of sustainability in individual countries compared to other Member States and to the values for the EU as a whole. They make it possible to assess the extent to which there is a need for a relatively big policy adjustment at present or in the future, as well as the type of policy adjustment required (fiscal or structural or a combination of both).

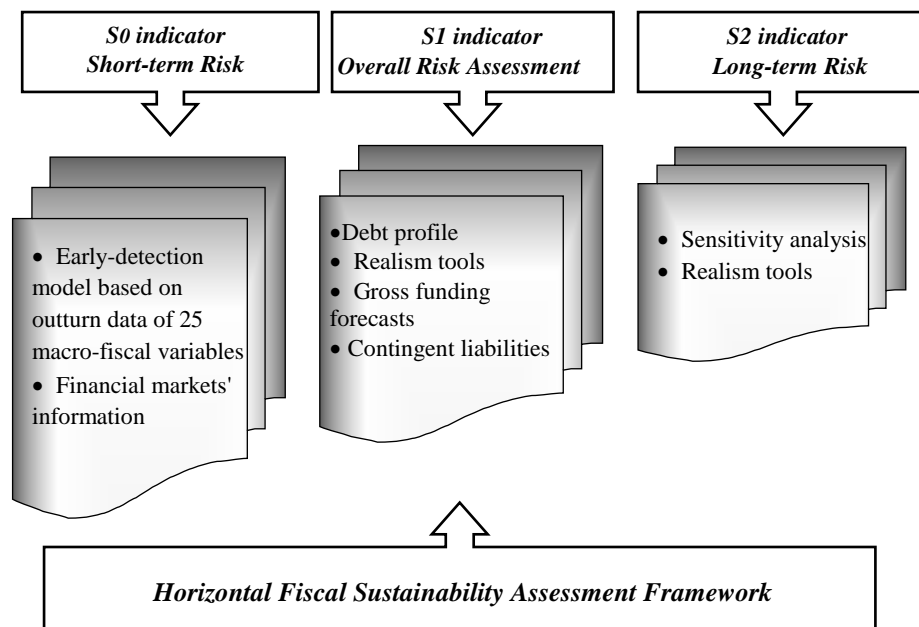


Figure 3. Fiscal sustainability framework: a multidimensional approach

Source: European Commission

The multi-dimensional approach of the Commission to assess fiscal sustainability integrates long-term projections with an assessment of more immediate challenges and risks. Both long-term and short-term analysis are supported by appropriate indicators that can indicate the scale and scope of sustainability challenges as follows:

The short-term fiscal challenges are assessed using a composite S0 indicator of the risks of potential 'fiscal stress'. The value of the indicator computed as the weighted proportion of fiscal, financial and macroeconomic variables (25 in total), performs as a potential fiscal stress signalling tool and an early-detection risk indicator over a one year horizon. To the extent that the **S0** indicator is 'an early-detection indicator', it allows identification of risks of potential fiscal stress stemming from fiscal and financial aspects of the economy, including its short-term competitiveness (over a one-year horizon). The indicator also comprises variables used for the surveillance of macro-economic imbalances in order to identify potential risks early on in case of emergence of potentially harmful economic imbalances as well as to correct existing ones.

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- **The medium-term fiscal challenges** are assessed using a modified S1 indicator (fiscal gap), which measures the fiscal adjustment required to bring debt ratios to 60% of GDP in 15 years, including future costs of ageing.

- **The long-term fiscal challenges** are assessed based on the use of the S2 indicator, which measures the 'gap' in the long-term sustainability. The values of the indicator determine the fiscal adjustment of the structural primary balance required to meet the debt ratio constraint over an infinite period, including ageing costs projections. Unlike the S1 indicator, **the S2 indicator by definition does not provide for a debt upper limitation** as it is computed over an infinite horizon. Thus, **the S2 indicator does not take into account the adjustment required to reduce debt below 60% of GDP** in accordance with the provisions of the Stability and Growth Pact for countries with a high debt burden. The higher the values of **the S2 sustainability indicator**, the more fiscal adjustments and adjustment of the risk of fiscal instability are required.

The multi-dimensional analysis of fiscal risks the EU Member States face aims: *first*, to identify the type and the intensity of the challenges to fiscal sustainability and, *second*, comparing the relative present and future deficit and debt values and future ageing costs to pursue appropriate corrective policies.

4. Medium-term assessment of the fiscal risk of the EU Member States for the period 2015-2019.

The increase in the level of government debt in the public and private sectors of a number of EU countries, especially following the 2008 global economic and financial crisis, is one of the main risks to the fiscal sustainability of the EU Member States. In the macro-economic context, serious challenges to easing government debt burden in the EU pose the very low inflation and the not very high GDP growth, which only contributes to a reduction in the relative debt-to-GDP ratio, but not to a real reduction in the size of the debt (Zahariev, et al., 2020a). The only positive effect on government debt management is the fact that the cost of government debt financing remains low, reflecting the historically low interest rate.

The problem of the sustainability of public finances in the EA and in the EU as a whole was brought to the fore by the significant increase in the level of debt due to the economic and financial crisis. Compared to 2007, it was 28.9% up in 2014 (for the EU-28 countries) and only in 2015 began to decline gradually, reaching a level of 80.4% in 2018. In line with the main provisions of the Stability and Growth Pact, the European Commission makes regular assessments (twice a year) of the degree of fiscal risk in the short, medium and long term. The findings of the Commission, presented in five annual reports (2016-2020) on the fiscal sustainability risks in the short run (the forthcoming year) – S0 indicator, confirm that none of the EU Member States has been exposed to high risk after 2015, the risks of short-term fiscal stress being significantly lower compared to the situation in 2009 (the first crisis year). The assessment of the medium-term challenges to sustainability, based on DSA and S1 indicator analysis and both deterministic and stochastic debt projections over a 10-year horizon in five consecutive years (2015 – 2019), allows for outlining the trends in the situation and the expectations on the fiscal sustainability of the EU Member States (Table 1).

For nine of the Member States: Bulgaria, Czech Republic, Denmark, Germany, Estonia, Latvia, Luxembourg, Malta and Sweden, the levels of fiscal risk on both indicators (DSA and S1) are low for the entire analysed period. The risk for Ireland, Croatia, Hungary, Cyprus, Latvia, the Netherlands, Austria, Poland and Slovenia (countries that "started" with relatively high debt-to-GDP ratios in 2014) is reported as low medium for 2019 (104.4% for Ireland, 109.2% for Latvia, 83.3% for Slovenia). With the exception of Poland and the Netherlands, states that managed to "lower" the debt level below 60% (the EU Treaty reference value) at the end of the analysed period, the other countries maintained levels higher than the reference values, with markedly declining trend over a horizon by 2030, including future aging costs. Countries are deemed to face high medium-term

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sustainability risk whenever they have critical DSA or S1 values (grounded on the no-fiscal policy change scenario in terms of the lower and the upper risk thresholds (0 and 2,5 GDP percentage points respectively). The countries that are deemed of the highest sustainability risk in the medium term according to both the DSA and the S1 criteria for all years included in this analysis are Belgium, Spain, France and Italy, due to the high debt-to-GDP ratio - over 90% at the end of the analysed period, grounded on the no-fiscal policy change scenario.

Table 1. Assessment of the level of medium-term fiscal risks in EU Member States

state	Debt sustainability analysis - general risk assessment (Debt sustainability analysis - DSA)					S1 indicator - general risk assessment				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
BE	high	high	high	high	high	high	high	high	High	high
BG	low	low	low	low	low	low	low	low	Low	low
CZ	low	low	low	low	low	low	low	low	Low	low
DK	low	low	low	low	low	low	low	low	Low	low
DE	low	low	low	low	low	low	low	low	Low	low
EE	low	low	low	low	low	low	low	low	Low	low
IE	high	middle (high)	low (middle)	middle	low	high	middle (high)	middle (high)	Low	low
ES	high	high	high	high	high	high	high	high	High	high
FR	high	high	high	high	high	high	high	high	High	high
HR	high	high	high	middle	low (middle)	high	middle (high)	middle	middle	low (middle)
IT	high	high	high	high	high	high	high	high	High	high
CY	high (n.a.)	high (n.a.)	middle (high)	middle	low (middle)	high (n.a.)	high (n.a.)	middle (high)	Low (middle)	low (middle)
LV	low	low	low	low	low	low	low	low	Low	low
LT	low	low	low	low	low	middle	middle	middle	middle (low)	low
LU	low	low	low	low	low	low	low	low	Low	low
HU	middle	high (middle)	high	high	low (high)	middle	middle (low)	middle	middle	low (high)
MT	low	low	low	low	low	low	low	low	Low	low
NL	middle	low (middle)	low	low	low	middle	low (middle)	low	Low	low
AT	middle	middle	middle	low (middle)	low	middle	middle	middle	middle (low)	low
PL	middle	high (middle)	middle (high)	low (middle)	low	middle	middle	middle	middle (low)	low
PT	high	high	high	high	high	high	high	high	High	middle (high)
RO	high	high (middle)	high (low)	middle (high)	high (middle)	middle	middle	middle	middle	high (middle)
SI	high	high	middle (high)	low (middle)	low	high	middle (high)	middle	middle	low (middle)
SK	low	low	low	low	low	low	low	low	middle	low
FI	high	high	high	low (high)	middle (high)	high	high	middle (high)	Low (middle)	middle (high)
SE	low	low	low	low	low	low	low	low	Low	low
UK	high	high	high	high	high	high	high	middle (high)	middle	middle

Source: European Commission, Fiscal Sustainability Reports, author's interpretation based on the official European Commission forecasts for the period 2015-2019

For 2019, the medium-term risks are markedly assessed as high for Belgium, Spain, France, Italy, Portugal, Romania and the United Kingdom. In Belgium, Spain and Portugal, the assessment is based on the findings that the debt-to-GDP ratio remains at the level (for 2018) of 100%, 97.6% and 98.4% respectively. The risk for Romania is assessed as "high" (despite the relatively low levels of debt - 35% in 2018) for it is expected to rapidly increase at no change in fiscal policy due to the "rapid" increase in future aging costs.

The medium-term fiscal sustainability risks for Croatia, Cyprus, Hungary and Slovenia are deemed to be lower compared to 2018, because of better initial budgetary positions. Finland, that was assessed in three consecutive reports as being at high risk and expected to be at low risk in 2018, is again in the low risk category for the latest analysed period. The dynamics of risk levels for Romania is similar. A logical explanation for this is found in the more unfavourable initial budgetary position for Finland and the higher projected aging costs stemming from the pension reform in Romania

For 2018, the level of the debt-to-GDP ratio for the EU-28 countries is 80.4%, for EA (19) - 85% - values, due to the fact that the debt levels of more than half of the Member States (15 altogether) are above the EU Treaty threshold of 60%. The Commission's forecasts, based on the analysis of the budgetary positions in the autumn of 2019, regarding the venues for managing the EU debt level also do not "sound" very optimistic - expectations are for a reduction from 88.4% in 2014 to 70% in 2030 for the EU -28 countries and only if there is no change in the fiscal policy in the Member States.

5. Challenges to fiscal sustainability and the level of fiscal risk in the EU in the context of the COVID-19 pandemic

The impact of the COVID-19 pandemic on the economies of the EU Member States requires an adequate and timely fiscal response with an implication towards a significant increase in government debt. The governments of the Member States have taken a number of recovery measures in line with the State aid Temporary Framework adopted by the European Commission in March to support the economy in the context of the COVID-19 outbreak (Comisión Europea, 2019). In essence, these measures introduce the EC's fiscal response to the impact of the pandemic and support the economic recovery of the Member States, in particular, and the European Union as a whole. Two of the most significant and capital-intensive categories of recovery measures comprise direct spending and loan guarantees for the non-financial sector. In particular, they include: temporary unemployment benefits; subsidies for small and medium enterprises; increased support of the public health and insurance systems; deferral of tax payments, social payments and health insurance contributions; guarantee schemes for business support, etc. Their implementation now, in view of the liquidity problems some of the governments face, is definitely a prerequisite for an increase in sovereign debt.

The economically unpredictable situation resulting from the outbreak of the COVID-19 pandemics and the need for an immediate fiscal response confronted governments with the need to provide for funding within very short time horizon. This need is provoked not only by the economic recovery measures, but also by the functioning of automatic fiscal stabilizers. On the one hand, the implemented stabilization measures related to the deferral of social and tax payments and the declining incomes due to the downturn in economic activity have been significantly reducing tax revenues. On the other hand, the size of government guarantees required to promote small and medium-sized enterprises and the corporate sector will increase over time, as the amount of funds needed to recover depends on the duration of the recession, which is expected to deepen in the long run.

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These expectations are confirmed by the fact that the average European levels of GDP growth and the change in the budget deficit are comparable in the periods before and during the World Economic Crisis and the COVID-19 pandemic, as according to the European Economic Forecast Spring 2020 (Comisión Europea, 2020) the projected effect on the change in the budgetary balance in early 2020 is significantly higher than in 2019.

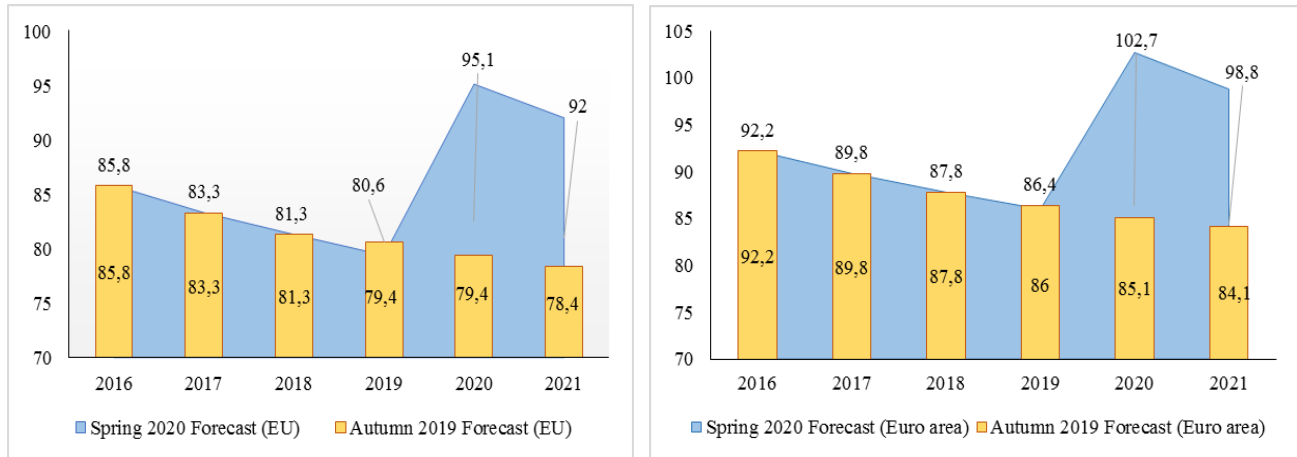


Figure 4. EU/Euro area average Gross debt, general government as a percentage of GDP, 2016-2021 (2020-2021 Forecast)

Source: European Economic Forecast Spring 2020, author's interpretation

According to the EC forecast data, the level of debt in the EA Member States is expected to increase between 7% and 22% in 2020, with the average level for the euro area showing a significant difference in the autumn 2019 and spring 2020 forecast data. With projected values of 85.1% in 2019, the updated forecast for May 2020 indicates a value of 102.7% (See Figure 4, right) or 17.6% up the projected. The EU forecasts are that after the expected peak in 2020, in 2021 the level of debt for the euro area will fall below the "psychological limit" of 100% to 98.8%. Regarding the EU, a peak of debt levels above 95% in 2020 and a subsequent decline to 92% in 2021 is projected in case that there are no drastic changes in fiscal policy. The levels of the same indicator in the previous 2019 are 79.4% (See Figure 4, left). The difference of 15.7% between the projected size for 2020 and that in 2019 is clear evidence of the expected unprecedented recession.

The deterioration in the economic situation following the COVID-19 pandemic required updating EU Member States' debt levels by adjusting for the drastic increases in countries' debt levels in response to the growing needs of financial resources for recovery interventions in the affected sectors. Of particular research interest in this situation is the difference in the level of gross debt (as a percentage of GDP) between the European Commission's Spring 2020 Forecast and Autumn 2019 Forecast, especially in countries that based on DSA analysis are deemed to be of high and low debt sustainability. For the purposes of conducting a comparative analysis, the countries are divided into 2 groups according to their assessment - high or low. The first group - countries with a high DSA assessment - includes Belgium, Spain, France, Italy and Portugal. It is noteworthy that the most serious difference in the EC forecast is observed in 2020, ranging from 12.4% for Portugal to 19.7% for Spain, which is explained by the economic shock caused by the pandemic at the beginning of 2020 (See Table 2). Since the countries, belonging to this group traditionally maintain relatively high debt levels and in view of the need for an adequate fiscal response to the situation, the observed deviation is not surprising. The deterioration in the economic

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situation following the COVID-19 pandemic required updating EU Member States' debt levels by adjusting for the drastic increases in countries' debt levels in response to the growing needs of financial resources for recovery interventions in the affected sectors. Of particular research interest in this situation is the difference in the level of gross debt (as a percentage of GDP) between the European Commission's Spring 2020 Forecast and Autumn 2019 Forecast, especially in countries that based on DSA analysis are deemed to be of high and low debt sustainability. For the purposes of conducting a comparative analysis, the countries are divided into 2 groups according to their assessment - high or low. The first group - countries with a high DSA assessment - includes Belgium, Spain, France, Italy and Portugal. It is noteworthy that the most serious difference in the EC forecast is observed in 2020, ranging from 12.4% for Portugal to 19.7% for Spain, which is explained by the economic shock caused by the pandemic at the beginning of 2020 (See Table 2). Since the countries, belonging to this group traditionally maintain relatively high debt levels and in view of the need for an adequate fiscal response to the situation, the observed deviation is not surprising.

Table 2. Difference in the gross debt level projections of European Commission's Spring 2020 Forecast and Autumn 2019 Forecast

Country/ year	BE	ES	FR	IT	PT	BG	CZ	DK	DE	EE	IE	LV	LT	LU	MT	NL	AT	PL	SL	SK	SE
2019*	-0,9	-1,2	-0,8	-1,5	-1,5	-3,3	-2,2	0,6	1,0	-3,4	-0,3	2,5	0,0	12,8	-0,5	-0,6	0,7	-3,0	-0,9	-0,2	1,4
2020*	14,3	19,7	17,8	16,7	12,4	28,1	26,1	38,4	32,9	146,4	23,2	22,4	38,2	37,5	23,7	31,8	17,3	28,6	32,6	25,8	27,5
2021*	10,0	18,4	12,8	11,8	9,4	36,6	32,6	40,7	30,5	175,6	26,8	32,8	39,1	38,2	31,3	26,3	17,3	31,6	34,3	27,7	32,8
2019**	-1,2	-1,2	-0,8	-2	-1,8	-0,7	-0,7	0,2	0,6	-0,3	-0,2	0,9	0	2,5	-0,2	-0,3	0,5	-1,4	-0,6	-0,1	0,5
2020**	22,7	19	17,6	22,7	14,5	5,6	8	12,4	19	12,3	13	7,9	13,4	7,2	9,7	15	11,6	13	20,6	12,2	9,2
2021**	6,8	17,7	12,7	16,2	10,7	6,8	9,8	12,9	17	14,4	14	10,8	13,6	7,1	12,1	12	11,2	14	20,4	13	10,5
2019*, 2020*, 2021* Difference between Spring 2020 Forecast and Autumn 2019 Forecast in %																					
2019**, 2020**, 2021** Difference between Spring 2020 Forecast and Autumn 2019 Forecast in absolute value (net)																					

Source: European Economic Forecast Spring 2020, author's interpretation

The situation is different in the group of countries with a low DSA assessment, where the difference in values in % between Spring 2020 Forecast and Autumn 2019 Forecast is significantly bigger in Estonia being 146.4% for 2020 and 175.6% for 2021. The extremely large discrepancy in expectations from 2019 and 2020 in Estonia is due to the fact that it is the country with the traditionally lowest level of debt in the EU. In absolute terms, the debt / GDP level is expected to increase from 8.4% in 2019, to 20.7% in 2020 and 22.6% in 2021. Other countries the debt levels of which are expected to increase drastically are Denmark, Latvia and Luxembourg with differences in the expected projected levels for 2020 of 38.4%, 38.2% and 37.5% respectively. It is noteworthy that, contrary to expectations for a declining average European debt level in 2021 to fall below 100%, it is projected to increase in these countries. Such reading of the data and the need for a fiscal response to the situation call into question the low DSA assessment of debt sustainability.

Over the next few years, most EU Member States will face a growing need for adequate fiscal debt repayment solutions. To the extent that the fiscal response of the countries in the form of stabilization measures reduces the negative impact of the recession caused by COVID-19 in the short term, the time horizon, the deepening economic crisis and the need to service the debt create preconditions for increasing fiscal risks in the medium term.

6. The “new normality” of deficit financing for governmental support to the business under COVID-19 framework

The current COVID-19 crisis has characteristics never seen before because many sectors of the economy have responded to it by restructuring and changing the way they operate and the goals they pursue (Terziev, 2019). The global interaction of producers and traders in supply chains (Laktionova, Dobrovolskyi, Karpova, & Zahariev, 2019) will have a cascading effect on the financial performance of all businesses in the supply chain. Moreover, the COVID-19 crisis has brought to the fore the demand for quality medical services. Thus, companies related to the pharmaceutical and healthcare sectors are subject to increased interest from the capital market. The limiting factor for such businesses as well as for the healthcare sector in general seems to be the scarcity of skilled healthcare specialists (Adamov, et al., 2010) rather than the shortage of drugs or hospital beds.

The changing conditions led to new risks, including all related to the traditional risk-free investment instruments issued by governments of the EU Member States (Zahariev, et al., 2020a) and devaluation of assets (Prodanov & Pavlov, 2016), currencies (Kostov, 2016) and oil as well (Zahariev & Kostov, 2016). These changes are not likely to be transient but to remain in effect even after the crisis is over. This situation is often referred to as "new normality." It can therefore be argued that benchmarking based on government securities will be even more non-applicable in relation to economic recovery due to fiscal policy of EU and Member States to support the business with deficit financing instruments. The entire markets have been able to adapt to this "new normality", but all traditional valuation and business models, based on risk-free rate of return (T-Bills related), will be more difficult to apply due to their many assumptions, expected parameters and obvious covariance of business ingoing cash flow from governmental COVID-19 programs and deficit financing of those programs. The “new normality” requires management goals (Terziev, 2020). In such situations, many public companies and banking institutions face the risk of persistent negative performance and, eventually, bankruptcy (Zahariev, et al., 2020b). On April 9, 2020 the Bulgarian National Bank Governing Council approved the submitted by the Association of Banks in Bulgaria draft Procedure for Deferral and Settlement of Liabilities Payable to Banks and their Subsidiaries - Financial Institutions in relation to the state of emergency enforced by the National Assembly on 13 March 2020. Once approved, the document constitutes a private moratoria within the meaning of the European Banking Authority (EBA) Guidelines on treatment of public and private moratoria in light of COVID-19 (EBA / GL / 2020/02). As of June 30, 2020, a total of 118,584 claims for liabilities with a gross carrying value of EUR 5 billion were submitted under the Procedure for deferral and settlement of liabilities payable to banks and their subsidiaries - financial institutions (Zahariev, et al., 2020b). Of these, 98,499 were approved for EUR 4.15 billion. According to the first published data, the profit of the banking system of Bulgaria for 1H2020 is EUR 263.32 million, against EUR 469.4 million for the first six months of 2019 (BNB, 2020).

Above data suggests that the business failure scenario is very possible even if business entities have insured their profits with sound insurance intermediaries (Zahariev, et al., 2020c). The findings are considered valid not only for the EU Member States, but also for a country with advancement in the research on the development of a COVID-19 vaccine as Russia, where the public deficit on national and regional budget level is part of the “new normality” (Sabitova, Shavaleyeva, Lizunova, Khairullova, & Zahariev, 2020).

Conclusion

The European Commission's multidimensional approach to conducting a systematic and harmonised analysis of the sustainability of public debt for EU Member States and assessing fiscal risk levels in the short, medium and long term provides key information for regular budgetary surveillance under the Stability and Growth Pact, the

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European Semester and the Europe 2020 strategy. The assessment criteria applied in the methodology make it possible to identify "vulnerable" countries in terms of public debt sustainability. All this by no means exhausts the obligations of the EU Member States to interpret the quantitative data and the related risk assessments for their "use" in the conduct of fiscal policy in the context of the individual country specifics. Providing for sufficient fiscal space to "deal" with adverse macroeconomic situations within the economic cycle remains one of the most serious challenges that the fiscal policy of a Member State and of the EU as a whole face.

In recent years, it has become increasingly supported that „countries can sustainably serve different levels of debt“ (Constâncio, 2020) and this largely depends on their fiscal space. According to authors such as Perote (Briceño & Perote, 2020), H., Navarro Ortiz, J. (Navarro-Ortiz & Sapena, 2020) respecting fiscal responsibility and avoiding excessive deficits is an important "first step" in ensuring fiscal sustainability, but substantial reform is needed in the fiscal rules implemented at European Union level. This claim is substantiated by the fact that in recent decades' fiscal policy within the EU has been limited to a rather passive manifestation, namely to the establishment of fiscal sustainability through compliance with deficit and debt limits, which resulted in the impossibility of adequate fiscal response to the debt crisis in the period 2008-2010. The discussion on the necessary reforms in the fiscal framework for the governance of the union is even more relevant and urgent at present, having in mind the unprecedented economic crisis the European economy is in since the outbreak of the COVID-19 pandemic.

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TOWARDS MORE SUSTAINABLE DISPUTE RESOLUTION IN COURTS: EMPIRICAL STUDY ON CHALLENGES OF THE COURT-CONNECTED MEDIATION IN LITHUANIA

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Abstract. Court-connected mediation designed to foster more sustainable dispute resolution practices in Lithuania was launched in 2005. The article is an elaboration on Lithuania's experiences relating to court-connected mediation in the realm of civil justice. It investigates the problem of the so called "plateau", when the number of mediated cases stops to grow, thus raising the question of what is the future of court-connected mediation in general. Authors present the main features of the Lithuanian court-connected mediation model and stages of its formation. The authors strive to provide a better understanding of the possible causes for the problem under consideration, as well as underlying assumptions associated with sustainable dispute resolution practices in courts. Next, the results of the original quantitative and qualitative empirical survey dedicated to the analyzed problem and performed by the authors in the beginning of 2021 are presented. The research is supplemented by data from Poland, which presents a fracture of the problems related to court-connected mediation in Eastern Europe. Poland's perspective provides a glance into another legal system, which chose a different model of court-connected mediation without the direct involvement of judges as mediators. Still, the data from Poland shows the tendency of a steady influx of mediated cases. The article ends with a discussion, conclusions and recommendations on the causes and consequences of mediation stagnation in the process of developing a court-mediation and, possibly, mediation in general. The paper is dedicated to dispute resolution experts, both practitioners and scientists, who are interested in Eastern European experiences and problems associated with the development of mediation.

Keywords: court-connected mediation; judge as a mediator; dispute resolution; mediation "plateau"; stagnation; empirical research

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JEL Classifications: K15, K41, Q01

1. Introduction

The court-connected mediation was a starting form of mediation development in Lithuania, which, compared to out-of-court mediation, in the last 15 years showed incredible results by high numbers of enthusiasts who decided

to join the list of court mediators and exponentially growing numbers of mediations conducted in the court. The main intention of launching court-connected mediation went in line with a need to promote social dialog and foster settlements, as adversarial litigation could not be treated as dispute resolution process bringing to sustainability (Kaminskiene et al. 2014). However, the days of glory for the court-connected mediation seem to have passed. As it is proven further, court-connected mediation in Lithuania does not appear to be popular as a preferred way of settling a dispute. In fact, during the last four years the number of the court-connected mediation cases is stable, but has shown no significant change. Currently such situation can be described as a “plateau” and requires to answer the question of what can be done to prevent such situation and even broader question of what the future holds for a court-connected mediation not only in Lithuania, but also in the countries that face the same problems of mediation stagnation.

The scientific discussion requires a glance from aside from the position of the development of court-connected mediation in another country. Thus, the article presents a short overview of Polish court-connected mediation model (without involvement of judges as mediators), which arguably shows a tendency of a stable mediation growth.

The objective of this article is to analyze the reasons for the problem of stagnation of court-connected mediation, suggest the ways for overcoming it and possible further directions for the development of court-connected mediation.

Previous research on the subject. The topic of court-connected mediation usually forms a natural part of general scientific studies on mediation, as long as the court-connected mediation is rather popular form of mediation. Nevertheless, some authors tend to debate if court-connected mediation is a part of reinvigoration or further erosion of a democratic justice system (Welsh 2004, 117). However, the works where court-connected mediation models or programs are analyzed empirically from the point of view of their problematics and effectiveness, dominate mostly in the works of American scientists, but are not so common for Europe. The works of Roselle L. Wissler (2004) presented the results of empirical researches on court-connected general civil case mediation and gave answers to the question of general effectiveness of court-connected mediation program used in the US. The lessons that are emerging from the available empirical data regarding best practices for court-connected mediation programs that mediate non-family civil matters are discussed in the article of Barbara McAdoo, Nancy Welsh and Roselle Wissler (2003). John Lande (2004) analyzed why some mediation programs produced the desired results while others did not outperform traditional litigation. Worldwide perspective is given in the works of Shahla F. Ali (2018), who explored the attitudes and perceptions of practitioners implementing court mediation programs in five regions (including Europe) of the world in order to understand the dynamics, challenges, and lessons learned from the perspective of those directly engaged in the work of administering, representing, and mediating civil claims.

In Lithuania the topic of court-connected mediation was previously analyzed by Natalija Kaminskienė (2010) (the article assesses the results of the pilot court-connected mediation project, attempts to identify problems encountered and propose possible solutions), Ieva Saudargaitė (2015) (the research object is the legal regulation of judicial mediation in civil disputes in Lithuania), Agnė Tvaronavičienė and Natalija Kaminskienė (2019) (the article analyzes the application of court-connected mediation in administrative law and proposes possible improvements in the legal framework in this area). Authors Sandra Molė and Jolanta Sondaitė (2014; 2019) analyzed attitudes of court mediators toward the practice of court-connected mediation from psychological point of view. Opportunities of court-connected and private family disputes mediation were described in the work of Salomėja Zaksaitė and Zigmas Garalevičius (2009). However, most of these works were published during the period when court-connected mediation “prospered” and was growing in numbers. No research was made on the

current stagnation of the court-connected mediation in Lithuania. This study is a first attempt to perform a quantitative and qualitative empirical research dedicated to the current problems of court-connected mediation in practice.

Methodology. Research was carried out using the methods of scientific literature review, document and comparative analyses, quantitative and qualitative empirical methods.

2. Theoretical background

Mediation was introduced for the first time in the Lithuanian legal system in 2005 through a court-connected mediation pilot project. The project was inspired by the embedment of court conciliation, a novelty in Lithuanian civil procedure introduced in 2003 under the new Code of Civil Procedure (hereinafter referred as – CCP). The pilot project was conducted by several judges and academicians familiar with the notion of mediation, who strongly supported the model adopted by the province of Quebec in Canada and its introduction in the Lithuanian courts (Kaminskiene 2010).

Initially only one court in capital of Lithuania – Vilnius, was applying the procedure of mediation. In 2006, already several district courts were using it, and after yielding positive results, later in 2007, following the Decree of Judicial Council No. 13P-15, it was extended to all Lithuanian courts. Within just a few years the pilot became the permanent court-connected mediation program in civil cases throughout the country.

The choice of starting mediation from the courts was mostly influenced by understanding that people of Lithuania recognize the authority of the court and trust judges. That is why it was decided that the best person, who could reliably offer mediation to the parties without discrediting himself, should be a judge.

Thus, successful experience in the Canadian province of Quebec has been applied in the development of the court-connected mediation project in Lithuania. Even nowadays the Lithuanian and Quebec models of court-connected mediation have much in common. For example, it similarly provides for the possibility of private meetings between the parties to the dispute and the mediator, the persons involved in court-connected mediation, the principle of confidentiality etc. However, as the time has passed, some new features were adopted to allow court-connected mediation operating more effectively.

Since the start of the pilot project court-connected mediation in Lithuania was completely voluntary. However, from 2019 in separate cases following the discretion of the judge, parties to a dispute may be referred to mandatory court mediation (CCP Art. 231¹(1)).

Initially, court-connected mediation was performed by a court-appointed mediator included in the list of court mediators administered by the National courts administration. Court mediators were listed since the very beginning of this institute. By the end of 2018 there were more than 450 mediators in the list of court mediators and this number was still growing. 81 per cent of all listed court-mediators were not judges – advocates, lawyers, psychologists, social workers, etc. Interestingly, although only 19 per cent of court mediators were judges, most of court mediations were mediated by court mediators-judges. Namely, 87 per cent of civil cases in 2018 were mediated by judges-mediators and only 13 per cent by non-judges (Annual Report of Lithuanian Courts 2018).

However, since 2019 only judges are allowed to be called “court-mediators” and be included into the list of court mediators (Law on Mediation, Art. 23, part 2). Currently there are 105 court mediators-judges in the list (The list of Court Mediators 2021). Trained judges serve as court mediators, whilst other mediators may be appointed from

the general Republic of Lithuania list of mediators only if a judge-mediator is not available due to objective reasons.

From the start of the court-connected mediation in Lithuania, if the judge wished to direct the case to mediation, he had no possibility to mediate the case himself and had to forward the case to another mediator nevertheless the judge had the status of mediator himself. However, since 2018 a judge-mediator under the parties' consent acquired the right to mediate even in cases where primarily had acted as a judge under the consent of the parties (CCP Art. 231¹, part 2). Where a successful settlement was reached, such a judge-mediator could confirm the settlement agreement by the ruling. If the mediation was unsuccessful then another judge had to be appointed to further examine the case from its very beginning.

After the recent legislation changes, court mediation is a natural part of civil procedure. Nowadays the court-connected mediation process in Lithuania is carried out according to the regulations of the Law on Mediation, the CCP and the Rules on Court Mediation. Court-connected mediation services are provided free of charge.

Court mediators have special requirements to attain their status: if a judge has more than three years of practice, he needs only 16 hours of mediation training and does not have to take an exam. Other mediators in order to be included into the Republic of Lithuania list of mediators need to have 40 hours of mediation training and to take an exam. Only judges that have less than three years of practice have to follow such general requirements. The procedure for the improvement of qualification for those mediators who are judges is determined by the Council of Judges.

The progress of court mediation in civil cases during the last 8 years in Lithuania is significant and is depicted in Chart 1. In terms of effectiveness of court mediation in Lithuania, the results of court mediations show that a bit less than a half (47 per cent) of court mediations are completed by settlement (Annual Report of Lithuanian Courts 2019).

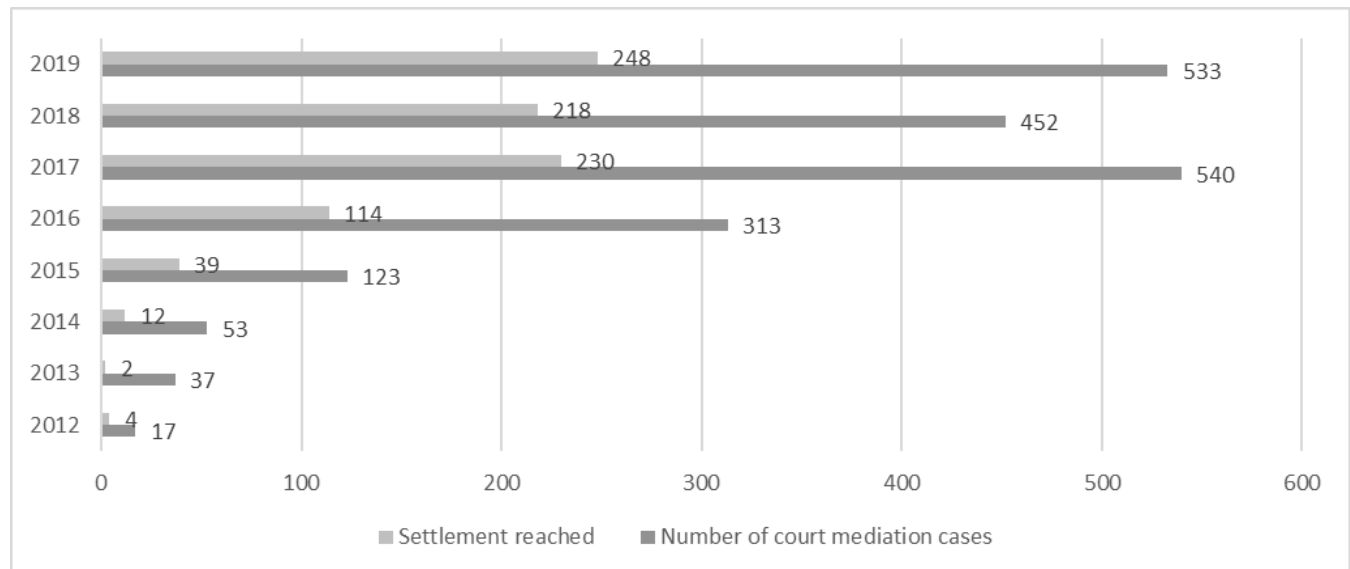


Figure 1. Number of court mediations in Lithuania from 2012 to 2019, and their effectiveness

Source: Annual Report of Lithuanian Courts 2019

However, the amount of court mediations compared to the overall workload of civil cases in the court of the first instance in Lithuania is miserable. According to the latest data, 159 655 civil cases were started in courts in 2019, yet there were only 533 mediations in civil cases during the same period.

Thus, court mediation does not appear to be popular as a preferred way of settling a dispute. In fact, during the last four years the number of the court-connected mediation cases is stable, but has shown no significant change.

3. Research Methodology

A mixed research strategy was chosen for the study, combining quantitative and qualitative research approaches, thus ensuring a comprehensive approach to data collection. The quantitative part of the research provides an opportunity to analyze court-connected mediation in Lithuania. The aim of the qualitative research is to focus on the experience of the research subjects (judges and judges-mediators) in order to study the current problems of court-connected mediation in Lithuania, the attitude of court management and colleagues of judges towards mediators and their activities.

The tool of quantitative empirical survey is a questionnaire. The prepared questionnaire consists of 20 questions. 90 respondents participated in the survey. Data analysis was implemented by the application of descriptive statistics.

The focus group method was chosen for the qualitative research, gathering reflections of the research participants on their work experience (Morgan, 2010). 5 judges and 5 judges-mediators (6 women and 4 men) from different Lithuanian courts were involved in the study. The study data was documented by recording. Oral consent of the survey participants was obtained before recording the data. The audio recordings of the discussions were studied, participants' contributions to the discussions were transcribed. The research data was analyzed, interpreted and conclusions were drawn. Thematic analysis was used for data analysis.

Research ethics. The research was conducted in accordance with the requirements of research ethics. The questionnaire was posted on Google forms. Research participants took part in the survey on voluntary basis. In order to ensure the anonymity of the respondents and the confidentiality of the provided answers, the principle of secrecy was followed (Gaižauskaitė, Mikienė, 2014). The survey participants were introduced to the aim of the survey and the method used. Researchers presented the purpose of the research, the course, data recording, ethical issues: the principle of ensuring confidentiality and anonymity.

4. Quantitative research results

Quantitative research results reflect a favorable attitude of judges working with civil cases in the Republic of Lithuania to court-connected mediation, but also signals some of the challenges currently faced by the system.

64 judges and 26 judges-mediators (90 respondents in total) took part in the quantitative research. There were about 70 women and 18 men among the surveyed judges and judges-mediators. A few of the participants did not want to reveal their gender. In regards to age, the respondents are almost evenly distributed in groups aged between 31 and 40 (22 respondents), 41 and 50 (31 respondents), and 51 and 60 (28 respondents). Only 9 respondents made up the "60 and over" age group. The majority of judges and judges-mediators who took part in the survey (40 respondents) have over 15 years of work experience as judges. 22 respondents have up to 5 years of work experience as judges and 29 respondents have between 6 and 15 years of experience. Most of the surveyed judges work in courts around Vilnius region (31). Slightly fewer of them work in Kaunas (25) and Klaipėda (16) regions. The least of the participants who responded were from Šiauliai (9) and Panevėžys (8)

regions. The vast majority of all judges (48) and judges-mediators (21) surveyed use court-connected mediation relatively rarely in their daily practice (up to 5 cases per judge in 2020). The largest number of judges-mediators surveyed indicated that in 2020 they mediated up to 5 cases (13 respondents), 6 respondents mediated between 6 and 15 cases. 6 respondents indicated that they provided court-connected mediation services more than 15 times.

4.1. General assessment of court-connected mediation practice in Lithuania

In the Republic of Lithuania amongst judges of civil cases the attitudes regarding the system of court-connected mediation are generally positive. The chart below shows that as many as 30 judges surveyed (47%) have no doubts about it at all. 21 other judges chose the answer “Rather positive than negative”. 10 judges remain neutral regarding this issue. Although none of the respondents assessed the practice of court-connected mediation negatively, it is clear that a sufficiently large portion of the judges who have assessed the system “rather positively than negatively” see the shortcomings of court-connected mediation that need to be resolved in order to further develop this institute. More satisfaction with the benefits of court-connected mediation amongst judges would also mean its wider promotion to litigants during legal disputes.

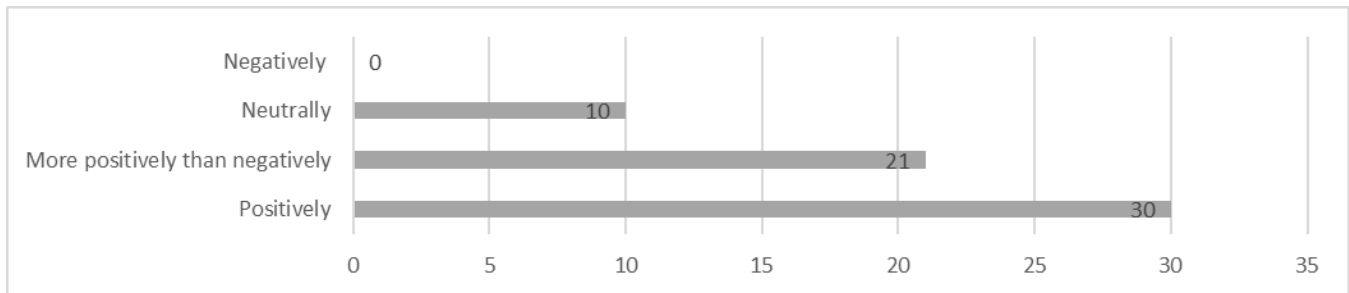


Figure 2. Evaluation of Court-connected Mediation (Perspective of the Judges)

The researchers have posed a similar question regarding the evaluation of the court-connected mediation system in Lithuania to the judges-mediators. The same trend of positive evaluation of court-connected mediation was observed among judges-mediators. However, there were several judges-mediators, who viewed the system negatively, thus attracting the attention of the researchers. The ideas of these judges were further investigated in the qualitative research.

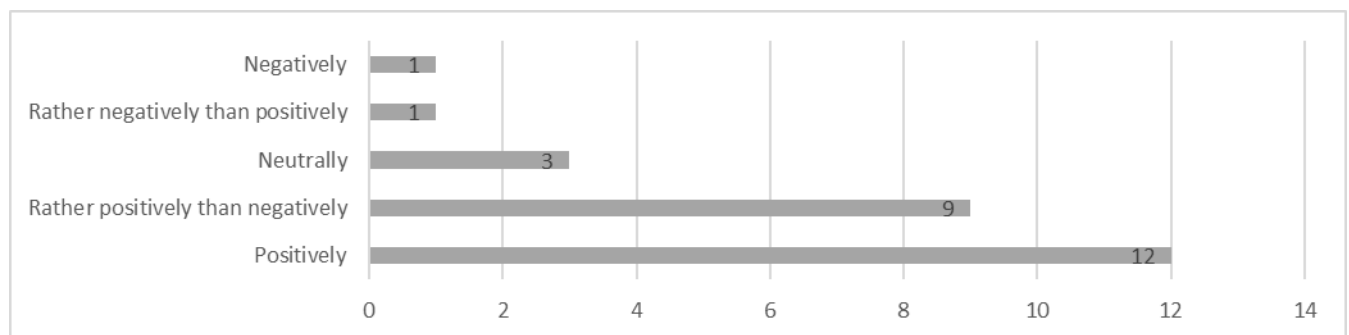


Figure 3. Evaluation of Court-connected Mediation (Perspective of the Judges-mediators)

When asked about the obstacles faced by the institute of court-connected mediation in Lithuania, the judges were asked to choose their answer from 8 options proposed by the researchers. They were also given the opportunity to share their own thoughts and ideas on the matter.

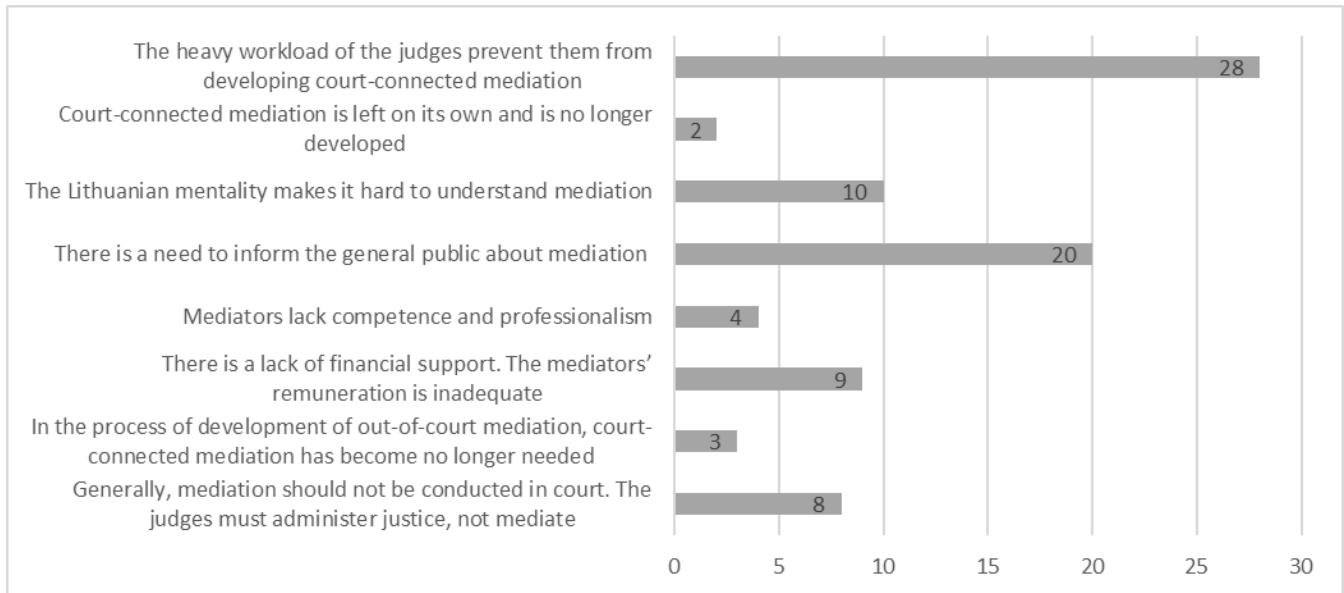


Figure 4. Obstacles Faced by the Court-connected Mediation (Perspective of Judges)

The surveyed judges outline excessive workload (28), insufficient public information (20), peculiarities of Lithuanian mentality (10), inadequate reward system (9) and the assumption that judges must administer justice, not mediate (8) as most significant obstacles to the development of court-connected mediation in Lithuania. 8 judges shared their own ideas regarding the issue. 1 judge expressed his opinion that Lithuanian courts are encouraged to resolve cases as quickly as possible and that is opposite to aiming for peace. The judge noted that “currently, the priority given to the speed of proceedings over the restoration of legal peace is an obstacle to pursuing mediation more frequently.” Another judge highlighted the inadequacy of judges-mediators’ working conditions. He has commented that “the basic working conditions are not ensured to judges-mediators. No premises are provided. It is often up to the mediator to plan and decide where the mediation will take place. Due to inadequate evaluation of their work (more precisely, undervaluation) and high workload, they often refuse to pursue mediation”. Another judge supported this idea, stating that “the parties only trust judges-mediators, but they have no interest in pursuing mediation.” Interestingly, the concerns of judges regarding the working conditions of judges-mediators are only partially in line with the judges-mediators’ own concerns. The majority of the surveyed judges-mediators (16 out of 26) said that they were satisfied with their working conditions as court mediators. Only 8 of them expressed dissatisfaction. One of the surveyed judges-mediators did not provide a clear answer on that matter.

When asked the same question about obstacles to the development of court-connected mediation, judges-mediators draw very similar conclusions.

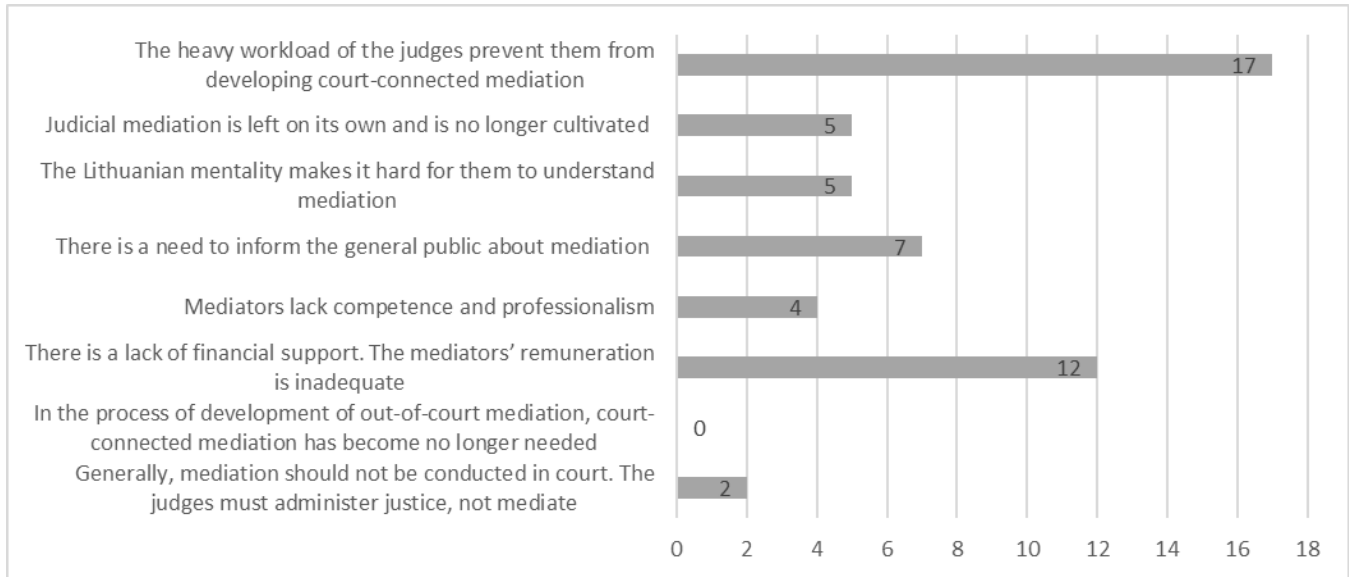


Figure 5. Obstacles Faced by the Court-connected Mediation (Perspective of Judges-mediators)

17 judges-mediators believe that one of the main reasons why the development of court-connected mediation has stopped is the excessive workload of judges. However, such opinion of the majority is not unanimous. One of the respondents stated that “judges mediate voluntarily, on their own initiative, and their workload should not be an incentive for mediation, it is the result of a goodwill, judges choose to engage in mediation without any coercion, thus, the workload of mediators should not be reduced because in that case they would receive significantly less cases than their colleagues”. 12 judges-mediators believe that an important obstacle is the inadequacy of the reward system for court mediators. According to the surveyed judges-mediators, lack of information of the public on mediation is another important obstacle for further development of court-connected mediation. Several judges-mediators identified more reasons that preclude court mediation, which were not provided in the list of the answers suggested by the researchers. One judge-mediator stated that “there is a lack of understanding and support on the part of self-governance of courts, court presidents and fellow judges”.

4.2. Evaluating the effectiveness of measures to promote court-connected mediation

4.2.1. The right to mediate in “your own” case

In order to promote court-connected mediation, it is established in part 2 of Article 231¹ of the CCP that with the consent of the parties a judge-mediator has a right to mediate a case for which he or she has been appointed as a judge (the so called “own case”). Judge-mediator is also entitled to approve a settlement agreement reached during court-connected mediation, but in the case of a failed mediation, it is prohibited for the same judge-mediator to continue to hear the case. In order to assess the effectiveness of this provision, judges-mediators were asked to answer the question of how many of “their cases” they have mediated by themselves. The responses indicated that as many as 21 out of 26 surveyed mediators did not provide court-connected mediation services in their “own cases”, which raises the question of the effectiveness of the legal norm providing the right for judges-mediators to mediate in their “own cases”. This opinion was further investigated in the qualitative research.

4.2.2. Mandatory court-connected mediation

Throughout the course of quantitative research, one of the goals was to investigate the opinion of the respondents on the idea of establishing mandatory court-connected mediation. Since 2017, part 1 of Article 231¹ of the CCP stipulates the possibility for a judge or a panel of judges to prescribe to the parties a compulsory court-connected mediation in the event of a high probability of a settlement. The purpose of this provision is to increase the usage of the court-connected mediation. Results of the study show that this form of compulsory mediation (judge's discretion) does not work in practice. Judges are not inclined to exercise this right widely. As many as 52 judges (more than 81%) indicated that they had not exercised this right. Only 11 judges indicated that they had exercised this right in their practice. Most of them only once. Only 3 respondents indicated that they had applied this provision 3, 5 and 6 times.

When asked about the reasons for not exercising this discretion, the judges could choose one or more of the answers offered to them by the researchers. Most of the judges (30) indicated that the disputes they dealt with were not suitable for compulsory mediation. 9 judges chose the option stating that "I think this is incompatible with the idea of mediation". 6 judges chose the option "I usually want the case to be heard as soon as possible and mediation prolongs the process". 2 judges stated that there is no such practice in their court. One judge admitted that he was not even aware of such possibility. The judges were also given the opportunity to share their own views on application of this provision. Those, who expressed their own opinion, emphasized the importance of the principle of voluntary mediation (e. g. "Essential principles of mediation - voluntary grounds. A party may withdraw from mediation at any time. If a party does not agree to mediation from the very beginning, mediation is not possible, unless that position changes in the process"; "The parties must agree to pursue mediation, otherwise, one will not force the parties to seek a solution", etc.). An interesting idea was also raised about the incentive effect of mandatory court-connected mediation. One judge stated that "it is enough to say that the court can order compulsory mediation and the parties themselves agree and no longer need to be ordered to pursue mediation." Another judge emphasized the time that compulsory mediation will take ("After the order of compulsory mediation and the possible withdrawal of the party, there will be a loss of at least two months in time. The length of the proceedings will extend."). Another judge stated "I do not believe in the efficiency of this institute. In all of my cases the parties themselves withdrew from mediation."

In order to determine the judges' knowledge about suitability of mediation for the cases, they were asked "What criteria do you consider when referring cases to compulsory court-connected mediation?" Since only those judges who had applied mandatory court-connected mediation in their practice were asked to answer this question, few answers were received. However, they are important in order to determine the level of knowledge of judges in this area. Respondents were able to choose from 6 answers proposed by the researchers.

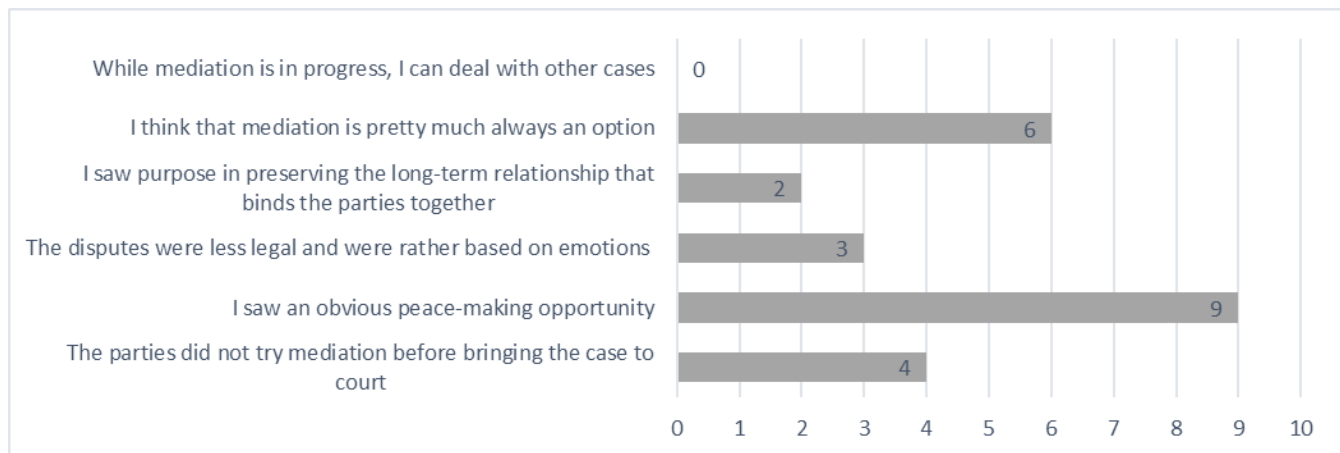


Figure 6. Criterias for the application of mandatory court-connected mediation (Perspective of Judges)

The diagram above proves that usually the reason why judges direct the parties to mandatory court-connected mediation is the probability of concluding a settlement (9) in the case. 6 judges indicated that they believe that mandatory mediation can be applicable in all disputes. Only 4 judges chose the answer related to the fact that there was no mediation pursued between the parties before the case was brought to court. Even fewer judges, 3 and 2, highlighted the importance of the longevity of the relationship and the strength of the emotional background of the case, which is often indicated as the most important criteria for the applicability of mediation.

4.2.3. The knowledge of judges in determining whether a dispute is appropriate to be referred to the mandatory court-connected mediation

When asked about their knowledge in determining whether a dispute is appropriate for mandatory referral to court-connected mediation, judges were quite positive about it. As many as 46 percent of respondents (29 judges) indicated that their knowledge was excellent. Just as many rated their knowledge as average. 4 judges identified a lack of such knowledge and only 1 admitted to having no such knowledge at all.

In search of the reasons why the number of court-connected mediation cases has not been growing as fast as before in the recent years, the researchers hypothesized that it could have been affected by the new provisions of the Law on mediation, which came into force in 2020 and established mediation as a mandatory pre-trial stage for resolving family disputes. The judges were asked whether they offer court-connected mediation to parties in family disputes who had already resorted to compulsory mediation before the case was brought to court. Unfortunately, the hypothesis was not confirmed. 28 of the judges stated that the decision regarding the offer of court-connected mediation is based on the nature of the dispute and its parties, and the fact that the parties have already tried to pursue mediation does not have much influence on the decision. 24 judges indicated that they offer court-connected mediation even to those parties who tried mediating their dispute before the case was brought to court and only 6 judges said that in such a situation the parties are no longer offered court-connected mediation.

In conclusion, it is clear that some of the measures that were initially intended to promote court-connected mediation have not produced the expected results. It is recommended to pay more attention to training judges in the field of mediation, especially regarding the knowledge on when the dispute is mostly advisable to refer to court-connected mediation.

5. Qualitative research results

5.1. General assessment of the court-connected mediation practice in Lithuania

Qualitative research data analysis revealed that both judges (J) and judges-mediators (JM) assessed court-connected mediation positively. Court-connected mediation is an opportunity to find a solution acceptable to both dispute parties and to resolve the dispute peacefully. “Social peace is the settlement of a dispute when both parties reach an agreement, which is a great good, at a state level, at a society level, at family, business or partner levels” (J3); “it is only good, <...> in any case, any level of peace, is far better than a hostile, long war between the parties. They themselves agree on the terms, <...> both parties leave the court as winners ... and both parties are satisfied” (J4).

Both judges and judges-mediators agree that a considerable amount of attention is paid to court-connected mediation. Judges who deal with civil cases always inform the parties to the dispute about mediation, they ask the parties whether substantial efforts have been made to resolve the dispute peacefully. According to the respondents: “In each case we suggest that the parties try to negotiate and to find a peaceful solution by themselves, if that is possible” (J4); “In practice, it is likely that when dealing with cases all judges will suggest to seek peaceful dispute resolution” (J2). However, as noted by the participants of the study, it is important that parties themselves want to resolve the disputes peacefully.

All participants of the research agreed that mediation is currently widely known. The judges mentioned that there are cases where the parties themselves request mediation and even indicate a preferred mediator. In some cases, even those parties that do not have lawyers, who would ensure that they are made aware of mediation as a possibility, have heard of mediation before. Perhaps they have heard about successful cases of mediation. The judges say that “when we accept lawsuits, along with the documents we send to the parties information about court-connected mediation, and we actually suggest it during the hearing. <...> we often manage to persuade the parties <...> they decide to try out the suggested path. We stress that it does not necessarily mean that you will reach an agreement in the end, but it is very important for you to talk, it might make it easier for you in the future” (J1). According to judges-mediators, court-connected mediation received more attention a few years ago. It used to be more publicized and was discussed in the legal community more frequently. One of the participants of the research pointed out the recent lack of information about court-connected mediation and the suppressed publicity process, but she noted that the “work has already been done” (JM2) and the mediation institute simply no longer needs to be repeatedly introduced to the public. “It is likely that mediation does not need that much advertising, that much attention, that much publicizing, because one can already see that the process is smooth and it is in force at full speed” (JM5).

However, the respondents acknowledged the fact that some of their fellow judges’ views are quite formal when it comes to the promotion of the court-connected mediation. They simply inform the parties to the dispute that they have a right to pursue mediation, but do not actively encourage or persuade them to exercise the right. On the other hand, there are judges who are not judges-mediators themselves, yet they make extensive work to offer the court-connected mediation in their cases giving the dispute parties every opportunity to seek peaceful settlement. “I am convinced that there are judges who carry out mediation in their “own cases” by actively suggesting ways to reach a peaceful settlement, perhaps even some specific solutions, doing that [more actively] than the judges who are dealing with those cases” (J5).

The respondents noted that to this day court mediators still lack attention. According to them, both the court administrators and the National Courts Administration should pay more attention to judges-mediators. Participants of the research stated that “everyone here has an interest in publicizing this process, which is indeed extremely necessary and important” (JM1); “Mediators really lack attention, but not in the literal sense -

mediators may lack help” (JM3). Judges-mediators reminisced that they decided to engage in mediation because it was something new and interesting. When they started carrying out court-connected mediation, they saw great meaning and purpose in promoting such a peace-building-oriented procedure in court. “It was something new, and answering the question “why am I still engaged in mediation?”, it seems that most of us who have tried it out and have seen positive results are encouraged by them and still think we can do the job and take on those additional responsibilities” (JM3). Yet at the same time, it was mentioned that besides building and extending the community of court mediators, it is also important to maintain the motivation of existing mediators, who, unfortunately, often drop out due to overwork or lack of knowledge and skills. “To a certain point, you can take the ideological path, the motivation is somewhat driven on an ideological basis. But then those human psychological effects make you stop and you begin to lack motivation” (JM5); “On the other hand, when you engage in an extracurricular activity, you take extra interest in it. It is only natural that your horizon expands and you see that there is room for improvement, that there is something to learn and more knowledge is required” (JM3). The respondents noted that “a great deal of training is directed at a circle of individuals who are only to be provided that mediator qualification. But for existing mediators, improving those skills, not forgetting and remembering both the legal regulations and other skills - I personally lack such training” (JM4).

5.2. Obstacles to the development of court-connected mediation in Lithuania

When asked to share their insights about why they think the number of court mediations has stalled, the members of the focus group identified a number of reasons: a) there is a certain distrust in colleagues (“If I will pass on the case to my colleague, he will mediate it, he might succeed, but he might also fail, he might give it back, then I will still have to deal with the case and I might even get another one because his schedule will be full and the courts are small”) (J5), b) the ability of people to negotiate peacefully is not sufficiently developed (“We must cultivate our cultural aspect. That understanding, the trust in both the institute of mediators, and any other common ability to negotiate peacefully. Because everyone here in Lithuania tends to curse at the courts anyway, but judging from the number of cases it is clear that they still want to go to those courts rather than to solve their disputes by themselves”) (J5). As for the reason why the number of court mediations is no longer increasing, one participant noted that c) the number of civil cases in Lithuania has been decreasing throughout the last few years. Besides, litigation cases at first instance, especially in large cities, often consist of cases that are settled in absentia without the presence of litigants, so there is no possibility to offer mediation (“The big Lithuanian courts <...> make such decisions very frequently, which means that the defendant is very passive, he does not participate, so there is no point in talking about mediation in this case at all. It is now a question of whether it is possible to increase the frequency [of mediations], it should be possible. If things were more active, people would be educated, fellow lawyers would look at mediation more favorably and encourage their clients to pursue it, then I think we could have that kind of growth”) (J1). Another reason why the number of court-connected mediations stopped growing, according to the focus group, is d) the duration of ongoing cases. The courts, just like the parties to the disputes, have an interest in resolving cases in the shortest possible time, and referring the parties to court-connected mediation will undoubtedly prolong the duration of the proceedings. Moreover, there is no guarantee that mediation will succeed. In the absence of a peaceful settlement, the dispute is returned back to the court for further hearing, which statistically means that the duration of the case hearing will be longer than average. “We have a very clear orientation towards a short trial. This becomes one of the criteria - that we have to deal with cases in the shortest possible time. Mediation is immediately perceived as some additional pause in the proceedings. Therefore, we are more likely to suggest for the parties to attempt to reach a peaceful agreement independently, we give them a couple of weeks before the next hearing to try and such a model is preferred over sending the case to mediation.” (J5). “Let’s say that some judges may be hesitant to refer the case to court-connected mediation, because if mediation fails, the overall time limit for hearing the case will be prolonged. And, of course, mediation usually takes a few months, it can take a long time and in case of failure, statistically for the judge it will take longer to process the case. I myself was surprised by such arguments and I think maybe we could think of some leverage points here, to deduct the amount of time that the mediation takes from the

length of the case or something like that because I myself have not even thought that there may be such fears” (JM4).

During the investigation both the judges and the judges-mediators touched upon the subject of a workload relevant to both of the groups as the number of new cases for judges-mediators conducting court-connected mediation is reduced to some extent. “If mediation is ordered, some of our cases are taken away” (JM5). Although there is currently no clear regulation on reducing the number of cases for judges conducting court-connected mediation, this issue is causing some dissatisfaction and tension among other judges in courts. “<...> we are saying that the workload is heavy and we have some judges who, for example, count their workload including [out-of-court mediations] and thus deal with fewer cases” (J5). Judges lack clearer information from the National Courts Administration. “At the moment, we cannot see how much of our workload is made up of mediation cases, it is impossible ... we have not yet done so. We have also contacted the National Courts Administration asking them to explain to us the weight of a mediation case and what it affects” (J4). However, judges themselves agree that when talking to fellow judges-mediators, they say they do not feel any significant reduction in workload and they often refuse to take mediation themselves because it is not worth it for them to mediate in terms of a workload. They prefer choosing to hear the ordinary case and to then have a clear sense of their workload. “They are formally court mediators, they are on the list, but they don’t take a single case. They say, they would rather take the case assigned to them, then at least their work will be formally considered a part of their workload” (J1).

5.3. Measures to promote court-connected mediation

Referring to part 1 of Article 231¹ of the CCP that grants the judges the right to refer the parties to mandatory court-connected mediation, the judges indicated that this legal norm is useful in promoting mediation. Some respondents mentioned that they make little use of it, but the fact that such a statutory provision exists in general is perceived positively. However, it was emphasized that court-connected mediation is used to end the dispute on peaceful terms. The parties to the dispute can only participate in this process voluntarily and they themselves must be determined to resolve the dispute peacefully. “If it is a settlement, it is the will of both parties, the goodwill of both parties. And if the parties do not see the possibility for this peaceful settlement to eventually be reached, then it is obviously possible to encourage it or to somewhat persuade them, but the peace treaty still is <...> a reciprocal element of voluntary goodwill and concessions of both sides” (J4). “For example, I have a hard time imagining a judge, at least myself, forcing a party into mediation, because to me mediation seems to be based on voluntary principles, and if you can not convince the parties, you can not be good by force” (J1). Several other judges agreed with the provisions of part 1 of Article 231¹ of the CCP on the appointment of mandatory court-connected mediation, but they also expressed doubts about the application of this norm. “I would like to mention that in any case, during the court hearing the judge can speak quite reservedly about both the possibilities or consequences of the settlement agreement and the referral of the case to mediation. Perhaps the judge is trying to avoid being accused of bias and so although he sees a high probability of resolving the dispute in peace, he cannot directly express that to the litigants at the court hearing” (J2). “If we say that this is a mediation process and it is not an integral part of the trial, then I think I have the right and reason to expect to be entitled to a legal protection instead of some alternative means of dispute resolution when I go to court” (J3). Thus, the respondents are cautious about making the appointment of court-connected mediation mandatory, as they believe that court-connected mediation is effective only when it is voluntary and when the parties are motivated to seek peace.

Judges-mediators expressed doubts about part 2 of Article 231¹ of the CCP. “With the consent of the parties, judges dealing with civil cases may decide to conduct mediation themselves if they are mediators.” One judge-mediator shared his experience: “At the very beginning, the institute took time to establish itself and I have even had to go to such extreme situations, <...> that I had to mediate in my “own cases” (JM5). But now it can be

concluded that it seems that the judges-mediators have a mutual agreement not to mediate their “own cases”. Since in the absence of a peace agreement, the judge would have to step down and transfer the case to another judge, which would again be related to the judges’ workload, the mediating judges inform the dispute parties about the possibility of mediation and, with their consent, refer the case to another mediator. “When mediators with complex cases agree to mediate them, in case of a failure, they have to withdraw from the case as judges” (JM3); “Everytime I encourage the parties to use mediation, I don’t even raise the question of my candidacy, I suggest considering another mediator aside from the judge and the opportunity to go to another court” (JM4).

In civil cases court-connected mediation can legally be performed by all mediators from the List of Mediators of the Republic of Lithuania who have signed agreements with the state-guaranteed legal aid office. However, the analysis of the research data revealed that both the judges and judges-mediators believe that the people involved in the court process often want the judges to perform mediation. Not only do they associate this with the judges’ extensive knowledge of legal issues, but also with their authority placing great confidence in them. One of the respondents stated that “Whenever court mediation is required and the parties come to choose mediators, judges-mediators are prioritised. This is precisely what is shown by the fact that judges are probably trusted more than other specialists who may be more qualified when it comes to settling real disputes” (J2). However, a part of the judges who participated in the research are still in favor of court-connected mediation being carried out by specialists who are not necessarily judges. In their view, a mediator should be a separate profession, especially considering the fact that professionals in this field are already being trained. “I am categorically against the participation of judges in the mediation process, categorically. When we talk about lawyers, notaries, prosecutors, we always say it is a job. When we talk about mediators, we also say that it is a job. I understand that judges have authority, I understand that they have legal knowledge, I understand that if they have worked, then [they also] have knowledge about communication and psychology, and so they can mediate. But if professional mediators were to be trained, they would do no worse” (J3). “If the system really succeeded in producing professional mediators who would have a genuine interest in resolving those disputes peacefully, I think that judges could really relinquish that function” (J1). According to an opinion of the majority of the respondents, judges should focus on the performance of their direct functions. Their functions – the administration of justice – cannot be performed by anyone else, thus, this must be the basis of their activities. Since the enforcement of court-connected mediation is not a function exclusive to the courts, judges should only refer the parties to the dispute to court-connected mediation, but not to perform mediation themselves. The respondents, who emphasized this idea, pointed out that: “I would rather have judges abstain from being court mediators all together. That is the position I take, since after all court mediation is not a court-connected function” (J2); “I would agree <...> it is not entirely a court-connected function. We are currently carrying it out, because we are generally trying to promote this institute. More often people themselves choose judges-mediators, this is probably just how the system is at the moment” (J1); “I think that the judge’s contribution to court-connected mediation should be limited to explaining to the parties [the possibility of pursuing mediation] and directing them to court-connected mediation, but not carrying it out” (J2).

In the opinion of both the judges and the judges-mediators, judges were very important in the initial stages of publicizing court-connected mediation. “Once it [court-connected mediation] has been introduced to the public, it is questionable whether we [judges] are very necessary” (JM5); “As far as I know, according to the established regulations, judges in Latvia and Estonia cannot be mediators. In that case, if our mission was to start this process, then I agree that we may have already achieved that” (JM3).

While sharing their visions of the future of court-connected mediation, members of the focus groups acknowledged that only a small part of all court disputes are resolved through mediation at the moment, therefore, there is room for growth. The respondents noted that court-connected mediation is especially effective when solving disputes of a complex nature. “I order about two or three complicated cases to be mediated a year. And as a rule of thumb, they were all resolved peacefully. The mediator would work for a long time, for as long

as a year. The disputes are complex in nature; therefore, I am happy to know that the people have achieved a better result after mediation compared to any possible outcome that could have been achieved in court” (J1). Both the judges and the judges-mediators agree that the success of mediation lies in the results achieved and not the statistics. “If every case we refer to mediation ended peacefully, the results would be absolutely fantastic” (J1); “<...> I am really grateful for my fellow mediators who return a successfully mediated dispute” (JM3). The participants of the research suggested that it would be wise to establish mediation as a mandatory pre-trial stage of dispute resolution in all disputes that are being settled by litigation in the CCP. This way, an even larger part of the public would learn about and experience the benefits of mediation. On the other hand, one judge pointed out that “the efforts made [to promote court-connected mediation] are very good, but there is still a need to seek balance. To what extent do the results of the mediation process correspond with those efforts and the funds that are allocated to achieve this goal?” (J3).

6. A Different Approach Towards Court-connected Mediation: Polish Perspective

The modern notion of mediation has been introduced into the Polish legal system through the Polish Code of Civil Procedure in 2005 (further – Polish CCP). Through simplifying the law, and safeguarding due process rights of litigants, mediation was a process designed to support the processing of service of justice, rather than to serve as an alternative to it. First, as part of the simplification process, mediation settlements were granted the same legal significance as court ordered judgments. Second, civil disputes that could be disbursed through a court settlement would fall under a category of disputes prone to being settled through mediation.

Mediation in Poland is permitted in all civil cases where a settlement is admissible. That means that the subject matter of the dispute at stake would go to mediation, but only if the dispute would be subject to a state court’s discretion.

According to the latest data presented by the EU Commission (EU Justice scoreboard 2020) Poland is one of the 4 most litigious countries in the EU. However, judges are encouraged to be applying more sustainable methods of dispute resolution such as mediation, especially at the preparatory stage of civil disputes. The figure below presents the dynamics of court-connected mediation cases and settled via mediation in 2017-2019.

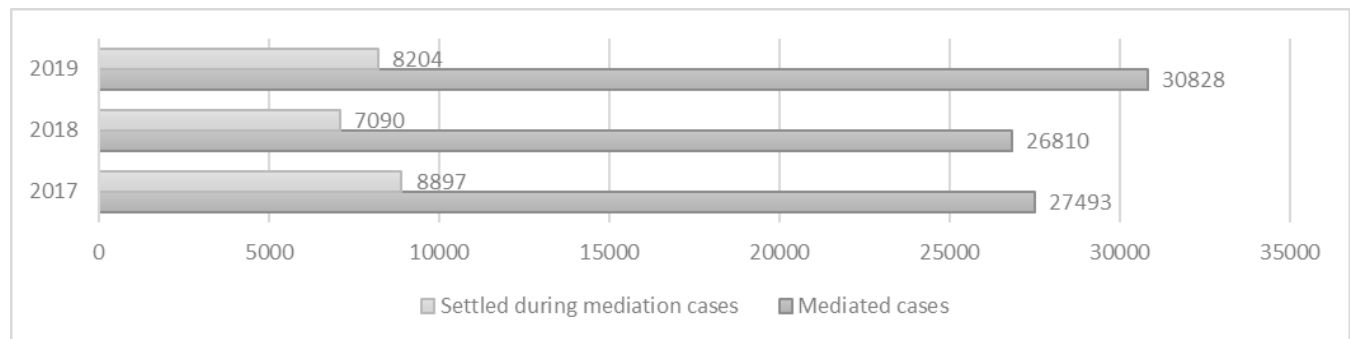


Figure 7: Number of mediations in Poland 2017-2019, and their success rate

Source: Ministry of Justice of Republic of Poland 2020

It is the law in Poland that mediation can be conducted either under a contract or by the appointment from a court (art. 183 Polish CCP). The mediation process takes place either prior to trial and/or, alternatively, if the parties agree during trial.

Court appointed mediation is possible even if the parties have not previously been bound by a mediation provision in a contract or a specific mediation-contract. Such mediation can go forward if certain conditions are satisfied. First, the parties should agree to mediate and, second, it may take place only during the preliminary stage of litigation (until the first hearing). The notion of mandatory court-bound mediation does not exist in the Polish legal system.

Parties to a dispute are encouraged to engage in mediation by judges. At the preparatory hearing, together with the parties, the chair judge shall determine the subject matter of the dispute and encourage the parties to reconcile, especially through mediation. Judges can act as conciliators on their own or advise to find a neutral mediator to deal with the case. There is, however, an assumption that the judge will assume an active role in negotiations between the parties. Although moderating the discussion between the parties is not anything new, the judge's "settlement" authority is quite broad. Therefore, a court settlement, a settlement reached/concluded in front of a mediator, as well as negotiations in front of a judge are all forms of amicable settlement made available to the parties in due process of the preparatory hearing (Flaga-Gieruszynska & Zielinski 2019).

Notwithstanding all of the potential benefits of the preparatory hearing, there are several controversies that relate to the judges' direct participation in the negotiations between the parties. Scholars and practitioners argue that such an arrangement by a judge may be dangerous for three main reasons. First, during the preliminary hearing, a party does not have to be represented by counsel. Second, the principles of equality and neutrality may be compromised. Finally, early intervention into the process can result in major setbacks and ultimately can infringe upon the parties' substantial procedural rights (Marszałkowska-Krzes 2021). Poland's mediation laws have been criticized for not being clear enough in regard to the actual actions that will have to be undertaken by the judges during the preparatory stage. In spite of the fact that there are not any real incentives or repercussions for the judges, the forecast is that the judge's engagement will be limited (Mucha 2020).

Additionally, as evidenced by empirical research, judges may also be obstacles to effective mediation proceedings in Poland. One of the most comprehensive studies conducted in Poland has revealed major challenges to institutionalized mediation (Rudolf et al. 2014). Judges being convinced of their own conciliatory skills, their lack of specific mediation knowledge, and also low quality of mediation settlements are all elements having an overall impact on the way mediation is perceived and utilized in Poland.

A universal rule, in a scenario where parties do proceed to mediation through the appointment of the court (court-connected mediation), they bear the costs of the proceeding (art. 183⁸ Polish CCP). In short, the mediator's salary can be determined through three different avenues depending on the type of mediation – it can be determined upon the basis of the Decree of the Ministry of Justice if it is a court-appointed mediation; on the basis of a mediation regulation in accordance with the payment tariff of the mediation center that the mediator acts on behalf of, or an individual agreement with the mediator if it is a contractual mediation.

In general, Polish civil procedure does not specifically distinguish requirements that ought to be met by mediators acting in court-connected mediation as opposed to contractual mediations. According to art. 183² §2 of the Polish Civil Code, in order to become a mediator, one has to be a natural person with full legal capacity, who is also exercising their innate rights. Thus, the law does not specify any formal requirements that have to be met by a mediator. However, there are exceptions. In divorce and separation cases (art. 436 §4, Polish CCP), if the parties have not decided on the mediator, the court will refer them to a permanent mediator who has theoretical knowledge on matters which could be relevant to such disputes. Under the law there are two kinds of mediators in Poland: permanent and ad hoc.

Article 183² § 3 specifies that nongovernmental organizations, public institutions (such as Universities) maintain lists of permanent mediators and create mediation centers. The lists of permanent mediators are forwarded to the

president of the circuit court. Art 183² §3¹ specifies that henceforth when the Act mentions a “mediator,” it is a permanent mediator, unless the Code explicitly states otherwise. In consequence, the ad hoc mediator can be distinguished from the permanent mediator in the Polish system under the Polish CCP. A practical consequence of said differentiation is that institutions that ultimately maintain lists of permanent mediators may include additional criteria for a mediator to be enlisted. Such criteria may include specific training, knowledge, educational background, etc. Presidents of circuit courts maintain lists of permanent mediators. The requirements set forth by the Decree establishing the lists of permanent mediators are not extensive.

As of now the Ministry of Justice is introducing a novel mediator’s registry called the National Mediator’s Registry (Krajowy Rejestr Mediatorów), which would come into force during 2023. The NMR is designed to be a public registry of mediators conducting court and out-of-court mediations. Sparking much debate, The National Mediator’s registry is an attempt to unify the profession and provide clear-cut requirements on skills and training. What is most important is that an existing registry, namely the Integrated Qualification System (Zintegrowany System Kwalifikacji), already enlists qualifications that have to be met by a mediator in civil and commercial cases. Therefore, it seems that in the coming years the profession will undergo further scrutiny relating to training, skills and expertise.

A permanent mediator can refuse to conduct mediation for valid reasons only. A mediator is under an obligation to inform the parties immediately of said refusal, and if the parties were appointed in a due process of trial, inform the court as well (art. 183² §4, Polish CCP).

What is important is that the Polish CCP introduces limitations on the appointment of judges as mediators. The Act specifies that although active judges cannot be mediators, the act does make an exception for judge emeriti. Under article 68 on the Common Court System, the general rule is that a judge retires at the age of 65.

In Poland, mediation is advertised as a concept and an out-of-court dispute settlement procedure. For that reason, there are limited unified national measures undertaken to promote court-connected mediations. However, it must be appreciated that state courts do promote mediation through various information and social campaigns.

7. Discussion, Conclusions and Recommendations

Court-connected mediation in Lithuania was first introduced by adopting appropriate legal regulation and only later was applied in practice. Lithuanian researchers studied the legal regulation of mediation, its development, the peculiarities of its implementation and the possibility of applying mediation in different disputes. However, there is very little research done on the attitudes and experiences of judges and judges-mediators regarding court-connected mediation.

The results of the completed quantitative and qualitative research revealed that both judges who deal with civil cases and judges-mediators of the Republic of Lithuania are generally positive about the system of court-connected mediation. Both of the mentioned groups believe considerable attention is paid to court-connected mediation. The dispute parties are offered to resolve the dispute peacefully and to make use of the court-connected mediation possibilities. Although the number of civil cases referred to court-connected mediation has been increasing over the past few years, this growth has recently stalled. While the results of the quantitative research revealed that judges see the lack of public awareness as one of the greatest obstacles to the development of the court-connected mediation, members of the focus groups expressed a bit different opinion. They mentioned the heavy workload, the incomplete accounting system for judges-mediators’ workload and a decrease in the total number of civil cases as the main reasons hindering the development of the court-connected mediation in Lithuania.

A study conducted by J. Sondaîtė and S. Molė (2019) titled “Attitudes of court mediators towards judicial mediation practice” revealed that after being offered court-connected mediation, the dispute parties tend to choose a judge as their mediator. Researchers refer to this as a kind of stereotype, linking these attitudes to the general assumption that the judge is a professional who is more knowledgeable in terms of the legal aspects of disputes. A study by S. B. Goldberg, M. L. Shaw, and J. M. Brett (2009) indicates the importance of the legal experience of judges-mediators when it comes to acquiring the dispute parties’s trust. The authority and the legal knowledge of the judge-mediator encourages the dispute parties to get involved in mediation more actively in order to achieve a peaceful settlement. The conducted research confirms this idea. According to the judges and the judges-mediators, in most cases, dispute parties who are involved in the court mediation process want the mediator to be a judge. Not only is this due to their good knowledge of legal issues, but it is also because of their authority and the society’s high confidence in them. The research also revealed the judges’ positive attitude towards mediation, even if it does not end with a settlement. In their opinion, when the case returns to court from mediation, the emotional motives are already discussed, and so it is only the legal arrangements that remain to be made. This was also observed in a study conducted by J. Sondaîtė and S. Molė (2019, 203), where the court mediators mentioned that “even if a peace treaty is not signed after mediation, the dialogue still has its effects, the parties gain more clarity and the conflict becomes less intense in any case”.

To summarize the results of the study, the need to explain the reasons for the dissatisfaction of judges with the court-connected mediation system in more detail is identified. There are several directions for the improvement of the institute of the court-connected mediation. First of all, both judges and judges-mediators see excessive workload of judges as the main obstacle for the development of the court-connected mediation. Given that there are judges who believe that court-connected mediation should not be conducted by judge-mediators at all, there is a need to discuss the possibility of more extensive involving of non-judges mediators in the process of court-connected mediation. Secondly, according to judges and judges-mediators, court-connected mediation still lacks wider public awareness. Due to the fact that a large part of the public takes part in court disputes relatively infrequently and that the option of court-connected mediation is relevant only to those who are currently involved in litigation, one-time information distribution is not sufficient - consistent long-term publicity is needed. It should also be noted that some respondents mentioned the low competence and professionalism of mediators. It is necessary to ensure continuous professional development of judges-mediators, increase their motivation to stay active in mediation.

Taking a glance at the Polish model of court-connected mediation which does not involve judges as mediators at all, it is obvious that this approach may be seen as an alternative to the Lithuanian model. However, it should be noted that the success rate of court-connected mediation in Lithuania (47 per cent in 2019) is higher than in Poland (27 per cent in 2019). Such a difference may be caused by issues concerning mediators’ qualification. In Poland the problem of mediator’s qualification is related primarily to a fragmentary qualification and training system with little or no control as well as no unified measures applied. Fostering more sustainable measures designed to improve the system of resolving civil disputes requires not only legal background, incentive measures but also a pool of professional mediators, who are ready to serve both in contract-based mediation and court-connected mediation. The existing certification system of out-of-court mediators’ in Lithuania and more than 500 mediators on the Lithuanian list of mediators is a strong argument for a comprehensive reform of the institutional model of the court-connected mediation in Lithuania.

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ENTREPRENEURIAL ORIENTATION AND CSR: A DYNAMIC CAPABILITY IN THE CORPORATE PERFORMANCE OF MEXICAN SMES*

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Abstract. In the current business context, SMEs play a determining role for most regions. For this reason, more and more companies are adopting business strategies that lead them to maintain and increase their competitiveness. Two of these strategies are Entrepreneurial Orientation (EO) and Corporate Social Responsibility (CSR). The purpose of the study is to observe the effects that the EO has on the CSR and on the Corporate Performance (CPERF). In addition, it seeks to determine if the CSR has significant effects on the Corporate Performance, and it has also been proposed to examine the mediating effect that the CSR has between the variable EO and Corporate Performance. The study analyzes a sample of 488 trade and service SMEs from the Northwest region in Mexico. The information was collected through a self-directed survey of the manager of each SME from May to September 2018. For the analysis of the data, the statistical technique PLS-SEM was used (partial least squares structural equation modeling). The results report that EO has a strong significant effect on CSR and also on the Corporate Performance of SMEs. Furthermore, the results have corroborated that CSR is a mediating variable between EO and Corporate Performance. The study contributes to the development of the theory of Dynamic Capabilities and of Stakeholders, corroborating that SMEs that adopt EO and CSR can lead them to the permanent adoption of sustainable entrepreneurship and the improvement of their corporate performance results.

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1. Introduction

In past and recent times organizations have been in search of competitiveness and permanence in global markets. For this, it has been necessary to adopt strategies that are difficult to match and with a high degree of innovation. For this purpose, the managers of these companies require resources and capacities to achieve these goals (Andreeva & Ritala, 2016). Among these requirements are entrepreneurship-oriented capacity and creativity to develop high-impact business ideas for stakeholders. Entrepreneurship is associated with the level of creativity, with the capacity for innovation, with taking risks and with the degree of proactivity of individuals (Drucker 2014; Zahra, & Wright 2016). Generally, experts on the subject have analyzed the behavior of this variable as a multidimensional construct, which considers the capacity for innovation, the ability to take risks, the ability to be proactive, aggressiveness and autonomy in the management of companies (Covin & Slevin, 1991; Wales, 2016). However, the variables that are most frequently studied in the field of business sciences are: innovation, proactivity and risk taking (Wales, 2016). In this same direction, various specialists in the business area and theoretical experts in business sustainability have expressed and confirmed that the Entrepreneurial Orientation (EO) provides an important number of benefits for companies (Mishra & Zachary, 2014; Nasra & Dacin, 2010; Zahra, 2007). These can be financial, organizational, and market specialists in the development of the Theory of Dynamic Capabilities (TDC) have explained that EO has become a crucial business strategy to maintain a competitive advantage, therefore, it is necessary to take advantage of opportunities, know the changes in the environment and reduce threats to through the exploration of innovation capacity (adopting new technologies) and the exploitation of intangible resources (organizational management capacity) with which an organization has available (Aagaard, 2016; Teece, 2007, 2016). Another key dynamic capability that is linked to business strategy is the case of Corporate Social Responsibility (CSR), which has been one of the most recurring sustainability strategies in the last two decades by company managers.

However, in order to achieve these benefits within and outside the company and more so for small and medium-sized enterprises (SMEs), it is necessary to bring down some obstacles such as: 1) the poor strategic vision of managers or investors, 2) little importance in creativity, innovation and orientation towards entrepreneurship, 3) high CSR regulations, 4) high costs of implementation in certifications, 5) little social and environmental commitment of employees, and 6) high competition with multinational companies (Gibb, 2007; Hernández et al., 2010; Terán-Yépez et al., 2020; Tiba et al., 2020; Zahra et al., 2006). All this has led to the arrival of new business models focused on corporate sustainability and are gradually leaving benefits focused only on traditional models that benefit shareholders (Carroll, 1991; Friedman, 2007). Therefore, sustainable business models incorporate a triple bottom line approach and consider multiple benefits for stakeholders, where they generally include ethical, environmental and social aspects (Cavaleri & Shabana, 2018; McWilliams et al., 2016; Seaborn et al., 2020). The conceptualization of CSR has been in constant evolution, the stakeholders theory being the most predominant in research, as it contemplates the voluntary actions and behaviors that companies undertake towards their internal and external clients, in ethical and legal terms, social, economic and environmental (Freeman et al., 2010; Hsueh, 2015; Spence, 2016). The literature on sustainable entrepreneurship has exposed an important variety of business models, from which SMEs can adopt to improve their corporate performance, among which

are: 1) circular business model, which is characterized in that in most cases they are closing, slowing down, intensifying, dematerializing or narrowing resource loops, these models have given rise to the business model based on the circular economy (Carayannis et al., 2018; Kalmykova et al., 2018), 2) social enterprises: business models that aim at social impact by generating profitability derived from economic activity or by completely reinvesting them (Nosratabadi et al., 2019), and 3) product and service system: these are business models that integrate the offer of functional products and services with substantial benefits and results for customers (Carayannis et al., 2012; Geissdoerfer et al., 2017, 2018), these approaches and/or models have been adapted to different contexts and productive sectors that have contributed to the sustainable development of various regions of the world (Abdelkafi & Täuscher, 2016; Nosratabadi et al., 2019).

Commonly, for SMEs in the commerce and service sector, the EO is not applied in its entirety, due to internal and external barriers that prevent the adoption of innovative actions, it is also common for these companies to have limited financial resources, little commitment from all stakeholders employees for the development of creativity, taking high risks in projects is not the priority and sustainable actions aimed at offering socially responsible goods and services have been a difficult task to adopt (Eggers, 2020). However, it has been shown that to be more competitive and face global economic crises it is advisable and important to focus on entrepreneurial-oriented strategies (Eggers, 2020). In the current context, the most active entrepreneurial activity is centered in the United States of America, Europe and Asia (Feng et al., 2020; Yang et al., 2020), the latter being the one that has stood out with the presence of emerging companies with innovative products in different parts of the world (Brink, 2018; Donbesuur et al., 2020). In this sense, the literature on entrepreneurship orientation states that companies must act proactively, innovatively and with tolerance to risk to respond to the demands of society and markets in a socially responsible way, with ethical behaviors that integrate the social, environmental and economic interests of stakeholders (Covin & Lumpkin, 2011; Donbesuur et al., 2020). In short, it is clear that companies that adopt ethical and legal practices lead them to reduce risks and errors in decision-making, however the level of proactivity and innovation can be seriously affected (Tuan, 2015). On the other hand, companies oriented to sustainability and ecological practices tend to be more innovative and proactive, but they are betting on a return on investment and long-term corporate performance and with greater risk (Carroll, 2018; McWilliams et al., 2016). These risks are more acute in SMEs, because when trying to voluntarily change towards sustainable entrepreneurship, their resources and management capacities are more limited (Terán-Yépez et al., 2020; Tiba et al., 2020). In the theoretical and empirical review, it has been detected that there are few studies focused on the analysis of business models oriented towards the influence of the EO on CSR and CPERF in SMEs (Stewart & Roth, 2007; Zahra, 2008). In most of the works analyzed, they focus on studying large corporations from different regions where countries have highly developed economic, political and social levels (Cooren, 2020; Kaplan & Kinderman, 2020; Perrini, 2006; Winkler et al., 2020). Due to the recent incursion of sustainable entrepreneurship (innovative actions based on social, economic and environmental practices) in organizations at a global level and more in the business practices of SMEs, but in addition to the lack of consistency in the literature and in the effect significant in financial performance, the study contributes to the development of the theory of dynamic capabilities (Jiang et al., 2018; Terán-Yépez et al., 2020).

In the Mexican context, SMEs represent 99% of the total companies registered in the country (about 6 million businesses), of which 60% are focused on the commerce sector, 30% on the services sector and 10% belongs to the industrial sector (manufacturing) (INEGI, 2019). On the other hand, Mexican companies (microenterprises) are characterized by being within the informal economy, these data represent 60% of the total generation of the economy in the country, although it is below the global average it is still a figure alarming (ILO, 2016). Despite the fact that in Mexico there are strong technological limitations (lack of internet connectivity coverage) and the promotion of innovation for social, political and economic development, the country is among those highlighted by the development of new enterprises (GEM, 2018; OECD, 2018). According to GEM (2020), Mexico has

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important challenges to develop the entrepreneurial spirit and the culture of entrepreneurship, among which the following stand out: 1) the few government programs to promote entrepreneurship, 2) financing with high interest rates, 3) lack of entrepreneurial education during training school, 4) high internal market regulations, and 5) little investment in research and development for innovation. On the other hand, the lack of government initiatives to promote business sustainability has been rare and a barrier to the development of sustainable entrepreneurship. In Mexico, companies are not required to go through certification processes related to sustainability or corporate social responsibility, only large companies are the ones that are voluntarily pushing these initiatives with force (UNO, 2019).

From the previous context, the study focuses on the contribution to the development of literature from two perspectives: 1) It contributes to the development of the EO literature as a strategy of dynamic capability of SMEs, and 2) It contributes to the development of Stakeholder theory through CSR analysis in SMEs with an economy in a developing country. The research work has the following objectives: 1. Analyze the effects that EO has on CSR and Corporate Performance, 2. Determine if CSR has significant effects on Corporate Performance, and 3. Examine the mediating effect that has the CSR between the variable EO and the Corporate Performance that is generated in the SMEs of the Northwest region of Mexico. In addition, the study answers the research questions: 1) The EO can be a dynamic capability that raises the CSR level and that improves the Corporate Performance in the SMEs trade and service of the Northwest of Mexico? 2) What are the strategic actions of EO that are most applied by SMEs trade and service in Northwestern Mexico, and 3) What are the CSR practices that are most developed by SMEs in Northwest Mexico? The document includes a review of the literature, the justification of the hypotheses, the method used, the measurement of the variables, the main findings, discussions and conclusions.

2. Review and Theoretical-Empirical Justification of the Hypotheses

2.1. Entrepreneurial Orientation, its Relationship with CSR and Corporate Performance

Entrepreneurial Orientation, in recent years, has been viewed as a dynamic capability and a superior value strategy for organizations (Teece, 2009; Zahra et al., 2006). Its conceptual origins derive from the literature of entrepreneurship, therefore, EO encompasses the configuration of practices, the adoption and application of policies in the processes that allow the creation of rational actions and decisions within the company (Lumpkin & Dess, 2015). Main researchers in the contextualization and measurement of EO have been Miller (1983) and Covin and Slevin (1991), who, in addition to determining that it is a multidimensional construct, have concluded that it is defined as a business strategy that is made up of actions, intentions and abilities, both individual and collective: 1) the capacity for innovation (leadership in innovation requires a strong investment in research and development for the generation of new products, changes in existing products, generation of new working techniques and adoption of new technologies in the processes) (Teece, 2010; Weerawardena & Mavondo, 2011), 2) proactivity: -human capacity to face the risks of the external environment- (must show a competitive posture, be the first to introduce new products, make bold decisions before competitors, show environmental boldness, make rational decisions, etc., (Wales, 2016; Zhao & Smallbone, 2019) and, 3) take risks (ease of propensity to take risks in projects with high risk and high return, value the cost-benefit) that assumes a business (Donbesuur et al., 2020; Lisboa et al., 2011). All this mix of capabilities leads companies to explore and take advantage of new opportunities, improve their performance in highly competitive markets and generate sustainable competitive advantages (Drucker, 2014; Lumpkin & Dess, 1996).

However, these classic trends have explained very little the relationship between entrepreneurial orientation or (intra-entrepreneurship) with the Theory of Stakeholders and the strategy of Corporate Social Responsibility, therefore, authors such as Teece (2007) and Newey and Zahra (2009), through their postulates and models have

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developed the theory of Dynamic Capabilities. They have given great importance to the incursion of business strategies oriented towards entrepreneurship, innovation, technology, knowledge management, sustained financial profitability, but they have also studied and incorporated into their models' sustainable practices such as corporate social responsibility in organizations of different dimensions. From an empirical perspective, recent studies have concluded that there is a strong relationship between EO and CSR in SMEs. We highlight the research of Isaak & Logic (1999) and Wagner (2010) who have linked green and social entrepreneurship to sustainable entrepreneurship, as three categories that share the common objective of positive environmental impact. Adomako & Nguyen(2020), also in a context of SMEs, observe EO as a key capability, able to create sustained competitive advantage for companies. Under the view of dynamic capabilities theory, greater levels of EO provide the company with available resources and the possibility to undertake CSR activities (Adomako & Nguyen, 2020). This way, EO facilitates the implementation of CSR activities, making its skills available to the company, so that it uses its internal resources and applies them in the CSR strategy. Iqbal & Malik (2019), analyzed the effects of EO through the engagement of SMEs in CSR practices. The results revealed that EO is positively associated with the engagement on sustainable practices, particularly regarding the environment, human resource management, and community and local development.

In addition, there are other results that have informed that SMEs, managers and entrepreneurs who take risks and who focus on innovation and technological development have managed to generate co-creation of value through the adoption of sustainable actions, the same as the leads to penetrate new market niches riddled with customers with greater awareness and ecological and environmental demands (Broadstock et al., 2019; Multaharju et al., 2017), however, the issue of sustainability has become a critical strategy for managers of SMEs (Liu, C. H. S., & Huang, 2020). From another perspective, some researchers have revealed that there is evidence that in some cases these practices lead companies to adopt certifications and drive them towards internationalization, positively impacting interest groups (Ayuso & Navarrete-Báez, 2018; Calic & Mosakowski, 2016; Moratis & Cochius, 2017; Schaltegger & Wagner, 2017). On the other hand, in the context of corporate performance, this variable is significantly affected by EO. Various authors have agreed that SMEs, oriented towards creativity, innovation and risk-taking, are more likely to increase their sales, improve their profits and achieve a greater competitive advantage (Linton et al., 2007; Martin & Javalgi, 2016). In addition, entrepreneurship-oriented SME managers have a strong propensity for new product innovation, improved business strategies that drive value creation, and drives toward higher levels of corporate performance for business stakeholders (Eshima & Anderson, 2017; Wang et al., 2020), besides, the EO focused on sustainability practices becomes more difficult to fulfill when global economic conditions are more turbulent for most SMEs in different regions (Ayuso & Navarrete-Báez, 2018; Laskovaia et al., 2019). The previous information justifies that EO is a predictor of the success of corporations (Kraus et al., 2012) and has a significant influence on corporate performance and value creation (Covin & Slevin, 1989). At the same time, Chege, Wang, and Leparan Suntu (2020) examines the link between EO and firm performance in Kenya obtaining positive results and recommending entrepreneurial actions of all type in the organization to achieve greater corporate performance. Similarly, Shafique and Saeed (2020) examine the impact of EO on corporate performance by considering environmental dynamism as a potential moderator.

Other important studies in this context of business strategy that have been developed in different economies such as Mexico, Spain and China, have shown that the EO is due to the level of innovation capacity, proactivity and risk-taking of companies to be able to raise corporate performance (Basco, Hernández-Perlines, & Rodríguez-García 2020). This behavior is manifested in recently created companies and in small businesses. Therefore, from a strategic vision, companies with EO and the capacity for innovation, which create and develop new products and with greater risk assessment in highly competitive markets are viewed as strategies that become dynamic capacities to achieve exponential and sustained results in organizational and financial terms (Lisboa et al., 2011; Monteiro et al., 2019). The following hypotheses arise from the previous context:

Hypothesis 1 (H1). The more entrepreneurial orientation, the higher the level of practices of Corporate Social Responsibility in SMEs.

Hypothesis 2 (H2). The more entrepreneurial orientation, the higher level of corporate performance (SMEs).

2.2. The Relationship of CSR and Corporate Performance

The literature has exposed that CSR practices are decisive for business sustainability. Furthermore, CSR is a concept that is made up of economic, social and environmental aspects (McWilliams et al., 2016; Schaltegger et al., 2016; Tasdemir et al., 2018). Starting from the Stakeholder theory, CSR can be defended as those companies that adopt voluntary practices focused on ethical, legal, social, economic and environmental actions to benefit employees, shareholders, suppliers, customers, society and other organizations (Carroll, 2018; Freeman et al., 2010). In the literature, the positive effect that CSR has on corporate performance has been largely discussed, it is common to find in literature that CSR produces greater social innovation, greater image, greater reputation and, consequently, better performance organizational economic and financial business (Hadj, 2020; McWilliams et al., 2006). However, for SMEs, the road is long to achieve all these benefits, this mainly depends on the size, resources and entrepreneurial capabilities (Ortiz-Avram et al., 2018a), in addition, SMEs tend to focus on a narrow niche of interest groups, all this contrasts with what is practiced in large companies (Magrizos et al., 2020).

However, the relationship between CSR and company performance is not yet fully defined and may vary according to operational conditions and the nature of each company (Carroll, 2016; Friedman, 2007). Research on endogeneity in the CSR area has explained that there is a divergence in the effect that CSR has on Corporate Performance. Empirical studies have shown that there can be a unidirectional and bidirectional relationship, however, it has been observed that there is a direct correlation between both constructs (CSR-Corporate Performance), but in addition, there are other variables that can act as mediators to obtain a direct positive effect and indirect on financial performance (Liu et al., 2020). Intangible variables such as knowledge, entrepreneurial orientation (innovation, proactivity and risk taking) and company size can help improve this correlation (Martínez-Campillo et al., 2013). Researchers on the subject have expressed that companies that focus on sustainable ventures have managed to generate trust and loyalty towards their clients, generate higher sales, raise their image, improve the reputation level and, consequently, manage to increase their financial profits (Martinez-Conesa et al., 2017; Naseem et al., 2020; Pérez-Cornejo et al., 2020; Tang & Tang, 2012). In this same context of SMEs, these organizations have been adopting business models based on innovation and sustainability, and with a greater concern and focus on customers and society, actions positively affect performance financial (Broadstock et al., 2019; Veronica et al., 2019). In this same direction, recent studies have expressed that the CSR is a business strategy that drives financial results, increases business reputation, improves customer satisfaction and is a measuring strategy to achieve competitive advantage (Cantele & Zardini, 2018; Gupta & Gupta, 2020).

There are numerous researches that link CSR with corporate performance. Literature indicates that firms which are carrying out CSR actions finally perform better. We can find empirical evidence about this relationship (Orlitzky, 2011; Pivato et al., 2007). Some authors provide evidence about how CSR practices in African companies generate performance improvement (Lindgreen et al., 2009). On the other hand, a study in China evidences that environmental CSR results on a corporate performance, higher in polluting industries with lower state ownership (Hu et al., 2018). More studies confirm this relationship with economic and social dimensions (Halme et al., 2020; Lindgreen et al., 2009; Reverte et al., 2016; Valdez-Juárez, 2017). Also, the developed by Gallardo-Vázquez, Valdez-Juárez, and Castuera-Díaz (2019) expresses this relationship in Spanish SMEs, while expressing a very complete link between the variables under study with others, such as innovation, reputation and

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competitive success in a context similar to the one under study. The paper of Lau, Lee, and Jung (2018) investigates the relationships between CSR and operational performance in the context of Korea's manufacturing industry and concludes that CSR can significantly affect operational performance. Herrera Madueño et al. (2016), analyzed the existence of a direct or mediated relationship between the development of CSR practices and competitive performance from a multi-stakeholder perspective, coinciding with our theoretical framework of study. Results indicate that CSR practices contribute to increase the corporate performance both directly and indirectly, considering the ability of the companies to manage their groups of interests. Supported by these previous investigations and from the theoretical and empirical review, we emit the following hypothesis:

Hypothesis 3 (H3). Corporate social responsibility positively influences the increase Corporate Performance of SMEs (see Figure 1).

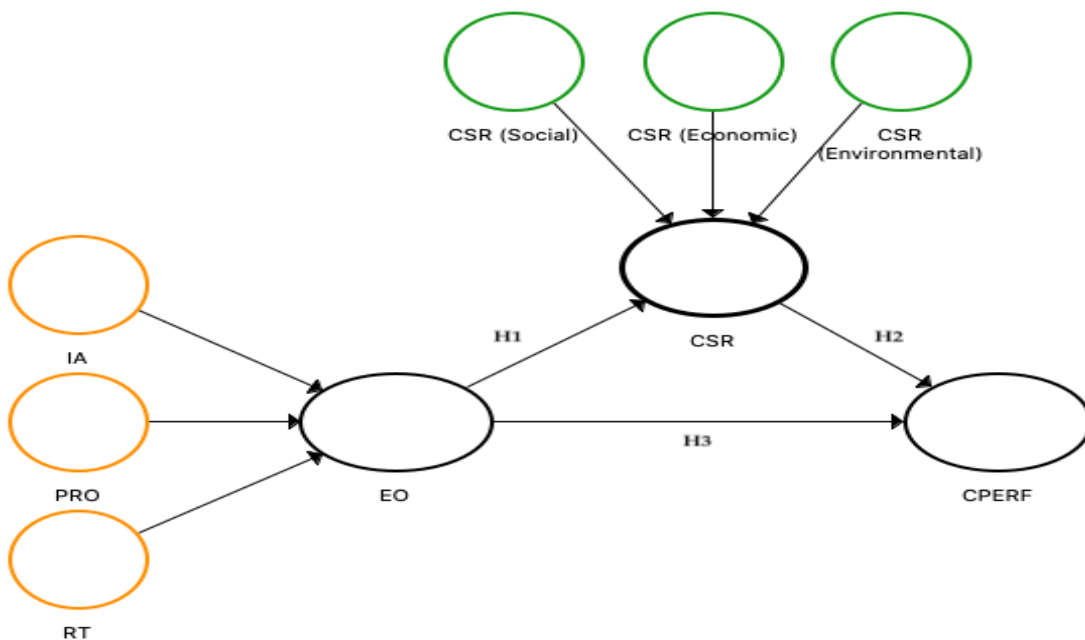


Figure 1. Conceptual Model
Source: Authors

3. Materials and Methods

3.1. Sample and data

The study is causal-predictive quantitative in nature and based on the principles of stratified sampling for finite populations. The population is formed of SMEs (10 to 250 employees) established in the region of Sonora, Baja California and Sinaloa which make up the Northwest area of Mexico, companies have been segmented according to the activity criteria, the productive sectors that participating in the study are companies dedicated to trade and service activities. The number of companies in each of the strata built has been obtained from the economic census information provided by the National Statistical Directory of Economic Units (DENUE) of the National Institute of Statistics and Geography (INEGI, 2018). In Sonora there are 80,046 SMEs (55% services and 45%

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trade), in Baja California there are 90,045 SMEs (56% services and 44% trade) and in the Sinaloa region there are 87,593 SMEs (53% services and 47% trade) (INEGI, 2018). To calculate the probabilistic sample, a formula for populations of no more than 500 thousand subjects was used (see Table 1) (Naing et al., 2006). The sample size was determined to achieve that the maximum margin of error for the estimation of a proportion (relative frequency of response in a specific item of a question) was less than 0.045 points with a confidence level of 95%. The technique for collecting the information was through a personal interview (questionnaire) addressed to the manager of the companies that were the object of study. The field work was carried out during the months of May to September of the year 2018. Finally, a sample of 488 companies was obtained of which 38% are from the Sonora region, 32% from the Baja California region and 30% from the Sinaloa region. Other characteristics of the companies are: 31.6% belongs to the trade sector and 68.4% to the services sector and 288 are small companies and 200 are medium-sized companies. (See Table 2).

Table 1. Sample calculation.

Data		Conversion
N	257,684	Total population (SMEs)
p	50%	0.50
q	50%	0.50
δ	95%	1.96
e	4.5%	0.05
n	473	Total sample (SMEs)

Note: Table 1 presents the results of the calculation of the sample for populations of less than 500 thousand subjects. N = population, p = probability in favor, q = probability against, δ = confidence level, e = margin of error and, n = total sample.

Source: compiled by authors

Table 2. Sample characteristics.

Activity sector	Size of the Company		Total
	Small Business 10 a 50 employees	Medium Business 51 a 250 employees	
Trade	86	68	154
Service	202	132	334
Total	288	200	488

Note: Table 2 shows the characteristics of the companies participating in the study, such as: size (small and medium business), based on the number of employees. In addition, this Table 2 shows the business activity sector (Trade and Service).

Source: compiled by authors

3.2. Instrument design (questionnaire)

The questionnaire used is made up of two main blocks. The first includes general company data (sector of activity, size and location of the company) and the second block is made up of 7 constructs: 1) Innovative activity (5 items), 2) Risk Taking (3 items), 3) Proactivity (4 items), 4) Corporate-social social responsibility (5 items), 5) Corporate-economic responsibility (4 items), 6) Corporate responsibility- Environmental (3 items) and, 7) Corporate Performance (6 items) (see Appendix 1). For the design of the items of each construct, a careful review of current and classic literature has been carried out. The design and measurement of the variables is based on the literature focused on the theory of dynamic capabilities (Entrepreneurial Orientation) and Stakeholders (Corporate Social Responsibility-Corporate Performance). Analysis of response bias and statistical validation of each construct are discussed in the following sections.

3.3. Variance Test of Common-Variance Method (CMV)

Due to the different problems that it represents for most investigations when data collected from the same source of information is used, the Common-Variance Method (CVM) has represented one of the main challenges in the field of science, social and business management (Gorrell et al., 2011; Podsakoff et al., 2003). In our study we validated the questions contained in the questionnaire through experts in the area and with a pilot test of the survey with 10% of the final sample. However, this is not enough to eliminate the bias in the responses, so we have followed the recommendations issued by Podsakoff et al., (2003), the Harman single factor test (Common-Variance Method, CVM) is necessary to perform the following procedure: 1) run a factor analysis of all the exogenous latent and endogenous latent constructs of the model and then an analysis of the main components without selecting any type of rotation method, and 2) the values of the non-rotated components should be analyzed and the number of factors that complement the variance. Once this analysis was carried out through the statistical software SPSS version 23, the results have shown that our proposed theoretical model is built by 6 factors, the Kaiser-Meyer-Olkin (KMO) test is 0.922 and 99% significant (see Table 3), furthermore, the total variance explained shows a value of 57.91% and the first non-rotated factor is 30.88%.

Table 3. KMO and Bartlett test.

Indicators	Value
Kaiser-Meyer-Olkin sample adequacy measure	.922
Approximate Chi-Square	8,798.114
gl	561
Sig. Bartlett's sphericity test	.000

Note: Table 3 provides the data on the Kaiser-Meyer-Olkin (KMO) test and the Bartlett's sphericity test for significance.

Source: compiled by authors.

This information allows us to infer and demonstrate that our model has no indication that there is only one factor. As well as, these results reveal that the first unrotated factor is less than the total value of the variance; therefore, this eliminates and reduces the presence of response bias from the CMV test (see Table 3). As an additional test to combat CMV, we have followed the recommendations of Bagozzi and Yi (1988) and Brahma (2009). These experts in the field propose to perform the correlation matrix procedure of the latent variables for models constructed and analyzed with PLS-SEM. Therefore, in their conclusions and suggestions they propose that the value of correlations between constructs should be less than 0.9. According to the analysis of this Harman test through the correlation matrix, the results confirm that CMV is not a problem for the model proposed in this study (see Table 4).

Table 4. Total variance explained (extraction method: main components analysis).

Component	Total	% of variance	% accumulated	Total	% of variance	% accumulated
1	10.499	30.88	30.88	10.50	30.88	30.88
2	2.520	7.41	38.29	2.52	7.41	38.29
3	1.679	4.94	43.23	1.68	4.94	43.23
4	1.426	4.19	47.42	1.43	4.19	47.42
5	1.284	3.78	51.20	1.28	3.78	51.20
6	1.161	3.41	54.61	1.16	3.41	54.61
7	1.121	3.30	57.91	1.12	3.30	57.91
8	0.952	2.80	60.71			
9	0.904	2.66	63.37			

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10	0.870	2.56	65.93			
11	0.842	2.48	68.40			
12	0.813	2.39	70.79			
13	0.758	2.23	73.02			
14	0.667	1.96	74.98			
15	0.641	1.89	76.87			
16	0.601	1.77	78.64			
17	0.587	1.73	80.36			
18	0.563	1.66	82.02			
19	0.560	1.65	83.67			
20	0.507	1.49	85.16			
21	0.486	1.43	86.59			
22	0.465	1.37	87.95			
23	0.446	1.31	89.26			
24	0.423	1.25	90.51			

Source: compiled by authors.

Table 5. Correlations of the constructs.

	CSR (Econ)	CSR (Env)	CSR (Soc)	CPERF	IA	PRO	RT
CSR (Econ)	1.000	0.630	0.728	0.570	0.632	0.532	0.626
CSR (Env)	0.630	1.000	0.666	0.461	0.514	0.484	0.525
CSR (Soc)	0.728	0.666	1.000	0.521	0.634	0.574	0.607
CPERF	0.570	0.461	0.521	1.000	0.510	0.489	0.502
Innovative Attitude	0.632	0.514	0.634	0.510	1.000	0.540	0.773
Proactivity	0.532	0.484	0.574	0.489	0.540	1.000	0.491
Risk Taking	0.626	0.525	0.607	0.502	0.773	0.491	1.000

Note: Table 5 shows the correlation matrix of the constructs (CSR-Economic, Environmental and Social, Financial Performance-CPERF, Innovative Attitude-IA, Proactivity-PRO and Risk Taking-RT) of the theoretical model to strengthen the analysis of the Harman Test on CMV using the PLS-SEM technique.

Source: compiled by authors.

3.4. Measurement of the variables

For the statistical treatment of the measurement model with multidimensional constructs of the first order (reflective variables) and second order (formative variables), in mode B (approximation to the multidimensional model with causal relationships) the two-step approach has been followed, suggested by Wright et al., (2012). This technique is widely used in the area of social sciences, business and marketing sciences, a method that consists of the construction and analysis of the model variables using latent variable scores. For this, it is recommended, in a first stage, to estimate the aggregate scores of the dimensions of the first-order constructs and in a second stage, these aggregate scores are used to model the second-order construct (Sarstedt et al., 2019). The theoretical and operational measurement of the constructs that make up the proposed theoretical model is shown below:

Entrepreneurial Orientation (EO). This variable was measured as a second-order multidimensional construct and as a variable of formative type in mode B, this type of variables does not need to be correlated and it is assumed that they are free of error, therefore it is important to clarify that the traditional evaluation reliability and validity

is considered not applicable (Bagozzi, 1994). The validity test for these constructs should be carried out based on theoretical reasoning and with the opinion of the experts (Diamantopoulos & Siguaw, 2006; Diamantopoulos & Winklhofer, 2001), however other tests have been applied to guarantee the validity and reliability of the constructs (Chin & Dibbern, 2010). To develop the measurement scales for this construct, the studies developed by Miller (1983), Covin and Slevin (1991) and Zahra et al., (2006). This variable was measured using a 7-point Likert-type scale, with 1 = Totally disagree and 7 = Completely agree. This variable has been disaggregated into: 1) Innovative Attitude, measured with 5 questions (Covin & Wales, 2012), 2) Risk Taking, measured with 3 questions (Knight, 1997), and 3) Proactivity, variable measured through 4 questions (Covin & Lumpkin, 2011), the questions were structured in a questionnaire addressed directly to the SME manager. At the indicator level, possible multicollinearity, the assessment of the magnitude of the weights and their significance must be evaluated. Once the tests have been carried out, all the questions comply with the indicators of internal consistency and convergent validity. The weights of each item are in a range of 0.116 to 0.496 (Cenfetelli & Bassellier, 2009) and all significant at 99%, also pass the Inflation Variance Factor (IVF) tests, the results show that all values are below the value of 3 as recommended Diamantopoulos and Siguaw (2006), see Table 6. The tolerance value is less than 1 and the condition index is 12.43, value less than 30 (Belsley, 1991; Chin & Dibbern, 2010), With this, the presence of multicollinearity is ruled out.

Table 6. Validity of the construct.

Construct	FL	Weights	P Value	T Value	IVF
Entrepreneurial Orientation					
Innovative Attitude					
Invest in new product development	0.704	0.250	0.000	4.025	1.766
Take advantage of market opportunities	0.732	0.116	0.000	1.877	1.614
Constant introduction of new products and services	0.888	0.479	0.000	7.341	1.829
Introduction of technology in products and processes	0.686	0.156	0.000	2.495	1.936
Significant process improvements	0.800	0.259	0.000	3.356	2.253
Risk Taking					
Make decisions evaluating financial results	0.819	0.496	0.000	9.480	1.629
Invest financial resources in new projects	0.711	0.290	0.000	4.283	1.960
Avoid generating unnecessary costs and expenses	0.788	0.492	0.000	8.306	2.224
Proactivity					
We are the first to introduce new products	0.821	0.321	0.000	3.565	1.936
We serve the demands of the market	0.867	0.334	0.000	2.797	2.361
We adopt new technology to our processes	0.689	0.224	0.000	2.633	1.531
We are in the competitive fight of the sector	0.843	0.348	0.000	3.394	1.999

Note: Table 6 shows the reliability and validity of the EO constructs (Innovative Attitude, Risk Taking and Proactivity), through the values of: Factorial Load (FL), Weights, P Value, Value of T and the Factor of the Inflation of Variance (IVF).

Source: compiled by authors.

Corporate Social Responsibility (CSR), was measured as a second-order multidimensional construct of formative type in mode B. For its theoretical and empirical measurement, the relationship it has with entrepreneurial orientation and corporate performance has been considered. The studies of Carroll (1999), Freeman et al., (2010) and McWilliams et al., (2016), have been taken as a reference to develop the measurement scales for this construct. This variable is made up of Social Responsibility (5 questions) (Freeman et al., 2010; Gallardo-Vázquez et al., 2013), Economic Responsibility (4 questions) (McWilliams & Siegel, 2001; McWilliams et al., 2006) and Environmental Responsibility (3 questions) (A. B. Carroll, 1999; Freeman et al., 2010). To do this, a total of 12 structured questions were constructed in the questionnaire that has been provided to the manager to identify and qualify the activities in the area of social responsibility that the company has carried out in the last 3 years, for this, a 7-point Likert-type scale was used with 1 = Strongly disagree and 7 = Strongly agree. All the questions meet the indicators of the measurement model such as internal consistency and convergent validity. The

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weights of each item are in a range of 0.218 to 0.466 and all significant to 99% (Cenfetelli & Bassellier, 2009), they also pass the Inflation Variance Factor (IVF) tests, all values are below the value of 3 as recommended Diamantopoulos and Siguaw (2006), see Table 7. The tolerance value is less than 1 and the condition index is 21.99, value less than 30 (Belsley, 1991; Chin & Dibbern, 2010), with this, the presence of multicollinearity is ruled out.

Table 7. Validity of the construct.

Construct	FL	Weights	P Value	t Value	IVF
CSR					
CSR (Social)					
We promote employee training	0.806	0.274	0.000	4.256	2.082
We have salaries above the sector	0.739	0.241	0.000	3.058	1.732
We have flexible work policies	0.773	0.256	0.000	4.166	1.887
We try to improve the quality of life of the worker	0.783	0.296	0.000	4.823	1.937
We participate in social projects with the community	0.782	0.218	0.000	3.836	2.017
CSR (Economic)					
Purchases with local suppliers are encouraged	0.789	0.395	0.000	6.238	1.937
We have relationships with responsible suppliers	0.666	0.208	0.000	3.476	1.621
Product prices are reasonable	0.805	0.345	0.000	5.261	1.801
There are guarantees on the products for the client	0.756	0.360	0.000	6.554	1.674
CSR (Environmental)					
Our processes have little environmental impact	0.811	0.450	0.000	6.171	1.720
We value the introduction of renewable energy	0.842	0.466	0.000	5.357	1.818
We are in favor of reducing gases and pollutants	0.797	0.305	0.000	3.763	1.806

Note: Table 7 shows the reliability and validity of the CSR constructs (Social, Economic and Environmental), through the values of: Factorial Load (FL), Weights, P Value, Value of T and the Factor of the Inflation of Variance (IVF).

Source: compiled by authors.

Corporate Performance (CPERF). This one-dimensional construct was measured as reflective in mode A. Based on the theoretical review carried out on the profitability related to Entrepreneurship and Corporate Social Responsibility, this variable was measured taking as reference the studies developed by Teece (2007), Peters and Mullen (2009) and Lomborg et al., (2017). The variable has been measured with 6 questions asked in a questionnaire addressed to managers expressing their answers in corporate performance results obtained by the company in the last 3 years. To do this, a 7-point Likert scale with 1 = poor performance and 7 = high performance was used. All questions meet the internal consistency and validity indicators. The factorial loads of the items are in a range of 0.739 to 0.792 and all significant to 99%, in addition this factor surpasses the indicators of compound reliability (0.889), Cronbach's alpha (0.890) and the Average Variance Extracted (AVE = 0.573) as suggested by Hair et al., (2017), see Table 8.

Table 8. Internal consistency and convergent validity.

Construct	FL	P Value	t Value	CR	CA	AVE
Corporate Performance				0.889	0.890	0.573
Increase in profits	0.744	0.000	28.835			
Increased sales	0.764	0.000	21.779			
Contribution margin increase	0.792	0.000	31.364			
Increased market share	0.760	0.000	26.229			
Increased customer satisfaction	0.739	0.000	24.759			
Increase in the image of the company	0.739	0.000	25.748			

Note: Table 8 shows the reliability and validity of the Corporate Performance construct, through the values of: Factor Load (FL), P Value, T Value, Composite Reliability (CR), Cronbach's Alpha (CA) and the Average Variance Extracted (AVE).

Source: compiled by authors.

Table 9 shows the results of the discriminant validity test of all the constructs of the proposed model. For this we have considered what was suggested by Fornell and Larcker (1981) and Henseler, Ringle, and Sarstedt (2015a), which considers that the amount of variance that a construct captures from its indicators (AVE), must be greater than the variance that the construct shares with other constructs. The (diagonal) results of the vertical and horizontal AVE are below the correlation between the constructs (Henseler et al., 2015b).

Table 9. Discriminant Validity.

Construct	EO	IA	RT	PRO	CSR	CSRS	CSRECON	CSRENV	CPERF
EO	0.930								
IA	0.729	0.931							
RT	0.715	0.711	0.926						
PRO	0.707	0.699	0.657	0.909					
CSR	0.703	0.668	0.645	0.602	0.907				
CSR (Soc)	0.656	0.626	0.597	0.574	0.712	0.905			
CSR (Econ)	0.654	0.614	0.588	0.532	0.675	0.639	0.871		
CSR(Env)	0.550	0.516	0.510	0.484	0.662	0.666	0.629	0.836	
CPERF	0.533	0.485	0.494	0.489	0.592	0.522	0.654	0.461	0.757

Source: compiled by authors.

4. Results

4.1. Structural Model

According to the nature of the research and the design of the theoretical model with formative and reflective variables, to validate and/or test the hypotheses proposed in this investigation with greater precision, the statistical technique PLS-SEM (Partial Least Square, Structural Equations Model) in version 3.3.2 Professional has been followed (Ringle et al., 2015). The use of this second generation multivariate technique is appropriate in predictive, exploratory, and confirmatory research (Henseler et al., 2016). The PLS-SEM technique is one of the most used by researchers for having a predictive causal approach that combines principal component analysis with ordinary least squares regressions. Furthermore, the use of PLS-SEM is appropriate to analyze complex models, but also when there are more than 2 formative constructs and when the literature is under construction or underdeveloped (Joseph F. Hair et al., 2019). PLS works with blocks of variables (components) and estimates the values or parameters of the model by maximizing the explained variance of the dependent variables (latent and observed) (Chin, 1998). Also, PLS does not impose any specific distribution assumption as the normality test for the model indicators, because it does not need the observations to be independent of each other. Also, PLS solves problems of skewed distributions in the manifest rather than symmetric variables and multicollinearity is not a problem between the latent variables and the indicators (Esposito et al., 2010). Table 10 shows the results of the β coefficient, the degree of significance (p value), the importance of the distribution of the values using the Student's t test and the Standard Deviation (SD). To test the hypothesis, the bootstrapping procedure was used with 5,000 sub-samples as recommended Chin (1998).

Table 10. Results of the hypothesis test.

Hypothesis	Beta Value	T Score	SD	P Value	f^2	Percentile CI (5%) (95)		BiasCorrected CI (5%) (95)		Result
H1. EO->RSC	0.761***	27.916	0.027	0.000	1.374	0.710	0.801	0.710	0.800	Supported
H2. EO->CPERF	0.321***	4.992	0.065	0.000	0.095	0.212	0.422	0.209	0.424	Supported
H3. RSC->CPERF	0.349***	6.109	0.058	0.000	0.089	0.254	0.442	0.257	0.448	Supported

Note: n = 5000 subsamples: * p <.05; ** p <.01; *** p <.001; ns: non-significant (one-tailed t Student) t (0.05; 4999) = 1,645; t (0.01; 4999) = 2,327; t (0.001; 4999) = 3,092. The table shows the results of the hypotheses (beta value), the t value, the standard deviation (SD) and the size of the effect of the predictive model through the f^2 test, and the significance levels of according to the values of: *, **, ***, 10% to 5% and 1% respectively.

Source: compiled by authors.

Table 9 and 10, show the results of the estimation of the structural equations made with PLS-SEM. In addition, the result of the explained variance of the model variables is shown. We find empirical support for all the hypotheses structured in the model (H1, H2 and H3). The results of the hypotheses present positive and significant effects at 99%. To evaluate the fit of the proposed model with SEM techniques that are based on variance through PLS, the following is considered: 1) the value of the path coefficients, 2) the analysis of (R^2) and 3) the values of (f^2) which are significant individual measures to explain the predictive capacity of the structural model (Chin & Dibbern, 2010). Valuation of the algebraic sign, the magnitude and the significance of the coefficients. Our model coefficients are 0.761, 0.321 and 0.349, they are significant at 99%, the T values are greater than the value of 2 and also the confidence intervals of the percentiles and the Bias Corrected (5% and 95%) are greater than zero, see Table 10 and 11.

Assessment of the coefficient of determination R^2 . The analysis of the explained variance and the predictive power of the model through (R^2), indicates the amount of variance of a construct that is explained by the predictor variables of that endogenous construct in the model. The results 0.578 of the CSR variable and 0.393 of the Corporate Performance show a substantial and/or strong effect, these parameters are above the value of 0.36 as recommended Sarstedt, Ringle, and Hair (2017). Furthermore, in our model we show the decomposition of R^2 , where the variance explained in an endogenous construct by another latent variable is given by the absolute value of the result of multiplying the path (b) coefficient by the corresponding correlation coefficient between both variables (see Table 11).

Table 11. Result of hypothesis and decomposition of R^2 .

Hypothesis	Beta Value	T Score	SD	P Value	f^2	Correlation	Decomposition of R^2
H1. EO->CSR	0.761***	27.916	0.027	0.000	1.374	0.756	57.5%
H2. EO->CPERF	0.321***	4.992	0.065	0.000	0.095	0.586	18.8%
H3. CSR->CPERF	0.349***	6.109	0.058	0.000	0.089	0.593	20.7%

Note: The table shows the results of the hypotheses (beta value), the t value, the standard deviation (SD), the effect size of the model and the explained variance (beta value x the correlation).

Source: compiled by authors.

Effect size, f^2 assesses the degree to which an exogenous construct contributes to explaining a particular endogenous construct in terms of R^2 (Cohen, 1988). The value (f^2), is measured according to the values of 0.02,

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0.15 and 0.35 these indicate weak, medium or large effect (Ringle et al., 2017). The results of this analysis of the key relationships of the model are 1.374, 0.095 and 0.089, which provide on average a mean effect size or index. Predictive relevance of the model through the statistical test Q^2 (cross-validated redundancy index). This Stone-Geisser test is used to assess the predictive relevance of endogenous constructs in a model. The model was evaluated through the blindfolding technique (Ringle et al., 2017). Our values are at 0.573 for CSR and 0.388 for Corporate Performance (PERF). Values greater than (0) show a remarkable predictive quality, thus evidencing the existence of a remarkable explanatory quality of the model (Chin, 1998; Joseph F. Hair et al., 2017). To explain the predictive effect more precisely, we have added a goodness-of-fit test. When the standardized residual root mean square (SRMR) value is in a range ($<0.08-0.1$), there is an acceptable fit (Forkmann et al., 2016; Schubert et al., 2018). Our result of 0.089 confirms that the proposed model has an acceptable predictive quality and that the empirical results are consistent with the theory.

4.2. Simple Mediation Analysis

To check the mediation effect of CSR between EO and Corporate Performance, we have carried out a mediation test. This test initially estimates the value of the direct effect (c'). In addition, it is necessary to: 1) determine the indirect effects ($a_1 \times b_1$), through the bootstrapping technique with 5000 subsamples, with confidence intervals of 90% (Nitzl et al., 2016; Williams & MacKinnon, 2008); 2) In a second step, the magnitude of the indirect effect, the value of the Variance Accounted For (VAF) and the relevance of the effect to determine the type of mediation are determined (Carrión et al., 2017; Joseph F. Hair et al., 2017). The mediation hypotheses developed for the mediation effects are: H1: EO has a positive direct effect on the profitability of SMEs: $H1=EO \rightarrow CPERF= (c')$ and H2: The relationship between EO and Performance is positively mediated by the CSR of the SME. $H2=EO \rightarrow RSC \rightarrow CPERF$. The results of this mediation analysis indicate that EO has a positive and significant direct effect on Performance ($H1: c'$), according to the value of 0.349 ***. Furthermore, it can be seen that H2 has been confirmed, these findings allow us to conclude that the CSR variable has a mediating effect between the EO variable and the Performance ($H2: a_1 \times b_1$). The result of the indirect effect is 0.244 *** and a total effect of 0.593 ***. The value of the VAF is 41%, with this it is concluded that there is a complementary partial measurement (Nitzl et al., 2016), see Table 12 and Figure 2.

Table 12. Mediation analysis.

Table 12. Mediation analysis.	Coefficients	Bootstrap 90% (Confident Intervals)				
		Percentiles		Bias Corrected		
Direct effect						
H ₁ : c´	0.349 ^{sig}	0.252	0.445	0.252	0.252	
a ₁	0.761 ^{sig}	0.714	0.801	0.714	0.715	
b ₁	0.321 ^{sig}	0.212	0.428	0.212	0.212	
Indirect effect	Estimated point	Percentile		Bias Corrected		VAF
H ₂ : a ₁ x b ₁	0.244 ^{sig}	0.151	0.343	0.152	0.152	41%
Total effect	0.531 ^{sig}					

Source: compiled by authors.

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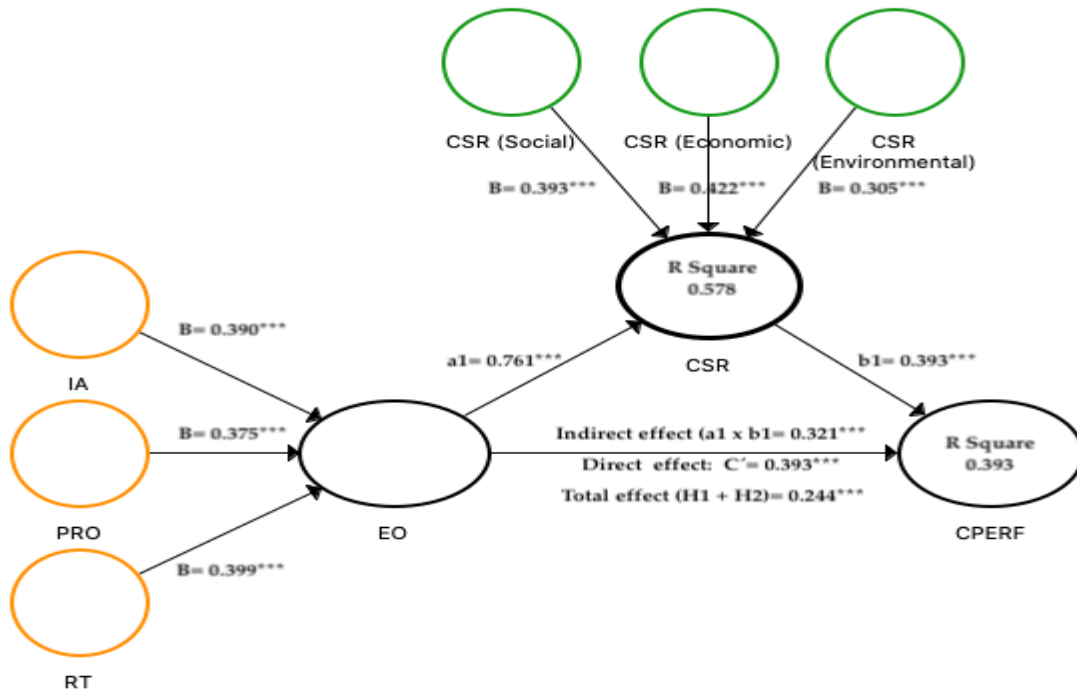


Figure 2. Mediation analysis.

Source: Authors.

Conclusions

In this section the discussions of the main findings of the study are issued, all based on the theory of Dynamic Capabilities and the theory of Stakeholders. The analysis focus on a sample of 488 SMEs established in the Northwest region of Mexico with a developing economy. In order to answer the research questions and objectives, the main findings of our research are described below. Using the results of the beta coefficients of the structural model carried out through PLS-SEM and the descriptive analysis of the measures of each item through the SPSS, the results inform that the Entrepreneurial Orientation practices that are most developed in SMEs are: 1) The taking of risks (Make decisions evaluating financial results), 2) Innovative Attitude (Constant introduction of new products and services), and 3) Proactivity (We serve the demands of the market) (see Figure 2 and Appendix 2). Similarly, we have analyzed the Corporate Social Responsibility practices that are most developed in SMEs in this region, being the following: 1) CSR-Economic (Product prices are reasonable), 2) CSR-Social (We promote employee training), and 3) CSR-Environmental (We value the introduction of renewable energy) (see Figure 2 and Appendix 2).

The strongest result observed in the proposed theoretical model focuses on H1, demonstrating that EO has a strong effect on CSR practices, which allows inferring that companies are placing greater emphasis on business sustainability. This is the product of the innovative attitude and strategic decisions of the managers of SMEs, being these actions the ones that lead them to increase their sales, improve their return on investment, increase their profits, maintain loyalty of the clients and, at the same time, allows the increase of their corporate performance. These results show a similar behavior with the theory of Dynamic Capabilities (Laskovaia et al., 2019; Lumpkin & Dess, 2015; Teece, 2009; Zahra et al., 2006) and the Stakeholders (Cavaleri and Shabana 2018; McWilliams et al. 2016; Zahra & Wright 2016). The practices that contribute most to good EO practices

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are the risk taking (decision-making focused on sustainable financial results) of the businessmen, the innovative attitude (detection of market opportunities for the introduction of new products and services) and proactivity (facing the competitive fight, adapting to new technologies and satisfying the demands of the markets and customers) (see Figure 2). In this same direction, but with less force, H2 shows that the higher the EO in the SME, the Corporate Performance increases. These findings allow us to state that innovative organizations that take planned risks have a greater propensity to achieve the increase in more significant financial results (Basco, Hernández-Perlines, & Rodríguez-García 2020; Drucker 2014; Gibb 2007; Zahra & Wright 2016). These findings are aligned with the theory of Dynamic Capabilities and with most empirical studies (Brink, 2018; Teece, 2016; Zahra et al., 2014). Another of our important findings and that maintains considerable strength is the H3, this relationship analyzes the effect that CSR exerts on Corporate Performance. This discovery indicates that SMEs that are adopting new business models based on sustainability, such as ecological processes and other actions aimed at protecting their resources, the environment and the benefit of their stakeholders (Aagaard, 2016; Freeman et al., 2010; Teece, 2007), are achieving greater organizational and financial benefits (Hsueh, 2015; Spence, 2016). Results that are in agreement with various empirical studies (Flammer, 2015; Tang & Tang, 2012; Vitolla et al., 2017; Zhao et al., 2019) and mainly with the Stakeholder theory (Brown & Forster, 2013; Abigail McWilliams et al., 2016; Spence, 2016). In addition, the study has shown that the practices that have the greatest impact on CSR are Economic actions (buying from local suppliers and selling products at reasonable prices), followed by Social ones (training of employees and participation in social projects) and Environmental projects (processes with a positive impact on the environment and the use of renewable energy) (see Figure 2).

These findings allow us to draw a series of conclusions for the administration and management of SMEs. First of all, research has shown that traditional sustainability models are efficient and profitable for stakeholders, however, the literature has exposed that the majority of SMEs do not support CSR practices or achieve sustained financial returns due to the lack of a strategic plan and their weak financial and organizational capacity (Martinez-Conesa et al., 2017; Spence, 2016). Secondly, our study sheds light on an important finding informing that the combination and incorporation of Entrepreneurial Orientation is an important piece that strengthens a successful business sustainability model (CSR and Financial Performance), in general, the organizational and financial results are more significant, this has been proven through our mediation analysis and also by what is exposed by the literature focused on the theory of dynamic capacities, affirming that SMEs with sustainable models are the ones with a greater orientation to entrepreneurship and innovation capacity (Ayuso & Navarrete-Báez, 2018; Teece, 2007, 2016; Wales, 2016). The main novel contribution in this field of business sciences is that the study has shown that the combination between an efficient entrepreneurial orientation and a correct application of corporate social responsibility practices are determining drivers to achieve greater growth, development and financial profitability for SMEs in developing regions such as Mexico. The link between companies, universities, government and society is the key to achieving increased entrepreneurship, innovation and regional development to increase the competitiveness of Mexican SMEs (Carayannis et al., 2012).

The study has generated a series of implications, from a theoretical context the study allows: 1) contribute to the development of Dynamic Capabilities (concluding that SMEs innovative and entrepreneurship-oriented can raise their competitiveness and Corporate Performance to a higher level and to the Stakeholder theory (proving that SMEs are a key piece for the survival and economic, social and environmental development of most regions, 2) design and improve business models focused on business sustainability, and 3) provide literature on sustainable business for discussion among experts, researchers and the university community. From an empirical perspective, the study has found that: SMEs in this region are: 1) developing entrepreneurial-oriented strategies, mostly focused on making risky decisions but with safer financial results, on improving their capacity for innovation to generate new and better products for their customers and are also focusing in its proactivity through the constant fight for competitiveness in the sector (Laskovaia et al., 2019; Wales, 2016), 2. In addition, these SMEs are on

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the right path towards sustainable entrepreneurship through the voluntary implementation and in some cases blindly (without full knowledge) of corporate social responsibility (Magrizos et al., 2020; McWilliams et al., 2006). 2) These companies are aware that greater investment in social, economic and environmental actions can lead them to generate greater corporate performance, to achieve greater prestige and to attract and greater market coverage (Ortiz-Avram et al., 2018b; Tuan, 2015; Wales, 2016). However, the findings also inform that environmental actions are the least developed or practiced in these organizations, this because there is always the fear that this investment can become a significant expense for the finances of the business (Friedman, 2007; Magrizos et al., 2020). 3) Therefore, our study is extremely important for business sciences, because the combination of two dynamic capacities such as entrepreneurial orientation and corporate social responsibility, can be the right way for SMEs to become business-oriented sustainable entrepreneurship, in highly competitive companies within their sector and, in companies that manage to improve their more sustained financial returns over time (Wales, 2016; Zahra et al., 2006). All of this can be achieved through the correct deployment of their resources and capabilities, but also with good management of the business leaders through the individual and collective involvement of the members of the organization. Therefore, it is important that the leaders of this type of organization transmit to their collaborators (managers, supervisors and employees) the good practices they are developing and that they also adopt other business practices from abroad (Benchmarking). Therefore, it is important that these types of companies: 1) continue to adopt sustainable and innovative business models (Müller et al., 2018; Teece, 2010), 2) grow in a sustained and responsible way through a strategic plan (Dixit & Nanda, 2011; Stefan Schaltegger et al., 2016), 3) make strategic decisions with the least possible risk (agile entrepreneurship methodologies and discovery of new markets) (Cavaleri & Shabana, 2018; Hart & Milstein, 2003), 4) continue with the practices of innovation in products and processes, and gradually incorporate radical innovation (Andreeva & Ritala, 2016; Carlo et al., 2012; West et al., 2014), 5) establish ties and collaboration abroad with other companies and with other institutions, such as universities, research centers and training centers (Carayannis et al., 2012, 2018), 6) establish and strengthen ties with their employees, customers and suppliers (McWilliams et al., 2016; Veronica et al., 2019), 7) strengthen their current markets, in order to obtain sustained financial results (Multaharju et al., 2017; Zhao et al., 2019) and 8) adopt certified processes at the regional and global levels in order to compete with other companies (adoption of a model with a focus on the circular economy) (Moratis & Cochiuș, 2017; Nosratabadi et al., 2019).

The research exposes some limitations and on the other hand opens windows for the development of future lines of research. One of the first limitations contemplated in the work focuses on the use of a single source of information. This, because the data was collected from subjective perceptions expressed by the owners and/or managers of SMEs, which may in some cases cause bias in the results. Secondly, the sample has only been focused on companies in the trade and services sector, in the future the sample may cover other productive sectors and with a greater degree of specialization. As well as the sample has focused on specific regions and/or cities in Northwest Mexico. In later times, other regions of the country or other countries can be considered to analyze and compare the results through multigroup and/or cross-cultural analysis. The last limitation considered in this work refers to the measurement scales used in our model, since validated scales and questions were considered in contexts of regions with characteristics different from the area in which this study was carried out. In addition, in the future, the use of statistical analyzes that focus on examining the behavior of covariance may be considered. Therefore, in the short and medium term, in order to face the limitations, it is convenient to improve and refine the conceptual model through this type of research, by including new constructs that contribute to the analysis of sustainable, entrepreneurial and innovative behavior of the SME. Finally, given the importance of EO and CSR in small and large companies, for being factors that generate social, economic and financial stability at a global level, is convenient to continue with the development of this type of studies that consider complementary variables such as: creativity, the circular economy, open innovation and corporate image.

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Appendix 1. Survey

Dear company and/or manager, we ask you to please help us answer the following questions of this research project, thank you very much for your collaboration. Instructions: Please mark with an (X), in blocks I and II, in the option that you consider most appropriate and closest to the reality of your organization.

Block I

1. Activity sector ☐ Trade ☐ Service
 2. Size of the company ☐ Small (10-50 employees) ☐ Medium (51-250 employees)
 3. Geographical location of the company ☐ Sonora ☐ Baja California ☐ Sinaloa

Block II

	Strongly disagree-Strongly agree						
Entrepreneurial Orientation: In the last 3 years your company has:	1	2	3	4	5	6	7
Innovative Attitude							
Invest in new product development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take advantage of market opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Constant introduction of new products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Introduction of technology in products and processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Significant process improvements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Risk Taking							
Make decisions evaluating financial results	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Invest financial resources in new projects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avoid generating unnecessary costs and expenses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proactivity							
Be the first to present new products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quickly meet market demands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the adoption of new technologies for our processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are always in the competitive fight in the sector.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CSR: In the last 3 years your company has:	1	2	3	4	5	6	7
CSR (Social)							
Promote employee training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has higher salaries than the sector	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has flexible labor policies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Try to improve the quality of life of the worker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participate in social projects with the community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CSR (Economic)							
Purchases with local suppliers are encouraged.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They have relationships with responsible suppliers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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The prices of their products are reasonable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are guarantees on the products offered to the customer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CSR (Environmental)							
Its processes have little environmental impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They value the adoption and use of renewable energies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are in favor of reducing gases and pollutants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Poor Performance-High Performance						
Corporate Performance: In the last 3 years your company has achieved:	1	2	3	4	5	6	7
Increase profits (financial profits)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase sales of products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase contribution margin (costs + expenses-income)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase market share in the sector	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase customer satisfaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase in the image of the company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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