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DEVELOPMENT TRENDS AND CHALLENGES OF STUDENTS' ACADEMIC MOBILITY IN HIGHER EDUCATION

Agnė Juškevičienė ¹, Kristina Samašonok ², Adomas Vincas Rakšnys ³, Lina Žirnelė ⁴, Vilma Gegužienė ⁵

1,2,3,4,5 Vilnius University of Applied Sciences, Saltoniškių Str. 58, Vilnius, Lithuania

E-mails: 1*a.juskeviciene@vvf.viko.lt (Corresponding authors); 2 k.samasonok@vvf.viko.lt; 3a.raksnys@mtf.viko.lt; 4l.zirnele@vvf.viko.lt; 5 v.geguziene@vvf.viko.lt

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Abstract. The article presents the evaluation of students' international academic mobility in higher education in the context of the scientific literature, where the barriers to the development of academic mobility are singled out, the more effective management tools of academic mobility and their effectiveness are discussed. The aim of the research: after identifying the problematic areas of the implementation of international academic mobility in higher education, to anticipate the possibilities of its development. Analytical descriptive, quantitative and statistical research methods were applied. Using the quantitative research strategy, the experience of participation of Lithuanian higher education students (n = 349) in the Erasmus+ mobility programme was clarified, the reasons for non-participation in international academic mobility programmes were revealed and the factors determining higher student mobility indicators were singled out. The results of the study revealed the need to improve the system for the promotion and implementation of international academic mobility in higher education, as the results of the study showed that only a small number of research participants took part in the Erasmus+ programme. Despite the fact that participation in academic mobility programmes provides experience in communication and cooperation with representatives of other cultures, professional foreign language development, independence skills are developed, however, according to the research participants, fear, self-confidence due to insufficient professional knowledge and skills, lack of foreign language knowledge, intimidating selection procedures and interviews, and fears of possible difficulties in adapting when moving to another country, as well as reluctance to break up with family or close friends and insufficient financial support (scholarship), are among the reasons for not participating in Erasmus+ mobility. When assessing the possibilities of developing international academic mobility in higher education, the highest average scores show that higher scholarships and paid internships, as well as opportunities for groups of students to go to the same higher education institution or company in another country and places offered (educational institutions, internship places), the diversity of of places for academic exchanges and the high level of quality of professional training (education, studies and internships), according to the research participants, would encourage students to participate more actively in international academic mobility programmes. The results of the study will have practical implications for anticipating possible more effective tools for managing academic mobility in higher education.

Keywords: international academic mobility; Erasmus+ mobility programme; internships; higher education; students

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1. Introduction

In the context of internationalization, technological and socio-cultural changes, the international mobility of students in higher education is receiving increasing attention (Lopez-Duarte, et. al., 2021; Khanal and Gaulee, 2019; Castro, et.al., 2016; Bista, 2019; Dias, et al., 2021; Kirloskar and Inamdar, 2021; Cibák et al., 2021; Hou and Du, 2022). The results of international student exchange programmes such as Erasmus, their improvement opportunities, efficiency and effectiveness of existing processes and projects, as well as potential challenges, changes for the participants in different geographic fields are analysed (Do and Pham, 2016; Lopez-Duarte, et. al., 2021; Souto-Otero et. al., 2013; Wells, 2014; Wulz and Rainer, 2015). While this phenomenon is not new, historians say that at least one out of ten students in universities in the Middle Ages came from another country (Teichler, 2007), in the current conditions, the mobility of international students is intensified by the integration of educational political and legal systems, knowledge economy, various formats of global supranational institutions, strategic changes in university policy, the agreements and commitments they entail, declaration multiculturalism, opportunities provided by modern technologies (Knight, 2012; Lopez-Duarte, et. al., 2021; Joyce, et. al., 2007). In Europe, for example, these phenomena are linked to the Bologna process, The European Higher Education Area (EHEA), Definition of a European Credit Transfer & Accumulation System (ECTS), unification of higher education quality management systems and standards (Joyce, et. al., 2007). In retrospect, the establishment of the Erasmus exchange programme in 1987, which was based on student mobility, aimed at strengthening young people's career prospects, promoting socio-cultural adaptability and gaining international experience, is a significant catalyst for these processes (Papatsiba, 2005). Erasmus programme involves more than 4,000 higher education institutions from more than 30 countries (Souto-Otero et. al., 2013). The most popular countries which dominate in the context of international student selection are the Anglo-Saxon USA, UK, Australia, Canada and China (Bista, 2019). It should be noted that since 1950, globally, the number of students studying abroad has grown to more than 2 million by 2012 (Wells, 2014), other authors, e.g. Knight (2012), based on data from Chen and Barnett and OECD, state that the number of students increased from approximately 238,000 in 1960 to as many as 3.3 million in 2008. Although the data and methodologies of counting differ, they undoubtedly confirm the growing interest of students, the intensification of student mobility processes and the relevance of the analysed topic and problems in the face of constant political, legal, socio-cultural, institutional, structural and procedural changes. Student mobility is most often driven by the reputation of foreign universities, the quality of studies, the need for different cultural experiences, the financial interests of the universities themselves, recommendations from other students, external communication strategies used by higher education institutions, openness and freedom of academic thought of the institutions, high living and working standards, political reasons, e.g. postcolonial relations between states (Teichler, 2007; Wells, 2014; Wulz and Rainer, 2015).

The scientific problem of the article — what are the main challenges of the international mobility of students and what are the development trends of the international mobility?

Aim of the research: after identifying problematic areas for the implementation of international academic mobility in higher education, to identify opportunities for its development.

2. Theoretical background

The concept and key challenges of student mobility. Analysing the concepts of student mobility, it is possible to distinguish vertical mobility, where students have the opportunity to try institutions and study programmes in the same country, and when analysing international mobility in different countries, the concept of horizontal mobility is most often used. In the first case, it is called intra-national mobility, and in the second case, it is called international mobility. Given the complexity of this phenomenon, it is necessary to mention various double-triple diploma programmes, when students spend part of their study time in their home country and another part abroad, various international workshops (Teichler, 2007; Wells, 2014; Knight, 2012). Current research also notes the

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concept of virtual international mobility of students, particularly in relation to the global situation of COVID-19 (Lopez-Duarte, et. al., 2021; Joyce, et. al., 2007). The article analyses a phenomenon related to the mobility of international student credits (ECTS), which is limited in time (Wulz and Rainer, 2015; Papatsiba, 2005). As with any social phenomenon, the mobility of international students is inseparable from specific challenges. The concepts of challenges, pull factors / barriers are most often used in academic discourse to describe this phenomenon. In this article, the concept of challenges is used to distinguish both the factors that may limit students' participation in international mobility programmes and the factors-problems that arise during participation in these programmes, as these problems later become challenges for new students due to the feedback they provide (Wells, 2014; Souto-Otero et. al., 2013). Other authors, e.g. Khanal and Gaulee (2019) focus their research on the challenges of international mobility of students before and in the later stages, predeparture and post-departure. The article attempts to systematize these challenges by distinguishing the fundamental categories that are formed based on various empirical studies.

Socio-cultural challenges. When examining barriers to the development of academic mobility, special attention is paid to socio-cultural factors. Many researchers associate a person's reluctance to participate in exchange programmes and go to a higher education institution abroad for academic purposes with a person's lack of motivation and personal reasons, as well as unfavourable conditions for exchange. First of all, it is possible to distinguish students' reluctance and fear of separation from relatives, lack of motivation to participate. On the other hand, research data predominate, where geographical proximity is also considered an important factor influencing students' self-determination regarding their mobility (Mok, et al., 2021). Students are not offered a suitable period, e.g. the study period is considered too long or too short. Although student mobility periods vary, students usually have to spend a semester or even a year at a foreign higher education institution, which can negatively affect their social relationships, e.g. with their partner, other family members. This phenomenon is also inseparable from the various responsibilities of students to take care of older parents or children, who play a significant role in the context of student mobility. When discussing the influence of close contact and circumstances on a person's decision to participate in international academic mobility programmes, some researchers (Mok, et al., 2021) emphasize the importance of social contacts with an acquaintance or family living in the host country. According to researchers, such social ties with the countries to which they intend to study encourage student mobility. Also student mobility is often restricted by limited knowledge of a foreign language, a limited number of programmes in the English language, fear of losing one's job, complex socialization and integration processes, lack of mentoring, identity and value compatibility issues or the so-called "culture shock" phenomenon, family attitudes towards student mobility, and even the social status of the family, social segregation. It is also important to mention the challenges of intercultural communication, considering the different styles and forms of communication. On the other hand, security is of great importance in a person's life. This is confirmed by the findings of the researchers' work, which shows that, for example, the security of the country of destination is important for motivating students to study in a foreign institution. For example, Hill and Sughnani (2021), based on a study, notes that three-quarters of respondents identified national security as one of the most important factors in deciding to participate in an international academic mobility programme. The international mobility of students is also often criticized for the brain drain phenomenon, which can lead to a lack of cultural support, and for a positive perception of these processes in society, which is inseparable from ensuring student mobility. Frequently arriving international students are seen as a threat to the country's economy and jobs, they face racism, student psychological problems, e.g. depression due to increased workload (Bryla and Ciabiada, 2014; Teichler, 2007; Papatsiba, 2005; Do and Pham, 2016; Souto-Otero, et. al., 2013; Lopez-Duarte, et. al., 2021; Khanal and Gaulee, 2019; Wulz and Rainer, 2015; Bista, 2019).

Legal - procedural challenges. The legal instruments set out the basic principles and modalities for implementing international academic mobility programmes. Unfortunately, it is not always possible to ensure the smooth implementation of academic exchanges in a higher education institution. The mobility of international students

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can be limited by various laws, strict legal requirements (e.g. migration rules), and the complex process of filling in and submitting documents, competition between students for mobility positions. Some universities are generally unable to offer extensive mobility opportunities for their students, they lack information on international mobility programmes. It can be difficult to choose the right programme, students are not given the opportunity to apply for the desired institution of higher education. Despite various international agreements, university procedures and policies differ, e.g. the length and structure of the academic period, the timetable system (e.g. in some universities in Japan the spring semester runs from April to August), different assessment, examination procedures, and teaching methods, institutions face the challenge of limited student counselling about involvement in international exchange programmes, complex checks. Students are not sure whether their acquired knowledge, completed programmes, diploma, subject credits abroad will be recognized in the home country as well. The challenges of international student mobility can also be linked to the attractiveness of the host country itself, e.g. peripheral status in the Southeast Asian region (Bryla and Ciabiada, 2014; Knight, 2012; Do and Pham, 2016; Souto-Otero et. al., 2013; Lopez-Duarte, et. al., 2021; Wulz and Rainer, 2015). It is important to note that student mobility is also closely linked to the political situation in countries or regions of the world. According to Altbach and Wit (2018), students' mobility is influenced by Brexit, and, at the same time, the strengthening of anti-migrant policies. Such processes also change the map of openness of higher education to different groups of students. For example, due to the Brexit process, the increased problem of obtaining visas, even according to Altbach and Wit (2018), the unfavourable atmosphere for foreigners and other problems reduce the number of international students in the UK. At the same time, processes such as Brexit have an impact on the mobility of students from other European countries (Lincényi and Laczko, 2020).

Financial reasons. Students avoid participating in international mobility programmes due to limited university financial support, small scholarships, competition for scholarships, various fees, different levels of economic development of the states, ensuring the functions of the welfare state, economic cycle, especially when students come from less developed countries and face high financial costs, accommodation problems, students question the financial benefits of international mobility, and in many countries, it is forbidden to combine studies with financial - career goals and work during studies. It is natural that the limited financial support of a higher education institution, the different economic level of development of the countries and the related possible financial difficulties may be one of the reasons limiting a person's access to a higher education institution abroad for academic purposes. The location of the higher education institutions themselves, the physical environment and its attractiveness are also considered to be a certain limitation. Some higher education institutions participating in international mobility programmes require detailed financial statements (sometimes even from family members, such as bank records for one year) (Bryla and Ciabiada, 2014; Papatsiba, 2005; Souto-Otero et. al., 2013; Wulz and Rainer, 2015). Lee (2013) emphasizes that cost issues, including not only living but also social costs such as security, are considered to be one of the key factors influencing students' final decision to participate in an international mobility programme.

Technological and ecological environment reasons. Living in the conditions of rapid social, economic and technological changes, technology-based studies, which include virtual learning and other forms of learning based on information and communication technologies, become an inevitability in the context of modernization of higher education and study quality improvement (Volungevičienė and Teresevičienė, 2008). According to researchers, the implementation of technological learning solutions not only ensures more flexible organization of activities in the study process, improves access to higher education for those who want to study according to the opportunities and needs of students, but also gives higher education institutions a competitive advantage and uniqueness over other higher education institutions. encouraging an increase in academic exchange flows. To ensure the efficiency of international student mobility processes, it is necessary to invest in the digitization of educational processes, the development and integration of various virtual systems. The lack of technological competence and infrastructure can be seen as a specific challenge (Fakunle and Ajani, 2021). The lack of

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competence can cause underuse of contemporary higher education websites, learning platforms, assessment and examination systems etc.. This is particularly important because international students in higher education institutions often face staff passivity, lack of attention and information that could be offset by well-functioning technological systems (Joyce, et. al., 2007; Bista, 2019; Turnea et al., 2020).

The use of virtual systems to promote student mobility is also supported by Sidhu, et. al. (2021). It should be noted that virtual student mobility may also become an opportunity for international study, although this cannot completely replace student mobility programmes related to physical travel. However, Sidhu, et. al. (2020) argues that higher education institutions should include more blended mobility programmes. On the other hand, the change in forms of student mobility is driven by economic and cultural reasons, the national political climate, and global geopolitical realities (Kirloskar and Inamdar, 2021). William Lo and Chan (2020), Hou and Du (2022) place great emphasis on the political and economic forces among the countries participating in student mobility programmes and unequivocally determine the successful implementation of these processes. For example, Wit and Altbach (2021) even link the implementation of student mobility to various global phenomena, including climate change issues, noting that it is important for programmes such as Erasmus+ to contribute to reducing carbon emissions. more active virtual exchanges and joint international online learning are encouraged. At the same time, it is noted that these are just some of the key challenges for the next decade. Continuing to delve into the causes of student mobility, there is certainly considerable attention paid to ecological environment factors when, according to Mok, et. al. (2021), the environmental and climatic conditions in the destination country are one of the main reasons for deciding on student mobility.

Summarizing the above, it can be seen that the implementation of academic mobility is of particular importance in the context of globalization. Based on the results of the discussed research, it can be stated that the implementation of international academic mobility not only supports and ensures the attractiveness of higher education institutions in the international environment, but also improves the compliance of future international competencies and qualifications with the labour market. However, there are many barriers to the development and implementation of academic mobility, such as language and cultural differences, lack of information, non-recognition of foreign qualifications, differences in living standards, migrant status, visa problems and lack of funding. All this complicates the implementation of academic student mobility and does not ensure the development of its effectiveness in higher education. Therefore, the development of academic mobility in higher education institutions should be based not only on the knowledge provided in the field of study, but also on innovative approaches and tools through virtual systems and based on social cohesion.

3. The research methodology

Organization and sample of the study. The sample of the study was convenient, so the students of the selected Lithuanian higher education institution (n = 349) participated in it, of which 204 (58.6%) were female and 140 (40.2%) male, and 4 (1, 1%) did not indicate gender in the study. The highest number of respondents is first-year (n = 178 (51.1%)) and third-year (n = 107 (30.7%)) students, while the lowest number of respondents is second-year (n = 52 (14.9%)). and fourth-year (n = 11 (3.2%)) students. At the request of the higher education institution where the study was conducted, its name is not published.

A mixed method of distributing the questionnaires was used: a written survey and an online survey. The most effective way to collect data was to send questionnaires directly to survey participants. A total of 307 questionnaires were distributed, filled in immediately and returned to the person who conducted the survey. Of the returned questionnaires, 6 questionnaires were invalid, incomplete or incompletely filled in (e.g. the same numbers in all columns of the questionnaire were marked, etc.) and were not included in the further data analysis. Also, 48 students responded to the online questionnaire. For further data analysis, 349 questionnaires were used, which are considered suitable for statistical analysis. The ethical principle of free choice to participate in the

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survey was observed during the research. The study was conducted anonymously, the results were processed and summarized, and data confidentiality was ensured.

Research methods. The analytical descriptive method was used to analyse the questions of implementation of internationalization development in higher education. Quantitative research method. A questionnaire was created in order to find out how the international academic mobility of students is promoted by providing opportunities to study in foreign higher education institutions and to reveal the challenges and opportunities for the development of academic exchanges in higher education. The questionnaire was constructed on the basis of theoretical insights, criteria selected in the scientific literature, based on which students' mobility for academic purposes was studied, factors determining participation in exchange programmes, and reasons limiting students' international academic mobility. The validity and reliability of the questionnaire were determined by calculating the Cronbach's alpha values for each group of statements in the questionnaire. The results of the statistical analysis show that the group of statements in the questionnaire on the benefits of Erasmus + mobility programs for students preparing for a professional career has a sufficiently high internal compatibility rate (Cronbach's alpha) ranging from 0.841 to 0.851, except for the statement with a negative value of Cronbach's alpha = 0.774; therefore, this statement is analysed as a separate variable.

After checking the internal consistency of the statement group on the possibilities of *Exchange possibilities development in higher education*, the Cronbach's alpha = 0.8639 was calculated and ranged from 0.8479 to 0.8702. In defining the main reasons for non-participation in the Erasmus + mobility programme, the aim is to test several constructs in this regard. For this purpose, the analysis of principal component factors using a Varimax rotation was performed. The results show that the data are suitable for factor analysis: KMO = 0.793 (possible KMO not less than 0.6), and Bartlet specificity test p <0.001. The results of the factor analysis show that the statements in the question consist of three factors (see Table 1). Factor weights in each factor range from 0.41 to 0.791. The calculated internal degree of agreement (Cronbach alpha) for each factor and the number of statements are presented in Table 1. Based on the fact that internal consistency should be between 0 and 1, and a Cronbach's alpha of 0.60 is considered suitable for research (Pakalniškienė, 2012), the Cronbach's alpha calculated in this study indicates that the groups of statements in the question should be considered compatible.

Table 1. Reasons for not participating in the Erasmus + mobility programme: internal compatibility of factors

Factors	Number of statements	Cronbach alpha
External causes in high school	9	0.627
Personal reasons	8	0.806
Environmental factors	7	0.65

Statistical research method. Statistical analysis methods were used to process the data collected during the study: calculations of percentage frequencies and statistical averages. Statistical analysis of the data was performed using the data package of SPSS software version 17.

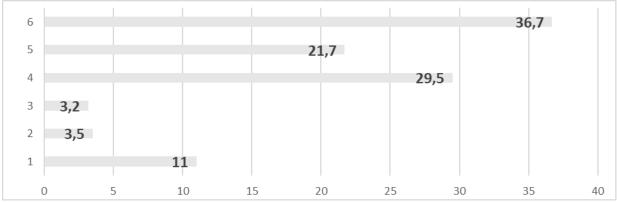
4. The research results and their analysis

With the rapid processes of globalization, the demand for higher education and the need to acquire it are obvious. The prevailing trend - increasing demand for higher education, the need for higher education - encourages academic mobility of students. Thus, as higher education becomes more and more international, the importance of opportunities for students to deepen their knowledge and broaden their horizons by choosing to study at a foreign higher education institution is obvious. However, are students taking advantage of the opportunity to participate in international academic mobility programmes?

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Analysing the respondents' participating in the Erasmus+ mobility programme experience (see Figure 1), the analysis of the data showed that only 11% of students who participated in the survey have participated in the Erasmus+ programme while preparing for professional activities and have taken the opportunity to go to another higher education institution or having an internship in a foreign country and gain knowledge, experience and skills there. The stronger passiveness of students to participate in the international academic mobility programme is also evidenced by the fact that only a small percentage of survey participants (3.5%) were selected but could not leave or did not take part in the competition due to the global pandemic (3.2%).

The results of the survey also showed that almost a third (29.5%) of the respondents did not go to other foreign higher education institutions to study, but are plan to participate in the Erasmus + programme in the future, and 21.7%. the students who participated in the study have thought many times (4 times and more) about participating in an international academic mobility programme, but did not take action for objective or subjective reasons. Thus, the latter results do not reject the possibility that facilitating the academic mobility of students and improving the framework for the promotion and implementation of international academic mobility is likely to increase student mobility rates. The need for action is also reflected in the fact that more than a third (36.7%) of survey participants did not plan and are not planning to participate in the Erasmus+ mobility programme in the future (see Picture 1).



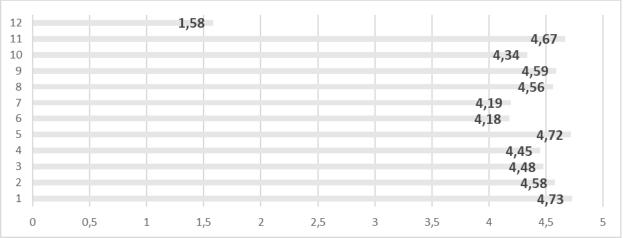
Picture 1. Experience of participating in Erasmus + mobility programme: students' assessment (n=349; %) *Remark:*

- 1. I have already participated in the Erasmus+ mobility programme
- 2. I took part in the competition, was selected but could not go due to the Covid-19 pandemic
- 3. I have participated in the competition, but was not selected
- 4. I am planning to participate in the Erasmus+ mobility programme
- 5. Yes, many times (4 times or more) I have thought about participating in the Erasmus+ mobility programme, but I have not taken action
- 6. I did not and am not planning to participate in the Erasmus+mobility programme

International academic mobility is probably most often associated with students' academic, professional progress and personal change in terms of knowledge, skills, values and attitudes (Juknytė-Petrekienė and Pukelis, 2007). Undoubtedly, young people's academic mobility in preparation for their careers is very important. International mobility enriches students' learning through international experience, develops intercultural competences and general abilities that allow them to compete more successfully in the national and international labour market. On the other hand, integrated part-time studies at a foreign university or an internship in a foreign company provide students with the opportunity to gain subject, linguistic and cultural international experience; students develop communication skills and have further international professional activities perspectives (Knight, 2004).

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This is further illustrated by the results of this study, which show that students are positive about the benefits of participating in the Erasmus+ mobility programme (see Picture 2). The highest average values of the estimates showed that, according to the participants of the research, participation in mobility programmes enhances the experience of learning about the new cultural environment (M=4.73) and students have the opportunity to improve their spoken foreign language after moving to another foreign university (M=4.72). On the other hand, by participating in academic mobility programmes, students have the opportunity to change their environment, travel and see the world (M=4.67), acquire independence skills (M=4.59) and develop intercultural competencies, attitudes and values (M=4.58). The positive average of the exchange programmes (M=1.58) adds to the positive evaluation of the exchange programmes, indicating that the majority of respondents do not agree that students do not benefit from participating in the Erasmus+ mobility programme. As the results of the study show, participants of the research least associate the benefits of students' participation in mobility programmes with the increasing employment opportunities and prospects in the national and intercultural labour market (M=4.18) and greater career opportunities in the national and international environment (M=4.19); these variables are based on the lowest estimates of the maximum possible 5.



Picture 2. Evaluation of the benefits for a student to participate in the Erasmus+ mobility programme (n = 349; M-average value, max = 5) *Remark:*

- 1. The experience of recognition of a new cultural environment is strengthened (knowledge of mentality, life and human relations of other countries, etc.)
- 2. Intercultural competences, attitudes and values are formed (cultural awareness, cultural knowledge, skills, etc.)
- 3. Students' understanding of the economic and social culture of other countries is expanded
- 4. Students' tolerance of other cultures is developed
- 5. The student improves spoken foreign language skills
- 6. Employment opportunities / perspectives of students in the national and intercultural labor market are increasing

- 7. Students have greater career opportunities in the national and international environment
- 8. Students get acquainted with studies and practice organized differently than in Lithuania (teaching / learning and assessment methods, etc.)
- 9. Students gain more independence skills
- $10. \ \mbox{The student}$ breaks away from everyday life and has a good time
- 11. The student travels, changes the environment, sees the world
- 12. The student does not receive any benefit

Summarizing the results, the answers showed that the general personal abilities and socio-cultural skills acquired through participation in international academic mobility programmes are of great importance to the respondents. Participants in the research indicated that participation in academic mobility programmes provides experience in communication and cooperation with representatives of other cultures, improves professional foreign language

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skills, develops independence skills in adapting to a new environment and flexibility in relation to other sociocultural living conditions. On the other hand, the survey shows that respondents associate the potential benefits of international academic mobility to a lesser extent with a competitive advantage in the national and international labour market, greater employment and career opportunities nationally and internationally. Thus, according to students, participation in international academic mobility programmes is less related to the knowledge and skills acquired for a future professional career. It should be noted that the indicators reflecting the benefits of international academic mobility are in line with and confirm the aspects identified in the scientific literature, such as: experience gained, personal development that includes tolerance of other cultures, independence and communication skills in a foreign language, and so on.

Despite the fact that ongoing globalization processes act as a catalyst for academic mobility, barriers to international mobility exist. Researchers who have identified barriers to the development of academic mobility identify the cost of living and cost of studies, language, cultural or religious differences, lack of information, differences in living standards, restrictions of acknowledgement of the qualification gained, restrictions on possibility to work while studying, re-recognition of newly acquired qualifications, etc. (Knight, 2004).

The analysis of the reasons why the participants did not take the opportunity to go to a higher education institution abroad for academic purposes was based on the evaluations of the respondents who did not participate in the Erasmus+ exchange programme. After factor analysis, three groups of reasons were identified: personal, related to higher education institution, and environmental factors.

The results of the statistical analysis show (see Table 2) that non-participation in the Erasmus+ exchange programme is mainly due to personal reasons; the highest average scores found in the group of personal reasons range from 2.01 to 1.62 out of 3. The study found that fear, lack of self-confidence due to insufficient professional knowledge and skills (M = 2.01) and lack of foreign language skills (M = 1.98) are among the reasons for not participating in the Erasmus+ mobility programme. On the other hand, the personal reasons why students have not yet participated in an international academic mobility programme are intimidating selection procedures and interviews (M = 1.98) and fears of possible difficulties in adapting when moving to another country (M = 1.98). Therefore, one of the ways to solve this problem is to start partnership with foreign higher education institutions and companies, disseminate information about the implemented study programmes, higher education institution and study conditions by involving mobile students, organizing virtual or physical meetings with foreign higher education teachers before the student goes to a foreign higher education institution or company for an internship. It is likely that the development of cooperation networks would not only help to adapt more successfully to new conditions in another country and to the requirements of the institution, but would also increase the mobility of students internationally.

Slightly lower average estimates suggest that environmental factors are less associated by research participants with reasons that may influence their decision not to participate in an international academic mobility programme; in this group of statements, average scores range from 1.83 to 1.24 (see Table 2). According to the statistical analysis of the data, the reluctance to separate with family members (M = 1.83) or close friends (M = 1.8) is one of the reasons why the students have not participated in the international academic mobility programme so far. A similar situation arose when assessing the inadequate (too long / too short) proposed period of the mobility (M = 1.65) and fear of losing one's job (M = 1.6), which from the respondents' point of view, is one of the reasons for not participating in the academic mobility programme.

Analysing the reasons why students do not participate in the international academic mobility programme, the lowest average scores, ranging from 1.8 to 1.13, indicate (see Table 2) that the research participants associate these reasons with higher education institution the least. According to the respondents, insufficient financial support (scholarship) (M = 1.8), as well as lack of help from the sending institution, when the student has to find a place to study abroad independently (M = 1.65), are one of the reasons why the study participants have not yet

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participated in the Erasmus+ mobility programme. On the other hand, the analysed research data show that the possibility to participate in the Erasmus+ programme competition is limited by poor academic results (M = 1.63).

Table 2. Personal reasons related to higher education institution and environmental factors determining students; non-participation in the international academic mobility programme (n = 349; M-average values, max = 3)

Personal reasons	M
I don't know what to start from.	1.82
Intimidating selection procedures (application, selection interview).	1.98
Documentation procedures are intimidating.	1.78
Organizational issues (buying tickets, accommodation, etc.)	1.89
The potential difficulties of adaptation when moving to another country are frightening.	1.98
Fear, lack of self-confidence due to poor foreign language skills.	1.98
Fear, self-confidence due to lack of professional knowledge and skills.	2.01
I am not interested in the Erasmus+ mobility programme.	1.62
Environmental factors	
Poor feedback from students who participated in the Erasmus+ mobility programme.	1.35
Reluctance to break up with family members.	1.83
Reluctance to break up with close friends.	1.8
Lack of support from the family.	1.24
Fear of losing one's job.	1.6
Inappropriate (too long) proposed mobility period (e.g. 5 months for studies, 3 months for internships)	1.65
Inappropriate (too short) proposed mobility period (e.g. 5 months for studies, 3 months for internships)	1.65
External causes in the high education institution	
I knew nothing about such a possibility.	1.21
I participated in the competition but was not selected.	1.13
Information about Erasmus+ is not provided in the higher education institution website.	1.44
I asked, but did not receive information from study consultants about the Erasmus+ programme.	1.15
I found out about the Erasmus+ exchange programme too late.	1.3
Lack of help from the sending institution (I have to find a place to study abroad myself, etc.)	1.65
Insufficient financial support (scholarship) for participation in the Erasmus + mobility programme.	1.8
I'm afraid to get worse grades when I leave and lose the scholarship I get from higher education institution.	1.35
I cannot participate in Erasmus+ competition due to low academic performance.	1.63

Summarizing the data, we can see a clear trend in the assessment of factors related to personal reasons, such as a person's fear of insufficient professional knowledge and skills and poor assessment of his / her foreign language skills, as well as possible difficulties in adapting to another culture, which, according to the research participants, has an impact on not participating in the international academic mobility programme. On the other hand, according to the research, the reasons why respondents did not participate in the Erasmus+ mobility programme so far are related to the environmental factors: they do not want to be separated from family and close friends, and the reasons for not participating in the academic mobility programme are least related to higher education institution including insufficient financial support and lack of assistance from the sending institution in finding a place to study abroad, etc. Undoubtedly, the reasons mentioned may reduce students; willingness and intention to participate in an international academic mobility programme.

With the growing need for higher education, initiating international academic mobility in the higher education sector is becoming one of the priority areas. Therefore, in addition to the use of already proven means, there is a need to find more effective ways for managing academic mobility in the face of ever-changing global conditions and the challenges of a changing external environment. Analysing the opportunities for the development of students' international academic mobility, the research suggests the idea that higher rates of student mobility would be determined by sufficient implementation of publicity of academic exchanges and promotion of students, as well as greater availability of study exchanges.

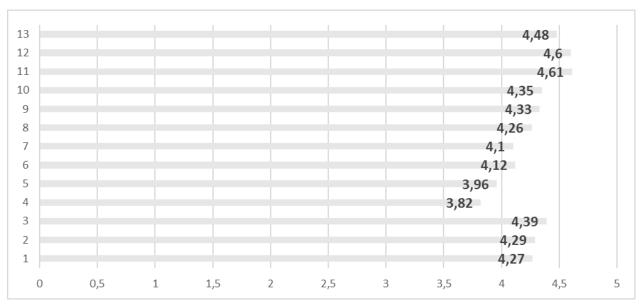
Examining students' opinions on the possibilities of developing international academic mobility (see Picture 3) identifies the importance of higher scholarships (M = 4.6) and paid internships (M = 4.61), which, according to

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students, are one of the main measures promoting the academic mobility of students. Thus, a material incentive to create a comfortable study environment that meets a person's needs can be one of the factors and the main motives for academic mobility. Also, opportunities for groups of students to go to the same higher education institution or company in another country (M = 4.48) and the variety of places offered for academic exchange (educational institutions, internships) (M = 4.39), according to the research participants, encourage students to become more involved in international academic mobility programmes. Based on this, it is expedient to expand the network of cooperation with foreign higher education institutions and companies, to create international networks that are essential for acquiring most recent knowledge, to form and initiate an environment for cooperation between higher education institutions in creating a common higher education area. On the other hand, the aspects of the quality of the higher education system and the high economic development of the country are identified as one of the essential in order to increase the academic mobility of students. According to the participants of the research, students have the opportunity to choose higher education institutions in economically strong countries with a high level of development (M = 4.26) and countries with a high level of professional training (education, studies and internships) (M = 4.35) would encourage students to participate more actively in international academic mobility programmes. The latter results are in line with Želvis' (2006) idea, which emphasizes that students willing to study abroad tend to choose economically developed countries which achievements in higher education are universally recognized. It is also identified as one of the key ways to promote international academic mobility, enabling students to participate more actively in academic exchange programmes - opportunities for students to travel to countries in an attractive geographical area (M = 4.33). The lower averages of the estimates indicate that, according to the respondents, increasing the attractiveness of higher education institutions participating in academic mobility programmes in other countries (M = 4.29) and providing more detailed information on opportunities to participate in exchange programmes (M = 4.27) would increase participation in international academic exchange programs less. Slightly lower, but also significant data show that, according to the study participants, meetings with students participating in academic exchange programmes, sharing good practices (M = 4.12) and disseminating students' experiences on social media (M = 4.1) would encourage students to be more active in participating in international academic mobility programmes. Recent results show the effectiveness of disseminating information about academic mobility programmes in a variety of ways and channels. According to the research participants, students who have participated in exchange programmes by passing on their academic experience to other students during events organized at the higher education institution would help to form a positive attitude towards academic international exchange.

Whereas the virtual implementation of international academic exchanges and the development of short-term mobility (academic exchanges) are not marked with high average scores as one of the means to increase internationalization in higher education (see Picture 3). According to the participants of the study, opportunities to participate in short-term exchanges (5 days abroad, the rest of the time - online) (M = 3.96) or the opportunity to participate in a virtual academic mobility without leaving the country (M = 3.82) are less effective ways of encouraging students to participate more actively in academic mobility programmes. Recent findings suggest that there is still a widespread perception of traditional international mobility, with greater recognition of studies conducted in a physical academic setting. However, in the context of ongoing globalization, the implementation of virtual international academic mobility, based on communication and collaboration and technology, will make it inevitable for higher education institutions to respond to changes in the world in the near future. It is likely that the implementation of virtual mobility in the near future will not only enrich but also change physical mobility by responding to students' needs and by managing and creating a virtual learning environment, selecting ways and means to organize and implement technology-based studies and facilitating international academic mobility programmes for students who, for various subjective or objective reasons, are unable to leave their country, job or family. Thus, the organization of technology-based studies is an inevitable and one of the priority areas for the organization and implementation of virtual mobility in the near future. On the other hand, virtual mobility directly determines the quality of studies, the internationality of studies, the supply and diversity of studies and the modernization of higher education (Volungevičienė, Teresevičienė, 2008).

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Picture 3. Opportunities to promote students' participation in international academic mobility programmes (n = 349; M-average values, max = 5)

Remark:

- 1. More information on opportunities to participate in the Erasmus+ study exchange programme.
- 2. Enhancing the attractiveness of higher education institutions in other countries participating in Erasmus+mobility programme.
- 3. Variety of Erasmus+ exchange places offered (educational institutions, companies etc.)
- 4. Opportunity to participate in a virtual Erasmus+ mobility programme without leaving the country to study at a higher education institution in another country
- 5. Possibility to participate in short-term exchanges (5 days abroad, other time online)
- 6. Meetings with Erasmus+ students, sharing good practices (e.g. Erasmus+ Days)

- 7. Public dissemination on social media of the experiences of students participating in Erasmus+ mobility programme.
- 8. Possibility to ravel to countries with a high level of economic development.
- 9. Possibility to travel to countries in an attractive geographical area (warm climate, seaside, etc.).
- 10. Possibility to go to countries with a high level of quality of higher education (education, studies and internships).
- 11. Paid internship place.
- 12. Higher Erasmus+ scholarships.
- 13. Opportunity for groups of students to go to the same higher education institution / company in another country.

Summarizing the results of the research, the factors significant for increasing the active participation of students in academic mobility programmes were identified: higher financial support (scholarships, paid internships), as well as an attractive geographical and cultural aspect, higher level of economic development of the country. In addition, the importance of the quality of higher education (professional training) is perceived, which, according to students, would increase the rates of academic mobility and the more active involvement of students in participating in mobility programmes. Also, increasing the international attractiveness of studies, foreign higher education institutions and disseminating information about the variety of exchange places offered are identified as one of the ways to encourage students to become more actively involved in academic international mobility.

However, the limitation of this study should be mentioned, which is defined by the fact that the sample consisted of the majority of students who did not participate in international academic mobility programmes. Therefore, in order to further explore the possibilities of promoting academic mobility of students, in the future it would be

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appropriate to expand the sample to include students with exchange experience and explore how academic mobility changes students' behaviour, knowledge, understanding, values and skills. The insights provided by students on how to increase their participation in mobility programs would provide an opportunity to improve the situation.

Conclusions

- 1. The implementation of international academic mobility supports and ensures the attractiveness of higher education institutions in the international environment, however, there are many barriers to the development and implementation of academic mobility, such as language and cultural differences, lack of information, non-recognition of foreign qualifications, differences in living standards, migrant status, visa problems and lack of funding.
- 2. The situation of the implementation of international academic mobility in higher education has been clarified by the statement study:
 - 2.1. As the results of the research show, although almost a third of respondents plan to participate in the Erasmus+ programme in the future or have planned to do so but did not take action for objective or subjective reasons, more than a third of respondents did not and do not intend to participate in the Erasmus+ mobility programme. have participated in an Erasmus+ program, participated in a competition, failed to pass or been selected but were unable to leave for objective reasons. Recent results have highlighted the need to improve the framework for promoting and implementing international academic mobility in higher education.
 - 2.2. The highest averages of the estimates indicate that fear, lack of self-confidence due to lack of professional knowledge and skills, lack of foreign language skills, intimidating selection procedures and interviews, and fear of possible adjustment difficulties when moving to another country, as well as reluctance to separate with close friends and insufficient financial support (scholarship) are the reasons for not participating in the Erasmus+ mobility programme.
 - 3. Based on the results of the research, the possibilities for the development of international academic mobility in higher education are foreseen:
 - 3.1. According to the participants of the study, higher scholarships and paid internships, as well as opportunities for groups of students to go to the same higher education institution or company in another country would encourage students to participate more actively in international academic mobility programmes.
 - 3.2. Despite the fact that the implementation of virtual international academic mobility for higher education institutions will become inevitable in the near future in order to respond to changes in the world, the analysis of data shows that virtual international academic exchanges and short-term mobility (academic exchanges) are less effective encouraging students to participate more actively in academic mobility programmes.

References

Altbach, P., De Wit, H. (2018). Are we facing a fundamental challenge to higher education internationalization? *International Higher Education*, (93), 2-4. https://doi.org/10.6017/ihe.0.93.10414

Bista, K. (2018). Exploring the Field Understanding the International Student Experience In K. Bista, K. (ed.), Global perspectives on international student experiences in higher education: Tensions and issues (1-16). Routledge. https://doi.org/10.4324/9781315113456-1

Bryla, P., Ciabiada, B. (2014). Obstacles to International Student Mobility: the Case of Poland. Trends. *Journal of Sciences Research*, 1(1), 12-16. https://doi.org/10.31586/PoliticalStudies.0101.02

ISSN 2345-0282 (online) http://doi.org/10.9770/jesi.2022.9.4(16)

Castro, P., Woodin, J., Lundgren, U., Byram, M. (2016). Student mobility and internationalisation in higher education: perspectives from practitioners. *Language and Intercultural Communication*, 16(3), 418-436. https://doi.org/10.1080/14708477.2016.1168052

Cibák, L., Kollár, V., Filip, S. (2021). Measuring and evaluating education quality of future public administration employees at private university in the Slovak Republic. *Insights into the Regional Development*, 3(2), 213-228. http://doi.org/10.9770/IRD.2021.3.2(4)

Dias, G. P., Barbosa, B., Santos, C. A., Pinheiro, M. M., Simões, D., Filipe, S. (2021) Between promises and pitfalls: the impact of mobility on the internationalization of higher education. *Journal of Further and Higher Education*, 45(1), 79-94. https://doi.org/10.1080/0309877X.2020.1735321

Do, T. T., Pham, D. N. (2016). Challenges of Student Mobility in Southeast Asia. *International Higher Education*, 84, 24-26. https://doi.org/10.6017/ihe.2016.84.9118

Fakunle, S. O., Ajani, B. K. (2021). Peculiarities of ICT adoption in Nigeria. *Insights into Regional Development*, 3(4), 51-61. http://doi.org/10.9770/IRD.2021.3.4(4)

Hill, Ch., Sughnani, N. (2021). Student motivations for studying at international branch campuses: a study of transnational education engagement in Dubai. *Quality in Higher Education*, 27(2), 222-238. https://doi.org/10.1080/13538322.2020.1867034

Hou, Ch., Du, D. (2022). The changing patterns of international student mobility: a network perspective. *Journal of Ethnic and Migration Studies*, 48(1), 248-272. https://doi.org/10.1080/1369183X.2020.1797476

Joyce, A., Timmis, S., Rajagopal, K., Verjans, S. (2007). Student Mobility in a Digital World. The Scottish Centre for research into On-Line Learning & Assessment (SCROLLA) School of Education, University of Edinburgh, Edinburgh EH8 8AQ, UK.

Juknytė - Petreikienė, I., Pukelis, K. (2007). Internacionalizuotų studijų kokybės vertinimas: Socrates / Erasmus programos dalyvių patirtis (Assessing the quality of international studies: the experience of Socrates / Erasmus participants). *Aukštojo mokslo kokybė*, 4, 74-101.

Khanal, J., Gaulee, U. (2019). Challenges of International Students from Pre-Departure to Post-Study: A Literature Review. *Journal of International Students*, 9(2), 560-581. https://doi.org/10.32674/jis.v9i2.673

Kirloskar, P., Inamdar, N. (2021). Shifting international student mobility directions and factors influencing students' higher education destination choices. *Journal of Higher Education Policy and Leadership Studies*, 2(3), 160-178. https://doi.org/10.52547/johepal.2.3.160

Knight, J. (2004). Internationalization remodeled: definition, approaaches, and rationales. *Journal of Studies in International Education*, 8(1), 5-31. https://doi.org/10.1177/1028315303260832

Knight, J. (2012). Student Mobility and Internationalization: trends and tribulations. *Research in Comparative and International Education*, 7(1), 20-33. https://doi.org/10.2304/rcie.2012.7.1.20

Lee, C. (2013). An investigation of factors determining the study abroad destination choice: A case study of Taiwan. *Journal of Studies in International Education*, 18(4), 362-381.https://doi.org/10.1177/1028315313497061

Lincényi, M., Laczko, M. (2020). Influence of Brexit on Education towards Europeanism. *Insights into Regional Development*, 2(4), 814-824. http://doi.org/10.9770/IRD.2020.2.4(7)

 $Lopez-Duarte,~C.,~Maley,~J.~F.,~Vidal-Suarez,~M.M.~(2021).~Main~challenges~to~international~student~mobility~in~the~European~arena. \\ \textit{Scientometrics},~126(7),~8957-8980.~\underline{https://doi.org/10.1007/s11192-021-04155-y}$

Mok, K. H., Xiong, W., Ke, G., Cheung, J. O. W. (2021). Impact of COVID-19 pandemic on international higher education and student mobility: Student perspectives from mainland China and Hong Kong. *International Journal of Educational Research*, 105(101718). https://doi.org/10.1016/j.ijer.2020.101718

ISSN 2345-0282 (online) http://doi.org/10.9770/jesi.2022.9.4(16)

Pakalniškienė, V. (2012). Tyrimo ir įvertinimo priemonių patikimumo ir validumo nustatymas. Metodinė priemonė (Determining the reliability and validity of research and evaluation tools. Methodological tool). Vilnius: Vilniaus Universiteto leidykla.

Papatsiba, V. (2005). Student Mobility In Europe: An Academic, Cultural and Mental Journey? Some Conceptual Reflections and Empirical Findings. *International Perspectives on Higher Education Research*, 3, 29-65. https://doi.org/10.1016/S1479-3628(05)03003-0

Sidhu, R., Cheng, Y. E., Collins, F., Ho, K. Ch., Yeoh, B. (2021). International student mobilities in a contagion: (Im)mobilising higher education? *Geographical Research*, 59, 313-323. https://doi.org/10.1111/1745-5871.12471

Souto-Otero, M., Huisman, J., Beerkens, M., de Wit, H., Vujic, S. (2013). Barriers to International Student Mobility: Evidence From the Erasmus Program. *Educational Researcher*, 42(2), 70-77. https://doi.org/10.3102/0013189X12466696

Teicher, U. (2007). The Changing Role of Student Mobility. *Higher Education Policy*, 20(4), 457-475. https://doi.org/10.1057/palgrave.hep.8300163

Turnea, E.-S., Prodan, A., Boldureanu, G., Ciulu, R., Arustei, C.C., Boldureanu, D. (2020). The Importance of Organizational Rewards on Attracting and Retaining Students at Work. *Transformations in Business & Economics*, Vol. 19, No 2B (50B), pp.923-943.

Volungevičienė, A., Teresevičienė, M. (2008). Nuotolinio mokymo(si) turinio projektavimo kokybės vertinimo dimensijos (Dimensions of quality assessment of distance learning content design). *Aukštojo mokslo kokybė*, 5, 32-53.

Wells, A. (2014). International Student Mobility: Approaches, Challenges And Suggestions For Further Research. Procedia - Social and Behavioral Sciences, 143, 19-24. https://doi.org/10.1016/j.sbspro.2014.07.350

Wit, H., Altbach, Ph. G. (2021). Internationalization in higher education: global trends and recommendations for its future. *Policy Reviews in Higher Education*, 5(1), 28-46. https://doi.org/10.1080/23322969.2020.1820898

Wulz, J., Rainer., F. (2015). Challenges of Student Mobility in a Cosmopolitan Europe In A. Curaj et al. (eds.), The European Higher Education Area. https://doi.org/10.1007/978-3-319-20877-0_4

Yat, W., Lo, W., Chan, Sh. J. (2020). Globalism, regionalism and nationalism: the dynamics of student mobility in higher education across the Taiwan Strait. *Discourse: Studies in the Cultural Politics of Education*, 41(4), 587-603. https://doi.org/10.1080/01596306.2018.1516198

Želvys, R. (2006). Internacionalizacijos iššūkiai Lietuvos aukštajam mokslui (Challenges of internationalization for Lithuanian higher education). Vilnius: VPU. https://doi.org/10.15388/ActPaed.2006.17.9693

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Agnė JUŠKEVIČIENĖ, Doctor of Social Sciences (Educology), Docent of the Faculty of Business Management of Vilnius University of Applied Sciences, Didlaukio Str., 49, Vilnius, e-mail: administracija[eta]vvf.viko.lt.; research interest areas: inclusive, multicultural education in higher and general education school, acquisition and development of general and subject competencies, formation of identity in adolescence.

ORCID ID: https://orcid.org/0000-0001-9732-8616

Kristina SAMAŠONOK, Doctor of Social Sciences (Educology), Docent of the Faculty of Business Management of Vilnius University of Applied Sciences, Didlaukio Str., 49, Vilnius, e-mail: administracija[eta]vvf.viko.lt; research interest areas: social exclusion risk for adolescence adaptation, institutional development and adaptive behaviour modelling, the first year students' adaptation to the study process, motivation factors for choosing studies, developing students' creative thinking in a higher school.

ORCID ID: https://orcid.org/0000-0002-8985-6942

Adomas Vincas RAKŠNYS, Doctor of Social Sciences (Management), Associate Professor of the Faculty of Business Management of Vilnius University of Applied Sciences, Didlaukio Str., 49, Vilnius, e-mail: administracija[eta]vvf.viko.lt; research interest areas: organizational culture, public governance, risk management.

ORCID ID: https://orcid.org//0000-0002-2128-6314

Lina ŽIRNELĖ, Master of philology at Vilnius university. Lecturer, Erasmus coordinator and the Head of Advertising and Communication Department at of the Faculty of Business Management of Vilnius University of Applied Sciences, Didlaukio Str., 49, Vilnius, e-mail: administracija[eta]vvf.viko.lt. Research interest areas: intercultural communication, creativity, CSR, internationalization.

ORCID ID: https://orcid.org/0000-0002-4100-7319

Vilma GEGUŽIENĖ, Lecturer of the Faculty of Business Management of Vilnius University of Applied Sciences, Didlaukio Str., 49, Vilnius, e-mail: administracija[eta]vvf.viko.lt; research interest areas: sociology of education, research methodology, public speaking theory and practice, development of creative thinking in higher education.

ORCID ID: https://orcid.org/0000-0002-9568-020X

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