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INSIGHTS INTO REGIONAL DEVELOPMENT

Volume 1 Number 2
June 2019

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ENTREPRENEURSHIP AND
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Editorial correspondence including manuscripts and submissions:

Prof. dr. Manuela Tvaronavičienė

Tel.: +37068783944

E-mail: submissions@jssidoi.org or manuela.tvaronaviciene@jssidoi.org

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<http://orcid.org/0000-0002-6326-5714>

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<http://orcid.org/0000-0002-2009-3772>

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sebastian.kot@wz.pcz.pl



<http://orcid.org/0000-0002-8272-6918>

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Author ID: 35520490200

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<http://orcid.org/0000-0002-8496-3941>

[Prof. Gilberto de Miranda Rocha](#), Federal University of Pará, Belém, Brazil Brazil.gilrocha@ufpa

Author ID: 55813405600

[Prof. Marina Sheresheva](#), Lomonosov Moscow State University, Russian Federation

m.sheresheva@mail.ru

Author ID: 44662077400

[Dr. Amr Radwan](#), Academy of Scientific Research and Technology, Egypt amm@sti.sci.eg



<http://orcid.org/0000-0002-5567-6708>

[Prof. Armenia Androniceanu](#), The Bucharest University of Economic Studies, Faculty of Administration and Public Management, Bucharest, Romania armenia.androniceanu@man.ase.ro

Author ID: 35253283800

[Prof. Najiba El Amrani](#), University Sidi Mohamed bin Abdellah, Faculty of Science and Technology, Fes, Morocco najiba.elamrani@usmba.ac.ma

Author ID: 56122394900

Prof. Bora Aktan, University of Bahrain, the Kingdom of Bahrain gbora@uob.edu.bh

 <http://orcid.org/0000-0002-1334-3542>

Prof. Gunnar Prause, Tallinn University of Technology, Estonia gunnar.prause@ttu.ee

 <http://orcid.org/0000-0002-3293-1331>

Prof. Vera Komarova, Daugavpils University, Latvia veraboronenko@inbox.lv

 <http://0000-0002-9829-622X>

Prof. Fernando García, Department of Economics and Social Sciences, Faculty of Business Administration and Management, Polytechnic university of Valencia, Spain fergarga@esp.upv.es

Author ID: 57201603529

Dr. Michal Fabus, School of Economics and Management in Public Administration in Bratislava, Slovak Republic michal.fabus@vsemvs.sk

 <http://orcid.org/0000-0002-3792-179X>

Prof. Sulphey, M.M., Prince Sattam Bin Abdulaziz University, Al-Kharj, Saudi Arabia
s.manakkattil@psau.edu.sa

 <http://orcid.org/0000-0001-6042-2123>

Prof. Mirjana Radović-Marković, Institute of Economic Sciences, Belgrade, Serbia
mirjana.radovic@ien.bg.ac.rs

Author ID: 36680528200

Prof. Ronaldo Lopes Rodrigues Mendes, Federal University of Pará, Belém, Brazil
rmendes@ufpa.br

 <https://orcid.org/0000-0002-5584-8688>

Dr. Andrea Bernardi, Oxford Brookes University, UK abernardi@brookes.ac.uk

Prof. Francesco Vigliarolo, Universidad Católica de La Plata, Argentina
francesco.vigliarolo@ucalp.edu.ar

Dr. Laima Gerlitz, Wismar University of Applied Sciences, Wismar, Germany laima.gerlitz@hs-wismar.de

Author ID: 57015379200

Dr. Federico Tomassi, Agenzia per la Coesione Territoriale, Italy federico.tomassi@uniroma1.it

Dr. Kiran Javaria, University of Lahore, Lahore, Pakistan Kiranmaryam23@gmail.com

 <https://orcid.org/0000-0002-6147-5283>

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mgmelo@uea.edu.br



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FOREWORD

to INSIGHTS INTO REGIONAL DEVELOPMENT
2019 Volume 1 Number 2 (June)

Dear readers,

Sustainable development is oriented at the well-being of society, the integrated and balanced development of the environment and the economy, which would satisfy people's current social and economic needs and ensure the observation of environmental demands without threatening opportunities to satisfy the needs of future generations, while maintaining biological diversity.

Currently, it is clear that the only opportunity to successfully respond to global challenges is to create the kind of development policy that would balance all needs: the need to facilitate economic growth, to improve the quality of life for all members of society, the need to ensure social cohesion and security, as well as the need to protect the ecological environment for coming generations. Researchers must be conscious of inevitable global tendencies: our society is aging, the global economy is changing and becoming comprehensively innovative, the usual forms of public administration are experiencing deep changes, but the cost of energy resources and their availability is, to a large degree, beginning to determine the lives of society, already at the household level.

Bearing all this in mind, researchers from the most diverse fields must predict the kinds of challenges and threats we may be facing and what kind of opportunities will be opening up in the near future. However, the main task for researchers is to not only predict, but also find solutions.

This Journal is a wonderful instrument for researchers to be able to share their ideas, disseminate the results of their research and to offer their solutions to real problems. The Journal regularly publishes the results of inter-disciplinary

innovative research, the added value of which is the close connection between theory and practice. This provides evidence of the Journal's high-quality contribution to the contemporary academic field.

With best regards,



Professor Anita STASULANE

Leader of the Daugavpils University's partnership in European Union's Horizon 2020 Research and Innovation Programme projects European Cohort Development Project (ECDP) Grant Agreement No.777449 (2018-2019)
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Cultural Heritage and Identities of Europe's Future



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UNDOING GENDER INEQUALITIES: INSIGHTS FROM THE PORTUGUESE PERSPECTIVE*

Maria Johanna Schouten

University of Beira Interior (UBI) and Interdisciplinary Centre of Social Sciences, University of Minho (CICS.NOVA.UMinho), Estrada do Sineiro, 1, 6200 254 Covilhã, Portugal

E-mail: schouten@ubi.pt

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Abstract. In Portugal and elsewhere in the world, the movement promoting gender equality has known advances and setbacks over the past century. While acknowledging and outlining the major favourable developments, this paper discusses mainly some tendencies in the opposite direction, in particular those that highlight and encourage, from an early age, differences between men and women, usually to the detriment of the latter. Examples in Portugal include the growing genderization of children's toys and books (which in one case has triggered a widely-meditized polemic in September 2017) and the importance of the colours pink and blue. After childhood, differences persist regarding choice of study, professional activities, salary and domestic responsibilities. In this respect, sociological research in Portugal has observed a backlash in the position of women, in particular as an effect of the financial and economic crisis in the period 2010-2014.

Keywords: gender inequality; feminism; Portugal; education; domestic context

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1. Introduction

Since the 18th century, the hope for a time when men and women can live in an equal society has permeated progressive and feminist movements. Virginia Woolf, in her essay “Women and fiction”, written in the 1920s, noted that despite recent civil victories, women continued to face many injustices, both structural and in their daily lives, but she also dreamt of the coming of better times. In the last sentence of the essay, alluding to the lack of opportunities for women to develop their talents, she put these hopes into words, “looking ahead to that golden, that perhaps fabulous age when women will have what has so long been denied them – leisure, and money, and a room to themselves” (Woolf 1929: 187). The first victories of feminism in her country gave her cause to imagine a future era in which these resources would be available to women. Should this come to pass, it would be a “golden age”, but if not, it would be a “fabulous age”, existing only in fables or fairy tales.

Glimmers of hope were also seen in early 20th-century Portugal. These included a nascent feminist movement. Its aims, primarily to achieve greater civil rights and better education for women, were not well received by society as a whole, and the use of the term “feminism” to describe their struggle even less so. Speaking in 1905, Ana de Castro Osório, one of the movement’s leading figures, said, “In Portugal [feminism] is a word which still causes laughter or outrage in men, depending on their temperament, and which causes most women to blush, the poor wretches, as if it were a grave error committed by some of their fellow women, for which they are not responsible, praise the Lord!” (Osório 1905:11). The hope in this lament lies in the word “still”, which reveals the author’s belief in the dawning of a better age, in which the cause of gender equality, and the use of the word “feminism” to describe the movement advocating this fairer situation, would be accepted as normal.

In the century that separates our times from those of Ana de Castro Osório and Virginia Woolf, major steps have been made towards achieving gender equality, but we are far from realising the dreams of these authors. The term feminism continues to incite revulsion or discomfort, feelings evoked by the provocative title of the volume edited by Ann Oakley and Juliet Mitchell (1997), *Who is afraid of feminism?* In the same decade, Lúcia Amâncio (1998: 80) observed a feeling of horror towards “feminists” among university students, stemming from their own ignorance. Today, years later, few of my own students would label themselves feminists if asked during their first lesson. The image of “women who want to dominate men”, and of feminism as the female equivalent of “chauvinism” prevails. The existence of male feminists is relatively unknown and even considered ridiculous.

It is not only the term feminism that lacks widespread acceptance today, but also the aim of this movement, namely equality of opportunities irrespective of gender. In part, this hostile or indifferent stance toward feminism is a result of its own success. For many, the fact that women now occupy positions such as minister, judge or director is a sign that equality has already been achieved, rendering its advancement unnecessary. Some people even hold the view that women are privileged beings, illustrated, for example, by constant comments about the high proportion of women among the student population. Another objection to feminism justifies social differentiation on the basis of the natural difference between the sexes which, according to this line of thought, impacts greatly on their respective skills and personalities.

In reality, appearances conceal prevailing injustices (Silva et al. 2016). Women in top positions do not compensate for the overall inequality of the labour market, in which women are overrepresented in lower income categories and less prestigious professions and roles (Acker 2009; Santos and Amâncio 2014; Boulis and Jacobs 2008; WEF 2017; Eurostat 2018). The increasing division between traditionally feminine and traditionally masculine sectors is worthy of careful consideration (Coontz 2012). Moreover, initiatives to improve the balance between extra-domestic work and private life, which would mainly benefit women, have encountered obstacles, resulting in part from the precarious working arrangements that have become prevalent.

These negative developments in terms of gender equality replicate a pattern seen throughout history. Frequently, such setbacks have reversed the road towards justice, for example the emancipation of certain sections of the population (Wertheim 1971). Sometimes, it is a case of two steps forward, one step back, but sometimes three backwards steps are taken. Above all, it is a long and winding road.

This paper discusses the winding road towards realising greater equality between the genders, considering two factors; “images of gender” on the one hand and “socioeconomic and political context” on the other. Many authors have argued that the first of these factors (which concerns identity and stereotypes) is decisive. On the basis of many studies, Cecilia Ridgeway (2011) pointed to the persistence of what she calls “common knowledge” about the genders, which is more difficult to transform than “material structures”. The author demonstrates that throughout major processes of societal transformation in America, gender inequality has remained a constant, always adapting to the new circumstances (Ridgeway 1997; 2011). This rule also seems to apply in Portugal, the difference being that since the transition to democracy in 1974, governmental authorities and civic associations in our country have done more to explicitly promote gender equality. The fact that legal and social change alone has not succeeded in achieving firmly rooted material equality seems to demonstrate the dominance and tenacity of gendered stereotypes. This is nothing new, and is evidenced by the great focus on representations in studies of gender inequality, an approach seen in Portugal in the pioneering work of Lúcia Amâncio (1994).

Thus, this text will explore these trends in Portugal, using examples relating to the two aforementioned areas. The first topic concerns the fundamental role of education and upbringing, including teaching materials, in the development of gender identity. The second topic relates to the domestic setting, in particular the division of housework between men and women, an arrangement that conditions their respective opportunities for public life. These two themes are strongly connected, given the great influence of early childhood experiences on the construction of gender identity and representations of men and women. As such, we consider stereotypes and representations (to which Osório alluded) as well as the availability and use of resources such as free time, financial resources and privacy (the desire expressed by Woolf), seeking the interrelationships between these two dimensions.

The next section offers a brief portrait of feminism in Portugal over the last hundred years, initiatives in the field of gender equality and their results. We then present and interpret the two aforementioned cases of advances and setbacks on the path to gender equality, focusing on childhood and practices in the families.

2. The trajet of feminism in Portugal

As a movement, feminism, the fight for equality between men and women, has never had a solid footing in Portugal. It made a promising start in the early decades of the 20th century, but involvement in this struggle was limited to a small group of elite men and women. The repressive climate that emerged in 1926, after the First Republic, left no room for increasing public awareness, let alone open opposition to gender-based injustices, of which there were many. Women had a precarious legal status, a high rate of illiteracy and suffered most from the poverty and lack of health services, conditions which led, for example, to Portugal’s poor position in the European rankings for maternal and infant death (Barreto 2002). In addition to this, anti-feminist ideology was disseminated by the authoritarian Estado Novo regime and the Catholic Church (Cova and Costa Pinto 1997; Pimentel 2001). The few small groups fighting for progress had to act with extreme caution, or even go underground (Esteves 2006; Gorjão 2002; Tavares 2000).

On a national level, the political transition of 1974 led to the drafting of measures to promote equality between the sexes. In Portugal, unlike other countries with a long-established tradition of equal rights movements, the reform initiative came mainly from the government, although there was dialogue with civic associations. The principal official body was the Comissão da Condição Feminina (the Committee on the Feminine Condition, now the CIG – Comissão para a Cidadania e a Igualdade de Género - Committee for Citizenship and Gender Equality), founded in 1977. Prior to this, working groups had already drafted legislation, including the law establishing 90 days statutory maternity leave, which was implemented in 1976 (Monteiro 2010; Monteiro and Ferreira 2012). Portugal's admission to the European Economic Community (now the European Union) in 1986 was another incentive for equality policies, such as the various National Equality Plans.

Furthermore, under the new democratic regime, legal reform targeted diverse aspects of life, aiming to combat the widespread inequality of Portuguese society. As a result of these policies, positive progress was made in many fields, such as the expansion and democratisation of educational and healthcare structures and social services, which also resulted in the creation of jobs, particularly for women. Various specific laws were passed in order to foster gender equality, governing areas including maternity and paternity leave and benefits; the fight against domestic violence; and, more recently, the decriminalisation of voluntary abortion up to 10 weeks and the recognition of the rights of LGBT people. However, there is, at times, considerable discrepancy between the letter of the law and actual practices.

3. Differentiation, images and education

Frequently, opponents of feminism resort to the argument of “difference” between men and women. And they do not always understand that the most significant biological difference is the fact that women are capable of becoming pregnant, giving birth and breastfeeding. Rather, this form of biological determinism presupposes a fundamental difference between the sexes in terms of interests, skills and personality. In many cases, this serves to justify the more powerful position of men, either by undervaluing “feminine qualities”, or by exalting abilities, such as supposed communication skills, in a “benevolently sexist” discourse (Amâncio 2004: 338; Lima and Sobral 2016). These binary representations are alive as well, as demonstrated by the continuing position on the bestseller lists of the book *Men are from Mars, Women are from Venus*, in which John Gray (1992) argues that the difference between men and women is so great that communication between them appears impossible. Hundreds of other mass market titles concerning the opposition between men and women have recorded significant sales, such as *Why men don't listen and women can't read maps*, by Allan and Barbara Pease (2000).

The significance attributed to difference goes hand in hand with the great interest in the sex of a human being, even before birth. Technological advances, in particular ultrasound scans, enable us to better monitor the health and development of babies during gestation. However, for many future mothers and fathers (and their social circle), the most interesting aspect of the 20-week scan is learning their baby's sex. They often claim that there is a practical reason for this curiosity, as knowing the sex is useful when preparing clothing and decorating the baby's room, which, today, must match the sex of the child. Among the middle classes in the United States, this interest has culminated in people holding parties at which the sex of the baby is revealed, the so-called “gender reveal parties”. At these events, attendees are officially informed of the sex (not the gender, as the term misleadingly suggests) of the child. They involve an element of suspense, as well as games, cakes and other snacks. The internet and businesses in general are awash with tips on organising this type of party and the products to buy, which prominently feature the colours pink and blue.

This symbolism is a recent construction. Differentiation of the sexes using colour originated in the United States, where, curiously, 100 years ago pink indicated a boy as it was considered “stronger” and blue was for girls

(Paoletti 2012). My own childhood memories also bear witness to the vast range of meaning that such signs can hold, depending on their context. In 1950s and 1960s Holland, the designated colour for babies, regardless of sex, was white. In my Catholic extended family, the preferred colour for older girls was blue, due to the association with Mary, mother of Jesus (Koslosky 2017). What is more, for centuries the clothing worn by small children was not determined by sex (Schouten 2011: 36, note 22). The pictures in my primary school books and old family photographs featured an abundance of boys in skirts.

In today's toy market, the strong differentiation between boys and girls is manifested in the "blue and pink aisles" of large retailers. Differences in toys and games according to sex appear to be universal and to have existed throughout history. This distinction in toys is a subject frequently alluded to as an example of how upbringing and primary socialisation play an active role in the formation of gender identity (Cardona et al. 2015: 11; Taveira and Silva 2014; Auster and Mansbach 2012); and the topic is often covered in gender equality training initiatives. However, the effects of these awareness initiatives and "gender mainstreaming" are not reflected in the range of toys on offer. On the contrary, according to various studies, binary differentiation of these items is greater today than in the 1960s and 70s. Research by Sweet (2014) reveals that, at one time, labelling "for boys" and "for girls" was practically absent from the Sears catalogue, affecting only 2% of toys in 1975 (cf. Daly 2017). Another example is Lego. When this toy formula was launched in the 1960s, it was aimed at all children, irrespective of gender. However, it has since diverged into female Lego and male Lego, prominently featuring pink and blue. Differentiation generates or reinforces inequality, because it restricts the access of each of the sexes to certain activities, in this case forms of play. Manufacturers and consumers do not appear to consider this a major problem; manufacturers may take the view that producing toys for girls and toys for boys is an opportunity to increase sales.

An imbalance also exists in terms of the information and education available to girls, as demonstrated by the books on offer. *The Dangerous Book for Boys* (Iggulden 2006), in its Portuguese version advertised in the 2017 FNAC catalogue with the slogan "The book that teaches boys to be boys [...]", has already reached its fourth edition in Portugal. Following the success of this book, the *Daring Book for Girls* (Buchanan and Peskowitz 2009) was published, featuring the blurb, "the female version of the spectacular Dangerous Book for Boys". This suggests that it is a second thought, aimed at the Second Sex. These books are localised translations of the English and American originals, which have had great international success, inspiring other publishers to produce similar titles. The content of the respective publications deserves further study but appears to reinforce the stereotype of the adventurous male. While girls are encouraged to follow this example to a certain point, they cannot forget supposedly feminine interests, such as knitting. The "masculine" is the norm. The distinct blue and pink covers contribute to the message transmitted to potential buyers.

In terms of books for girls, we cannot neglect to mention a "case" that caused a considerable stir in Portuguese social media in summer 2017. It concerned two versions of a puzzle and activity book designed for children aged four to six, one "for boys" and the other "for girls". Their content differed in line with traditional gender stereotypes. For example, boys were associated with space and "public" activities, while girls are associated with "private" settings. The games and activities also differed, with boys being assigned tasks that involved more "action". In a "technical statement" (2017), the Committee for Citizenship and Gender Equality (CIG) decried the publications and highlighted the setbacks that these activity books could cause in terms of the fight against gender stereotypes. Following the recommendations of the Committee (or the social media outcry), the publisher suspended sale of the books. However, it returned to the shelves of the bookstores the following month.

This intervention fell within the remit of the CIG, primarily because the book represented a teaching material which, given the age of its target users, was sure to have an impact on the formation of their gender identity. West and Zimmerman (1987) argue that this identity is consolidated by the performance of certain activities considered appropriate to a person's gender. This "doing gender" approach, in the authors' own terminology, highlights the

performative and interactional aspect of the concept of gender (Schouten 2016). From an early age, many children assert themselves as girls or boys through performance of these roles. In the family setting, this gender identity tends to be taught and learnt both through play and later through the types of tasks the child is expected to perform (Vieira 2006). In previous generations, the daughters of a family were generally expected to assist in household chores, while sons were not, thus giving them more time for play and study. This practice persists, as illustrated by a statement by a woman in her thirties, whom we interviewed in 2011, in the project about Time and Technology (Schouten et al. 2012). The interviewee did not involve her son in household chores, unlike her friend who had daughters: "...I had a son, but in the case of my friend, she had daughters. She makes her daughters clean. The weekend comes around and one of them dusts, while the other cleans the kitchen. You hear about parents who make their boys work... but not me".

In the preschool and school setting, this difference is accentuated by the social environment. In a recent study, Sales Oliveira and Mendes (2017) report considerable differences in play habits between four to six-year-old boys and girls at preschool. The teacher responsible of the group under scrutiny had recently attended a training course on Education, Gender and Citizenship, organised by the CIG in partnership with the University of Beira Interior (UBI). However, these courses alone are not enough to bring about substantial change, because in the preschool environment a multitude of factors and actors exert an influence on the formation or consolidation of gender identity in children. At a slightly older age, the influence of relationships within peer groups is a key factor in reinforcing gender identities. At school, for example, these are reaffirmed by conversations and behaviour outside of teaching hours, as observed by Maria do Mar Pereira (2012) in her study on adolescents in Lisbon. Boys and girls are treated differently during the teaching and learning process itself, notably by teachers, who implicitly, and perhaps unconsciously, assume a difference in skills between the sexes. Saavedra et al. (2011: 164) refer to international surveys demonstrating that in the hard sciences and technologies, teachers and school textbooks are orientated more towards boys, which may be one reason for the gender imbalance in various scientific fields in higher education.

4. The domestic context

Habits within the domestic sphere often hinder the realisation of greater gender equality in society. Traditionally, the fact that women and not men have been responsible for domestic chores and childcare has had a negative impact on their health and limited their leisure and training opportunities, particularly when combined with work outside the home. Feminist movements and relevant institutions have signalled the importance of equality within the private sphere, while also acknowledging the difficulty of influencing what happens behind closed doors. In Portugal, many of the initiatives resulting from the Equality Plans, general law and European programmes such as EQUAL aimed to create conditions that foster more even distribution of housework. To this end, they supported measures aiming to improve the balance between work, family and private life. Among other measures, this involved the provision of leave, better social services and facilities such as crèches, and incentives for companies to offer alternative ways of working.

Despite these measures and the many awareness campaigns, inequalities within the domestic sphere persist. Studies carried out in Portugal (Aboim 2010; Schouten et al. 2012; Wall, Aboim and Marinho 2010) show some alterations in daily routines, in particular with regards to the role of the man within the family, demonstrating a diversification of approaches to fatherhood. However, these are not fundamental changes: women remain responsible for the wellbeing of the family and the home, and continue to be the partner who have less time for themselves. In the first decade of this millennium, there were positive developments, as evidenced by surveys and studies in which we participated (ConVidas 2002-2004; RoMann 2006). However, the second decade saw the re-

emergence of traditional patterns. This development was not unrelated to the austerity policies of 2010-2015, supposedly justified by the financial crisis that occurred during this period (Ferreira and Monteiro 2015).

Gender differentiation manifested itself in the forms and phases in which the measures accompanying the financial and economic crisis which began in 2008 were implemented. Initially, unemployment mainly affected men, as they represented the majority of the workforce in the construction and industrial sectors, the first to reduce staffing numbers (Moura, Spindler and Taylor, 2015: 90; Jordão 2015: 216). Male unemployment did not automatically lead to a fairer distribution of housework, especially not in couples where both partners lost their jobs, which was not unusual during the latter stages. As observed in a survey carried out by Múrias (2015) in rural parishes in Northern Portugal, women in such situations almost always do the majority of housework, while unemployed males have more spare time. Another study of intra-family relationships during times of crisis, in which 803 couples were surveyed, showed an increase in the time men dedicated to household chores, but only during the working week. At the weekend, their contribution did not increase (Ribeiro, Coelho and Ferreira-Valente 2015; Coelho 2016). For men, habits and norms from the times when they were working persist: the weekend is mainly for leisure. The findings of these 2014 surveys, that male unemployment does not significantly relieve women from housework and childcare duties, are similar to the results of the studies carried out around the turn of the millennium (Afonso and Poeschl 2006).

In these difficult years, the reorganisation of the state budget led to cuts to social services and facilities for the elderly, the chronically ill and children, and the burden of resolving the resulting problems lay mainly with women (family members or neighbours) (Ferreira and Monteiro 2015; Coelho 2016). This extension of their care duties resulted from expectations inherent to the fact that they were female. These expectations existed within their social environment, but were also rooted in their own female being, their identity. As a result, many women who had recently achieved a level of autonomy, thanks to the political and sociocultural changes and initiatives promoting equality, had to surrender some of these conquests.

During the crisis, we witnessed the persistence of ideas about the difference between men and women in terms of their roles, their supposed rights and the ways in which their gender is asserted. Like Ridgeway (2011), we can conclude that stereotypes are so firmly entrenched that social movements struggle to uproot them. In this case, the slowdown of public equality policy and disruption of the economic structure led to the resurrection of old stereotypes. Ribeiro et al. (2015: 79) highlighted the convergence between data collected in their survey, concerning the time that men and women dedicate to housework, and the results of the nationwide survey on the use of time carried out in the late 1990s (Perista 2002). As if to prove the findings of Ribeiro and her fellow authors, a recent survey on the use of time, carried out in 2015, Perista et al. (2016: 59) once again noted an “accentuated gender imbalance” in terms of time dedicated to the activities in question.

It is possible to place one’s hopes in the next generation, but the signs are not very promising. Recent studies of university students in Portugal- a group who could be expected to have an open attitude and a desire for change- illustrate the persistence of traditional ideas about the division of tasks between men and women within the family, although not rigidly. A survey of 206 male and 172 female students at the University of Beira Interior, with an average age of 21, carried out in 2010 (Villas-Boas et al. 2014), included questions about the organisation of their future family lives. Almost 80% of participants (more women than men) stated that they were in favour of equal sharing of household chores. However, with regards to specific tasks, students expected to continue traditional practices, for example women being responsible for the laundry and men being responsible for financial questions and repairs (Villas-Boas et al. 2014: 121-123).

Another survey of students at the Instituto Superior de Economia e Gestão (ISEG- Higher Institute for Economics and Management) was carried out in 2014 by Coelho and Casaca (2017), using a sample of 53 women and 47 men with an average age of 21. Once again, the vast majority stated that in their future lives they were in favour

of equality between men and women in terms of household chores (Villas-Boas et al. 2014: 121). It is, however, worth highlighting the differing male and female stances on this subject. Of the latter, 96% were in favour of equality, while this percentage among men was only 78%. This investigation also revealed that young women were less confident with regards to their future professional career, which may be a consequence of stereotypes instilled since childhood, as well as their intention to become a mother in the future, a desire shared by 87% of female participants.

These surveys indicate a minor shift in views on gender equality within the domestic sphere among well-educated young people, compared to the previous generation. However, doubt remains as to whether their ideas will be put into practice in the future.

5. Conclusions

In order to interpret the alternating emancipatory and counter-emancipatory trends outlined in this paper with regards to the role of women, we must consider the ways in which various developments intersect. The large-scale structures such as political regimes, which have undergone great changes in Portugal since the beginning of the 20th century, and the economic conjunctures have both exerted an influence, as have other factors, in particular those inherent to gender regimes: identities, images and the praxis of gender.

Virginia Woolf's wish, evoked at the beginning of this paper, was modest: to have money, free time, and a room of her own, without mentioning numbers or demanding equality with men. This desire has been partially fulfilled in Portugal, where the situation of women today is far better than in the mid-20th century. However, they continue to lag behind men in various areas of economic and social life. Women's free time is limited, in particular due to the persistence of the double shift, one for paid and the other for unpaid work. Space for themselves continues to be a luxury, only accessible to a few. Even when they temporarily leave the domestic setting, women with families find it difficult to fully mentally disconnect from their household responsibilities (Chesley 2005; Guerreiro and Carvalho 2007; Schouten 2012: 98-101). The greater autonomy won by (and for) women clearly has its limits.

Although the environment, particularly in terms of politics, is favourable to the pursuit of equality between men and women, the internalisation of gender roles by individuals, in combination with the expectations of others, has its effects. It is likely that these representations of gender in particular have brought about the aforementioned setbacks on the road towards equality. Images of gender have not been transformed, but rather recycled to adapt to new social conditions. The changes to symbols, toys and teaching materials cited earlier are, in reality, merely changes to the way stereotypes are expressed, not to the stereotypes themselves. Similar superficial change has been noted in the world of work.

Thus, in the present day, despite the organisational and technological restructuring of the workplace, images and self-perception of gender continue to exert considerable influence on the attribution of tasks and on hierarchical progression (Casaca 2012). The iconic "Luisa" depicted by António Gedeão in his poem *Calçada de Carriche* (1957) with her monotonous factory job now finds her counterpart in the mostly female supermarket checkout workers who use modern digital technology to perform monotonous operations, often under precarious employment conditions (Cruz 2004). The radical transformation of the world of business, brought about by technological change, has not led to the advent of a new world of work, where both genders have equal opportunities. In reality, on a global level, the prestigious technology sector is increasingly male dominated, to the extent that the organisers of the 2018 World Economic Forum in Davos de 2018 explicitly signalled the retreat of progress towards equality (Martinson 2018). Even in the more modest high-tech environment of a call

centre, Matos (2014) noted that men tend to occupy technical support roles, while women are relegated to customer service, playing to gender stereotypes about their superior communication skills.

Government measures can promote equality (as they have in Portugal at various points since the revolution of 25 April 1974) or, on the contrary, they can push women (back) into the domestic sphere and/or subordinate positions, as was the case under the Estado Novo regime. The recent backlash went hand in hand with the economic and financial crisis, which brought about a reduction of social benefits, services and facilities and a major increase in unemployment and economic hardship for families. As a rule, it was women who tried to resolve these problems, extending their duties as a caregiver and giving up leisure activities, education and work. In these years, the fragility of the rights won by women in Portugal became evident.

Ridgeway (2011, 2013) called attention to the slowness of gender stereotypes (in her words, common knowledge) to change, thus favouring a focus on training and shifting perceptions. However, in Portugal, the crucial role of upbringing and education continues to be countered by other trends. As already stated, a great proportion of the (formal and informal) socialisation of children highlights the differences between men/boys and women/girls, thus restricting the range of opportunities for girls, while also mentally setting them up for a future of inequalities. Moreover, in certain areas, the differentiation between masculine and feminine is more marked today than in previous decades. This is one of the setbacks experienced during the period discussed in this paper, which run in parallel, or alternate, with advances towards gender equality.

In order to put the dreams of Virginia Woolf into context, it is important to remember that were expressed shortly after women in the United Kingdom has won universal suffrage, ten years after a specific section of the female population was given the right to vote. In February 2018, to celebrate the centenary of this first step, the Guardian newspaper published testimonies by five female writers on their predictions for the next 100 years (Atwood 2018). None of them were optimistic. In her contribution, journalist Polly Toynbee evoked the optimism of the Western world in the 1970s, when equality seemed to be well within reach, and contrasts this with the disillusioned climate of 2018. In light of the setbacks mentioned, she calculated that equality would take four generations to achieve. Yet more pessimistic is the recent message from Portugal, reflected in an opinion piece by Sara Falcão Casaca (2018). Referring to the Gender Gap Report of 2017 (also cited in this paper) it is calculated that if progress continues at the same pace, the road to (global) financial gender equality will take 217 years. Progress will also be slow in fields such as health, politics and education.

As history teaches us, it is impossible to accurately predict the future. History also teaches us that during phases of progress and euphoria, such as the era of Ana de Castro Osório and her generation, the first wave of feminists, setbacks can occur. Taking into account the fragile nature of social progress, groups and individuals advocating equality and justice must always remain vigilant and active. These emancipatory actions may take place within social sciences and movements which, faced with the issues raised by this article, must not shy away from being labelled feminist.

Note:

A slightly different version of this article in the Portuguese language, entitled “Desfazendo desigualdades de género: um caminho sinuoso”, has been published in Gomes, S. et al (Eds.) (2018). *Desigualdades sociais e políticas públicas. Homenagem a Manuel Carlos Silva*. Famalicão: Húmus, Pp. 467-486.

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Maria Johanna Christina SCHOUTEN is Associate Professor of Sociology at the University of Beira Interior, Portugal. She has obtained a PhD in social and cultural sciences at VU University Amsterdam, and «agregação» in Sociology at the University of Beira Interior. Research and teaching activities mainly in Portugal and Indonesia. Main areas of interest: Gender Studies; Sociology and Anthropology of Health; Sociology of Ageing; History of Anthropology; Anthropology and History of Southeast Asia.

ORCID ID: <http://orcid.org/0000-0001-5191-3916>

Register for an ORCID ID:

<https://orcid.org/register>

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DOES THE WAGNER'S LAW EXIST IN A STRATEGIC NATIONAL AREA? AN EVIDENCE FROM KEDUNGSEPUR - INDONESIA*

Gatot Sasongko¹, Andrian Dolfriandra Huruta², Anita Wardani³

^{1,2,3} Satya Wacana Christian University, Faculty of Economics and Business, Diponegoro 52-60, Salatiga, Indonesia

E-mails:¹ gatot.sasongko@staff.uksw.edu ; ² andrian.huruta@staff.uksw.edu (corresponding author);
³ 222015044@student.uksw.edu

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Abstract. The Kedungsepur National Strategic Area was formed to realize urban areas as the center of national and international economic activities. In order to realize this goal, government expenditure and economic growth are important variables in the development process. Empirically, the study was conducted to analyze the relationship between government expenditure and economic growth from the perspective of Wagner's Law in 6 regencies or cities in the Kedungsepur National Strategic Area during 2012 to 2017. Methodically, this study used Panel Granger Causality and Panel Data Regression to explain the short-term relationship between both variables. The results showed that there was a negative one-way relationship from economic growth to government expenditure. The increase in economic growth in the previous year would reduce the government expenditure in the short term, resulting the Wegner's Law inapplicable in the Kedungsepur National Strategic Area. This was due to the ineffectiveness of institutions, differences in regional expenditure structures towards state expenditures and the lack of government work programs in the productive sector. Thus, a good and coordinative institutional environment was needed to realize the cooperation in crucial sectors, as well as the distribution of regional expenditures on more productive expenditures based on priority interests, aiming at the welfare of the community.

Keywords: Wagner's Law, Economic Growth, Government Expenditure, Panel Granger Causality, Panel Data Regression

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JEL Classifications: E6, R11, R58

1. Introduction

Since it was officially inaugurated in 2007 through Law Number 26 of 2007, the Kedungsepur National Strategic Area (Kendal, Demak, Ungaran, Salatiga, Semarang and Purwodadi) has become one of the most densely populated economic zones in Central Java and in the national level. The area covering Kendal Regency, Demak Regency, Semarang Regency, Salatiga City, Semarang City, and Grobogan Regency was formed to create urban areas as a center of international scale economic activities, based on trade and services, industry, tourism, without

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overriding sustainable agricultural land (Presidential Regulation of the Republic of Indonesia, 2017). The map of the Kedungsepur National Strategic Area can be seen in Figure 1 below.

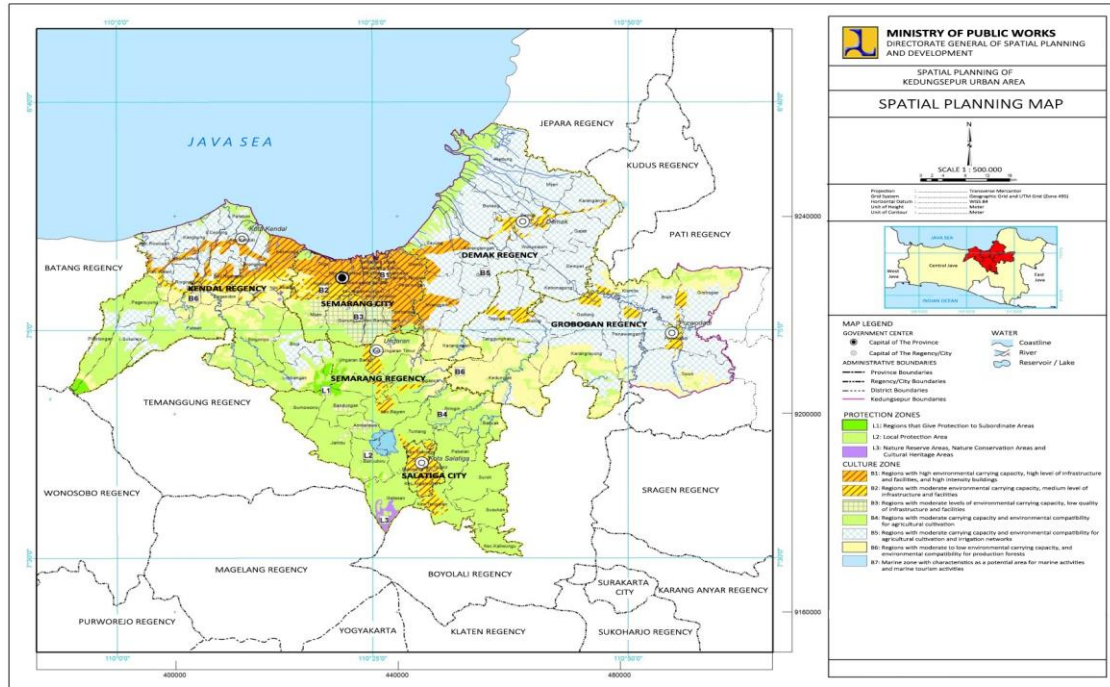


Fig. 1. Map of Kedungsepur National Strategic Area

Source: Ministry of Public Works (2014)

The government plays an important role in creating harmonization between regions through its policies and authorities. Government expenditures are distributed to increase regional productivity and improve communities' welfare. From 2012 to 2017, the government expenditure in the Kedungsepur Region tended to increase with an average growth rate of 14.14%. In 2017, the total of the government expenditure in 6 regencies or cities in the Kedungsepur National Strategic Area reached Rp 12.974,16 billion or 5.79% of the value of the Gross Regional Domestic Product (GRDP) of the Kedungsepur Region in 2017. Although it was inaugurated in 2007, the new Kedungsepur National Strategic Area Institution was formed in 2017 based on the Presidential Regulation of the Republic of Indonesia Number 78 of 2017. The absence of definite and poorly functioning existing authorities in coordinating the Kedungsepur National Strategic Area well had resulted in disparities between regions (Ministry of Public Works, 2014). This can be seen in Figure 2 below.

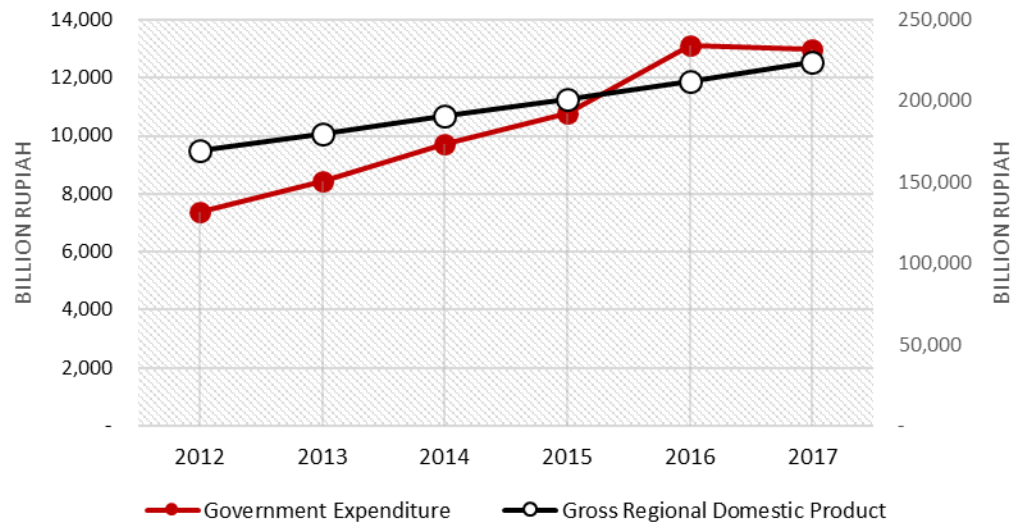


Fig. 2. Government Expenditure and Gross Regional Domestic Product at Constant Prices in Kedungsepur National Strategic Area 2012-2017

Source: Central Bureau of Statistics (2019)

Figure 2 explains the value of GRDP which tends to increase. The GRDP contribution for 6 regencies or cities in the Kedungsepur National Strategic Area in 2017 reaches 25.18% or more than a quarter of the GRDP value in Central Java Province. However, it was dominated by Semarang City with a percentage of 13.7%. Whereas the contribution of GRDP to Demak Regency, Salatiga City and Grobogan Regency to the GRDP of Central Java in 2017 is still below the average, which is less than 2.86%. As a special region with economic designation, the figure is certainly a problem. However, considering at the natural conditions and existing human resources, the Kedungsepur has sectors with a developing potential and it can encourage the economy of Central Java and the national level if appropriate policies are implemented.

The results of previous studies prove that an increase in the government expenditure was a result of an increased economic growth (Dada & Adewale, 2013; García, 2018; Ismal, 2011; Magazzino, Giolli, & Mele, 2015; Mohammadi & Ram, 2015; Mutuku & Kimani, 2012; Uzuner, Bekun, & Akadiri, 2017; Wang, Peculea, & Xu, 2016). On the other hand, previous researches were unable to prove the Wagner's Law, mentioning that when the economic growth got weakened, the government expenditure would increase (García, 2018). Furthermore, when the government expenditure increased, the economic growth would also increase (Ighodaro & Oriakhi, 2010; Ismal, 2011; Kurniawati, 2018; Kyaw, 2018; Magazzino et al., 2015; Mohammadi & Ram, 2015; Neduziak & Correia, 2017; Okoro, 2013; Uddin & Aziz, 2015). In addition, the relationship between the two variables showed a negative effect where there was an increase in the government expenditure, it would lower the economic growth (Hasnul, 2016; Manyeki & Kotosz, 2017; Maurya & Singh, 2017; Ogundipe & Oluwatobi, 2013).

The government expenditure and economic growth are two important variables in the development process. The relationship between these two has become such a debate in academic circles to date. The Wegnerian side considers that an increase in per capita income will encourage the expansion of the government to manage and regulate the market economy. In short, an increase in government expenditure adjusts for an increase in economic growth.

The government expenditure can be an endogenous factor which is a result of changes in economic growth and exogenous variables that can influence the level of economic growth. Keynes assumed that the government

intervention through an increase in the government expenditure could increase a country's output growth (Dillard, 1950; Skousen, 2006). Samuelson stated that an increase in per capita income would result in a decrease in the government expenditure (Dluhosch & Zimmermann, 2006). The more increase the income, the more the private goods consumed compared to public goods, assuming the economy has developed with equitable infrastructure.

2. Theoretical background

The relationship between the government expenditure and economic growth is explained in Wagner's law. The government expenditure is endogenous towards the economic growth, where there is a long-term trend of increasing government expenditure as the economic growth increases. The Wagner's hypothesis on the relationship between the government expenditure and economic growth is interpreted into the following function equations (Hasnul, 2016):

$$GE = f(Y) \quad (1)$$

Equation 1 shows that GE is a public sector expenditure that reflects government expenditure, while Y is the national income, which in this case, is reflected in economic growth. There are 3 main reasons presented by Wagner on the relationship between the government expenditure and economic growth. First, the existence of industrialization and increasing economic growth are characterized by the dominance of the private sector as the economic actors. In this case, the government is needed to regulate the economy through law enforcement. Second, increasing per capita income will lead to increased public sector demand such as education, health, culture and other services. These needs are considered more efficient if they are managed by the government compared to a private management. Finally, the state invests in removing monopolistic tendencies in a country (Bird, 1971).

Literature discussing the relationship between the government expenditure and economic growth with the Wagner's legal direction has been widely practiced in various parts of the world. In Romania, Wang et al. (2016) who used Autoregressive Distributed Lag showed a positive one-way relationship from the government expenditure to economic growth. This indicated that the government could formulate a good economic policy strategy to deal with the precarious situation in the economy, such as during a crisis.

In general, the condition needed to support the Wagner's law is the existence of one-way causality in the economic growth to government expenditure. In Nigeria, Dada and Adewale (2013) used Vector Error Correction Model proved that there was a one-way causal relationship from the economic growth to government expenditure. The results also proved that the Wagner's law was a long-term phenomenon and not a short-term one. As per capita income increased, the public sector became increasingly important and required increased government expenditure.

Furthermore, Mutuku and Kimani (2012) who used a cointegration test and Granger causality found that the economic growth could increase the government expenditure. The amount of government expenditure was the result of decisions taken in the midst of changing economic conditions. However, it was highly important to organize and distribute these expenditures based on priority interests. Meanwhile, Uzuner et al. (2017) who used the Johansen co-integration test and Granger causality, tried to prove the Wagner's theory applied in Turkey. This finding indicated that the government expenditure would increase the output in the long run.

Another study was conducted by García (2018), who used a cointegration test with a structural breakpoint proved that the Wegner's Law was applied in Spain. However, the testing on the last 2 models showed a negative

relationship between the economic growth and government expenditure. This was due to the impact of the great recession in 2008 which required an implementation of a budget deficit policy by carrying out debt.

In Nigeria, Ighodaro and Oriakhi (2010) who used Granger causality proved that the Wagner's Law were not applicable. In other words, the government expenditure was such a variable that was able to drive the economic growth and with an increase in the government expenditure, it would not bring down the economy. When the government spent more money, it would encourage the economic growth, although the expenditure made was deficit (Kyaw, 2018; Neduziak & Correia, 2017; Okoro, 2013; Uddin & Aziz, 2015). The implementation of budget transfers in the right sectors can reduce budget distortion and also balance the government expenditure. In Myanmar, Kyaw (2018) who used cointegration tests stated that both variables were mutually integrated in the long run. While the results of the Granger causality test showed a positive and one-way relationship from the government expenditure to the economic growth. In line with Neduziak and Correia (2017) who used panel data found that the fiscal policy through the government expenditure was actually beneficial for the economic growth. Therefore, the fiscal organization is important for the sustainability of the economy.

In the same country, Okoro (2013) who used the Johansen cointegration test stated that there were long-term relationships in both variables. Although the economic growth in Nigeria during 1980-2011 tended to decline, an increase in the government expenditure would increase the value of the real GDP in the long run. Whereas in the short term, the growth would adjust the long-term balance at a rate of 60% per year. Allocating government expenditure in potential sectors (industry and agriculture) and infrastructure development would drive the economy. Similar to Uddin and Aziz (2015) who used Ordinary Least Squares proved that the government expenditure had a positive effect on the economic growth in Bangladesh. From the productive sector, the allocation for the construction of decent infrastructure could increase the economic activity. In addition to the economic conditions, the political stability in Bangladesh also showed that it had an important role in the economy.

In European countries, Magazzino et al. (2015) examined his study using Granger causality to prove that the Wagner's Law applied in 8 of 27 countries, namely: Bulgaria, France, Germany, Greece, Ireland, Portugal, Slovenia and Spain. The Wagner's Law was proven because as the output increased, the government intervention would be increasingly needed to manage the natural monopolies. Moreover, Mohammadi and Ram (2015) also proved that there was an existence of the Wagner's Law in Japan and Korea. However, it was not found in Malaysia, Philippines, Singapore and Thailand.

In Kenya, Manyeki and Kotosz (2017) used Autoregressive Distributed Lag stated that there was a resistance to the Wagner's Law. The results showed a negative and one-way relationship from the government expenditure to the economic growth. When the government expenditure increased, there would be a decline in the economic growth. This was due to the expenditure allocations that tended to be less productive and also due to poor institutions in Nigeria. This was in line with the findings of Ogundipe and Oluwatobi (2013) which stated that in addition to education and health expenditures, the amount of the government expenditure also negatively affected the economic growth in Nigeria in the period of 1970-2009. The results of the Johansen cointegration test made it clear that when the government increased its expenditure, the economic growth tended to decline. This happened because the government often allocated the expenditure on programs that could actually be covered by the private sector. The expenditure implementation at the regional level was often out of control. Therefore, there was a risk of fund misappropriation. Nevertheless, the government expenditure still played a role in stimulating the economic growth through capital expenditure.

In Malaysia, Hasnul (2016) who used Ordinary Least Squares and panel data also proved the existence of a negative relationship on the government expenditure and economic growth. The biggest influence was due to the housing sector and development spending. While the expenditures in the education, health, and operational

expenditure sectors did not show a significant effect. In the end, the management of allocation, supervision and sound institutions was such an important factor in a country's fiscal policy. The existence of a negative relationship caused by an increase in government expenditure might be a signal that the government expenditure did not lead to the economic growth.

In Indonesia, Ismal (2011) was able to prove that the government expenditure showed a positive performance towards the real sector. When the economic activities had good prospects, the government budget would also increase. This indicated that when the economic activity increased, the state revenues from the tax, export and import sectors would increase. It was assumed that an increase in income would lead to an increase in the budget. Furthermore, Kurniawati (2018) who used Granger causality proved a one-way relationship from the economic growth to the government expenditure in West Kalimantan. This happened as a result of the implementation of the regional autonomy since 2001 which authorized the local government to process the expenditure allocations according to priority. In other words, the right allocation to productive sectors would optimize the government expenditure and economic growth.

Overall, the previous studies conducted show various findings such as negative relationship, positive relationship, one-way causal relationship, absence of causal relationship and etc. This indicates that there is still an uncertain relationship between the government expenditure and economic growth (the Wagner's Law) in various countries.

3. Methodology

The data used in this study was secondary data obtained from the Indonesian Central Bureau of Statistics and websites of the regional government in the Kedungsepur National Strategic Area. Furthermore, the type of data used was panel data, consisting a combination of time series data and cross-section in 6 regencies or cities in the Kedungsepur National Strategic Area during 2012-2017. This period was chosen to get an overview of the economic conditions in the Kedungsepur National Strategic Area after it was inaugurated in 2007 through Law No. 26 of 2007. Theoretically, the Wagner's Law examines the relationship between the government expenditure and economic growth (Wang et al., 2016). The government expenditure is measured by the realization of the regional budget, while the economic growth is measured by the growth of GRDP at constant prices.

Panel data stationarity was conducted to check whether the data had a variance that was not too large and a tendency to approach the average value. The panel data stationarity test was carried out using the Levin, Lin and Chu (LLC) test (Granger & Newbold, 1974):

$$Y_{it} = \rho_i Y_{it-1} + X_{it} \delta_i + \epsilon_{it} \quad (2)$$

Equation 2 shows that Y_{it} represents pooled variables, X_{it} represents exogenous variables in the model, including fixed effects or individual trends, ρ_i is autoregressive coefficients, and errors ϵ_{it} are assumed to be separate idiosyncratic disorders.

The Granger causality test is an empirical approach that is often used to prove differences in hypotheses in the Wagner's Law (Magazzino et al., 2015). Before carrying out the Granger causality test, it is necessary to determine the optimum lag. The determination of the optimum lag length aims to determine the length of the period of influence of a variable on endogenous variables with its past and other endogenous variables. To understand the length of the lag, the Akaike Information Criterion can be used, which are believed to be superior to other criteria (Winarno, 2015). The lower AIC value is able to decide the best lag length in the model (Gujarati & Poter, 2009).

After the best lag length was found, the Panel Granger causality test was performed by entering the optimal lag. The model describing the relationship between variables would be explained by the Panel Granger causality (Granger & Newbold, 1974):

$$Y_{it} = \alpha_{0i} + \alpha_{1i}Y_{it-1} + \dots + \alpha_{ki}Y_{it-k} + \beta_{1i}X_{it-1} + \dots + \beta_{ki}X_{it-k} + \epsilon_{it} \quad (3)$$

$$X_{it} = \alpha_{0i} + \alpha_{1i}X_{it-1} + \dots + \alpha_{ki}X_{it-k} + \beta_{1i}Y_{it-1} + \dots + \beta_{ki}Y_{it-k} + \epsilon_{it} \quad (4)$$

Equations 3 and 4 show that X_{it} is the amount of government expenditure in a given year and Y_{it} is the rate of economic growth in a given year, while ϵ_{it} is an error term assumed to contain no cross-correlation.

The approach used for Panel Granger causality testing in this study was a stacked test in which the panel data would be treated as a large set of data stacked without taking the left value of one cross-section to the next one. This method assumes that all coefficients are the same in all cross-sections with the following models (Granger & Newbold, 1974):

$$\alpha_{0i} = \alpha_{0j}, \alpha_{1i} = \alpha_{1j}, \dots, \alpha_{ki} = \alpha_{kj}, \forall i, j \quad (5)$$

$$\beta_{1i} = \beta_{1j}, \dots, \beta_{ki} = \beta_{kj}, \forall i, j \quad (6)$$

The classic assumption test consists of multicollinearity, heteroscedasticity, autocorrelation, and normality testing (Winarno, 2015). However, in this study, only the heteroscedasticity test was needed. Multicollinearity testing phase was not done because this study only used one independent variable, resulting to the multicollinearity impossible to occur between the independent variables. Then, the autocorrelation testing was also not done because it generally occurs in time series data where the value of the sample or observation at a certain time point is influenced by the value of observation at a previous time (Gujarati & Poter, 2009). However, in the panel data there is a repetition of time series data, resulting the autocorrelation test on panel data is considered to be meaningless. Furthermore, the normality testing was also considered meaningless because in the panel data, each object cross-section has a different average so that the residual average value also varies.

The heteroscedasticity test was done to test whether there was an inequality variance of residual of one observation to another which generally occurred in cross-section data. The heteroscedasticity test used the Glejser method by regressing all independent variables to the absolute value of the residual $|e|$. If there is an effect of independent variables that are significant to the absolute value of the residuals, then there is a problem with heteroscedasticity in the model (Winarno, 2015). The equation for heteroscedasticity is as follows:

$$|u|_i = \alpha + \beta X_i + v_i \quad (7)$$

Equation 7 shows that an absolute residual value is an independent variable. In the panel data, random effect model uses the Generalized Least Squares method. While the fixed effect model and the common effect model use Ordinary Least Squares. Therefore, a heteroscedasticity test is needed so that the model can be used as a good predictor.

Based on the results of the Panel Granger causality test, panel regression tests were conducted to determine the relationship and how big the influence of economic growth rates and government expenditure in the 2012-2017

Kedungsepur Region was. Models that can be applied in panel data regression are the common effect model, fixed effect model, and random effect models with the following equations (Winarno, 2015):

$$Y_{it} = \alpha_0 + \beta X_{it} + e_{it} \quad (\text{common effect model}) \quad (9)$$

$$Y_{it} = \alpha_{0i} + \beta_1 X_{it} + \beta_2 d_{li} + \dots + \beta_7 d_{6i} + e_{it} \quad (\text{fixed effect model}) \quad (10)$$

$$Y_{it} = \alpha_{0i} + \beta X_{it} + e_t \quad (\text{random effect model}) \quad (11)$$

Before conducting a panel data regression test, a verification of the appropriate model was needed. The process can be seen in Figure 3 below:

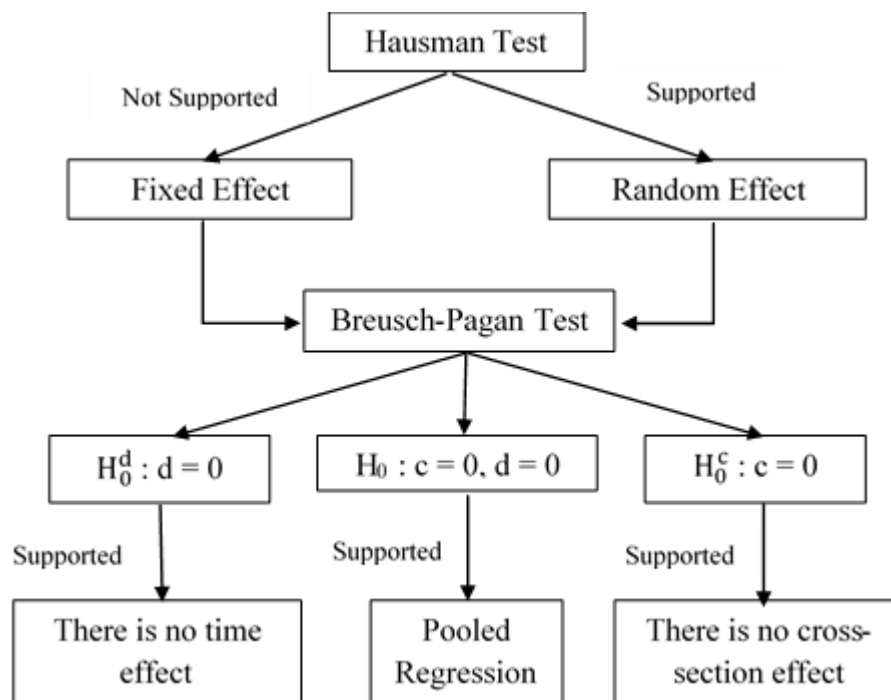


Fig. 3. Model Specification in Panel Data Regression

Source: Rosadi (2012)

Figure 3 shows that the first stage is a Hausman test of data with the following hypothesis as follows:

$H_0 : E(C_i | X) = E(u) = 0$, there is a random effect in the model

$H_a : E(C_i | X) = E(u) \neq 0$, there is no random effect in the model

If the probability value is smaller than the level of significance ($\alpha = 5\%$), then H_0 is rejected. Thus, the best model used is the fixed effect model. Conversely, if the ignition value is greater than the level of significance ($\alpha = 5\%$), then H_0 is accepted. Thus, the best model to be used is the random effect model.

Next, a Breusch-Pagan test was carried out to understand if there was a cross-section or time (or both) effect in the panel data by testing the hypothesis (Rosadi, 2012):

$H_0 : c = 0, d = 0$, there is no effect on cross-section or time

$H_0^c H_0^d : c = 0$, there is no effect on cross-section

$H_0^c H_0^d : d = 0$, there is no effect on time

H_0 is accepted if the probability value is greater than the level of significance ($\alpha = 5\%$). If the Breusch-Pagan test hypothesis is accepted, an analysis is performed using a panel data regression model.

4. Results

The unit root test results are carried out by entering individual trends and analyzed based on the Levin, Lin & Chu (LLC) tests on the panel data. The unit root test results can be seen in Table 1 below.

Table 1. Panel Data Stationary Test

Variable	Degree of Integration	Prob. LLC	Conclusion
DGrowth	First difference	0.0000	panel has stationary
DGovernment	First difference	0.0000	panel has stationary

Source: Research findings

Table 1 indicates that the economic growth has been stationary in the degree of integration of the first difference. This is indicated by a probability value that is smaller than the level of significance ($\alpha=5\%$). The same case also happens to the government expenditure variables that are stationary on the degree of integration of the first difference. This is indicated by a probability value that is smaller than the level of significance ($\alpha=5\%$).

The optimal determination of lag using the lag length test was carried out before carrying out the Granger causality testing. The results of the lag length test can be seen in Table 2 below.

Table 2. Lag Length Test

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-176.7912	NA	3.00e+10	29.79853	29.87935	29.76861
1	-163.3297	20.19228*	6.32e+09*	28.22161*	28.46407*	28.13185
2	-159.2020	4.815609	6.75e+09	28.23034	28.60442	28.05073
3	-155.2420	3.300036	8.54e+09	28.23699	28.77272	27.99754*

Source: Research findings

*indicates the optimal lag

Table 2 shows that the most optimal lag is lag 1. This can be seen in the Akaike value that the smallest information criterion is 28.22161. Thus, lag 1 was used for Panel Granger causality testing between the economic growth and government expenditure.

The Panel Granger causality test was conducted to determine whether the Wagner's Law was proven. The results of the Panel Granger causality test using the Stacked Test causality can be seen in Table 3 below.

Table 3. Panel Granger Causality Test

Null Hypothesis	F-Statistic	Prob.
DGovernment does not Granger Cause D Growth	0.03798	0.8474
D Growth does not Granger Cause D Government	4.74360	0.0410

Source: Research findings

Table 3 shows that the hypothesis, stating that there is no Granger causality between the economic growth and the government expenditure, is not accepted. The H_0 rejection is based on a probability value of 0.0410 which is smaller than the level of significance ($\alpha=5\%$). While the hypothesis, stating that there is no Granger causality between the government expenditure and economic growth, is accepted. The H_0 acceptance is based on a probability value of 0.8474 which is greater than the level of significance ($\alpha=5\%$).

Thus, it could be concluded that there had been a one-way relationship from the economic growth to the government expenditure. This revealed that changes in economic growth caused changes in the government expenditure, but not vice versa. This also indicated that the possibility of the Wagner's Law was applied in the Kedungsepur Region. However, the panel data regression testing was needed to determine the direction of the relationship and ensure the existence of the Wagner's Law in the Kedungsepur National Strategic Area.

The Hausman test was the first step before panel data regression was carried out. This aimed to see if there was a random effect on the panel data. The test results can be seen in Table 4 below.

Table 4. Hausman Test

	Prob.	The Best Estimation Model
Hausman Test	0.6823	Random Effect Model

Source: Research findings

Table 4 shows that the probability value in the Hausman test is greater than the level of significance ($\alpha=5\%$). This indicates that the hypothesis H_0 is accepted or there is a random effect in the model. Therefore, the most appropriate model to explain the phenomenon of short-term relationships between the economic growth and government expenditure was the random effect model. Thus, the best model used in the panel data regression was the random effect model.

Next, the Breusch-Pagan test was performed to see whether there was any effect on time or cross-section in the data. The summary for the Breusch-Pagan test can be seen in Table 5 below.

Table 5. Breusch – Pagan Test

Hypothesis	Prob.	Conclusion
Cross-section	0.1412	H_0 is accepted
Time	0.3218	H_0 is accepted
Both	0.0761	H_0 accepted

Source: Research findings

Table 5 shows that there is no effect of cross-section or time on the model. This is indicated by the hypothetical cross-section value of 0.1412 which is greater than the level of significance ($\alpha=5\%$), the probability of time of 0.3218 which is greater than the level of significance ($\alpha=5\%$) and the hypothetical cross-section and time series of 0.0761 which is greater than the level of significance ($\alpha=5\%$). Thus, the three Breusch - Pagan test results accept the H_0 or in short, there are no cross-section or time effects.

Before conducting the panel data regression analysis, it is necessary to do a classic assumption test. In this case, the classic assumption test carried out was only the heteroscedasticity test to understand whether there is an inequality of variation from the residual of one observation to another. The summary of the heteroscedasticity test results can be seen in Table 6 below.

Table 6. Heteroscedasticity Test

Dependent Variable: RESABS	
Variable	Prob.
DGrowth	0.8064

Source: Research findings

Table 6 shows that data is not subjected to heteroscedasticity. This is evidenced by the probability value of the independent variable where the economic growth greater than the level of significance ($\alpha=5\%$). Thus, H_0 is accepted and the variance of the residuals between observations is the same.

After conducting the heteroscedasticity test, the final step was to do a panel data regression test. The panel data regression test results with random effect models can be seen in Table 7.

Table 7. Panel Data Regression Test

Variable	Coefficient	t-Statistic	Prob.
C	189234.2	3.019967	0.0053
DGrowth	-120207.8	-2.499745	0.0186
R-Squared	0.186997		
Prob (F-statistic)	0.017006		

Source: Research findings

Table 7 shows that the economic growth has a negative and significant effect on the government expenditure in the Kedungsepur National Strategic Area. This can be seen from the probability value of THE economic growth which is smaller than the level of significance ($\alpha=5\%$). This proves that the Wagner's Law did not apply in the Kedungsepur Region.

5. Discussion

National strategic areas in an economic interest perspective were formed because they were considered capable of having an important influence on the national economy. According to the (Ministry of Public Works, 2014), the region must meet the criteria of regions with economic growth potential, had a superior sector, the potential for exports, economic activities with high-tech devices, a network of infrastructure supporting economic activities, potential food and energy security, and were able to accelerate equity.

Since its inauguration in 2007, the Kedungsepur National Strategic Area had experienced dramatic growth. The population increased by 5.83% during 2012-2017 accompanied by economic transformation. The increase triggered an increase in economic activity in the Kedungsepur National Strategic Area which could also be seen from the increase in the value of GDP at a constant price of 2010. However, the economic growth in 2012 to 2017 had a trend that tended to slow down despite its growth accompanied by an increase in per capita income. This can be seen in Figure 4 below.

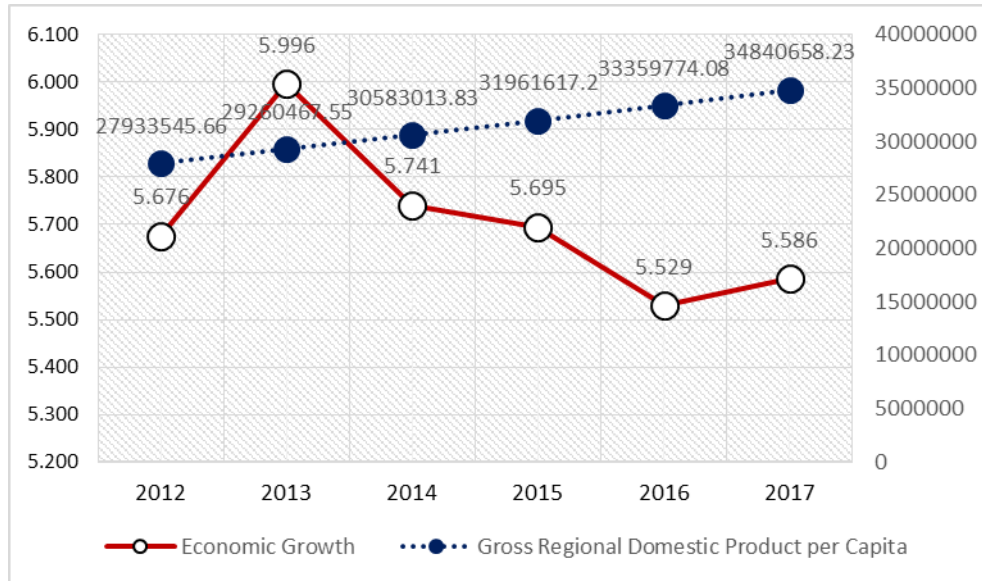


Fig. 4. Economic Growth of the Kedungsepur National Strategic Area 2012-2017

Source: Central Bureau of Statistics (2019b)

Based on Figure 4, the highest economic growth in the Kedungsepur National Strategic Area in 2013 reaches a percentage of 5.996%. In 2013, the economic growth of Kendal Regency, Salatiga City and Semarang City reaches the highest growth rate for 6 years, which is more than 6%. However, in 2014 to 2016, the economic growth of the Kedungsepur National Strategic Area slows to reach its lowest point in 2016 of 5.529%. Nonetheless, the per capita GRDP shows an increasing trend. During 2012 to 2017, the increase in per capita income is 4.518%. The value of the Kedungsepur's per capita income in 2017 is IDR 34,840,568 per year with the highest per capita income by the City of Semarang at IDR 69,409,690 per year and the lowest by Grobogan Regency at IDR 12,904,456 per year.

The Kedungsepur National Strategic Area covered 4 Regencies and 2 Cities with dense economic activities. In this regard, the role of the government was needed to develop infrastructure and facilities to support the economic activities (Ministry of Public Works, 2014). From 2012 to 2017, the government expenditure in the Kedungsepur National Strategic Area tends to increase with an average growth rate of 14.14%. The government expenditure was divided into several parts. To get an overview of the government expenditure of the Kedungsepur National Strategic Area, it can be seen in Figure 5 below.

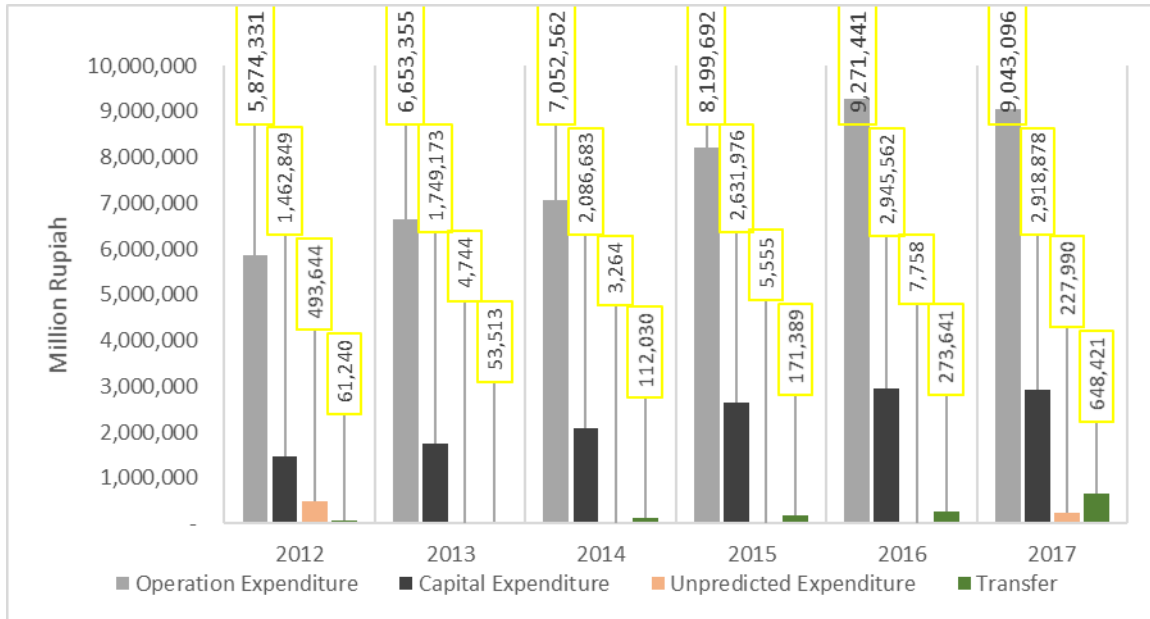


Fig. 5. The Realization of Regional Expenditures by Types of Expenditures in Kedungsepur National Strategic Area 2012-2017

Source: Central Bureau of Statistics (2019a)

Figure 5 shows that the operating expenditure dominates the local government expenditure each year. In 2012, the operating expenditures reaches Rp 5.874,33 billion, with a proportion of 74.4% of the total expenditure in the regency or city of the Kedungsepur National Strategic Area. It reaches its peak in 2016 of Rp 9.271,44 billion. While the average capital expenditure per year is Rp 2.299,19 during 2012-2017. The lowest proportion of regional expenditure is unexpected expenditure and transfers with a value of less than Rp 700,00 billion. The Kedungsepur National Strategic Area consists of 6 regions with different economic sizes. The denser the economy, the higher the budget needed (Adisasmita, 2011). This can be seen in Figure 6 below.

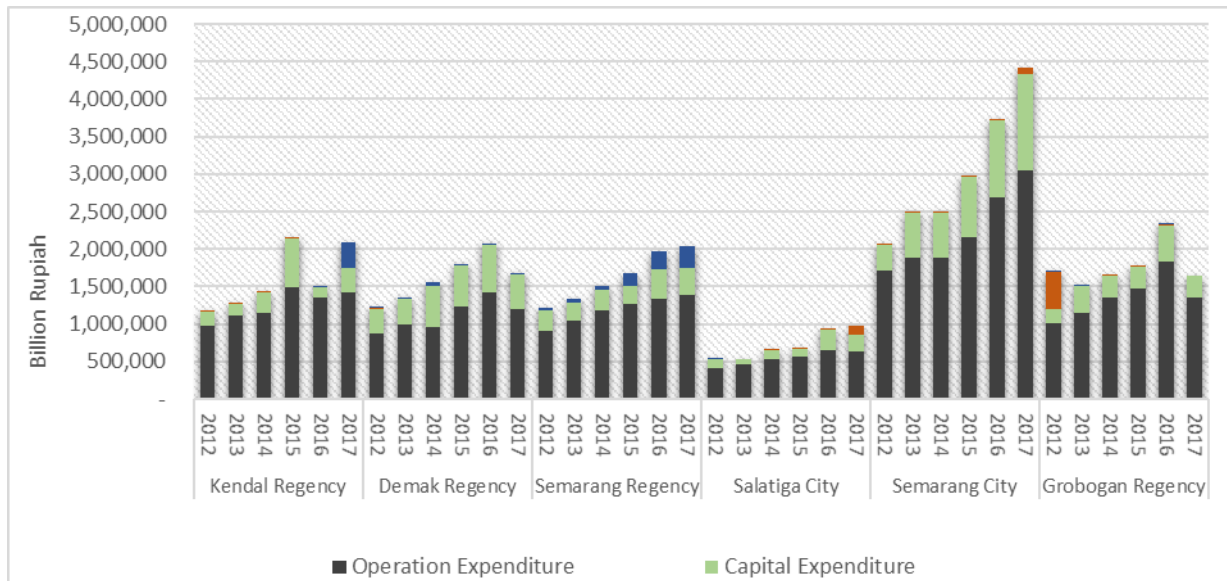


Fig. 6. The Realization of the Regional Expenditures by Type of Expenditures in Kedungsepur National Strategic Area 2012-2017

Source: Central Bureau of Statistics (2019a)

Figure 6 shows that the government expenditure in each region tends to be different. The highest expenditure is by the Semarang City in 2017 with a value of Rp 4.424,77 billion. Besides being the capital city of Central Java, Semarang City is the most populous region with a population of 1.027.489 inhabitants. While the lowest government expenditure is by Salatiga City of Rp 529,22 billion in 2013. The regional expenditure was also based on the population and the needs of the region itself. Regions with fewer residents tended to have a small proportion of expenditure, while regions with high population levels and high population densities tended to have higher government expenditure.

This study aims to analyze the relationship between the government expenditure and the economic growth. More specifically, this study is focused on testing whether the Wagner hypothesis is proven in regencies or cities in the Kedungsepur National Strategic Area during 2012-2017. The Granger causality test results show that there is a one-way relationship from the economic growth to the government expenditure. The government expenditure was an endogenous factor that would change along with changes in the economic growth. Then, the result of the panel regression test with a random effect model proved that the economic growth has a negative and significant effect on the government expenditure in the Kedungsepur National Strategic Area. These results confirm that the Wagner's Law did not apply in the Kedungsepur Region in the short term. This condition is consistent with the findings of García (2018) who found a negative relationship between the economic growth and the government expenditure. This finding is also in line with the Samuelson's argument that when per capita income increased, the expenditure in the public sector would decrease (Dluhosch & Zimmermann, 2006). However, the fact in the Kedungsepur Area was unable to support the reasons conveyed by Samuelson that if the income per capita increased, the people would get richer and tended to prefer to consume private goods rather than public goods. Whereas during 2012-2017, the value of per capita GRDP in the Kedungsepur National Strategic Area, especially in Grobogan Regency and Demak Regency, was below the Central Java per capita GRDP (Central Bureau of Statistics, 2019b).

There were several factors making it possible to cause a negative relationship between the government expenditure and the economic growth in Kedungsepur. First, Wagner considers that with increasing economic growth and increasingly complex economic activities, the government expenditure is needed to create rules to enforce the law (Bird, 1971; Dluhosch & Zimmermann, 2006; García, 2018; Ighodaro & Oriakhi, 2010; Kurniawati, 2018; Wang et al., 2016). In fact, the Kedungsepur institutional condition did not function well before the enactment of Presidential Regulation of the Republic Indonesia Number 78 (Presidential Regulation of the Republic of Indonesia, 2017). This results in a weak coordination between sectors and regions in the Kedungsepur region. Although it has been inaugurated since 2007 with the label of the National Strategic Area, overly passive relationships made the Kedungsepur area as if it was only an area adjacent to each other. Interactions that had been built for more than 10 years were only limited to coordination with very minimal program implementation. In addition, there had been no financial support from the State Budget to operate both in terms of planning or realization of burdening the Local Government Budget of the regencies or cities in the Kedungsepur region (Ministry of Public Works, 2014). The local governments tended to focus more on the development of their respective regions without understanding the purpose of the establishment of the Kedungsepur National Strategic Area, resulting to a lack of cooperation between regions that made it had no regulations needed to be created. Therefore, although the economic growth had increased, the government expenditure on making regulations had not increased and even decreased. Second, Wagner considers that when per capita income increases, it will also increase public sector demand such as education, health, culture, and other services (Bird, 1971; Dada & Adewale, 2013; Dluhosch & Zimmermann, 2006; Kurniawati, 2018; Ogundipe & Oluwatobi, 2013). It should re-emphasized that the regional expenditure structure differed from the national or central expenditure structure (Kurniawati, 2018). The Local Government Budget was focused on the development, regional accessibility, improving the quality of public services, and community welfare with a 25% budget for infrastructure expenditure (Directorate General of Budget, 2019). While the budget for public welfare such as the education, health,

infrastructure, social protection, and subsidy budgets was partly financed through the State Budget. This is what caused the proportion of regional expenditure to focus more on unproductive activities. This can be seen Figure 7 below.

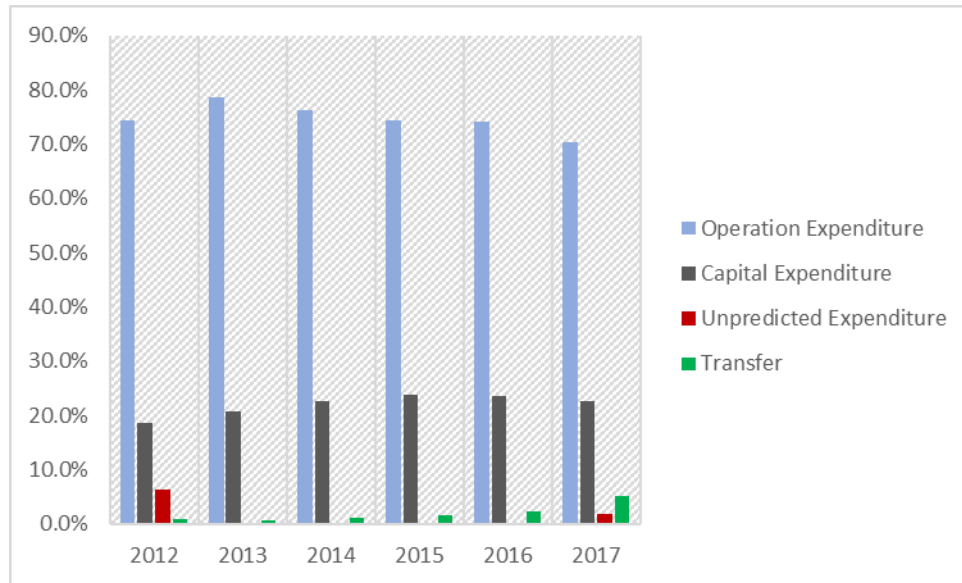


Fig. 7. Budget Structure in Kedungsepur National Strategic Area 2012-2017
Source: Central Bureau of Statistics (2019a)

Figure 7 shows the government expenditure structure of the Kedungsepur National Strategic Area dominated by operation expenditure with personnel expenditure as the sector that contributed the largest expenditure with an average value of 41.56% during 2012-2017. While the expenditure on subsidies, grants, social assistance, and financial assistance for 6 years only contributed an average of less than 3%. Compared to being allocated to the productive sector or directly benefiting the people, the regional budget in the Kedungsepur National Strategic Area is dominated by administrative expenditure. In addition, the capital expenditure by regencies or cities in the Kedungsepur National Strategic Area is an average of 21.99% per year. This resulted in regional government expenditure not reacting optimally to increasing economic growth in the Kedungsepur National Strategic Area, making the effect negative. Third, Wagner believes that if the economy advances, government investment is needed to eliminate monopolistic tendencies by the private sector in a country (Bird, 1971; Dluhosch & Zimmermann, 2006). Thus, the expenditure is allocated as much as possible to productive sectors (Hasnul, 2016; Manyeki & Kotosz, 2017; Mutuku & Kimani, 2012; Neduziak & Correia, 2017). However, outside of individual regional projects, the cooperation projects realized in the Kedungsepur National Strategic Area were still very few. Until this moment, the programs that had been running include Indonesian Railroad of Kedungsepur, Trans Central Java Bus, and public transportation routes. In fact, several fields of cooperation needed to be immediately carried out such as transportation, drinking water, solid waste, tourism, environmental treatment, and food security, where if the government did not intervene quickly, it could create a monopoly by the private sector. The lack of cooperation programs was not able to increase the government expenditure although the economic growth in each of the Kedungsepur regions had increased.

Conclusions

This study proves that the Wegner's Law did not apply in the Kedungsepur National Strategic Area in the short term from 2012 to 2017. The results of the Granger causality test show that there was a unidirectional relationship in which the economic growth caused government expenditure. The government expenditure was such an endogenous factor that will change with changing economic growth. However, based on the panel regression test, it shows that economic growth had a significant negative effect on the government expenditure in the Kedungsepur National Strategic Area. The increase in economic growth in the previous year would reduce the government expenditure in the short term. There were several factors causing an absence of the Wagner's Law in the Kedungsepur National Strategic Area including (1) no institutional establishment in the Kedungsepur National Strategic Area which resulted in a weak coordination between sectors and regions. In addition, there was no financial support from the State Budget for operations, both in terms of planning or realization of the program, which finally weighing down the Local Government Budget in the Kedungsepur National Strategic Area; (2) differences in the structure of regional budgets with the structure of state budgets made the proportion of regional expenditure leaning on unproductive activities. This resulted in local government expenditure not reacting optimally to increasing growth; and (3) the lack of cooperation programs between regions made the regional government expenditure unproductive.

Basically, the government expenditure is an important factor to drive the economy. An effective institutional environment needs to be established to create strong relations between the Kedungsepur National Strategic Area. Existing institutions must be able to carry out intensive coordination to realize the cooperation in crucial sectors. The distribution of regional expenditure must be realized based on the priorities of the interests and welfare of the community. Furthermore, to increase the government's role in the Kedungsepur National Strategic Area, a cooperation needs to be carried out immediately in several fields such as transportation, drinking water, solid waste, tourism, environmental treatment, and food security which if the government does not intervene quickly, it can create a monopoly by the private sector. Furthermore, as this research is based on theory proving, further research is suggested to use the Structural Vector Autoregression (SVAR) model in a wider range of regions.

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Gatot SASONGKO, Dr. is an associated professor and the head of economics department at the Faculty of Economics and Business of Satya Wacana Christian University. His fields of expertise are labor economics, quantative research and macroeconomic policy. His publications have appeared at various national journals in Indonesia and international journals.

ORCID ID: <https://orcid.org/0000-0003-0381-9348>

Andrian Dolfriandra HURUTA, M.Si. is a lecturer at the Faculty of Economics and Business of Satya Wacana Christian University. His fields of expertise are macroeconomic policy and applied econometrics. His publications have appeared at various national journals in Indonesia and international journals.

ORCID ID: <https://orcid.org/0000-0001-7676-5294>

Anita WARDANI. is an undergraduate at the Faculty of Economics and Business of Satya Wacana Christian University. Her fields of expertise are macroeconomic policy and applied econometrics.

ORCID ID: <https://orcid.org/0000-0003-1732-9753>

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TRANSITION FROM THE INDUSTRIAL CLUSTERS TO THE SMART SPECIALIZATION: A CASE STUDY*

Yelena Petrenko¹, Elena Vechkinzova², Viktor Antonov³

¹ *Plekhanov Russian University of Economic, 117997, Moscow, Stremyanny lane 36, Russia*

² *V.A. Trapeznikov Institute of Control Sciences of Russian Academy of Sciences
117997, Moscow, Profsoyuznaya Street, 65, Russia*

³ *Federal state budgetary educational institution of higher education, "State University of Management", 109542, Moscow,
Ryazanskiy prospect, 99, V-239, Russia*

E-mails: ¹ petrenko_yelena@bk.ru, ² kvin07@list.ru, ³ antonovcg@yandex.ru

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Abstract. Kazakhstan faced the problem of falling industrial production and decrease in efficiency of former managerial methods of territorial development. Transition to the new Smart Specialization approach provides better understanding of the specifics of the region and provides the highest return on investment in innovation. The authors produce rationale for the selection of regions of Kazakhstan to determine their smart specialization. There were determined the regions, in which it is advisable to develop the general purpose technologies, and the territories, where it is more profitable to focus on applied research and transmitting them into practice in relation to existing products and technological processes.

Keywords: industrial policy; smart specialization; innovations; development of industrial regions; Kazakhstan

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JEL Classifications: O15, O5, O53; P4; P47

1. Introduction

Over the past 15 years Kazakhstan has made significant progress in creating jobs, reducing poverty and sharing prosperity through job creation and wage growth. Job creation has also led to increase in social mobility and building of a middle class. In Kazakhstan a high level of job creation was marked between 2003 and 2013, and growth took place mainly in a service sector (especially trade and education) and a construction sector, offsetting loss of jobs in agriculture (Kazakhstan - Low oil prices; an opportunity to reform. Kazakhstan Economic Update Spring 2015. World Bank Group.). Jobs are increasingly moving out of agriculture into urban services sector. The

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question now is how to increase access to good jobs. Employment growth was higher in occupations that require skills of middle and high level, but many workers do not meet these requirements. Most of the working population is still working in low-productivity sectors.

The main task is to overcome the geographic differences in poverty between regions and between rural and urban areas. It is necessary to continue to create jobs in private sector, focusing on their quality, productivity and skills development to enable workers to move to more highly paid professions. There are still difficulties in securing permanent co-prosperity.

Recent trends of economic development in the Republic of Kazakhstan show the need to review industrial policy. Productivity growth slowed down significantly reaching its lowest level in recent years. Sectoral and geographical mobility contributed to preservation of positive dynamics of labor market and poverty reduction. Slowing growth in a service sector in cities ensures creation of jobs and reduction of unemployment.

The cities of Kazakhstan were created in the Soviet years in result of industrialization, opening and development minerals, development of a virgin soil and also transport construction. From 1920 to 1983 the number of the cities grew from 19 to 82, characteristic feature of development of the cities became prevalence of the small cities. In 2016 from 87 cities 60 are the small cities with the population to 50 thousand inhabitants, in which about 1.4 million people live. Transformation of city settlements in rural in 2007 increased the number of villagers. In 2006 in the Strategy of territorial development Kazakhstan for the first time refused from alignment of living conditions in the cities and suggested to be focused on the cities – "growth poles". The expected scheme of territorial development of the country puts emphasis on development of agglomerations – disputable thesis about dependence of growth of economy from concentration – "increase economic density" in a basis of the Expected scheme of territorial development of the country till 2020. The government put a thesis about dependences of growth of economy on concentration. Formation agglomerations will become a key form the territorial organization of Kazakhstan from low population density, in 2030 there will live in the cities, the population of 70%, believes the Government.

The World Bank study provides the following assessment of the situation in the Republic of Kazakhstan: «Recognizing that cities are hubs of economic opportunity and prosperity, urbanization is one of the seven major systemic reforms envisioned in the Kazakhstan 2025 strategy. But the pace of urbanization in Kazakhstan is slow. Internal migration flows in Kazakhstan in 2010–15 accounted for an average of only about 1.7 –2.3 % of the population. In Canada, the comparable share is 14.0 percent; in Japan, it is 4.0 percent; and in the United States, it is 11.0 %. Recent research identifies two key constraints to urbanization in the country: the high cost of living in cities and a near absence of a rental housing market. Primarily because of the high cost of housing, the cost of living in Almaty, the largest city, and Astana, the capital, is 190 % and 240 %, respectively, of the national average. Real housing prices in Astana were three times higher in 2016 than in 2001, and prices more than quadrupled in Almaty over the same period. Along with significantly higher food costs, this means that Kazakhstan's cities are unaffordable for many rural residents who wish to relocate to places where job opportunities may be greater. At around 95 %, Kazakhstan also has one of the highest home ownership rates in the world, but the rental market is small and targets mostly upper-income residents. In the absence of affordable rental housing, most potential internal migrants in Kazakhstan are not able to move to urban areas for work. A large body of research suggests that these kinds of barriers lead to exclusion of lower-income people and restrain economic growth. Disproportionate increases in housing prices can severely limit population flows to highly productive locations and sectors. In other countries, the rising cost of urban housing has been one of the primary causes of greater inequality (Bussolo, Maurizio, Dávalos, M. E., Peragine, V., Sundaram, R.. 2019; Foray, D., Goddard, J., Beldarrain, X. G., Landabaso, M., McCann, P., Morgan, K., Ortega-Argilés, R. 2012).

Structural reforms aimed to encourage private sector participation are actively implemented. There were made

commitments to reduce the number of permits by 50% and to introduce new laws, implementing the principles of self-regulation. State conducts an ambitious program of regulatory and institutional reforms to diversify economy and to increase participation of a private sector. The government implements a plan for privatization of some state-owned enterprises, however, which results are now ambiguous. But the prospects of number for the working-age population are not unambiguous. And this situation creates problems for further development (Figure 1).

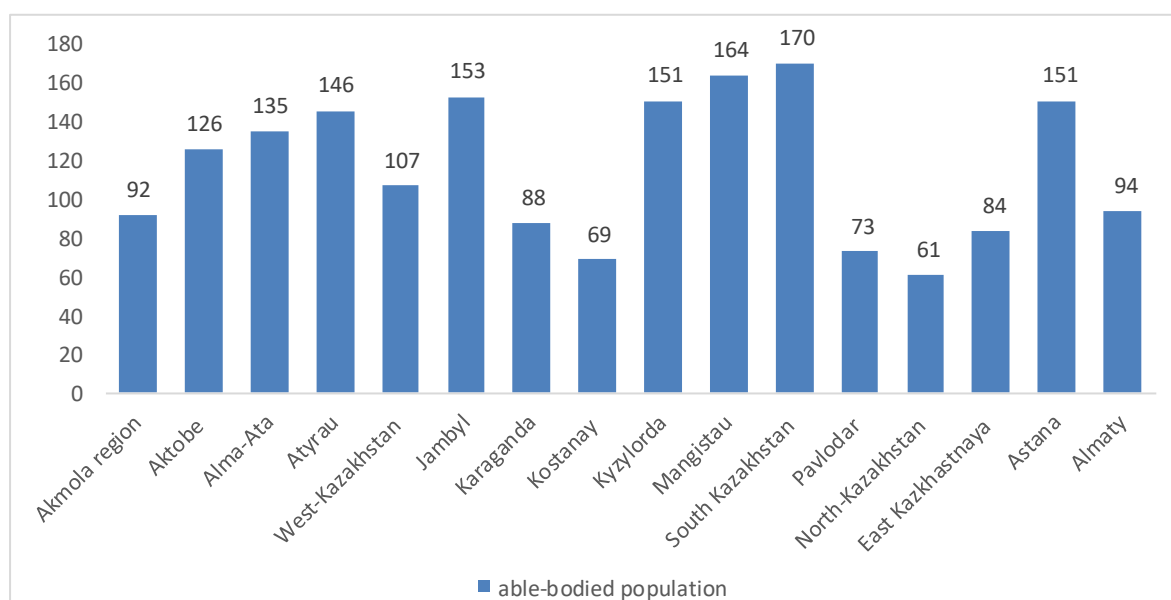


Fig 1. Growth of number of able-bodied population of Kazakhstan and regions up to 2050

Source: Compiled by the authors by the source Center for Applied Economics Research www.cipe.kz

In the study of World Bank «Toward a New Social Contract: Taking On Distributional Tensions in Europe and Central Asia» study shows tensions in the region. Inequality in access to economic opportunities based on geographical location is one of the factors of tension (Figure 2).

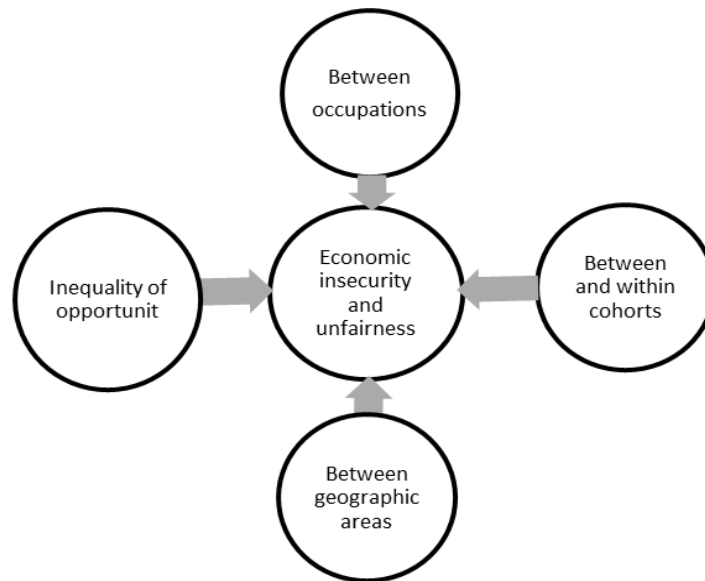


Fig. 2. Distributional tensions along four dimensions are explored

Source: compiled by the authors

The four distributional tensions have emerged amid concerns and resentment over the falling share of labor relative to capital in total income and over the increasing concentration of top incomes and wealth.

Nowadays transition to the new concepts of territorial development — smart specialization (OECD Synthesis Report on Innovation Driven-Growth in Regions: the Role of Smart Specialisation. 2013) is discussed in the country. Policy of smart specialization is aimed to the problem of fragmentation and duplication of innovation that ultimately leads to a lack of effectiveness of scientific research due to impossibility of having a critical mass of knowledge (Vukovic, D., Radulovic, D., Markovic, M., Kochetkov, D., Vlasova, N. 2017). The authors believe that innovation policy cannot be the same in relation to the regions that are different in its innovative profile, capacity and specialization. Regional development today depends on the balance between staff training, researches, industrial and business strategies.

Researches conducted by the authors show a decline in effectiveness of a cluster model by a number of manifestations of weak innovative features. In the classical sense, formulated by M. Porter, a cluster is a group of geographically adjacent interconnected companies and related organizations of a certain sphere, characterized by common activities and complementary to each other. In world practice, clusters are:

- regional forms of economic activity within related sectors, usually tied to one or another scientific institution;
- vertical production chains, narrowly defined sectors, in which the structures carrying out the adjacent stages of the production process (for example, the supplier-producer-marketer-customer sequence) constitute the core. In particular, this definition includes networks that are formed around parent companies;
- having a high degree of integration by industry associations or aggregates of structures with an even higher level of aggregation.

The main goal of clustering is to create an effective economic environment within the region by improving the quality of products, saving various types of resources (production, information) and creating innovations.

However, in the practice of economic activity, clusters may not coincide with the most promising areas of innovative development.

In the cluster model traditional industries dominate in access to resources. Cluster approach often limits the inter-regional communication and generates priority of promotion of available subjects over creation of the new ones. In scientific studies of developed countries, a considerable body of research is devoted to the processes of reducing the effectiveness of the former methods of managing the development of territories and the transition to a new approach of Smart Specialization (for example Antonelli, G., & Cappelletto, G. 2016; Ignatavičius, R.; Tvaronavičienė, M.; Piccinetti, L. 2015; Romão, J., & Neuts, B. 2017; Tvaronavičienė, M.; Razminienė, K.; Piccinetti, L. 2015; Žižka, M., Hovorková Valentová, V., Pelloneová, N., Štichhauerová, E. 2018).

A review of recent publications in the post-Soviet space shows that the development of regional specifics and ensuring the greatest return on investment in innovation is given attention in the works of many authors (e.g. Goridko, N.P., Nizhegorodtsev, R.M. 2018.; de Melo, F., Maslennikov, V.V., Popova, E.V., Bezrukova, T.L., Kyksova, I.V. 2015; Mavlyanova, N., Denisov, I., Lipatov, V. 2015; Kapitonov, I.A., Taspenova, G.A., Meshkov, V.R., Shulus, A.A. 2017; Mingaleva, Z.; Sheresheva, M.; Oborin, M.; Gvarliani, T. 2017; Kantemirova, M. A.; Dzakojev, Z. L.; Alikova, Z. R.; Chedgemov, S. R.; Soskiewa, Z. V. 2018; Lavrinenko, O.; Ignatjeva, S.; Ohotina, A.; Rybalkin, O.; Lazdans, D. 2019; Prause, G.; Tuisk, T.; Olaniyi, E.O. 2019).

At the same time, Kazakhstani science has not yet implemented a systematic statistical study of the main parameters and indicators of the sphere of regional specialization and the associated efficiency of investments in innovations in full.

The purpose of the research is determine those regions in which joint investment will make the greatest contribution to the economic development by supporting researches, development and innovation activities within the identified areas of specialization. The authors emphasize that this article examines not intraregional clusters of enterprises, but clusters of regions as mesoeconomic groups with similar conditions and factors of innovative regional and interregional development. The identification of such clusters - groups of regions can be the basis for the implementation of the concept of territorial development - smart specialization.

Methods of the research. In the process of the research, statistical methods of processing economic data were used, in particular methods of grouping, analysis of dynamics and structure.

2. Main results of the research

It is important to determine the role of innovation factors in the development of industrial regions of Kazakhstan to perform transition to innovative path of development. Some of these regions develop at the expense of intellectual effort, for others the innovations themselves are a foundation, and the others lack both scientific developments and their practical implementation (Goridko, N.P., Nizhegorodtsev, R.M. 2018).

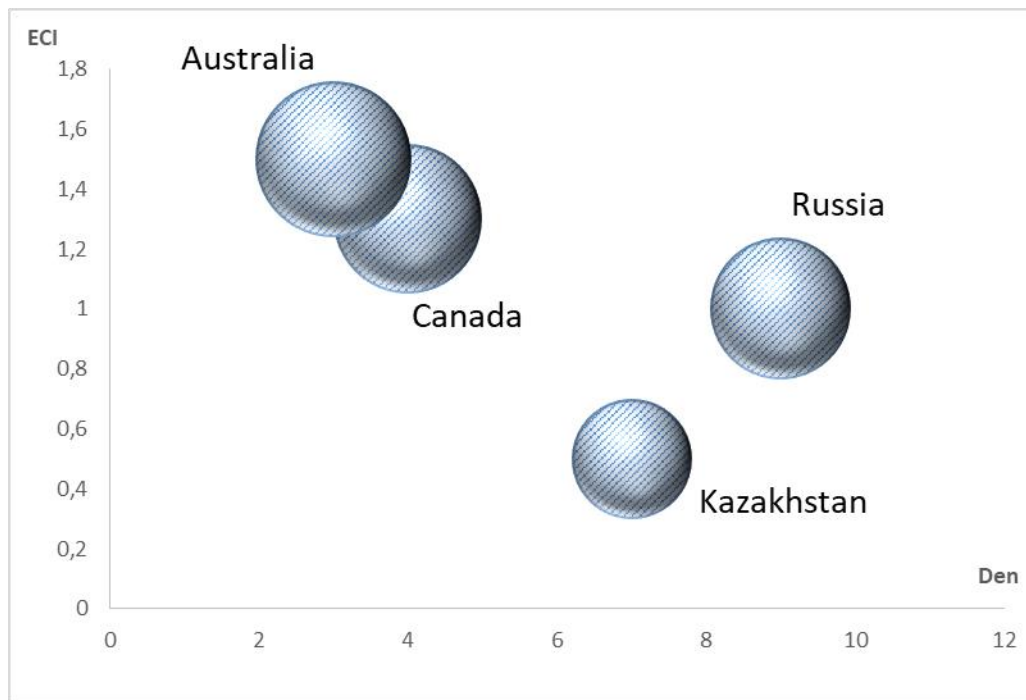


Fig. 4. Level of economic complexity

Source: Compiled by the authors by the sources <http://atlas.media.mit.edu/en/rankings/country/>,
<http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS/> . <http://data.worldbank.org/indicator/EN.POP.DNS>

The urbanization is a long-term global trend, all developed countries have high urban saturation, not all highly urbanized countries are developed. Achievement of economic complexity is the base of model of sustained economic growth which is strongly connected with population density and an urbanization. Innovative potential of economy depends on developed human and social capital. The cities, large, comfortable for life, act as a key factor in attraction of talents. The economic power concentrates in the large cities more and more. The global cities became the main drivers of growth in the developed world and high-growth Third World countries. Growth of the cities will bring more from 60% to 90% in the general growth depending on the region of the world, and technological changes the creating "smart cities" increase in them concentration of the population (Urban world: Mapping the economic power of cities. Report. Mckinsey Global Institute). There is a communication between economic complexity of the country, urban saturation and density population. Level of economic complexity - the objective indicator reflecting long-term degree of competitiveness of the country and its stability. The countries with high economic complexity, comparable on population density with Kazakhstan, as a rule have high urban saturation.

The authors have grouped the regions of Kazakhstan due to four critical characteristics: the volume of the gross regional product (GRP), domestic expenditure on researches and development, expenditure on technological innovation and the volume of industrial output. Materials of the Committee on statistics of the Republic of Kazakhstan were used as statistical base of the research, taken at the regional level (<http://www.stat.gov.kz>).

Using the principle of Ward and the method of Euclidean distances, the authors obtained the dendrogram of distribution of regions, where Almaty stands out on one hand, and on the other - the rest of the set of regions, the Euclidean distance between them is very small in comparison to the distance between Almaty and the rest of the aggregate.

Then the authors used k-means method and received a graph of the distribution of average values (Figure 5) for

clustering of all subjects of the Republic of Kazakhstan. The Figure displays the clear separation of the two clusters in terms of expenditures on researches and technological innovation.

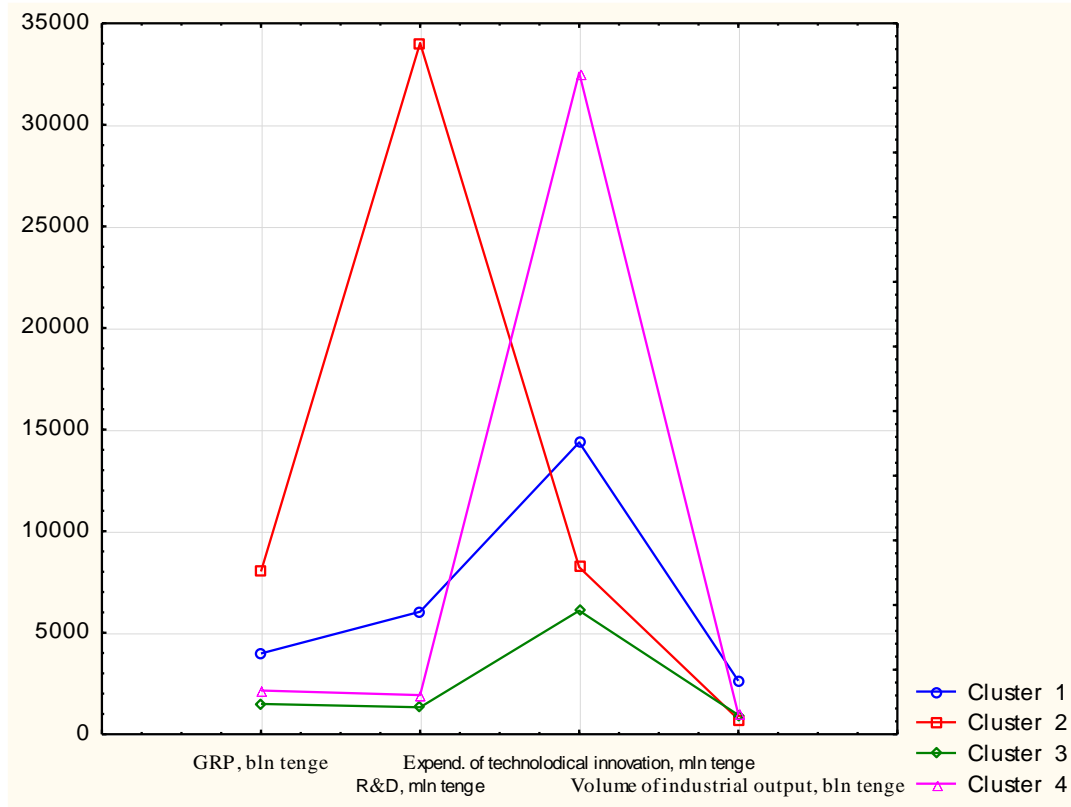


Fig. 5. The graph of the average values for the selected clusters (4 clusters, 16 regions of Kazakhstan)

Source: compiled by the authors according to the results of statistical cluster analysis

Measurement average for every cluster is shown in Table 1.

Table 1. Measurement average in clusters

	Cluster 1	Cluster 2	Cluster 3	Cluster 4
GRP, bln tenge	3980,20	8018,30	1494,875	2154,84
Inner spends on research and development, mln tenge	6036,70	34030,30	1326,412	1926,52
Spends on technological innovations, mln tenge	14370,55	8228,30	6082,875	32568,24
Volume of industrial production, bln tenge	2629,86	738,95	947,713	990,28

Source: compiled by the authors according to the results of statistical cluster analysis

Cluster 1 is characterized by the highest volume of industrial production, the second largest GRP and average spends on research and technological innovations. Cluster is represented by two regions (Table 2), their economical profiles are different. Astana is a leader in GRP, as soon as a lot big national companies which are the main source of GRP have their offices in the city. Atyrau region is a leader in industrial production being one of the main Kazakhstan region with a highly developed oil industry.

Table 2. Regions of Cluster 1

	Destination to the center of the cluster
Atyrau region	3150,003
Astana	3150,003

Source: compiled by the authors according to the results of statistical cluster analysis

Cluster 2 includes the only region which is Almaty. It has leading position both in GRP volume and in volume of resources spent on inner research and development.

Cluster 3 can be characterized with the minimal numbers of the cluster division.

Cluster includes 8 regions (Table 3), some of which have mostly dominating agricultural economical profile (Akmola region, Almaty region, Zhambyl region, North Kazakhstan region) and others have low spends on research and development and technological innovations which do not lead to the growth of GRP due to some organizational and technological reasons.

Table 3. Regions of Cluster 3

	Destination to the center of the cluster
Akmola region	2523,322
Almaty region	424,108
West Kazakhstan region	2270,158
Zhambyl region	1649,116
Kyzylorda region	2814,630
Mangystau region	2997,951
Pavlodar region	1391,608
North Kazakhstan region	1228,932

Source: compiled by the authors according to the results of statistical cluster analysis

Cluster 4 is a leader in spends on technological innovations. In terms of other metrics cluster 4 has slightly bigger numbers than cluster 3. It includes developed industrial areas (except for South Kazakhstan region) which mainly require modernization and introducing of new technologies (Table 4).

Table 4. Regions of Cluster 4

	Destination to the center of the cluster
Aktobe region	1548,548
Karaganda region	1162,254
Kostanay region	3748,094
South Kazakhstan region	506,667
East Kazakhstan region	1939,992

Source: compiled by the authors according to the results of statistical cluster analysis

3. Discussion

Results of the research determine several clusters in which transition to smart specialization is possible.

Regions in which developing of general purpose technologies looks rational are Aktobe region, Karaganda region and East Kazakhstan region. Innovations in these areas are put into industrial production and are of high concentration. Great input into spends on technological innovations may be a starting point of the next level of these industrial regions development where innovations will get technical and technological realization.

Highly distinguished cluster of the capital of the country – Astana - may be determined as a territory where it is more profitable to put efforts into applied research and general purpose technologies realization in terms of existing products and technological processes. “Smart Astana” program started in November 2016. 5 centers of competences will be created in the capital with the input from the leading global companies of the world. These centers are center of urban and agro technologies, medical technology, energy and fintech.

Mayor of Astana said at the XI Innovation congress: “Today development of the world economy is determined by the global cities, and so we have an aim to make Astana Global Smart City. The new strategy of city development is realized, that is adapted to world trends of global cities development. We determined for ourselves 10 priority sectors which make steady city economy and will create a stable and productive employment. Some of them are development, tourism, financial center, modern production, solutions for a smart city, medicine, logistics and others”.

Regions in which innovations are a result of not only scientific but also creative activity (in a wide meaning of this word) stand alone in smart specialization. It is rational to develop so called creative branches in them. Almaty is a city of this category in Kazakhstan. It is financial, cultural and educational center of Kazakhstan. Despite the recognition of the importance of the process of specialization of regions for the development of the country, current policies, programs and forecasting schemes are contradictory and do not contain a clear desired target value of the level of urbanization. Strategy 2050 prioritizes the development of Astana and satellite cities around Almaty; support single-industry towns and small cities development.

The concept of Kazakhstan's entry into 30 developed countries determines that a small population of geographically distant regional centers in the long term can also become a serious obstacle to economic development. The low overall population density in Kazakhstan is aggravated by the lack of urbanization. By 2050, this indicator, according to experts, will increase to 63-64%, which will remain below the world average. The general scheme of the organization of the Territory of the Republic of Kazakhstan plans to limit migration to cities by supporting the agricultural sector. Concentration of efforts on preservation and development of single-industry towns and small cities. According to the Forecasting scheme of the Territorial development, the further development of the country requires the concentration in the urban area of at least 70% of the country's population, which will allow the formation of a modern post-industrial economy. Given the low population of Kazakhstan, it is necessary in the near future to form a limited number of world-class modern urban centers. First of all, such cities in Kazakhstan can be the cities of Astana, Almaty, Shymkent, Aktobe and Ust-Kamenogorsk. According to forecasts, urbanization is expected to grow to 70% by 2050 (from the current 55%), with more than 35% of the urban population living in hub cities with a population of over 2 million (Almaty, Astana, Shymkent, Ust-Kamenogorsk).

Conclusions

Problem of determination and identification of sources of growth of different regions is actual for Kazakhstan. Country demonstrates hydrocarbon focus of sources of growth and development of economy. Due to focusing on unique competences and resources of the region and due to taking into account different ways of development,

policy of rational specialization leads to differentiation regional innovative strategies in the country and as a result to their diversity. This will lead to appearing of new points of growth and will enhance course to stable development of national economy.

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Yelena PETRENKO

ORCHID ID: 0000-0001-6892-2392

Elena VECHKINZOVA

ORCHID ID: 0000-0003-2543-625X

Viktor ANTONOV

ORCHID ID: 0000-0003-0146-9786

Register for an ORCID ID:

<https://orcid.org/register>

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IMPACT OF OIL PRICES ON STOCK RETURN: EVIDENCE FROM G7 COUNTRIES*

Omar Masood¹, Manuela Tvaronavičienė², Kiran Javaria³

^{1,3} School of Accountancy and Finance, University of Lahore, Lahore, Pakistan

² Vilnius Gediminas Technical University, Vilnius, Lithuania

E-mail: ³manuela.tvaronaviciene@vgtu.lt

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Abstract. The aim of the study is to investigate the impact of oil prices on the stock market of G7 countries. Oil prices not only affect the economy of a country but also the country's stock market. The stock market affects the stock valuation or, to put in another way, the company's stock value. The stock value is associated with the discounted sum of predictable future cash flows and these flows may be distressed by macroeconomic variables including oil prices fluctuations. This study has researched the impact of oil prices' fluctuation on countries included G7, i.e. Canada, Germany, France, Italy, United Kingdom, United States of America and Japan. The time periods were from September 2009 to August 2016. For the analysis, the most recent data is collected. In this study, the real stock return has considered as a depended variable or predict variable, while oil prices, industrial production, and short-term interest rate are as independent, or predictor variables. The study is quantitative in nature. All data was collected from OECD website with the exception of oil prices, which were taken from oil intelligence report. The model, which has been used in the study is based on Arbitrage pricing theory-APT model, where financial assets are associated with macroeconomic variables. The results showed that Industrial production is positively associated with a real stock return in the case of Germany, Italy, Japan, the United Kingdom, and France, while the short-term interest rate is negatively connected with a real stock return in the case of Canada, the United Kingdom, and United States of America. Oil prices have an insignificant effect on real stock markets of all considered countries. The authors provide an economic interpretation of the obtained results.

Keywords: oil prices; industrial production; short-term interest rate; real stock return; G7 countries; Arbitrage Pricing Theory

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JEL Classifications: E31, G12

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1. Introduction

Discussion concerning oil prices and their effect on various phenomena has become rather a common one in recent time (e.g. Humbatova et al. 2019). In one strand of literature price of energetic resources is frequently associated with energy consumption (Tvaronavičienė et al. 2017) and energy security (Melas et al. 2017).

In another strand of literature interrelation of between oil prices and stock markets performance is being examined. The stock market performance directly affects the stock valuation. The stock value is associated with the discounted sum of predictable future cash flows, and these flows may be affected by main macroeconomic variables, including oil prices fluctuations. Effect of fluctuation can be positive, negative, significant or insignificant. That we will discuss further. This research examines the impact of oil prices on the real stock return in Group of Seven (G7) countries. The main research question is: how the markets of the indicated countries respond when transactional real oil price changes.

Generally, if discussing the volatility of oil prices fluctuation, the anticipated answer would be, that it must be a negative relationship between stock market and oil prices. Alas, if talking about reality, this relationship appears to be not that simple. Different series of examination allowed to reveal the influence of oil prices and oil tremor on economies of developing and emerging economies. But the very limited number of research papers analyze the impact of oil prices on the stock market or stock return. Jones and Kaul (1996) and Huang et al. (1996) made studies to find the effect of oil prices on the stock market. They did not find significant relationships or influence of oil prices on the stock market.

The motivation behind those investigations were studies conducted even earlier, specifically in the year 1973. Since then there were investigated reasons for the oil prices oscillation, US Economy, importing and exporting oil countries, alas there were few papers, which tackled G7 countries in this context. This paper will focus on G7 countries and will examine how the real market return reacts to oil prices change. To put the research question in another way, the aim of the study is to describe the behavior of the stock markets of G7 countries as a reaction to oil prices fluctuation; the previous research will be considered.

In the first section the researchers provide an introduction and the purpose of the study. The second part presents the literature review. In the third section methodology of the research is described; i.e. hypotheses, tools, and a model, which will be used for analysis of the collected data. Section four is devoted to the elaboration of obtained results. Section five is the last one, in it conclusions and research limitations are presented.

2. Literature review. Oil price fluctuation: concept and historical overview

Shortage and oversupply of oil are conditioned by policies of OPEC. The price of the oil is basically a spot price per barrel, which is used as a reference price for buyers and sellers of oil. The spot price of oil is basically used for the grading purpose. It consists of four benchmarks, which include:

- West Texas Intermediate (WTI)
- Brent Blend
- Dubai Crude
- OPEC Reference Basket (ORB)

The above oils have their own demand and supply, which means that their prices are also changing in own way. The major effect of oil prices fluctuations appears due to the supply distraction and also due to the radical disturbance in the Middle East (Tverberg 2010).

Oil prices shocks are a phenomenon, which differs from oil price fluctuation. Hamilton (2005) focused on the different events which were directly or indirectly impacted the oil prices. According to the researcher, the most worldwide oil prices tremors were caused by clashes which took place in the Middle East. The researcher examined the different events, which included World War II, Oil embargo in 1973-1974, 1978-1979, Iranian Revolution, Iran – Iraq war in 1980, Persian War in 1990-91 as oil prices oscillations factors. It can be easily observed, that the value of oil was not quite important then if to compare to nowadays. Hamilton (2011) argued in his paper that demand in oil never corresponded level of prices, as it could be expected. According to him, crude oil prices played an especially significant role in the global economy in the years 1971, 1979 and 2008.

The First Oil Shock (October 1973 – March 1974): in the year 1973, the Arab - Israel war commenced, what triggered the oil crisis. Then Syria and Egypt fight with Israel, and the USA played the role of a financial donor of Israel. That provoked boycott Persian countries and Iran on the supply of oil to the USA.

The Second Oil Shock (April 1979 – July 1990): in the year 1979 Ayatollah Khomeini seized power in Iran. The impact of this revolution on oil prices was huge and oil prices skyrocketed up from \$13 to \$32 bbl.

The First Oil Countershock (November 1985 – July 1986): the first oil countershock was recorded when Saudi Arabia cut down its production by almost 75% to reduce the prices of oil globally. On this action, 25% of prices were declined from 1985 to 1986.

Gulf War (July 1990 – November 1990): when Iraq was assaulted on Kuwait in the year of 1990, at that time Iraq was supplying 8% of world oil. United Nation banned on Iraq's global supply and Kuwait production was also completely shut down which create a shortage in the world market.

Asian Financial Crisis (January 1997 – December 1998): Asian financial crises were unpredictable; it also affects oil prices and production of oil in many countries including both OPEC and non-OPEC. The Third Oil Shock (December 2003 – June 2008): in that period price of oil fluctuated from \$16 to \$126. Prices of oil fluctuated due to the high demand from emerging economies. The third oil shock was not that difficult to handle by oil importing countries as compared to the previous two oil shocks because it is was smaller (Norman 1988).

Financial Crises (July 2008 - February 2009): the third oil shock was called a boom period, in which oil prices the first time reached the highest level. On the other hand, the time period within July 2008 to February 2009 is also considered as a global financial crisis, which caused a deep recession similarly as the great depression in the year of (1930).

The Fifth oil Countershock (September 2014 – February 2016): the countershock was caused by oversupply (oil shale and tar sands) and global recession, during which prices of oil fall from US\$105.79 to US\$44. i.e. decreased by 58.4%.

Oil Prices and Economic Activity. According to previous studies, oil prices' oscillation has an impact on economic activities through the channel of demand and supply, mainly. Bernanke (1983) argued that oil has a very important part of the production process or manufacturing. If the value of oil prices increases than, definitely, cost of production value also becomes high, and which ultimately fall the production process. Tatom (1988) discussed in his study that oil prices have also an adversative influence on the stock because due to growth in prices organization's cost rise. During the past history, prices of oil increased or decreased sharply, which are totally unpredictable to observe. If to review the past oil prices, it could be noticed a 76% rise in oil prices from

March 2007 to July 2008. On the other hand, 48% diminished in oil prices from July 2008 to October 2008. The high percentage change in oil prices surely affect the economic activities of any country. According to Arouri and Fouquau (2009), oil prices play a significant role in the economic activities of developed countries.

Oil prices and Exchange Rate. The exchange rate is the most important element of macroeconomic variables. Sadorsky (2001) investigated the relationship between oil prices and the emerging stock market. He considered the exchange rate index of major currencies, interest rate, oil supply, and world economic activity as variables. He found that exchange rate movement and change in oil prices are interlinked.

Oil Prices and Oil Exporting Countries. Dutch Disease Theory (Corden and Neary, 1982) explain the effect of oil prices increase on economic growth. According to the theory, an industrial structure can be changed due to an increase in the price level of oil prices. Oil exporting countries condition the higher concentration in the oil sector as compared to other non-traded sectors. It is claimed that higher oil prices may result in increase of the local currency value, what automatically increases the level of import of consumer goods. As the result, the competition among local producers would be reduced. According to this theory, increase of a level of oil prices is not fruitful for oil exporting countries (Van Wijnbergen 1986).

Oil Prices and Stock Market. According to the study, conducted by Jones and Kaul (1996), the impact of oil prices on stock market in United States of America and Canada appear to be significant. Huang et al. (1996) discussed the different channels through which oil prices can affect stock market. According to the researchers, when oil prices change, they affect costs of production, what, in its turn, influence prices in the stock market.

3. Methodology

Based on literature review, the following hypotheses were formulated:

H1: There is a relationship between Real stock market return and oil prices.

H2: There is a relationship between Real stock market return and Industrial Production.

H3: There is a relationship between Real stock market return and the Short Term Interest Rate.

A variable of real stock market return is a dependent variable, and other variables, such as oil prices, industrial production and short-term interest rate, are independent variables. Similar variables were used in the research of Park and Ratii (2008) and Papapetrou (2001).

All data are secondary. They embrace period from September 2009 to August 2016 on a monthly basis. Data of oil prices was collected from oil intelligence website. The benchmark, which is considered for this study, was Burnett oil (this variable is considered as an independent variable). Data for other variables, i.e. industrial production index and short-term interest rate, were collected from OECD website database for G7 countries. They both are also considered as independent variables. One more variable, which is very important and is a base of this study, is stock market return. Data of G7 countries stock indices are collected from the OECD database. For the purpose of real stock market return and real industrial production, the study also considered Consumer prices index for inflation-adjusted proxy. G7 consumer prices index is collected from OECD website database.

Statistical tools are: descriptive statistics and regression analysis. In the first step description of each selected variables is done. In the next step the impact of select variables on the dependent variable is identified. In the third step, the F- test is performed. Further analysis will be conducted on the basis of the coefficient in which T- test is used to check the significance level of the select variables. Finally, the last step will be a correlation analysis.

The Arbitrage Pricing Theory was presented in the year of 1976 by Stephen Ross (Ross 1976). According to this theory, financial assets are linked with the different type of macroeconomics variables. Besides, the securities are linked linearly with other variables. We use model, in which return is priced with consideration of the different macroeconomic variables. Stock return is used as a dependent variable. Macroeconomic variables include oil prices, interest rate, and industrial production. Those variables are used as explanatory variables. Stock return reacts linearly after the change in descriptive variables.

Statistical description of G7 countries is provided in Table 1. Regression statistics is provided in Table 2 (Appendix B). R^2 is called the coefficient of determination, which allows to judge how the regression equation fits the statistics. It is simply how alteration of independent variable will be affect i the change of the dependent variables. In the case of Canada's stock return, the value of R^2 is 0.540001518. It means that about just 0.54 of the variation in the real stock return is explained by oil prices, industrial production, and short-term interest rate. When observed value is close to 1 it means that the sample regression line fits the data very well.

= F.INV.RT (Probability, Degree of Freedom)

= F.INV.RT (Probability, Regression, Residual)

= F.INV.RT (0.05, 3, 80)

= 2.718784982

In the above table, the value of F is 31.30453912 and the critical value is 2.71. It means that the real stock market has a correlation with other variables. In the case of Germany's stock return, the value of R^2 is 0.017502266 which almost close to 0 value. It means that about just 0.01 of the variation in the real stock return is explained by oil prices, industrial production, and short-term interest rate. When the observed value is close to 0, it means that the sample regression line almost does not fit the data.

= F.INV.RT (0.05, 3, 80)

= 2.718784982

In the above table, the value of F is 0.47504138, the critical value is 2.71. It means that the real stock market is not correlated with other variables. F test is not successful in the case of Germany.

In the case of Italy's stock return, the value of R^2 is 0.0267175, what almost close to 0 value. It means that about just 0.02 of the variation in the real stock return is explained by oil prices, industrial production, and short-term interest rate. = F.INV.RT (0.05, 3, 80)

= 2.718784982

In the above table, the value of F is 0.73202462, the critical value is 2.71. It means that the real stock market is not correlated with other variables. F test is not successful in the case of Italy.

In the case of Japan stock return, the value of R^2 is 0.01991456, what almost close to zero value. It means that about just 0.01 of the variation in the real stock return is explained by oil prices, industrial production, and short-term interest rate.

= F.INV.RT (0.05, 3, 80)

= 2.718784982

In the above table, the value of F is 0.5418455, the critical value is 2.71. It means that the real stock market has no correlation with other variables. F test is not successful in the case of Japan. In the case of the United Kingdom stock return, the value of R^2 is 0.014398061, what almost close to 0 value. It means that about just 0.014 of the variation in the real stock return is explained by oil prices, industrial production, and short-term interest rate.

= F.INV.RT (0.05, 3, 80)

= 2.718784982

In the above table, the value of F is 0.389557151 and the critical value is 2.71. It means that the real stock market does not correlate with other variables. F test is not successful in the case of the United Kingdom.

In the case of US stock return, the value of R^2 is 0.00317609, what is almost close to zero value. It means that about just 0.31 of the variation in the real stock return is explained by oil prices, industrial production, and short-term interest rate.

= F.INV.RT (0.05, 3, 80)

= 2.718784982

In the above table, the value of F is 0.08496561, the critical value is 2.71. It means that the real stock market is not correlated with other variables. F test is not successful in the case of the United State of America.

In the case of France stock return, the value of R^2 is 0.029654053, what almost close to 0 value. It means that about just 0.02 of the variation in the real stock return is explained by oil prices, industrial production, and short-term interest rate.

= F.INV.RT (0.05, 3, 80)

= 2.718784982

In the above table, the value of F is 0.814941046 and the critical value is 2.71. It means that the real stock market has no correlation with other variables. F test is not successful in the case of the United State of France. According to Table 3 (Appendix C), Canada, Germany, Italy, Japan, UK, USA and France demonstrates that the change of oil prices, industrial production, and interest rate, all are insignificant for real stock return.

Conclusions

Role of oil prices appear to be in focus of scientists and practitioners during the recent decades. The reason is that to change in oil prices affect economies of oil importing countries. This research examined how stock market return of G7 countries react to change of oil prices. This study has shown that not all considered countries are sensitive to change of oil prices.

Let us recall that in this study, the real stock return has considered as a depended variable or predict variable, while oil prices, industrial production, and short-term interest rate as independent or predictor variables. All data has collected from OECD website, and prices of oil were taken from oil intelligence report. Stock market performance reacts negatively to the increase of oil prices in Germany, Italy, France and Japan. Industrial production is positively associated with a real stock return in the case of Germany, Italy, Japan, the United Kingdom and France. While the short-term interest rate is negatively connected with a real stock return in the case of Canada, United Kingdom and United States of America. Research limitations: performance of any stock exchange is affected by wide array of factors, therefore the research results may change if other factors were considered.

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Tables and Graphs

Appendix A

Table 1. Description of G7 countries (September 31, 2015 –August 31, 2016)

	CANADA			GERMANY			ITALY			JAPAN		
	RSR	LNIP	IR	RSR	LNIP	IR	RSR	LNIP	IR	RSR	LNIP	IR
Mean	-0.99	4.664	0.986	-0.000	4.673	0.4682	0.000	4.555	0.467	-0.000	4.579	0.271
Standard Error	3.760	0.004	0.028	0.000	0.005	0.056	0.000	0.004	0.056	0.000	0.003	0.012
Median	-0.99	4.667	1.16	-0.000	4.693	0.3	0.000	4.541	0.3	-0.000	4.582	0.27
SD	0.000	0.044	0.263	0.005	0.055	0.521	0.006	0.039	0.521	0.005	0.032	0.111
SVariance	1.188	0.001	0.069	3.386	0.003	0.271	4.654	0.001	0.272	3.478	0.001	0.012
Kurtosis	1.108	-0.85	0.155	3.593	2.435	-0.574	-0.44	-0.76	-0.58	-0.38	2.781	-0.113
Skewness	0.764	-0.49	-1.20	0.903	-1.78	0.625	0.051	0.739	0.626	0.247	-1.304	0.240
Minimum	-0.99	4.564	0.376	-0.014	4.495	-0.3	0.031	0.140	1.9	-0.013	4.457	0.06
Maximum	-0.99	4.723	1.189	0.025	4.737	1.6	-0.01	4.504	-0.3	0.013	4.629	0.54
Count	84	84	84	84	84	84	0.018	4.644	1.6	84	84	84

	UK			USA			FRANCE		
	RSR	LNIP	IR	RSR	LNIP	IR	RSR	LNIP	IR
Mean	0.000	4.585	0.653	-0.000	0.263	0.263	-7.474	4.607	0.480
Standard Error	0.000	0.001	0.019	0.000	0.014	0.014	0.000	0.001	0.056
Median	4.858	4.587	0.57	-0.000	0.24	0.24	-9.045	4.606	0.28
Standard Deviation	0.004	0.017	0.179	0.004	0.131	0.131	0.005	0.017	0.518
Sample Variance	1.658	0.000	0.032	1.905	0.017	0.017	3.245	0.000	0.268
Kurtosis	0.066	-0.378	0.394	0.750	0.477	0.477	-0.344	-0.213	-0.617
Skewness	0.167	-0.211	1.225	0.267	1.080	1.080	0.279	0.308	0.613
Minimum	-0.008	4.541	0.47	-0.012	0.11	0.11	-0.011	4.571	-0.29
Maximum	0.009	4.624	1.11	0.011	0.62	0.62	0.016	4.656	1.6
Sum	0.001	389.7	55.58	84	84	84	84	84	84

Appendix B**Table 2.** Regression statistics of G7 countries

	CANADA	GERMANY	ITALY	JAPAN	UK	USA	FRANCE
Multiple R	0.73484795	0.13229612	0.163454	0.141118	0.1199919	0.056356	0.1722035
R Square	0.54000151	0.01750226	0.026717	0.019914	0.0143980	0.003176	0.0296540
Adjusted R Square	0.52275157	-0.01934139	-0.00978	-0.01683	-0.0225620	-0.034204	-0.006733
Standard Error	0.00023812	0.00587543	0.006855	0.005947	0.0040999	0.004439	0.0057159
F Statistics	31.3045391	0.47504138	0.732024	0.541845	0.3895571	0.084965	0.8149410
Observations	84	84	84	84	84	84	84

Appendix C**Table 3.** Countries stock return value analysis

	CANADA			GERMANY		
	OP	LNIP	IR	OP	LNIP	IR
P Value	0.074271977	2.48083E-06	0.164243448	0.72559686	0.33298899	0.33276159
	ITALY			JAPAN		
	OP	LNIP	IR	OP	LNIP	IR
P Value	0.98491183	0.33792517	0.33792517	0.33792517	0.3697064	0.50047671
	UK			USA		
	OP	LNIP	IR	OP	LNIP	IR
P Value	0.35905009	0.48788738	0.891075269	0.76015991	0.73638268	0.81934329
	FRANCE					
	OP	LNIP	IR			
P Value	0.842119538	0.34397682	0.535256008			

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Omar MASOOD

ORCHID ID: <http://orcid.org/0000-0001-5481-4032>

Manuela TVARONAVIČIENĖ

ORCHID ID: <http://orcid.org/0000-0002-9667-3730>

Kiran JAVARIA

ORCHID ID: <https://orcid.org/0000-0002-6147-5283>

Register for an ORCID ID:

<https://orcid.org/register>

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TOWARDS DIVERSIFICATION OF THE ECONOMY OF KAZAKHSTAN VIA INFORMATION SUPPORT FOR THE TOURISM INDUSTRY*

Anna Shevyakova¹, Eleonora Munsh², Malika Arystan³

¹ LLP "Rational solutions", Doctor of Economics, Senior Researcher, Microdistrict Orbita-1 11/1, 100 000 Karaganda, Republic of Kazakhstan

² EPAM Kazakhstan, Training and Development Department, Ermekova str., 58/3, 100 000 Karaganda, Republic of Kazakhstan

³ Karaganda Economic University, Department of economic and management, Akademicheskaya str. 9, 100 000 Karaganda, Republic of Kazakhstan

E-mails: ¹shevyakova.anna@gmail.com ; ²eleonoria@list.ru ; ³malika_arystan@mail.ru

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Abstract. Raising awareness of tourism players requires improving the comfort of the information environment of their activities. In tourism practices, information support of tourist activities that ensures the comfort of tourist services and the attractiveness of the tourist region strengthens the motivation of consumers to visit this territory. The development of tourism demand, caused by tourists' awareness, and at the same time demographic changes, accelerate the segmentation and the creation of new types of proposals. Recent advances in telecommunications, networking organizations, creation, and processing of databases and electronic marketing provide new business opportunities in the tourism sector and a significant impact on the model of traditional business. Therefore, the main sphere of changes and innovations in tourism is related to the use of information and communication technologies. Kazakhstan with its unique natural resources and original culture of the nomadic people has a huge untapped potential for tourism development in the international and regional markets. The tourism industry in the Republic of Kazakhstan is recognized as one of the priority branches of the economy at the state level. For example, in the implementation of the provisions of industrial-innovative development of the country's economy, the leading role belongs to the cluster system, in particular to the tourism cluster. Modern trends in the development of this industry are that tourists who have studied the most famous resorts in the world well are striving to those countries where the tourism sector is just beginning to develop. At the present stage of tourism development, Kazakhstan is becoming a more attractive country for extreme holiday lovers and people interested in history and the present of the countries located on the Great Silk Road. From this perspective, the attractiveness of Kazakhstan

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is growing. The tourist potential of recreational resources and historical and cultural heritage allows the Republic to harmoniously integrate into the international tourism market and achieve intensive development of tourism in the country. This will ensure sustainable employment and income growth, stimulate the development of related industries and increase of investment flows in the national economy.

Keywords: Kazakhstan, Kazakhstan's economic sectors, pre-employment, tourism, non-governmental organizations, information technologies and support, computer networks, diversification.

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JEL Classification: L31, O53

1. Introduction

The fundamental changes taking place in the world economy, exacerbated by the geopolitical crisis and the sanctions policies of the leading powers, are making their own adjustments to the economic policies of Kazakhstan. Today's successes in socio-economic development and attraction of foreign investments make the Republic of Kazakhstan obliged to such basic factors of competitiveness as the availability of natural resources, a favorable macroeconomic environment, and political stability. But the economy of the Republic of Kazakhstan is already partially losing competitiveness and is in the "a trap of average income". To maintain high rates of economic growth, the Republic of Kazakhstan will need to implement the structural changes in the economy that are necessary to move to a new stage of development. In this regard, the problem of economic diversification remains relevant for Kazakhstan.

One of the main features of the development of the economy of Kazakhstan is still the dominant position of the oil and gas and raw sectors due to the weakening of the positions of the Kazakhstan manufacturing industry, as well as the replacement of imported goods from the structure of consumption of domestic products. At the same time, it is in the raw nature of the Kazakh economy and its weak diversification that the main reason for recurring economic crises can be seen, since the formation of the country's budget depends on energy prices (the issues of economic development have been taken into account regional peculiarities, peculiarities of formation of associations of countries and the formation of economic and political associations, have been repeatedly considered in the writings of economists and sociologists (e.g Delmon, 2015; Meņšikovs & Ignatjeva & Stankevičs, 2014; Boronenko & Lavrinenko, 2015; Shevyakova et al., 2016; Petrenko et al., 2017; Isatayeva et al, 2019).

According to the Committee of the Republic of Kazakhstan on Statistics, the share of the mining industry in the structure of the country's GDP tends to grow - for the period from 2000 to 2016 it increased by 3.4% and amounted to more than 16.4% in 2016, while the share the manufacturing industry is declining - in 2016 it fell by 5.0% compared to 2000 and amounted to 11.5%. It aggravates the situation and direction of financial resources. During the period from 2000 to 2016, the inflow of foreign direct investment (FDI) into the economy of the country amounted to more than 1.3 billion US dollars. At the same time, more than two-thirds of these investments were directed to mining (32.6% of gross FDI inflows) and geological exploration and exploration (37.0%). The share of manufacturing industry accounts for only 8.8% of all FDI, and for agriculture - 0.1%. Thus, during the considered period the raw material orientation of the Kazakh economy did not decrease, and its dependence on the external economic situation intensified.

It should be noted that the raw nature of the structure of industrial production of Kazakhstan not only provided for the progressive development of the country's economy until recently but is also the most reliable source of its

growth in the near future. However, as the world economic crisis has shown, the dominance of raw materials in the structure of the country's economy leads to instability of economic growth and prolonged stagnation. Therefore, it is of strategic importance for Kazakhstan to pursue a purposeful state policy of diversifying and modernizing the economy in order to increase its competitiveness, overcome the raw material orientation and ensure sustainable economic growth of the country and individual regions.

Steady high dynamics of economic growth and favorable conjuncture in the world market allowed Kazakhstan to set and solve certain tasks until 2015 to give the national economy an innovative and socially-oriented character. However, in absolute terms, the decrease in export earnings, compared to 2012, following the results of 2016 amounted to about \$ 39 billion. As a result, Kazakhstan exported back to the level of 2007. The quantitative decrease in the rates of export earnings has been replaced by serious qualitative changes, as the shortfall in income reduces opportunities for investment in production and all types of infrastructure - from transport to social. And this, in turn, beats the country's competitiveness and weakens its economic opportunities.

Super profits in raw branches and the corresponding demand for their production really block a free modulation of the capital in the processing sector and the service sector. Especially destructive were consequences of the accelerated dismantling of state ownership for the branches and productions referred now to the real economy. The economic development of Kazakhstan can be characterized as depending on the oil and gas and mining export sector and a high real exchange rate so far. Therefore, the susceptibility of the economy to world price fluctuations so-called a boom - sectors is high. A position of the companies' monopolists in raw branches, which highly profitable and extremely profitable, such is that they aren't interested in the development of the processing sector, except for small projects on improvement of technological indicators within extraction of raw materials or raw repartition. Domination of raw branches is a basic obstacle for ensuring long-term economic growth, does the country dependent on an environment of the world markets.

The relevance of the above is confirmed by an analysis of the most important qualitative indicators. Thus, in the structure of Kazakhstan's GDP, a significant share is accounted for by raw materials. First of all, on the fuel and energy complex and metallurgy. This situation is reflected in the structure of Kazakhstan's exports, the indicator of which only for commodity operations related to oil, gas, metals is the lion's share. The import structure of the Republic of Kazakhstan is represented by such groups of goods like machinery and equipment, finished metal products and other types of industrially processed products. This situation is explained by the underdeveloped manufacturing industry, capable of producing goods with high added value. So exported crude oil is returned to our country in the form of products by deep processing and high added value.

The consolidation of Kazakhstan in the status of an oil state carries with it big problems: underinvestment of the processing sectors of the economy, volatile growth rates due to dependence on external conditions, a reduction in jobs and, of course, an increase in the socioeconomic stratification of the population. The increase and intensification of negative manifestations in the economy of Kazakhstan, including the second devaluation in a year and a half, indicate the entry into the final stage of the economic and political model, the foundations of which were laid in the second half of the 1990s, and which has been developed and consolidated in recent years. It is based on the export of oil, crude uranium, ferrous and non-ferrous metals, in exchange for the importation into Kazakhstan of equipment and materials for the same raw exports, and goods not manufactured in Kazakhstan to meet consumer demand. Respectively, within such model in Kazakhstan actually raw export and also transport, trade and financial infrastructure for delivery and distribution about the country of final foreign goods developed.

The quantitative and chronological disposition of these two defining sides of the aligned economic model is shown in Figure 1.

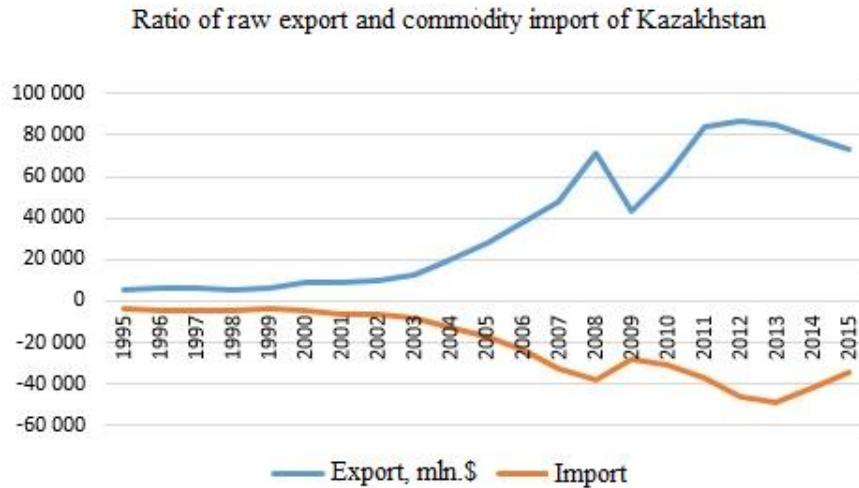


Fig. 1. Ratio of raw export and commodity import of Kazakhstan

Source: composed by the authors according to the Statistics Committee of the Republic of Kazakhstan

Volumes of an export currency earnings, especially from the beginning of "zero years" and before the crisis of 2007-2008, grew repeatedly. It could become base for the accelerated social and economic national development based on industrialization and innovation of non-raw internal productions. The essential part of the export and raw income was cut before an entrance to the economy of Kazakhstan, accumulating in gold and foreign exchange reserves of National bank and currency accumulating of National fund, actually – in foreign debt obligations. The most part of the got export currency earnings to the national economy went for the growing import of manufactured and consumer goods to Kazakhstan. Most of the export foreign exchange earnings entered into the national economy went to import of industrial and consumer goods to Kazakhstan. As a result, the economy of Kazakhstan got to the export and raw and commodity and import external dependences blocking any attempts of development of import-substituting productions within the country.

The external economic and political conjuncture is formed in such a way that the rate of growth of the world economy, and, consequently, consumption of the products of Kazakhstan's exports, will only slow down. Also, there is no expectation of an increase in world prices for oil and metals - there are a decline and consolidation at a certain sustainable level. And such amicably negative assessments are given by world experts for the next two or three years, at least.

If oil, ferrous and non-ferrous metals, let and not at the prices giving excess profits, all the same, are in demand in the world market, it is possible to break negative tendencies due to the quantitative building of production of export-oriented productions. The main thing in exhaustion of sources of development of such an economic model. The rate on foreign investments, in a compartment with the budgetary investment and investment, started on raw income at the expense of means of the export enterprises has led to strengthening and fixing of export and raw orientation of the Kazakhstan economy. As speculation reflection of export and raw orientation, the delivery economy to the country and trade in the industrial and consumer goods which aren't made here has developed, has

developed and has gained a foothold in Kazakhstan. She has received a considerable share of investment too – in the form of transport and retail chain stores and financial infrastructure. And this part of the economy which is consuming the lion's share of export revenue, most of all suffering from the shortage of foreign currency and devaluation of currency national doesn't facilitate too and aggravates the general crisis state.

The deadlock final of the economic model built in Kazakhstan is put in her initial genesis – sovereign embedding into the world market. In such "independent" option Kazakhstan is necessary to the system of global division of labor only as the territory of the reduced the price production of energy and mineral resources on export and also — already to a lesser extent, for sale of production of industrially more developed economies here. And, certainly, for exclusively external monetary providing supplementing export not of renewable natural resources also the export of the most part of financial income.

Real options for an independent breakthrough from such a well-rounded and packaged in a monocentric global model of the scheme of neo-colonial raw material and monetary exploitation from Kazakhstan, as yet, do not exist.

The addition of simple oil, ferrous and non-ferrous metals production by their deep processing and the release of finished high-tech products, which was repeatedly declared and planned for the last 15 years but never implemented, did not come about not only because of insufficient professionalism and excessive corrupting of the executive bodies. At the heart of failure is the fundamental uselessness of the world market for all such "industrial-innovative" initiatives of a separately taken Kazakhstan.

The multinational company occupied with oil refining, production of uranium and metallurgical raw materials isn't interested to let the Kazakhstan participant in the foreign productions. They haven't interest to place the refinery capacities in Kazakhstan. Basic reasons: enormous and badly populated territory, sharply continental climate, insufficient productive and purchasing potential of the population.

In the same way, attempts to reduce currency and commodity dependence on import are strongly limited. His main part (about 43%) is made by machines, the equipment and vehicles which establishing alternative production exceeds not only financial and investment, but also general opportunities actually of Kazakhstan. Further (about 8%) there is chemical production, including rubbers and plastic – here possibilities of replacement are limited too. And only food dependence Kazakhstan can (and has to) to liquidate almost entirely — but it is rather small (about 10%) a share of everything imported.

Each deadlock has the exit, and any crisis keeps testing and opportunities. The economic model and sources of its development approach exhaustion are necessary other model and other sources.

There are two main approaches to the enhancement of structure of the economy.

The first (horizontal measures) provides creation of steady institutes for the functioning of economic agents, forming of the favorable investment climate, reducing intervention of the state in the economy, maintenance of the competition in the markets. These measures are directed on improvement of a provision of all economic agents. Direct intervention of the state in the relations of economic agents is allowed only for maintenance and stimulation of the competition.

The second approach (vertical measures) assumes carrying out an active state policy on change of structure of the economy, its enhancement on the basis of stimulation, including financial, of separate industries and the entities. The specified measures put onegroup of economic agents in more favorable conditions in comparison with others.

In its pure form, none of these approaches solves the problem of diversifying the structure of the economy. Horizontal measures in themselves do not allow in the medium term to change the relative shares of sectors in GDP: they have the same effect on both non-raw and raw materials sectors. And only at a high level of withdrawal of natural rent raw materials industries in the long term become less attractive.

2. The development of tourism as a way to diversify the economy of Kazakhstan and problems of its information support

From 2000 for 2016 inflow of the direct foreign investments (DFI) to the national economy has made more than 1.3 billion US dollars. At the same time, more than two-thirds of such investments went to mining branches (32.6% of gross inflow of PII) and activities for carrying out geological investigation and researches (37.0%). Only 8.8% of all PII, and on an agriculture share – 0.1% fall to the share of the manufacturing industry. Thus, for the considered period the raw orientation of the Kazakhstan economy hasn't decreased, and her dependence on the external economic environment has amplified.

As an object of research, we take such a promising and dynamically developing industry like tourism. Kazakhstan, having a rich tourist and recreational potential, is characterized by an inadequate level of tourism development. Its share in the gross domestic product does not even reach 1%. According to the United Nations World Tourism Organization (the report of 2016), in the world export of goods and services tourism ranks third (7%) after the export of fuel and chemical products. In 2015, according to export performance, tourism outstripped the food and automotive sectors. In some developed countries tourism takes first place in the export of goods and services. According to the World Travel & Tourism Council (World Tourism and Travel Council) for 2015, the share of tourism in the world GDP is 10%, every 11th person in the world works in the tourist sphere, and the number of international tourist arrivals amounted to 1,186 million US dollars, increasing over the year by 52 million US dollars. By profitability, this industry ranks third in the world after the oil industry and the automotive industry.

The Republic of Kazakhstan with its extensive territory, favorable in respect of trade relations between Europe and Asia by the geographical location rich with the cultural and historical heritage and traditions which have remained till these days has all reasons for the successful development of tourism. There are five main economic and social interests to consider tourism as one of the national priorities of development in the Republic of Kazakhstan:

- an opportunity to provide in the sphere of tourism over 250 thousand jobs, including the population of the rural and remote areas and youth without separation from a traditional rural way of life;
- assistance to the cultural development of business activity among a general population, creating business opportunities for families, small and medium-sized enterprises;
- a contribution to the development of regions and the rural areas of the Republic of Kazakhstan, including development of engineering and transport infrastructure in the remote areas, infrastructures of checkpoints through Frontier of the Republic of Kazakhstan;
- assistance to cooperation and creation of opportunities in other sectors of the economy, including agriculture, mechanical engineering, the light and food industry, the non-productive sector;
- assistance to the creation of the positive and productive cross-cultural relations promoting the advance of national and interstate mutual understanding.

Development of entrance and internal tourism in Kazakhstan will depend on a number of market tendencies – in tourism in general, economy, demography, ecology, technology, and other spheres. But in the course of carrying out the analysis it is modern conditions of the tourist branch of Kazakhstan were the following problems are revealed:

- the prevalence of the small travel companies which don't have personnel and material resources doesn't contribute to the development of investment investments in a branch of tourism;
- the backwardness of transport infrastructure. A small quantity of both regular, and charter foreign flights. Development of tourism is limited to high transport expenses. There are no specialized motor transportation enterprises for tourist activity. Also, the system of electronic booking and planning of trips isn't created;
- the discrepancy of statistical account to the international standards and lack of complex objective accounting of economic effect of tourist activity;
- discrepancy to the international standards of the system of modern education and training of qualified personnel for the tourist industry;
- weak level of financing of the development of tourism in regions, etc.

From types of tourism in Kazakhstan outbound tourism (figure 2) prevails. The number of visitors who have left the country exceeds the number of visitors who have driven to the country by 1.8 times. Trips on personal purposes have made in 2016 81.8% of the total of trips to Kazakhstan, trips on the business and professional purposes — 17.2%. At the same time, private visits have made 90.0% of trips on personal purposes (transit – 9.1%, tourism – 0.9%). During the period from 2011 to 2016 sure increase in a number of leaving tourists from 8.0 million people in 2011 up to 12.1 million people in 2016 was observed. The quantity driving in the considered period fluctuated: having increased from 5.7 million people in 2011 to 6.8 million people in 2013, the indicator was reduced to 6.3 million people in 2014, and then again has increased up to 7.4 million people in 2016.

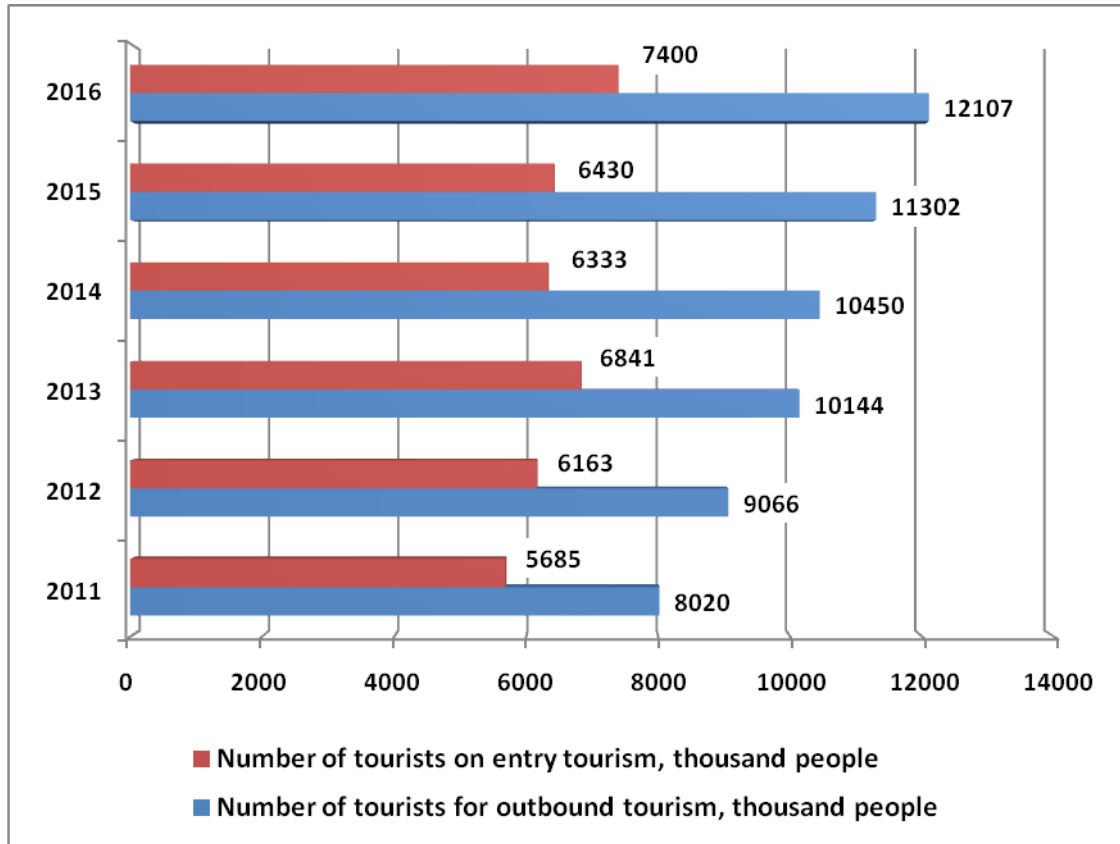


Fig. 2. Number of visitors by type of tourism in Kazakhstan

Source: composed by the authors according to the Statistics Committee of the Republic of Kazakhstan

The main problem of Kazakhstan tourism: entrance tourism as a concept of Kazakhstan is absent. According to the Committee on Statistics of the Republic of Kazakhstan, for example, in Q1 2016, 144.7 thousand foreigners arrived in our country. This is 13 thousand more than last year's indicator for the first quarter (in 2015, Kazakhstan received 692 thousand foreigners for the year, hotels rendered services for 73 billion tenge). That is, the popularity of Kazakhstan seems to be steadily growing - for 10 years the number of foreign tourists has increased three-fold, and the volume of the industry's revenues has increased 5-fold. However if to compare these data at least to data from Uzbekistan (2 million tourists for 2015 — tenfold growth in 10 years), you understand that Kazakhstan takes the 85th place in the world on tourism development by right.

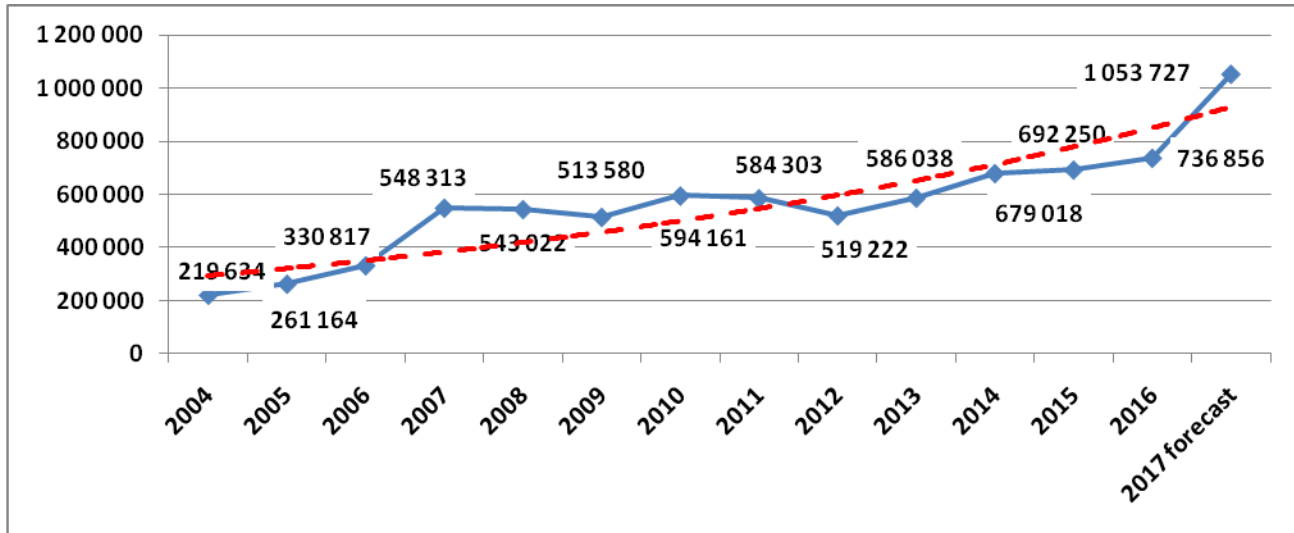


Fig. 3. Number of non-residents of the Republic of Kazakhstan served in the places of residence, people

Source: composed by the authors according to the Statistics Committee of the Republic of Kazakhstan

The spontaneous Kazakhstan tourist services market that has developed in recent years, in general, in the absence of a coordinating start, is in a crisis state, and Kazakhstani facilities, despite the huge recreational potential of the country, are still not included in the permanent international tourist chains. One of the reasons for this contradiction is the lack of reliable and reliable information about the market conditions and the usual service for the Western client, based on all the opportunities provided by modern means of communication. Today, the process of forming and sending tourist groups abroad and, conversely, without the use of information technology is not effective enough, even in Astana and Almaty.

It is widely known that in the theory and practice of management, the availability of information means a reduction in uncertainty and risk, which leads to the adoption of more thoughtful and justified management decisions. In the Republic of Kazakhstan, in the sphere of tourism, there is a low level of information security at all levels of relations.

Features of the implementation of the tourist product do not allow us to speak of a full-fledged market without adequate information support. Almaty tourist firms and tourist management bodies that enter the international market face challenges in developing new information technologies, which are a prerequisite for international integration and the modern concept of tourism business as an information-rich sphere. In this regard, at present, the analysis of existing information systems in tourism, the study of the main areas of application of information technology and the development of recommendations for tourism management on the use of information systems is particularly relevant.

It should be noted that the providers of tourism services use a number of communication technologies that can provide direct satellite coverage of international events, conduct business via teleconferences from mobile means of communication (for example, the ability to make a call to any part of the world from the aircraft). To get information about the place of stay, its attractive features also require a variety of video tools. As a result of the use of information technology, the safety and quality of tourist services are increasing, and their apparent human content is not changing at all.

Information technology is also provided by airlines. In the process of organizing, managing and controlling air operations, electronic systems play an important role, helping in the planning of routes and schedules, control and analysis of flight operations, personnel management, accounting, and prospective planning. They include (for example) a system for transmitting and sending messages, a satellite system for collecting and transmitting information for air transport, inertial navigation systems, an air traffic control system, and an aviation ticket sales system.

Ensuring a high level of service in the hotel in modern conditions is also impossible to achieve without the use of new technologies. The new technology provides for the automation of many hotel processes, electronic backup, the introduction of technologies that improve the quality of service while reducing staff.

Network information technologies are an actual and promising direction for the development of information technologies. Their goal is not only to provide information exchange between individual users of information and computer systems but also to create for them the possibility of cooperative use of distributed information resources of the society, obtaining reference, documentary and other information from various specialized information funds.

Thus, the information technology system used in tourism consists of a computer reservation system, a system for holding teleconferences, video systems, computers, information management systems, electronic airline information systems, electronic money transfer, telephone networks, mobile means of communication, etc. It should be noted that this system of technologies is deployed not by travel agents, hotels or airlines, individually, but by all of them. Moreover, the use of the information technology system by each segment of tourism is important for all other parts.

Analysis of the current state of foreign tourism in the field of information support for tourists showed the following:

- in health and entertainment tourism, there is a growing demand for efficient and high-quality global communication, as well as for the individual and collective acquisition of cognitive and entertaining video information in places of residence and transport;
- in health-sports tourism, operational information support in extreme situations, as well as information security for tourists through meteorological forecasting systems, surveillance, and navigation, is of particular importance; for example, the information security of elite sea tourism, maritime races and individual trips is quite fully automated;
- in the system of excursion and cognitive tourism when equipping museum and field expositions, multimedia means of collective (group) display of explanatory and additional graphic and video information are used; Individual and collective audio and video support for excursions are also distributed;
- in youth tourism, communication means, audio broadcasting, and computer virtual means of game and training character are being introduced;
- in the event tourism, there is a great demand for audio and video media, which allow, for example, to observe festive or sports events from different points of view;
- for all forms of tourism is characterized by high demand for photo and video recording of the moments of their stay in historical and presentable places.

In the field of information support for tourism intermediary structures, the following trends can be noted:

- quickly spread exclusively effective from the economic point of view, club methods of informing the population, including tourist products and services; while creating so-called virtual clubs, equipped with multimedia means of collective display; it is important that these clubs contribute to the formation of psychologically stable tourist groups;
- automated information support of tour operator activity is transferred to modern computer-network technologies; there are international automated booking systems;
- public telecommunication networks, for example, the Internet, are actively used to host tourist advertising and maintain a "contractual" workflow;
- the safety of the use of such networks is provided by the formation of international user associations;
- in the part of creating a new tourist product, the processes of information collection and processing are automatized in order to conduct management and marketing in various areas of tourism;
- there is relatively little data on informatization of control over tourist activities, detection and elimination of consequences of contingencies/

However, it can be assumed that work in this direction is carried out, for example, on the initiative of insurance companies.

The international experience shows that the active role of executive power in infrastructure ensuring the development of tourism is one of the considerable factors of success. Forms of the state support of the development of tourism are rather diverse, however, it is possible to allocate some examples which correspond to the current state of Kazakhstan on a number of signs:

- an active role of the state in the modernization of the country by direct participation in the economy;
- lack of natural development of resort areas, as a rule, because of remoteness, lack of infrastructure and backwardness of the domestic market by this type of tourism.

In the examples with such conditions the state actively created the new offer in tourism by the centralized development of the resort "from scratch", constructions of infrastructure and tourist objects. Commercial objects in these resorts were under construction either at the expense of public funds or with the attraction of private investments. As a rule, the state created for these purposes of the national operator whose activity had quasi-commercial character.

Despite the supposedly active support from the state of tourism in Kazakhstan, many issues remain unresolved for the simple reason that the development of tourism does not depend on a separate ministry, non-governmental organization or business community. Tourism in Kazakhstan, directly and indirectly, depends on 32 branches and state agencies which are responsible for those spheres to which the tourist adjoins from the moment of the crossing of the border of Kazakhstan until departure ... from border control and migration police to the door-keeper of the hotel and even the huntsman of the national park. It is enough to tell what coordinated with all interested public authorities of the Concept of development of tourism of Kazakhstan till 2020 is under consideration of Presidential Administration since February 2013.

In the world have already passed to tripartite management of tourism where is,

- the first, the public coordinating body in the form of the Ministry of tourism which resolves issues of the general regulation coordination, licensing and state policy (he at us exists);

- the second, regional (city) management of tourism which represent the interests of tourism in municipal authorities (are available in structures of management);

- the third, convent-and-visitor-bureau in the cities (CVB) which are engaged in marketing of a tourist's product and conference rooms which role with success non-governmental organizations could carry out.

At the present stage, it is necessary to explore the attractiveness of the regions of the republic. Within the conducted research we have been the rating of readiness of regions of Kazakhstan for reception of guests. The systematic solution of problems of increase in the appeal of regions of the republic to tourists, developments, and deployments of additional programs of development of tourism in regions, their timely financing and modernization of the operating infrastructure will allow increasing in the future considerably appeal of all tourist regions of Kazakhstan.

Table 1. Rating of readiness of the regions of Kazakhstan to receive guests

Name of the region (city)	The rank of the regions in terms of one-time capacity (beds)	One-time capacity (thousand beds)	Scope of services (million euros)	Number of placements (units)	Number of serviced intourists (people)	Occupied placements (%)
Total		119.3	39.38	2370	144 714	19.0
East Kazakhstan region	1	22.3	1.69	378	4 034	19.2
Akmola region	2	12.7	2.19	1628	1 628	13.4
Karagandy region	3	12.3	1.69	3577	3 577	18.2
Almaty region	4	11.2	1.48	96	96	17.3
South Kazakhstan region	5	6.0	1.08	2883	2 883	16.4
Kostanay region	6	5.8	0.43	1966	1 996	14.0
Pavlodar region	7	5.7	0.61	2034	2 034	12.9
Mangystau region	8	4.0	1.70	5154	5 154	15.3
Aktobe region	9	3.9	0.72	2036	2 036	12.4
Atyrau region	10	3.7	4.07	17682	17 682	28.0
Zhambyl region	11	2.8	1.09	342	342	12.4
West Kazakhstan region	12	2.8	1.69	4236	4 236	29.4
North Kazakhstan region	13	2.3	0.30	657	657	13.4
Kyzylorda region	14	1.6	0.35	560	560	15.2
Astana - the city of republican significance – the capital of Kazakhstan		9.5	10.29	35766	35 766	23.5
Almaty - the city of republican significance		12.7	9.98	62063	62 063	24.3

Source: composed by the authors

The East Kazakhstan region — 120 thousand at a time can accept the greatest number of tourists (including residents). In the region 378 locations of guests function. In the area, there is a resort area Katon-Karagay, Markakolsky and West Altai reserves.

The second place in rating at the Akmola region. The region in one stage can accept 22.3 thousand visitors. The area is attractive by resort areas in Shortandy, Zerende, Burabaye, the reserve Korgalzhyn.

On the third place — the Karaganda region. Single capacity of hotels of-12.7 thousand. The region is capable to attract Intourists with the resort area of Karkarala, the historical and cultural center of the first president and a recreation area of "Cabana Beach".

Afterward Almaty region interesting to visitors by the reserve museum "Tamgaly", a Sharyn canyon and so on was located. The area is capable to accept at a time over the 11th thousand visitors. Here 315 hotels work.

The Southern Kazakhstan area where Intourists will be able to estimate advantages of rest in Sara-Agashe and to visit historical monuments in Turkestan closes the five of the best. Only 139 locations are capable in total to receive slightly less than 6 thousand guests work in the southern region.

Besides the five of areas two largest cities of the country — Almaty and Astana in 291 hotels can accept 22 thousand visitors at a time. Two megalopolises bring more than a half of all volume of services, here to the highest fallibility of locations.

The quantity and degree of expressiveness of weaknesses of Kazakhstan are higher, than quantity and degree of expressiveness of his strengths that is usually characteristic of the country which, like Kazakhstan, is in development of the strong and competitive industry of tourism. However, the quantity and degree of expressiveness of opportunities in Kazakhstan are higher, than quantity and degree of expressiveness of threats that means that the republic is able to use the current world processes and to create a competitive advantage to development of the industry of tourism. Results of the carried-out SWOT analysis of tourist branch of Kazakhstan are presented in table 2.

Table 2. SWOT-analysis of the tourism industry in Kazakhstan

Strengths	Weaknesses
<p>Natural, cultural, social and economic characteristics of the country:</p> <ul style="list-style-type: none"> - a variety of natural resources; - a variety of monuments of tangible and intangible cultural heritage; - stable political and domestic situation; - the state of the labor market; - the possibility of public funding; - low cost of electricity and construction. <p>Interested parties and partnerships:</p> <ul style="list-style-type: none"> - the willingness of interested parties to cooperate; - readiness to create state-private enterprises; - availability of national tourist/hotel associations. 	<p>Low population density - a possible negative impact on the development of domestic tourism, including through a low level of demand for tourism products within the country.</p> <p>Insufficient level of involvement of historical and cultural monuments in tourist routes.</p> <p>Lack of qualified personnel in the sphere of tourism. Tools of state support that require further improvement, including stimulating the development of the industry through the introduction of tax support measures, simplifying the entry formalities (visa, migration regime), improving the land use regime, Possible obstacles to the development of tourism business, including the presence of administrative barriers, the availability of tools for government support, requiring further improvement.</p> <p>Insufficient development of infrastructure (transport, utility networks, checkpoints across the State border of the Republic of Kazakhstan, the condition of roads, significant distance between settlements, etc.), including significant physical and moral wear of a large number of tourist industry facilities, the lack of tourist class hotels , inadequate development of engineering, transport and social infrastructure in places of tourism, inaccessibility of tourist facilities, low level of service in tourist places in, insufficient quantity and quality of service of objects of a roadside infrastructure.</p>

	High prices for air tickets, the absence of national low-budget air carriers, a low number of new inbound air routes from countries that provide a potential influx of tourists, as well as domestic air routes in the direction of key tourist destinations identified in the cluster model of tourism development in Kazakhstan.
Opportunity	Threats
Industry Trends: - independent tourism; - Ecological and natural tourism; - cultural tourism; - demand for special/adventure tourist products; - more frequent and shorter rest periods; - Active, wellness and sports rest; - low-budget trips to the region; - implementation of tour packages via the Internet (e-commerce).	Increasing quality requirements. Long travel and passing of control procedures at checkpoints on the State border of the Republic of Kazakhstan for short-term rest. The high cost of traveling over long distances. Fragmentation of the travel market. Availability of new distribution channels to competitors. Similar tourist products of other regions (not only Kazakhstan is on the Great Silk Road, for example). Effective means of motivation and structure of entertainment; Strong dependence on the volume of business trips. Slow development of transport communication (air, land). Instability of the currency and high inflation.

Source: composed by the authors

The geopolitical situation and natural resources allow us to count on an increase in the number of tourists coming to Kazakhstan on business and participation in international events. These are, first of all, the cities of Almaty, Astana, Atyrau. The geopolitical situation and natural resources allow us to count on an increase in the number of business tourists coming to Kazakhstan on business issues and participation in international conferences. The infrastructure of the above centers is basically in line with international standards. The city of Almaty is a strategic (air, road, railway) gate for the republic and the main migration occurs precisely through this city. 500 km there are wonderful recreational areas. In addition, on the territory of a nearby city within a radius of 500 km there are wonderful recreational areas. The city of Astana becomes the same strategic zone. Increasing interest in the city as a young capital of our state, which has a modern look and infrastructure, creating a favorable development in the city of international and domestic tourism.

The analysis of tourist activity showed that tourists arriving from abroad prefer to stay in hotels that provide high-quality services and a full range of services. It is from business tourism that the further development of the hotel chain of international level will depend in large cities - business centers of the country.

The most promising regions of cultural and educational tourism are the city of Almaty and the Almaty region, the development of tourism along the Silk Road (the international tourist train "Pearl of the Silk Road" on the route Almaty - Turkestan - Tashkent - Samarkand - Bukhara - Urgench - Mary - Ashgabat - Almaty). Huge opportunities for the development of domestic cultural and educational tourism in the Republic opens Kazakhstan's participation in the tourist transcontinental route "Silk Road", implemented under the auspices of the UNWTO in cooperation with UNESCO.

One of the most promising areas for the development of the tourism industry in Kazakhstan, in our opinion, can be ecological tourism. The number of tourists interested in the protected areas of Kazakhstan is growing, new forms of organized tourism are being developed: bicycle, horse, water. The need for the development of ecological tourism in the Republic of Kazakhstan is due not only to economic factors - the creation of new jobs, the development of local communities in remote regions, but also the social order - the needs of the population in a more holistic, systematic approach to health problems and the use of free time. According to the experts of the World Tourism Organization, ecological tourism has become the most popular for the last ten years and is one of the tools for sustainable development of any state.

Conclusions

The problems of the Kazakhstani economy in conditions of openness and integration into the world are urgent, as they require the search for effective state and economic mechanisms for maintaining relative economic stability and social development. The development of Kazakhstan's economy in market conditions revealed both competitive advantages of the country's economic potential and their shortcomings associated with various opportunities for adaptation to the market. This led at the beginning of the stage of development of Kazakhstan as a sovereign state to a significant decline and curtailment of industries in certain sectors of the non-primary sector, aggravating the disproportion of the real sector of the economy towards the development of the raw materials sectors. Kazakhstan's entry into the world economic system is constrained by Kazakhstan's narrow specialization in the world and regional division of labor, remoteness from the world's major commodity markets.

Thus, the strategy of further economic development of Kazakhstan has to promote ensuring deduction of national economy at rather stable level on the basis of diversification of economy and creation of conditions by the state for production of competitive types of production and growth of non-oil export and also to creation of conditions for prevalence of private initiatives and equal competitive conditions for all subjects of the market.

In Kazakhstan tourism - the developing branch and influence of the tourist industry on the national economy it is still insignificant. The backwardness of tourist infrastructure, low quality of service, the steady myth about Kazakhstan as about the country of the increased risk led to the fact that now less than 1% of a world tourist stream is the share of our country.

An indicator of tourist mobility of the population of Kazakhstan is one of the lowest in the world. An overwhelming part of travel agencies prefers to be engaged in the direction of the compatriots abroad, and only a few firms' works for the involvement of tourists to Kazakhstan. And generally, tourists visit Almaty and Astana.

The analysis of inbound tourism flows to Kazakhstan shows that the republic remains insufficiently attractive to foreign tourists. On export of tourist services, Kazakhstan takes the 78th place in the world. On availability, the price and level of service, tourist services of Kazakhstan are not competitive in the world market and much more concede to foreign analogs including concerning information maintenance and support.

Unlike Kazakhstan information support of modern foreign tourism relies not only on the huge potential of the most modern radio electronics and the accurate organization of all production cycles, but also on the high level of information support of adjacent spheres of activity (bank, transport, hotel, museum, security, etc.) that considerably reduces functional loads of means of information support the tourism and at the same time essentially increases efficiency of their use.

It is possible to allocate the following problems of formation and development of the mechanism of information support of the development of internal and entrance tourism:

1. Decrease in information risk at decision-making in the sphere of management of tourism;
2. Improvement of coordination of actions between public authorities of various levels and also other participants of the market of internal and entrance tourism;
3. Improvement of the main characteristics of the used information: completeness, reliability, relevance and timeliness, availability, value;
4. Unification of processes of collecting, processing, use and dissemination of information;

5. Increase in tourist demand due to an increase in knowledge of tourists of tourist opportunities of territories, etc.

Thus, the insufficient level of information support slows down development of entrance and internal tourism in Kazakhstan. The existence of full, reliable and relevant information promotes the adoption of more effective administrative decisions and, therefore, increase in rates of development of tourism. The modern tourist industry basing on the unique and natural and cultural capacity of the Republic of Kazakhstan is a natural backbone factor of flexible integration of tourism into the system of world economic communications, one of the most dynamically developing and effective on return on the invested capital by branch, despite its capital intensity.

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Anna SHEVYAKOVA, Doctor of Economics, Senior Researcher, LLP "Rational solutions". Her research interests are related to macroeconomics, economic diversification, regional specialization, budget financing and state support for entrepreneurship development, innovation and development of “smart” territories.

ORCID ID: <https://orcid.org/0000-0002-2644-6292>



Malika ARYSTAN, PhD, Associate Professor, Department of economic and management, Karaganda Economic University. Research interests are related to micro- and macroeconomics, international and regional economic development, state economic policy, factors of economic growth.

ORCID ID: <https://orcid.org/0000-0003-4921-6577>

Eleonora MUNSH, Master of Engineering and Technology, Training and Development Department, EPAM Kazakhstan. Her research interests are related to Kazakhstan's economic sectors, pre-employment, non-governmental organizations, information technologies and support, computer networks, psychology and sociology.

ORCID ID: <https://orcid.org/0000-0003-2395-6403>

Register for an ORCID ID:

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USING THE CAPABILITY APPROACH AND ORGANIZATIONAL CLIMATE TO STUDY OCCUPATIONAL HEALTH AND SAFETY*

Andrea Bernardi

Oxford Brookes University, Gypsy Lane Oxford, OX3 0BP, United Kingdom

E-mails: abernardi@brookes.ac.uk

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Abstract. The Capability Approach, first developed by Amartya Sen, can be used as a mean to analyse occupational health and safety related behaviours. Accidents at work more frequently occur among atypical workers and migrants, making this an interesting context in which to apply Sen's theoretical framework; namely showing how freedoms, rights, organisational climate and capabilities are important factors in risk prevention. It is logical to expect that workers' participation and rights should provide a safer environment, but the application of the Capability Approach offers a tool to measure organisational inequalities and their consequences. Furthermore, its application could help to improve occupational health and safety chiefly among atypical workers. In this paper, I consider Safety Capability to encompass the workers attitude to their own protection, their understanding of safety procedures and the risks they face, and their freedom to ask their organisation to comply with the law and implement safe work processes.

Keywords: capability; health and safety; organizational climate; organization; wellbeing

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1. Introduction

This paper, after a brief statistical analysis of occupational safety trends, summarises different research perspectives on occupational well-being and safety. There is no doubt from the statistics that higher incidences of accidents and fatal accidents occur among non-standard workers than among standard workers. Occupational Health and Safety (OHS) is a key organisational priority to reduce risk and promote employees' well-being.

As well as applying Amartya Sen's Capability Approach to OHS behaviours, this paper's contribution lies in the way it introduces and discusses the role of organisational climate as an important mediator linking workers' contractual status (standard/non-standard, permanent/atypical) with their attitudes and behaviour in relation to safety. As such, this paper proposes a new theoretical methodology to deal with OHS issues, and further suggests cross-border co-operation among social sciences in this field. According to Eurofound: Atypical work refers to employment relationships not conforming to the standard or 'typical' model of full-time, regular, open-ended employment with a single employer over a long-time span. 'Typical' work in contrast is defined as a socially secure, full-time job of unlimited duration, with standard working hours guaranteeing a regular income and, via social security systems geared towards wage earners, securing pension payments and protection against ill-health and unemployment.

The motivation for carrying out this research lies in the official statistics on labour safety, although these in themselves present considerable difficulties. Any comparison between European countries becomes immediately methodologically difficult, especially when dealing with all 27 member states. At best, standard indexes and harmonized figures therefore have to be used (Figure 1). Germany and the UK outperform Italy that in turn outperforms France in terms of their OHS.

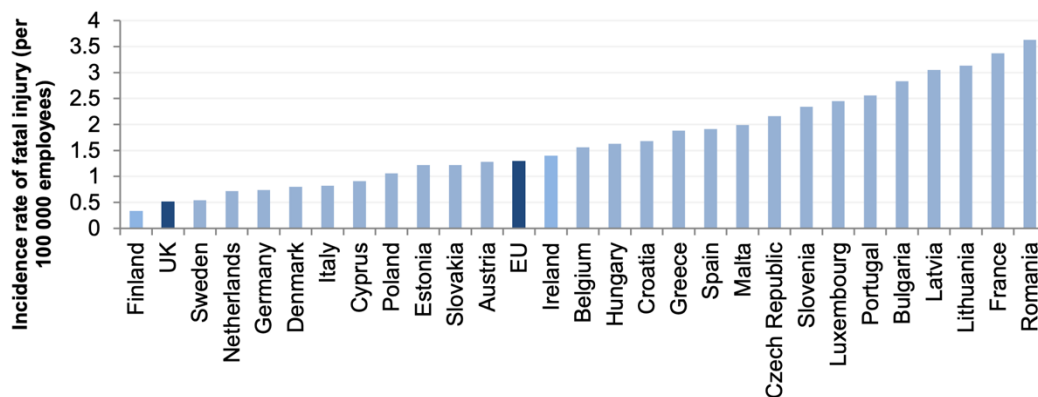


Fig. 1. Standardised incidence rates (per 100,000 employees) of fatal injury at work, excluding road traffic accidents for 2015.

Source: Eurostat, ESAW, 2015.

An index of disabilities and fatal accidents occurring at work in Britain, organised by industry (Figure 2) reveals some industries being unsurprisingly safer than others. Equally unsurprising, is finding that the most "dangerous" industries are named as being those associated with agriculture, fishing and forestry. Other features are less predictable, however. Construction performs better than public administration and human health. Such findings

strongly suggest that technology is not the only variable needed to explain risk. Safety culture (Gherardi and Nicolini, 2000, 2002), risk management and labour organisation are clearly very important as well.

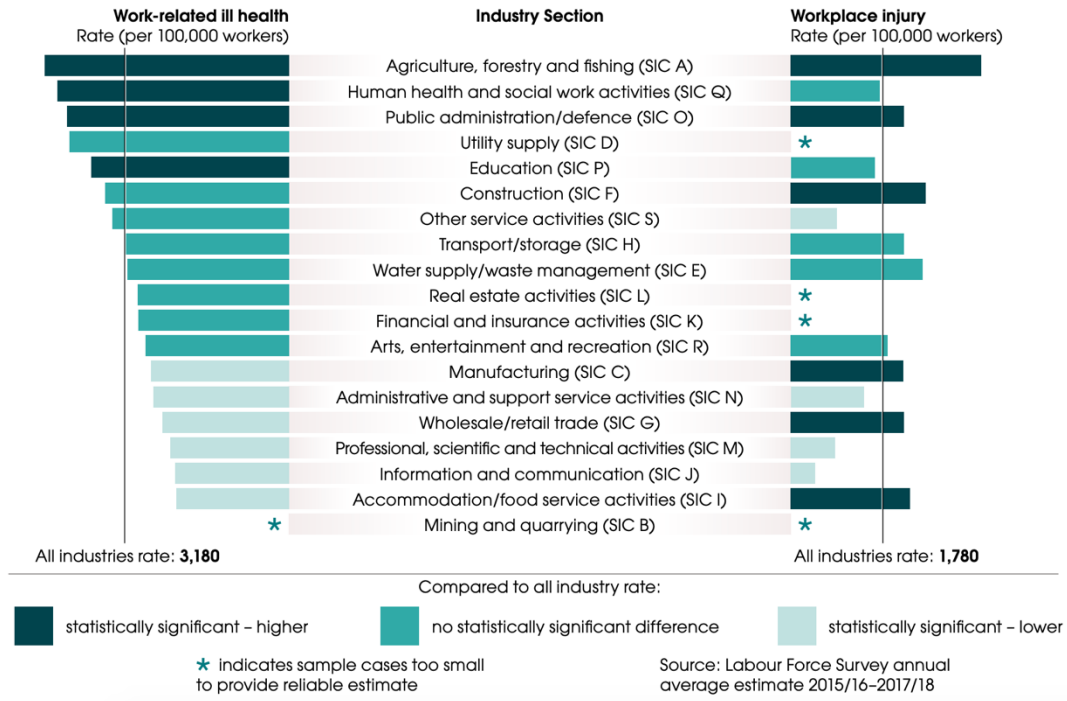


Fig. 2. Rate of self-reported work-related ill health and non-fatal injury by industry.
Source: UK HSE, Health and safety at work Summary statistics for Great Britain 2018.

The relatively bad performance of Public Administration as illustrated in Figure 2 could in part be attributable to the police and armed forces being in themselves relatively dangerous jobs. Nevertheless, such linkages between safety and contractual flexibility often display consistency. For example, in Italy, the state is the largest employer of atypical workers thereby going against common assumptions.

It is against this context, mapping the variable performances of European states in OHS issues, that this paper has the following objectives:

- 1) To review the literature on risk and safety and to analyze the role of organisational climate in affecting safety.
- 2) To discuss the feasibility of introducing the Capability Approach to Organisation Studies.

2. Safety, risk, well-being and organisations

Although in Western Europe the general rate of occupational accidents has decreased during the last 30 years, there seems nevertheless to have been a noteworthy recent increase among atypical workers and foreign workers (Hopkins, 2015; Howes, 2011). This trend of greater risks for non-nationals is also borne out in other European locations. In Austria for example, 37% of migrant workers surveyed felt affected by poor health conditions at work, compared with only 16% of Austrian workers. Furthermore, some 30% of migrant workers felt particularly affected by the risk of accident and injury in their workplace, compared with only 13% of Austrian nationals. In Spain the statistics build a similar picture: in 2005 8.4 out of every 100,000 migrant workers died in labour

accidents, a proportion in excess of that experienced by the Spanish labour force, who were said to have an accident mortality rate of 6.3% (Eurofound, 2007).

Risk, safety and well-being are complex phenomena that must be tackled at a systemic level, taking into account individual, organisational and institutional factors (Douglas, 1966; Tversky and Kahneman, 1974; Reason, 1990; Giddens, 1991; Beck, 1992; Weick and Sutcliffe, 2001; Weick, 1992; Weick and Roberts, 1993; Perrow, 1994; Gherardi, 2004; Gephart et al., 2009; James and Walters 1997; Guiol and Muñoz, 2009; Muñoz, 2019). Figure 3 illustrates this point, showing how micro level behaviour is affected by a plurality of influences. The authors mentioned above and schematically represented in Figure 4, represent the most important sample of those who have addressed the risk issue academically. A large number of economic and psychological studies on the subject particularly show how individuals calculate risk more or less rationally, both objectively and subjectively. This literature is supplemented by other research findings that stress the way that societies and governments (even in a Marxist perspective) calculate what they deem to be acceptable levels of risk. Additionally, literature within the fields of sociology and ergonomics has done much to emphasise the way technology affects modernity and has done much to illustrate how risk has become an intrinsic characteristic of modern societies.

There is a long tradition of studies on risk and safety among social scientists. In particular, much can be gleaned from the different standpoints and methodologies offered by Organisation Studies, which as a discipline pays much attention to the way perspectives have evolved over decades, simultaneous with broader influential changes in society, technology and economy.

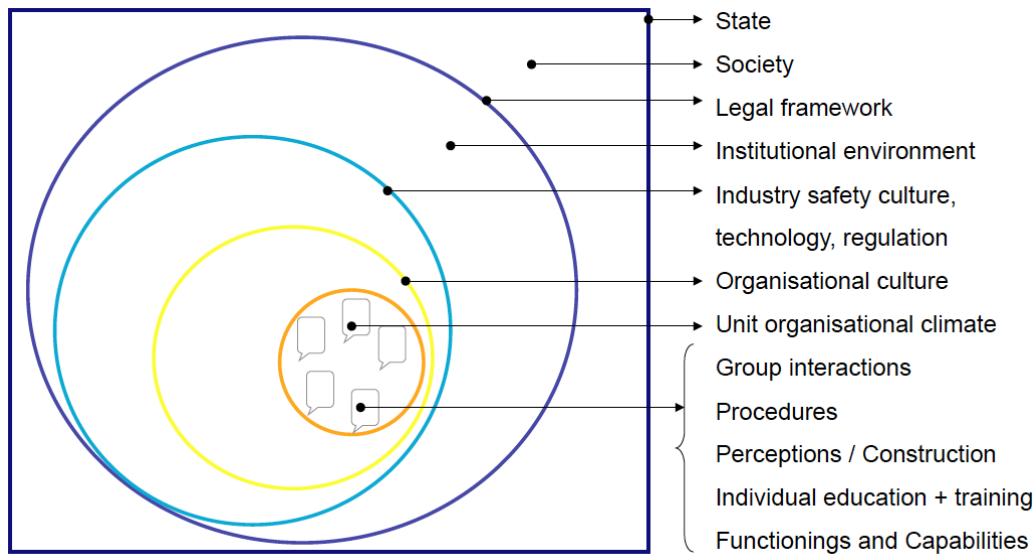


Fig. 3. Levels of risk analysis.

Finally, within Organisation Studies and industrial medicine, research has focussed upon a more detailed and nuanced elucidation of the interrelationship between safety culture, climate or workers' participation both as individual and cumulative factors contributive in helping to lower risk (Scholz & Vitols, 2019). Organizational climate and organizational culture are very close constructs (see for instance: Denison, 1996; Moran and Volkwein, 1992; Kunda, 1992). A further issue, which has yet not received as much attention, would be to consider the difference between risk and uncertainty at work according to different possible perspectives such as those of Keynes, Knight or Definetti.

With specific regard to an exploration of the connections between economic democracy (profit sharing, participation, co-operation) and occupational well-being the works of Guiol and Muñoz are particularly interesting. Their studies consider a sample of firms of different business sector and size in France and show that, the organisations with the best record for safety and well-being are those where systems of workers' participation have been most actively implemented (Guiol and Muñoz, 2007, 2009). With regard to the Finnish context, a similar study has been conducted on the relationship between worker's well-being and participation (Bernardi and Köppä, 2011; Scholz & Vitols, 2019).

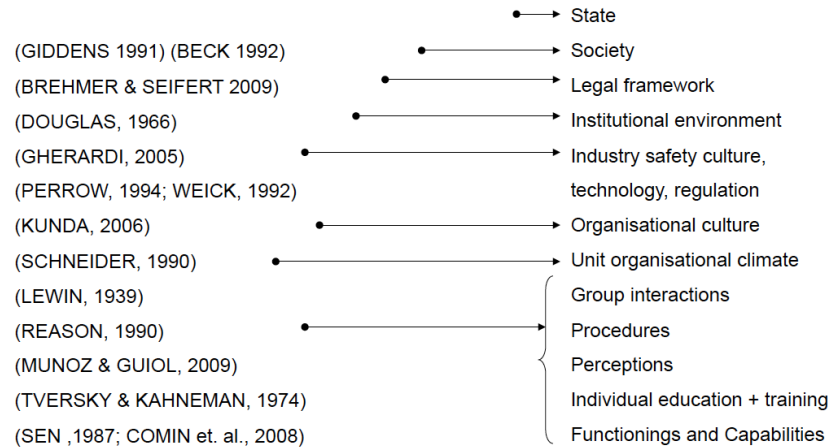


Fig. 4. Levels of risk analysis, literature.

Supplementary to the available literature described above, this paper explores an additional facet —the special aspect of western labour markets concerned with flexibility and atypical contractual arrangements (Amuedo-Dorantes, 2002, Barrett and Sargeant 2008) in a post Fordism context. It would seem that any discussion of this ‘non-standard’ segment of the market challenges the suitability of some of the above-discussed model theoretical frameworks (risk society, post-modern society, etc.). Indeed, these frameworks alone cannot explain why in the same industry, and in the same organisation, a worker with a worse contractual status is more likely to be in jeopardy, having either more chance of being affected by occupational diseases, or increased chance of being involved in a fatal accident at work.

I consider that one way of exploring this interrelationship between job insecurity and exposure to risk at work would be to to apply the Human Development and Capability Approach formulated by Sen. This seems particularly pertinent given its intrinsic interest in freedoms and rights and its ability to discern between real and formal abilities and capabilities, taking into account formal and informal institutions (De Muro and Tridico, 2008) and cultural constraints (Alkire, 2002).

“A functioning is an achievement, whereas a capability is the ability to achieve. Functionings are, in a sense, more directly related to living conditions, since they are different aspects of living conditions. Capabilities, in contrast, are notions of freedom, in the positive sense: what real opportunities you have regarding the life you may lead” (Sen, 1987).

We can say that functioning means the act of function, capability instead being the ability plus the real condition and the freedom to use our own ability.

This paper postulates that, together with freedoms, rights and capabilities the role of organisational climate (Woodman and King, 1978; Waters and Roach, 1974; Litwin and Stringer, 1968; Argyris, 1958) and culture (Schein, 2004; Kroeber and Kluckhohn, 1952; Hofstede, 1980) is highly important in affecting individual safety behaviours and performances. Furthermore, the way individuals and groups perceive risk can be variously

influenced by organisational climate, by group leaders, by interactions, and by structures and cultures within organisations. As the climate influences the attitudes of workers and managers towards risks and helps to determine the conditions of well-being at work (Lewin et. al., 1939; Schneider, 1990; Kunda, 2006), it seems logical to combine the Capability Approach and the organisational climate as theoretical tools to further examine certain trends and behaviours in the relationship between atypical workers and OHS.

2.1 Individual behaviour, groups and safety

Danger is evaluated by individuals not rationally but through filters of perception (Clarke, 1999). The difference between the real (or objective) risk and the perceived (thus subjective) risk is significant because the danger increases if individuals underestimate the real risk. The discrepancy between subjective and objective risk is taken into account in the theory of safety and in the theory of cognitive dissonance. In all cases, the organisational climate plays a role at the individual and group level in identifying and assessing risk.

Organisations can reduce the dissonance by acting on individuals: borrowing neo-institutional terminology, it is possible to influence safety behaviours with normative, cognitive and regulatory actions. The employee - a professional or a manual labourer (white or blue collar) - should be oriented by the organisation and other institutions in its behaviours or attitudes by communicating and explaining what is required to do (regulative), what is appropriate to do (normative), or what is right to do (cognitive). Attempts to change perceptions often encounter strong resistance, since these are the result of processes of self-learning and reinforcement.

The arguments, so far, have highlighted how perceptions influence the subjective cognition of danger and hence individual behaviour. From a systemic perspective it is also necessary to analyze the consequences that the individual perception of risk has on the behaviour of others. In particular, it is important to take into consideration the risk perceptions of executives and entrepreneurs, which are reflected in both the organisational climate and in the labour organisation. Furthermore, the socializing of experiences and perceptions increases both the quality and quantity of group assumptions. Group cohesion makes the socialisation even stronger, amplifying the effects. Safety culture is also built on training risk perceptions and on sharing cognitive elements (Roth et. al., 2006; Payne and Mansfield, 1978).

2.2 Organisational climate and safety

Climate analysis and capabilities' development can be considered tools for OHS prevention; initially this paper will consider the importance of climate, taking as axiomatic that organisational culture is the broader environment where climate develops.

There is a large literature on organisational climate (Levin et al., 1939; Schneider, 1975, 1990) and several studies on safety climate in particular (Nasurdin et. al., 2006; Johnstone and Johnston, 2005; Vaananen et al., 2004; Neal et. al., 2000; Miceli and Near, 1985; Zohar, 1980). There are no major studies, however, on the relationship between safety, climate (in a broad, general, sense) and organisational well-being. In this section I will try to explain how the general climate and well-being can influence safety conditions and the level of objective risk.

The reality is a complicated one. Climatic elements can even promote, for instance, a no-blame approach (most easily exemplified via the airline industry). Some organisational cultures, in contrast (for example those developed around productivity stress or cocky and macho behaviours) may instead encourage the spread of assumptions without explicit managerial direction, which is particularly dangerous when linked to safety.

A useful means of highlighting the power of these different organisational climates would be to consider policies towards whistle blowing, beyond the protection provided by the law for workers reporting illegal offences. In this context, it is important that internal mechanisms should permit employees to communicate sensitive information to top management or authorities in confidence. Organisations need to develop policies and tools to facilitate

whistle blowing, and above all, they have to foster a climate that encourages those behaviours and identifies them as safe and morally right. Judicial protection alone may not provide sufficient incentive.

The relationship between climate and safety therefore seems sensible, even self-evidential, and has already been studied in the literature. An organisation's success or failure can thus depend on its organisational climate. What is not explained, however, is how job insecurity varies amongst different categories of worker. How is it possible that a given job in a given factory is statistically more dangerous for non standard and alien workers than for their so-called 'standard' counterparts? Some possible reasons readily present themselves (the dynamics of the underground economy, the propensity to assign harder tasks for weaker workers, and so on), but this phenomenon still lacks scientific analysis.



Fig. 5. Contractual arrangement, climate, capabilities, behaviour.

Figure 5 explains how the contractual arrangement influences behaviour and, in turn, safety performance: naturally contractual arrangements confer different status within organisational climate. The organisational climate is a mediator between individuals and the collective cognitive phenomena. It can amplify or limit the individual perceptions of risk. The climate can allow colleagues with full contractual rights to ask their atypical co-workers to be allocated the most risky, unsafe, unpleasant or stressful tasks. The climate can help the individual to define subjective risk and it can influence the group appraisal of objective risk.

To further elucidate this analysis the Capability Approach can be usefully used. Given that the phenomenon described in this paper is one mainly based on differential access to rights, since an employment contract is mostly an issue of rights and duties, it is my contention that the Capability Approach can supply a useful tool to dissect and understand the complex interrelationship between rights, well-being and safety.

3. The Capability Approach and organisations

The Capability Approach (CA) was introduced by Amartya Sen in 1988, ten years before he received the Nobel Prize. Since then, the approach has been widely used among scholars of many disciplines, but mainly amongst those studying national or regional level phenomena. The main idea of this school stresses the need for both researchers and policymakers to look at capabilities, rather than merely consider economic data or formal legal systems (Fukuda-Parr, 2003; Sen, 1994). Equality and development should be pursued, Sen has argued, through capabilities that encapsulate notions of freedom and real opportunities regarding the desired life.

Capabilities as defined by Sen are enabled by rights and functionings (in our case education, safety, health, and so on). The well-being of citizens and the development of nations rely on capabilities and real equality of opportunity and not on GDP per capita, which has sometimes been the principal measure of assets, or equality of resources, or primary goods as suggested by Dwarkin (2000) or Rawls (1972).

Currently, the Capability Approach is used by researchers with different educational backgrounds involving many fields of study, including economics, anthropology, philosophy, political science, psychology, education science, health studies, welfare and public policy. There are also studies on labour, welfare and happiness, with a micro -

or macro - economic emphasis. There have been no applications to Organisational Studies, however. Traditional applications, (such as is illustrated in Figure 6) have seen policy makers and researchers concentrating upon human development indicators, rather than on growth or economic development.

In a liberal and pluralistic view of individual ambitions and well-being, scholars utilising the CA believe that the state should grant citizens freedoms and opportunities to achieve certain essential 'rights' or functionings (health, education, safety, for instance). Given a personal set of functionings, human beings should then be able to pursue their own selected goals for well-being, thanks to their own capabilities. A given set of functionings can be defined as the creation of an environment that allows positive pluralistic opportunities for citizens to both be and behave, it provides a context in which there is freedom and there is real (not merely formal) equality of opportunity. Furthermore, once citizens are placed in such an environment, they are given the possibility to acquire some capabilities and to use them autonomously in their own lives. Participation could well be considered as a functioning referring to workers' participation as well as the more traditional interpretation focussing on political participation.

A study of human development differs from other examinations of liberal frameworks of equality (see for instance those examined by Rawls or Dworkin) because it does not focus on equality in terms of the rule of law or on access to primary goods or resources. Human development instead concentrates on the equal ability of citizens to pursue well-being in the context of all the cultural or social constraints on human development. It is worth noting that researchers of this school frequently also focus on economic development, but they believe that economic development is a consequence of human development, not its cause.

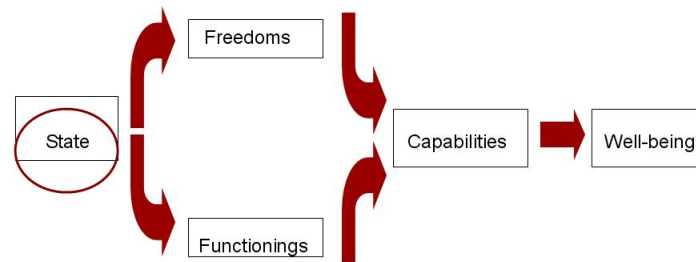


Fig. 6. Capability Approach and Human Development, at a regional level.

So far, the areas where the Capability Approach has been mostly developed are: the analysis of human development at national or regional level (Sen, 1985a; Comin et al., 2008); the analysis of well-being and local development (Alkire, 2002); the study of the conditions of the poor in developing countries; the development itself (Klasen, 2000; Qizilbash, 2002); the measurement of poverty and welfare in advanced economies; the study of the difficulties of disabled people; the study of gender discriminations (Sen 1985b; Robeyns 2003; Monni and Costantini, 2008; Nussbaum, 2000) and the analysis of public policies (Schokkaert and Van Ootegem, 1990).

To the extent that Organisational Studies deals with the individual and collective welfare of workers, the development of their potential contribution, the understanding of the exchange of contributions and incentives, cultural diversity, the psychological components of organisational behaviour, and with fairness, justice and change, the Capability Approach seems to offer an original opportunity for researchers. Perhaps surprisingly however, although this framework has been widely used, it has not been applied within Organisational Studies. Yet, its usefulness is immediately apparent. Rather than consider OHS, matters such as formal obligations, legal formalities or the presence of safety tools (hard hats and extinguishers for instance), it is perhaps more useful instead to focus on capabilities (the real abilities of workers to protect themselves) and on their freedom to request safe environments and proper procedures. This represents the measure of the potency of workers to affect or assume change within their working environments. Understanding the capabilities of atypical workers in this way,

by locating them within their various organisational climates, therefore provides a tangible means of understanding how contractual insecurity turns into risk and helps explain why foreign workers are in greater danger where they lack education, language skills and rights.

The Capability Approach can be combined together with analysis of organisational climate to provide insights into OHS trends at the organisational level. Shifting from the regional to the organisational level, the most important institution is no longer the state, but the organisation itself, given the importance and the role of all the other institutions (ILO, 2004), both formal and informal (Drury, 1983; Collinson, 1999).

Figure 7 illustrates the methodological framework with reference to OHS and one specific capability which I call *Safety Capability* and which I define as: *the worker's attitude to self protection through the understanding of safety procedures, the proper assessment of the objective risk and the freedom to ask the organisation to respect the law and to implement safe work processes[†] fitting the environmental and technological context[‡].*

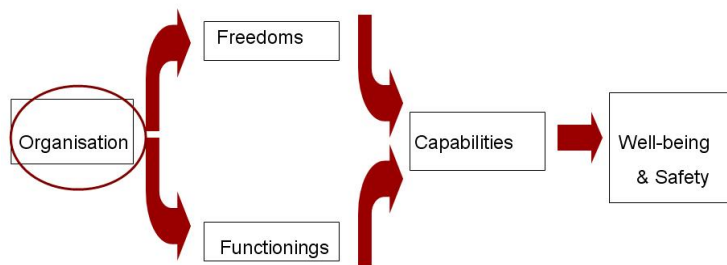


Fig. 7. Capability Approach and Organisational Development at the organizational level.

Some studies (Bernardi 2009, 2010) have been conducted with this methodology. The empirical findings were interesting. In the workplace it seems that workers' capabilities are activated by particular functionings, namely autonomy, trade union rights, occupational well-being, organizational equity, labour rights and workers' safety awareness (Keune & Pedaci, 2019). As in Sen's original application, functionings need a general context of freedom in order to flourish.

To assess workers' Human Development (meaning the development of their functioning and capabilities), however, one needs to place them in the context of Organisational Development. This re-orientation recognises the importance of Organisational Development as the primary means of fostering both individual and collective well-being at work. Human Development in contrast, tends to be a more useful lens via which to analyse the economic and social development of a nation or region.

4. Capability Approach and safety

Sen introduces the idea that the satiation of basic needs is a means to ensure positive rights or to improve the ability of individuals to exercise their rights of freedom in different areas, ranging from the social to the political and economic. Sen tries to analyze and measure these individual achievements and values by focusing his research on what people are theoretically *able* (or, to use his term, *capable*) to do because of the context in which they exist, rather than focusing on the tangible economic opportunities offered to them through disposable income, consumption or spending. This analytical framework therefore measures not only earnings, property, and

consumption but individual self-esteem, the way an individual is regarded by the community and their well-being in the workplace (for the purposes of this paper organisational climate and OHS). In short, this model gives more emphasis to the well-being of individuals and to their satisfaction of feeling fully realized as human beings. These intangible conditions are harder to measure than national product, per capita income, or a nation's endowment of infrastructure. According to Sen, the capabilities of individuals to achieve what they aspire to match with freedom: the freedom to do what you want in a context of "equality of opportunities".

The capabilities' framework is based on two concepts: freedom and valuable beings and doings. Sen managed to summarize both terms into a single expression, functionings. This encapsulates what every person is able to obtain and to achieve during his lifetime, in Sen's terminology their "doings" and "beings". But how can we achieve these *states of being*? At this point, Sen develops a path based on individual capabilities. According to him, the capabilities of a person depend on a variety of factors, including personal and social assets (i.e. what the social conditions of individuals are and how society handles it). Every person, according to Sen, has a set of basic and general *capabilities*, which is one of the several possible combinations of functionings that he is able to achieve. The basic capabilities refer to the freedom to do whatever is necessary to escape from a state of poverty. This model has become crucial for the analysis of poverty, and more generally, to analyze well-being (quality of life) (for example, Nussbaum and Sen, 1993). "General capabilities" are described as growing in a pleasant and healthy environment and refer to physical and mental health, education and knowledge, social relations and interactions, physical and moral well-being (Sen, 1983). The basic idea is that the abilities of individuals are linked to their actual freedom to be whatever they want and to achieve what they aspire to: that is "what are the real opportunities you have to live as you want" (Sen, 1987). Freedoms are closely related to functionings which are what you absolutely need to carry out your own capabilities (Figure 7).

In this view, the Capability Approach can be used with regard to the development of individuals that are part of an organisation (see Figure 7). In particular, we look at the conditions that an organisation can provide to foster *Safety Capability* as defined above. Organisational freedoms refer to trade union rights, the respect of employment rights, and freedom of association among workers. These freedoms underpin the functionings, relating to health and safety that have already been identified earlier in this paper: general organisational climate, safety compliance attitudes, well-being at workplace, autonomy, participation, proper training, equity and the general respect of rules.

It is my contention, based on the existing and above mentioned literature on health, safety and risk at work, that this combination of functionings is the root of *Safety Capability*: namely a complex tacit knowledge acquired by the worker that allows him to understand the importance of safety standards, to demand respect for rules, to limit the divergence between objective and subjective risk evaluation, and independently, if necessary, to take own measures to ensure his individual, group and organisational safety.

4.1 Possible Applications

This paper aims to put forward a new tool for OHS analysis. To do so, I have proposed a new means of measurement, one that takes into account both the climate of organisational units and the capabilities of workers. The capabilities framework enables us to understand that human beings are fully able to exercise their rights, to express their personality, to achieve personal satisfaction only if they can rely on an endowment of skills, suitable physical and moral conditions (Herzberg, 1959), or knowledge. It is ineffective to know your rights if you are not able to make a full use of them. To give an example at national level, Sen would argue that nothing is achieved by allowing under-privileged black citizens in the USA formal political rights unless they feel enabled and motivated to vote. Similarly, the presence of a university in a town is of no value to women if the local culture prevents them from studying there. In the same way, the full benefit of having purchasing power is undermined by poor education if this leads to the consumption of junk food and a consequently lower life expectancy.

Following this line of argument, it is not enough for a worker to simply be aware of a safe procedure, especially if he is part of an organisation that fosters risky behaviours, either formally or informally. Awareness of risk may not lead to the adoption of safe procedures in the face of a challenging climate and the negative attitudes of colleagues, managers (Greasley & Edwards, 2015) or groups. A positive circumstance would be one where the employee should enjoy a condition of freedom and well-being. In this context, organisational well-being is a necessary condition in order for the worker to be able to protect himself from risks. Freedom, which generally speaking suggests a condition of equity and the respect of rules, creates a situation whereby workers feel at liberty to call for safe tasks and procedures. Freedom is also the ability to make full use of a proper level of autonomy where the procedures are objectively hazardous or where it is necessary to intervene in order to avoid an accident. Finally, freedom implies that a worker may denounce violations of rules and proper procedure and illegal conditions without having to fear serious personal consequences.

Within a context of well-being, in a lawful environment where there is respect for safety rules, it is possible to reduce the cognitive dissonance between subjective and objective risks. Organisations should promote awareness and risk assessments that are reasonably objective (Neal et. al., 2000). On the other hand, some organisational cultures may instead promote risky assumptions concerning processes, rules, procedures and safety related behaviours.

Short term and atypical workers, foreign citizens or illegal workers usually have little freedom, social security, education, psychological confidence, autonomy or bargaining power. That is why such workers have to fight against false assumptions, if they are to refuse to undertake excessively dangerous tasks or challenge the perception of risk within the organisational unit: factory, office, shop, small firm or complex organisation. Furthermore, the social interactions and organisational behaviour of employees, who are not fully free, either in terms of employment contract, or in terms of evaluating skills, entail risk. The social construction of reality (Berger and Luckmann, 1966) among citizens who are not free or workers who are not skilled is risky.

Education, safety awareness, participation and the active use of civil and trade union rights give to any employee the capacity to take advantage of the available opportunities (Keune & Pedaci, 2019). It is the comparative lack of access to these that creates a situation of greater risk among foreign workers and non-standard workers. Further empirical studies could usefully study the relationship between safety attitudes (a capability), the organisational climate and the labour employment status (intended and measured both as functionings). Respondents would manifest their level of agreement with propositions on a Likert Scale. Socio demographic information and health confidential data, anonymously coupled with each questionnaire, could be collected. The functionings could be measured from the questionnaire and from data on health conditions and safety history obtained from the employer and from national authorities.

The hypothesis that the Safety Capability of workers (dependent variable) depends on functionings (predictors, independent variables) could then be tested using a linear regression. At that point it would be possible to say whether the safety climate, the quality of work, the general respect for rules, and the job stability and other possible factors are useful indicators to ensure that safety standards are understood and respected by workers with a proper attitude towards risk. Such a theoretical construct can also be seen in the form of a linear regression equation that relates the dependent variable capability to the functionings that are independent variables.

5. Conclusions

Going back to the original research question posed in this paper, my purpose was to demonstrate that in OHS the overall organisational climate influences safety behaviours. Organisational Studies can be very useful in dealing with safety at work, not least as it is clear that labour organisation and safety climate do matter; as evidenced in

Figure 3. Using a complex definition of safety prevention skills and a broader definition of well-being, it is clear that not only the safety climate but the entire general climate within an organisation influences OHS related behaviours. Moreover, the aim of this piece was to introduce the Capability Approach to Organisational Studies researchers. In my view, this study has revealed no incompatibilities between this approach and the general theoretical framework of Organisational Studies. Indeed, it is hoped that this work will show how Amartya Sen's framework can be applied in the field of Organisational Studies by addressing not only issues of well-being and safety but also by using it throughout the array of existing research interests and methodologies. Finally, by combining these two approaches, this paper should be seen as contributing to debates on economic democracy, not least with regard to the relationship that can be clearly mapped between workers' rights and participation and their occupational health.

The recession following the 2008 financial crisis triggered major reforms of labour market regulation in Europe, it also rebrought major changes to employees' experiences at work (Ogbonnaya, Gahan & Eib, 2019). It is now time to investigate if those recessionary changes at work had any impact on the health and safety of workers across Europe. This approach could contribute to such a study.

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Andrea BERNARDI is the Senior Lecturer in Employment and Organization Studies at Oxford Brookes University in the United Kingdom. He holds a doctorate in Organization Theory from the University of Milan (Bicocca). After studying in Rome, Copenhagen and Milan, he started his academic career in Italy before moving to the University of Helsinki and then the University of Nottingham, China. I then worked for four years at Manchester Metropolitan University before arriving at Oxford Brookes in 2016. His main research contributions relate to the co-operative sector, including Chinese co-operatives. He also works on employment relations and inequality and he has further interests in the study of time, the past, and history in management and organizational studies. His research has maintained three consistent characteristics across my career to date: its collaborative genesis, its openness to the benefits and challenges of interdisciplinarity, and its concern with approaching its objects of study using the insights and methods of history.

ORCID ID: <https://orcid.org/0000-0003-2571-6817>

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IMPACT OF INTERNATIONAL BRANCH CAMPUS KPIS ON THE UNIVERSITY COMPETITIVENESS: FARE METHOD*

Egle Girdzijauskaitė¹, Asta Radzeviciene², Arturas Jakubavicius³

^{1,2,3} Vilnius Gediminas Technical University, Saulėtekio al. 11, 10223 Vilnius, Lithuania

E-mails: ¹egle.girdzijauskaitė@vgtu.lt ; ²asta.radzeviciene@vgtu.lt ; ³arturas.jakubavicius@vgtu.lt

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Abstract. International branch campus is a rather new phenomenon in higher education and it is often questioned if it is an effective tool for HEI competitiveness because of its high risks and extremely high costs. In order for higher education institution managers to be able to use an international branch campus (IBC) as a tool for competitiveness, indicators of IBC having the strongest influence on the competitiveness of HEI must be indicated. In order to determine the main key performance indicators semi structured interviews were executed with the top managers of international branch campuses globally and the gathered data was analysed and coded using the computer assisted qualitative data analysis (CAQDAS) with Nvivo software. Six most important key performance indicators of IBCs have been identified and the FARE (Factor Relationship) method was used in order to determine the weights of the latter criteria. A system of indicators has been developed to assess the impact of HEI international development on the university's competitiveness and a relationship between the key performance indicators of the IBCs and the university's competitiveness has been revealed.

Keywords: branch campus; HEI, competitiveness; FARE

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1. Introduction

Internationalisation is an ultimate condition and the way for HEIs to operate. Due to its complexity internationalisation is an institutional change factor, is making strong influence on goals, culture, resources and behaviour of the HEIs, having crucial role for their competitiveness (Altbach & Knight, 2007; Radzevičienė & Girdzijauskaitė, 2012; Senan, 2018; Lysytsia et al., 2019). In response to external as well as internal pressure HEIs strive to increase the volume and enhance the quality of internationalisation activities. There is a high demand for the investigation of the critical factors and tools to enhance internationalisation in practice.

The competition in higher education area is growing and universities are becoming more and more entrepreneurial. It is argued in literature that universities will be run like multinational corporations and will have to incorporate business models in order to operate successfully (Czinkota et al., 2009; Ennew, 2012; Gallagher & Garrett, 2012; Kim & Zhu, 2010; Naidoo, 2008, 2009; Naushad, 2018). It is also argued that entering international markets is a source of competitiveness. The most radical foreign market mode in higher education is an international branch campus.

According to the British Council, an international branch campus (IBC) is a stand-alone satellite operation in the host country established by the sending HEI. An IBC is responsible for all aspects of recruiting, admission, programme delivery and awarding of the qualification. In addition to faculty employed from the parent institution, the IBC may employ local and/or international faculty to assist with teaching. Quality assurance of the programme is the responsibility of the sending HEI and is often subject to additional accreditation processes by the host country.

International branch campus is a rather new phenomenon in higher education and it is often questioned if it is an effective tool for HEI competitiveness because of its high risks and extremely high costs. Just like mobility has been the most visible aspect of internationalisation, IBCs are the most visible and riskiest aspect of transnational education (Beecher & Streitwieser, 2017; Girdzijauskaitė & Radzeviciene, 2014; Healey, 2008, 2015; Mazzarol et al., 2003; McBurnie & Pollock, 2000; McBurnie & Ziguras, 2007). These stand-alone satellites are risky in terms of reputational damage and financial loss, which may have been one of the reasons why the literature on this topic has been limited (Healey, 2015).

In order for higher education institution managers to be able to use an IBC as a tool for competitiveness, it is important to know, which indicators of IBC have the strongest influence on the competitiveness of HEI and take advantage of this knowledge. There is a lack of knowledge, necessary for the evaluation of the impact of the international branch campus on the competitiveness of a university and for the strategic and systematic approach to international branch campus as the most radical form of foreign market entry.

Evidently development of international activities in higher education is still an important subject for research especially the most recent topics: education export, branch campuses, and multinational universities (Becker, 2009; Healey, 2015; Girdzijauskaitė & Radzeviciene, 2014; Knight, 2005; Lane, 2011; Lawton & Katsomitros, 2012). Mastering the measures of international cooperation would allow for maximization of gain in such initiatives.

The need to test the internationalization of HEIs through quantitative methods has been discussed in the literature (Jiang and Carpenter, 2011; Goi, 2016). However, qualitative analysis methods are used in such research much

more frequently. Multicriteria evaluation using the factor relationship method (FARE) has been performed in this study in order to fill the gap.

2. Methodology

In order to determine the main key performance indicators semi structured interviews were executed with the top managers of international branch campuses globally and the gathered data was analysed and coded using the computer assisted qualitative data analysis (CAQDAS) with Nvivo software. Individuals were selected according to their function, campus location, as well as minding the female and male balance, in order to include all relevant groups: faculty, administration and management.

While a structured interview has a rigorous set of questions that do not allow one to divert, a semi-structured interview is open, allowing new ideas to be brought up during the interview as a result of what the interviewee says. The interviewer in a semi-structured interview generally has a frame-work of themes to be explored.

Interviews were audio taped (average time of the interview: 20-30 minutes). Audio data was then transcribed to text providing around 600 pages of data which was then coded and analysed with the Computer Assisted Qualitative Data Analysis (CAQDAS). Nvivo software was used for this, allowing to code all the text data and be able to look through the matrixes of thematic nodes and discover relationships.

After having identified the key performance indicators of IBCs that are influencing the overall competitiveness of a university the multicriteria evaluation using the FARE method has been performed in order to discover how each of the key performance indicators of international branch campuses influences the overall competitiveness of a higher education institution.

Despite of which method would have been chosen to use, all of them require to have the values of criteria and their influence weights. Usually the criteria weights are determined by experts. The limitation is predetermined by the fact that the accuracy of expert evaluation has a strong dependency on the number of criteria chosen for the research. The bigger the number of criteria, the more complicated it is for the expert to compare the alternatives and determine the weights. In this paper, a FARE (Factor Relationship) method (Ginevičius, 2006) is used, allowing the determination of weights of a large number of criteria based on the relationship between the criteria.

FARE method has been chosen over other multicriteria evaluation methods because it allows to increase the accuracy of calculations and to reduce the expert work.

The accuracy of the results reached while using the multi-criteria evaluation methods tend to depend on the determination of the criteria weights which are based on their interrelationship with each other (Ginevicius, 2006). FARE method was chosen for this research as one of the most accurate multi-criteria evaluation methods at the moment.

3. Results

After analysing the interviews, the conclusion was drawn that the following are the main key performance indicators having the biggest effect on the competitiveness of a HEI according to the respondents of the interviews: number of study programs taught at IBC, yearly income of IBC, having partners in IBC establishment in a form of joint venture (num-ber of partners), number of international staff (not local) in IBC, number of social partners in a host country of IBC, student number in IBC. Hence, the latter six KPIs were chosen for the evaluation of the interrelationship (Table 1).

Table 1. The key performance indicators chosen as the criteria for the multicriteria evaluation using FARE method (source: compiled by authors)

Criterion No.	Criterion
Createrion 1	Number of study programs taught at IBC
Createrion 2	Yearly income of IBC
Createrion 3	Having partners in IBC establishment in a form of joint venture (number of partners)
Createrion 4	Number of international staff (not local) in IBC
Createrion 5	Number of social partners in a host country of IBC
Createrion 6	Student number in IBC

Source: compiled by authors

The criteria weights were determined by the expert. The experts for the criteria weight determination were chosen based on their experience in the field of international branch campus management. Therefore, the experts were the top executives from IBCs all over the world, who are directly responsible for the decision making at the IBCs. The experts were interviewed and asked to determine the weights for 6 criteria, evaluating which key performance indicators (KPIs) of the international branch campuses (IBCs) has the highest influence on the overall competitiveness of the university.

Firstly, the experts ranked all the criteria by assigning them the relative standing positions against each other. In this way, the relationships between all the criteria were determined. Based on this logic, the 1 to 6 ranking amplitude was formed, where the total number of criteria (in our case – 6) was the lowest influence indicator, and 1 was the highest. The latter meaning that, the criterion which was ranked as the first has the highest influence on university's overall competitiveness in comparison with others (Table 2).

Table 2. Ranks assigned by experts for each criteria in the system (source: compiled by authors)

Criterion No.	Criterion	Rank
Criterion 1	Number of study programs taught at IBC	1
Criterion 2	Yearly income of IBC	5
Criterion 3	Having partners in IBC establishment in a form of joint venture (number of partners)	3
Criterion 4	Number of international staff (not local) in IBC	4
Criterion 5	Number of social partners in a host country of IBC	6
Criterion 6	Student number in IBC	2

Source: compiled by authors

Secondly, the experts were asked to determine the scope of the transfer for the highest ranked criterion. The latter has been done by using the scale of quantitative evaluation of interrelationship between the system's criteria, where the type of effect produced and the rating of the effect produced by the interrelationship (in points) are as follows: almost none – 1, very weak – 2, weak – 3, lower than average – 4, average – 5, higher than average – 6, strong – 7, very strong – 8, almost absolute – 9, absolute – 10. The scope of the transfer for the highest ranked criterion as assigned by the experts can be seen in Table 3.

Table 3. The relationship between the first main criterion and other system's criteria determined by the experts

Criteria	1	6	3	4	2	5
1	-	+7	+6	+5	+4	+3

Source: compiled by authors

The important point behind this ranking is that the criterion of a lower rank has relatively smaller impact on the criteria having higher ranks. Thus, it transfers a larger part of its potential impact to them. It follows that the ranks of the calculated criteria weights should match their numbers in the priority list, which means, that the higher ranked criteria should be assigned higher criteria weights. This important remark shall be referenced to in further calculations, where the strength and direction within the relationship between criteria is determined.

When the relationship between the main criterion (in our case it is the 1st criterion) and other criteria was determined, the concordance coefficient of Kendall (1939) was calculated in order to revisit the compatibility of the results.

Kendall's coefficient of concordance is a measure of the agreement among several quantitative or semi quantitative variables that are assessing a set of n objects of interest. In the social sciences, the variables are often experts, assessing different subjects or situations. (Kendall & Babington, 1939)

The concordance coefficient showed the sufficient consistency of expert's evaluations. The data was primary converted into ranks; later the ranks were displayed, and finally calculated.

After having checked the expert evaluations with the concordance coefficient of Kendall (1939), the relations between the remaining criteria groups and their strength were analytically measured in accordance with the relationships established at the first stage. Based on the formula (1), the part of the criterion's potential impact was transferred to the first criterion (Table 4).

$$a_{1i} = S - \widetilde{a}_{1i} \quad , \quad (1)$$

where a_{1i} is the impact of i -th criterion on the first main criterion; \widetilde{a}_{1i} is the part of i -th criterion's potential impact transferred to the main criterion.

Table 4. The part of the criterion potential impact transferred to the first main criterion

Criteria	1	6	3	4	2	5
1	-	+3	+4	+5	+6	+7

Source: compiled by authors

Thus, a criterion of the higher rank takes a part of the lower rank criterion's potential, because the criterion of a lower rank has smaller impact on the criteria having higher rank, therefore it respectively transfers a larger portion of its potential impact to them. In our case, the experts have ranked the criteria No. 3 by number +6, meaning that the effect on the main criterion No. 1 from criteria No. 3 is higher than average. Therefore, criteria No. 3 transfers its potential impact equal to +4.

As shown in table (Table 4), the first criterion is ranked first, while the second criterion is ranked fifth. It follows that the second criterion should transfer a part of the potential of its impact to the first criterion.

The relationship direction is indicated by a plus or a minus sign, showing that the considered criterion either influences another system's criterion or depends on it. A negative relationship shows that the considered criterion is less significant than the one to which it is related. Therefore, it transfers a part of its potential to it. A positive relationship on the other hand means that the considered criterion accumulates the potential of another criterion, therefore increasing the potential of its impact. Then, the matrix based on calculations was represented in table with a summary matrix of the potential equilibrium (Table 5):

Table 5. A summary matrix of the potential equilibrium of the criteria describing the research object

Criteria	1	2	3	4	5	6
1	-	+6	+4	+5	+7	+3
2	-6	-	-2	-1	+1	-3
3	-4	+2	-	+1	-11	-1
4	-5	+1	-1	-	+2	-2
5	-7	-1	+11	-2	-	-4
6	-3	+3	+1	+2	+4	-
Total	-25	+11	+13	+5	+3	-7

Source: compiled by authors

When the matrix of the potential equilibrium of the criteria describing the research object was calculated, the total potential impact using formula (2) was calculated based on the data presented in the first row of the latter matrix. The results of these calculations can be seen in the table (Table 6) below. As it is evident in the table (Tab. 6) below, the results are compatible with each other when the total effect (dependence) is equal to zero.

$$P_i = P_i - m a_{1i}, \quad (2)$$

The actual total impact with the actual total impact of each criterion of the system on the research object were found, in order to be able to calculate the weights of criteria based on formula (3) and formula (4).

$$P_s = mP = mS(m-I), \quad (3)$$

$$P_i^f = P_i + P, \quad (4)$$

Table 6. The results obtained in calculating the total effect (dependence) of the criteria describing the research object

Criteria	1	2	3	4	5	6	Total effect, P_i (Dependence)	P_i^f
1	-	+6	+4	+5	+7	+3	+25	+75
2	-6	-	-2	-1	+1	-3	-11	+39
3	-4	+2	-	+1	-11	-1	-13	+37
4	-5	+1	-1	-	+2	-2	-5	+45
5	-7	-1	+11	-2	-	-4	-3	+47
6	-3	+3	+1	+2	+4	-	+7	+57
Total	-25	+11	+13	+5	+3	-7	0	300

Source: compiled by authors

Finally, the normalized values of the potential of the total impact of the criteria on the research object were calculated based on formula (5). Firstly, for main criterion No. 1, the results are represented in table below (Tab. 7) and then consequently, for all other criteria in the created matrix (Table 7).

$$w_i = \frac{P_i^f}{P_s} = \frac{P_1 - m a_{1i} + S(m-1)}{mS(m-1)}, \quad (5)$$

Table 7. The results of weight calculation of the criteria describing the research object

	1	2	3	4	5	6	Total
Relationship between the first criterion with the other criteria	-	+6	+4	+5	+7	+3	$P_1 = 25$
Weights of criteria group w_i	0.25	0.13	0.12	0.15	0.16	0.19	$\sum_i^n w_i = 1.0$

Source: compiled by authors

Consequently, the normalized values of the total impact of the criteria on the research object were calculated for all other criteria in the created matrix (Table 8).

Table 8. The calculation of the criteria weights of IBC KPIs by FARE Method

Criteria	1	2	3	4	5	6	Total effect, P_i (Dependence)	P_i^f	w_i
1	-	+6	+4	+5	+7	+3	+25	+75	0.25
2	-6	-	-2	-1	+1	-3	-11	+39	0.13
3	-4	+2	-	+1	-11	-1	-13	+37	0.12
4	-5	+1	-1	-	+2	-2	-5	+45	0.15
5	-7	-1	+11	-2	-	-4	-3	+47	0.16
6	-3	+3	+1	+2	+4	-	+7	+57	0.19
Total	-25	+11	+13	+5	+3	-7	0	300	1

Source: compiled by authors

Finally, the effect and relationship between international branch campus key performance indicators and university competitiveness were determined and evaluated using FARE method and the following findings were discovered.

Conclusions

The hyper competition among HEIs has been growing globally. Establishing a branch campus might be a way to overgrow oneself, significantly strengthen the international presence.

It has been discovered that IBC establishment can have a considerable effect on the competitiveness of a higher education institution. A system of indicators has been developed to assess the impact of HEI international development on the university's competitiveness and a relationship between the key performance indicators of the IBCs and the university's competitiveness has been revealed.

The following indicators have been identified and listed according to the strength of a positive impact they have on the university competitiveness: number of study programs taught at IBC, student number in IBC, number of social partners in a host country of IBC, number of international staff (not local) in IBC, yearly income of IBC, having partners in IBC establishment in a form of joint venture (number of partners).

The discovered patterns and indicators shall allow further research on the strategic tools enabling universities to adopt international development solutions using an IBC as a tool for foreign market entry.

Abbreviations

FARE: Factor Relationship Method

HE: Higher Education

HEI: Higher Education Institution

IBC: International Branch Campus

KPIs: Key Performance Indicators

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Egle GIRDZLIJKAITE is a PhD candidate at Vilnius Gediminas Technical University. Having been researching international branch campus, entrepreneurial university phenomena and university business collaboration for the last 8 years she is now preparing a PhD thesis on “Internationalisation and innovation in the development of HEIs activities“. Currently working as a project manager in a creativity and innovation centre VGTU „LinkMenu fabrikas“. Research interests: entrepreneurial university, education export, higher education internationalisation.

ORCID ID: orcid.org/0000-0002-7871-6389

Asta RADZEVICIENE Dr. Asta Radzevičienė, currently a Vice-Rector for Strategic Partnership at Vilnius Gediminas Technical University, responsible for cooperation with business and academic partners, international development strategy and university outreach. Practitioner and researcher in higher education management and internationalisation with 20 years of experience, member of national HE management committees and WGs, former Head of International Relations Committee at the Lithuanian University Rectors' Conference. Her research interests are: higher education internationalization, entrepreneurial university and strategic management of higher education.

ORCID ID: orcid.org/0000-0001-8071-8861

Arturas JAKUBAVICIUS Doctor of Social Sciences. Expert and consultant of innovation management. Associate Professor at Vilnius Gediminas Technical University, Head of Innovation Support Services Department, Lithuanian Innovation Center. Has 25 years of experience in research, 20 years of experience in providing innovation support services, implementation of management methods and improvement of innovative processes. He has released over 50 scientific publications, has read over 100 reports in conferences and events, is a co-author of four monographs, and has been a long-time expert at the National Competition for Innovation. Areas of interest: innovation management, innovation projects, innovation systems.

ORCID ID: orcid.org/0000-0001-7936-5931

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