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Foreword

The Journal of Regional Economic and Social Development emerged owing to cooperation between the Research Institute for Business and Social Processes of Rezekne Academy of Technologies and City Unity College Nicosia and represents a peer-reviewed serial journal with a new single ISSN number. The journal is focusing on the topics covered by the previous journal Latgale National Economy Research (Print ISSN 1691-5828 Online ISSN 2256-0955). The journal publishes articles that delve into the diverse facets of regional economic and social development.

This edition showcases a dynamic collection of research spanning various global regions, with a particular emphasis on insightful theoretical and literature reviews and empirical evidence. The diverse array of research articles in this journal spans various critical themes in contemporary economic and social development. One overarching theme revolves around the examination of employment dynamics, particularly youth and gender-related challenges. The in-depth case study in Germany sheds light on the persistent issue of gender discrimination in youth employment, contributing to the broader discourse on creating inclusive work environments. This theme aligns with a broader societal push for equitable employment opportunities and the importance of dismantling discriminatory practices, emphasizing the need for actionable insights derived from empirical studies.

Another prevalent theme centres on sustainable practices within economic systems. The article exploring circular economy strategies in schools reflects a growing concern for environmental sustainability, with a specific focus on reducing food waste. This theme underscores the pressing need to integrate sustainability into various facets of economic activities and institutions for long-term environmental health.

The journal also delves into regional economic considerations, such as the examination of business opportunities and challenges in specific areas such as Latgale region and the Rezekne Special Economic Zone. This theme reflects a broader interest in understanding and fostering economic growth at the regional level, acknowledging the unique contexts and opportunities that different regions present. By exploring business diversification, economic zones, and opportunities for small and medium enterprises, these articles contribute valuable insights into the nuanced dynamics of regional economic development, highlighting the importance of tailoring strategies to specific regional contexts.

In summary, the journal encapsulates a rich tapestry of themes, ranging from the intricacies of employment dynamics and gender issues to the imperative of sustainable practices and the nuances of regional economic

development. These themes collectively contribute to a holistic understanding of the multifaceted challenges and opportunities in the realm of economic and social development, providing valuable insights for policymakers, academics, and practitioners alike.

On behalf of the Editorial Board, we would like to thank the authors of the papers – academics, scientists, master and doctoral students, researchers, national and municipal institution employees, and enterprise representatives – for their support and participation in developing the journal. We are also grateful to our team of the editorial board and reviewers for all the effort and job that they have done.

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Anda Zvaigzne, Rezekne Academy of Technologies, Latvia
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GENDER DISCRIMINATION IN YOUTH EMPLOYMENT: A CASE STUDY IN GERMANY

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Abstract.
Purpose and aim of the study: *The paper aim is to analyse qualitatively youth gender-based discrimination in employment.*
Design / Methodology / Approach: *The methodology of exploratory case study research was employed in this research. The method of data collection was observation. Observation was chosen, as it is an effective method of collecting qualitative data for building an adequate picture related to the phenomenon investigated. The obtained data were processed via pedagogical interpretation. The data were summarised.*
Main Findings: *Young engineering specialists have not been affected by gender based discrimination in employment. This finding based on the qualitative study is in accordance with the quantitative data received from a questionnaire survey recently implemented in selected countries of the European Union.*
Originality: *The originality of the paper is shown by a qualitative analysis of youth gender-based discrimination in employment, as there is a gap in such studies.*
Implications: *The scientific community could put more their efforts into the investigation of this significant topic.*

Keywords: *disadvantaged youth**, **employment, engineering, exposure, gender discrimination, observation, youth.*

Introduction

Youth gender-based discrimination in employment in the European Union has recently attracted researchers' attention, as the European Union Youth Strategy for 2019-2027 aims at quality employment for all (European Commission, 2018). The research field of youth gender-based discrimination in employment in the European Union is only emerging, and there is a gap in studies on the evaluation of youth gender-based

discrimination in employment in the European Union (Ahrens, Zascerinska, & Macovei, 2022b). This gap appeared due to the consideration of gender based discrimination and youth employment separately in the European Union Youth Strategy for 2019-2027 (European Commission, 2018), as pointed by Ahrens et.al. (2022): gender-based discrimination refers to Goal 2, and youth employment – to Goal 7. Due to this approach, the research on youth gender-based discrimination in employment remains under-explored.

The current research is built on the interrelation between youth employment and gender-based discrimination (Ahrens et.al., 2022).

Few studies (Ahrens, Zascerinska, & Macovei, 2022a; Ahrens, Zascerinska, & Macovei, 2022b; Ahrens et. al., 2022) were devoted to the analysis of youth gender-based discrimination in employment in the European Union. A comparative quantitative study of youth gender-based discrimination in employment in the selected countries of the European Union revealed that young people beliefs about gender-based discrimination were twice higher than a level of exposure in relation to gender-based discrimination (Ahrens, Zascerinska, & Macovei, 2022b). Against this background, the research on youth gender-based discrimination in employment requires a qualitative analysis of the phenomenon.

The aim of the paper is to analyse qualitatively youth gender-based discrimination in employment.

The tasks to reach the research aim are:
1. To analyse the links between economic development, youth employment and gender based discrimination.
2. To carry out an empirical study to evaluate the existence of the exposure of youth gender based discrimination in employment.
3. To put forward a new research question.

The analysis of the case study will be of qualitative nature. The originality of the paper is shown by a qualitative analysis of youth gender-based discrimination in employment, as there is a gap in such studies. The method of data collection is observation. Observation was chosen due to its effectiveness in collecting qualitative data (Zascerinska, 2013). The data were collected in September 2023. The findings of this research based on the qualitative data will be compared with the quantitative data from the recently implemented study. The novel nature of this research will be shown in a newly formulated research question.

Research results and discussion

Literature Review

Economic development is created by people (GIZ, 2021) including young people. The role of youth in economic development is seen as crucial (Mandalu, 2023). Young people have the potential to bring about positive change and drive the economy forward (Mandalu, 2023).

Economic development, as distinct from mere economic growth, combines (Adelman, 2000): (1) self-sustaining growth; (2) structural change in patterns of production; (3) technological upgrading; (4) social, political and institutional modernization; and (5) widespread improvement in the human condition. Consequently, economic development and social well-being are inter-connected. The better the economic situation is, the better the societal well-being becomes, and vice versa. The key benefits to economic development and, therefore, social well-being include (Mandalu, 2023)

1. A higher standard of living: economic development can lead to a higher standard of living for all citizens, especially those in poverty.
2. Increased employment opportunities: economic development can create new jobs and industries, providing more opportunities for youth to enter the workforce.
3. Greater social mobility: economic development can increase social mobility, allowing youth to move up the socio-economic ladder.
4. Improved infrastructure: economic development can lead to improvements in infrastructure, such as better roads, schools, and hospitals.
5. Increased foreign investment: foreign investors are often attracted to countries with strong economic growth potential. This can bring new capital and technology into the country, benefiting all citizens.

Therefore, economic development in any region in the world is aimed at reducing poverty and inequality, as well as providing a boost to a country's overall productivity (Mandalu, 2023).

At the same time, economic development might face some challenges, e.g., reducing poverty, creating jobs, and promoting sustainable growth (Mandalu, 2023).

Employment serves as an indicator of economic development and social well-being. The stronger the economic development is, the more employees are needed, and vice versa. Employment of young people is significant not only for their own personal economic prospects and well-being but also for overall economic growth and social cohesion (OECD,

2022). For example, in July 2023, 2.683 million young persons (under 25) were unemployed in the EU, of whom 2.206 million were in the euro area (Eurostat, 2023). In July 2023, the youth unemployment rate was 13.9% in the EU, and 13.8% in the euro area (Eurostat, 2023). In Germany, the youth unemployment rate, for example, in August 2023 was 5.7%.

Young people are suffering from high youth unemployment (European Commission, 2018). Even if young people are employed, they might experience precarious and exploitative working conditions as well as discrimination in the labour market and the workplace (European Commission, 2018).

Gender based discrimination in employment still affects many young people, especially young women (European Commission, 2018). Therein, youth employment and gender-based discrimination are inter-connected (Ahrens et.al., 2022). In order to engage young people into the labour market successfully, the European Union Youth Strategy for 2019-2027 aims at quality employment for all (European Commission, 2018). Quality employment means an inclusive working environment without gender based discrimination.

Methodology of the Study

The study was enabled by the following research question: What is the exposure of youth gender based discrimination in employment? The aim of the empirical study was to evaluate the existence of the exposure of youth gender based discrimination in employment.

The empirical study was implemented in September 2023. The empirical study was built within the methodology of the exploratory type of case study research (Zainal, 2007). The selection of this methodology is based on an assumption that a function of case studies is to generate new research questions and hypotheses, as well as to build theory (Kohlbacher, 2005). Exploratory case studies are leveraged to analyse any phenomenon that is of interest to the researcher (Zainal, 2007). The exploratory methodology is organised in three phases. Phase 1 is aimed at exploration through data collection, Phase 2 is devoted to data processing, analysis and interpretation, and Phase 3 focuses on hypothesis/question development in Phase 3 (Ahrens, Bassus, & Zaščerinska, 2013; Hariharan, Zaščerinska, & Swamydhas, 2013).

A data analysis was carried out on the basis of the interpretive research paradigm. The use of the interpretive paradigm is disclosed by the researcher's interest in a phenomenon (Ahrens, Zascerinska, & Aleksejeva, 2021). The interpretive paradigm is used for the analysis of meaningful reality socially constructed (Ahrens, Zascerinska, & Aleksejeva, 2021).

Interpretation allows meanings to emerge (Ahrens, Zascerinska, & Aleksejeva, 2021). The present study employed pedagogical interpretation. Pedagogical interpretation means that only the data that are of pedagogical interest were processed and analysed (Zascerinska et.al., 2023). Interpretation is carried out by the researcher involved in the present research and study (Ahrens et.al, 2018). The data were structured and summarised.

Observation was the method of data collection. Observation allows for building of an adequate picture that emerges of the research setting as a social system described from a number of participants' perspectives (Geertz, 1973). Participant observation in an institution in which the researcher work is beneficial, as the researcher participates as a member of the group while observing it (Hargreaves, 1967). This direct participation in the group life permits an easy entrance into the social situation by reducing the resistance of the group members; decreases the extent to which the investigator disturbs the 'natural' situation, and permits the investigator to experience and observe the group's norms, values, conflicts and pressures, which (over a long period) cannot be hidden from someone playing an in-group role (Hargreaves, 1967).

The sample was composed of 15 respondents. The respondents were young people between 21 and 26 years old. All of them were engineers. This sample was composed of the respondents with the immigrant background. All the respondents belonged to a disadvantaged group. Eight respondents were female, and seven respondents were male. Eight respondents obtained some working experience (1-2 years) in engineering via employment. Among eight respondents with working experience in India, six respondents were males, and two respondents were female. Seven respondents have not received any working experience. Table 1 summarizes the description of the sample respondents.

Table 1 Description of the sample respondents (compiled by the authors)

Description	Females	Males	Total
Respondents	8	7	15
Number of respondents with working experiences	2	6	8
Number of respondents without working experiences	6	1	7

Research results, findings and discussion

The data were collected on the 3rd of September 2023. The data were collected during an online class at a university in Germany. The task was to give a presentation on one of the three topics. One of the topics was defined as gender based discrimination in employment. From the group of 15 respondents, five respondents selected the topic of gender based discrimination in employment for presenting. Among these five respondents, four respondents were male, and one respondent was female.

The female respondent devoted her presentation to the definition of gender based discrimination, its target and manifestation, scope and historical context. The impact of gender based discrimination in employment on individuals and society was also presented. Measures to mitigate gender based discrimination in employment were proposed.

One of the male respondents also constructed his presentation in a similar manner. He shed light on the definition of gender discrimination in employment, gender discrimination practices in employment observed, and mitigation steps to reduce gender discrimination in employment.

Another male respondent revealed the definition of gender discrimination in employment. Other sub-topics related to gender discrimination in employment covered misandry & misogyny, transphobia, and measures to diminish the effect of gender discrimination in employment. Additionally, this respondent mentioned the other aspects of gender discrimination such as objectification, child marriage, women dress attire, and domestic violence.

The next male presenter highlighted the definition of gender discrimination, its historical context, types of gender discrimination in employment, the gender pay gap, workplace discrimination, stereotyping and bias. He also called to action in order to break the barriers of gender discrimination.

The final presentation given by a male respondent aimed at the definition of gender based discrimination, causes and consequences of gender discrimination. The speaker emphasized the importance of movements such as #MeToo and few other initiatives in fighting with gender discrimination in employment. Educational, legislative, and other campaigns to engage individuals and society in building an inclusive environment were proposed.

Table 2 gives an overview of the presented sub-topics on the issue of gender based discrimination in employment.

Table 2 Presented sub-topics on gender based discrimination in employment (compiled by the authors)

Sub-topic	Respondent 1	Respondent 2	Respondent 3	Respondent 4	Respondent 5
Definition of gender based discrimination	X	X	X	X	X
Target of gender based discrimination	X		X		
Manifestation of gender based discrimination	X	X	X	X	
Scope of gender based discrimination	X				
Historical context	X			X	X
Impact of gender based discrimination	X				
Measures to mitigate of gender based discrimination	X	X	X	X	X

Table 3 presents Top 3 sub-topics discussed by the respondents.

Table 3 Top 3 sub-topics on gender based discrimination in employment (compiled by the authors)

Sub-topic	Top 1	Top 2	Top 3
Definition of gender based discrimination	5 respondents		
Measures to mitigate of gender based discrimination	5 respondents		
Manifestation of gender based discrimination		4 respondents	
Historical context			3 respondents

The choice of the sub-topics for presenting allow us to find that the respondents were aware of gender based discrimination in employment. They had the knowledge about what gender based discrimination was, the historical context of gender based discrimination, the manifestation of gender based discrimination, and the measures to be taken to mitigate gender based discrimination.

The respondents' observation revealed that while their presentation about gender based discrimination in employment, their facial expressions, voice, and body language did not change. During their presentations, the

respondents spoke about theoretical developments in the field of gender based discrimination. There were no examples or cases discussed by the respondents. All these observations gave the impression that the respondents did not personally experience gender based discrimination. This allows us to find that the exposure of gender based discrimination in employment was not identified. If compared with the previously obtained findings by Ahrens, Zascerinska, & Macovei (2022b), the present study's finding is in accordance with the results of the quantitative study of youth gender-based discrimination in employment in the selected countries of the European Union (Ahrens, Zascerinska, & Macovei, 2022b).

The present study's results can be explained that four presentations were made by the male respondents who had working experience, and only one female respondent who received some working experience. Gender based discrimination in employment mostly affects young women (European Commission, 2018) in comparison with young men. Consequently, active engagement of male respondents in the discussion about gender based discrimination in employment could influence the study's results.

Another aspect to be considered when discussing the present study results is that the respondents did not experience any gender based discrimination in employment, as our respondents belonged to the engineering field. Currently, persistent labour shortages are found to be particularly prevalent in construction, healthcare, science, technology (notably ICT), engineering and mathematics (STEM) (EU Commission, 2023). Looking ahead, shortages in both high-skilled and low-skilled occupations are expected to continue, as the population ages and the green and digital transitions advance (EU Commission, 2023). Therefore, any employed engineering specialist is too valuable for the company to proceed.

Also, all the respondents were working in the engineering field. Engineering work does not imply any interpretation of working activities if compared with theatre, cinema, and other similar working environments. It means that an engineer gets a task and instructions, and later, s/he works mostly alone on the task implementation. In other professional environments such as supermarkets, hospitals, universities and similar, people work in direct interaction with others. This mutual interaction between the people promotes an interpretation of each other feelings and activities. These (mis)interpretations can lead to gender based discrimination in employment.

Conclusions and suggestions

The literature review demonstrated that the research on youth gender based discrimination in employment was scarce. The scientific community could put more their efforts into the investigation of this significant topic.

The empirical study's results allow us to conclude that youth has not been affected by gender based discrimination in employment. This conclusion is in accordance with the previously published research.

The conclusion about gender discrimination in employment of the respondents belonging to the disadvantaged group does not appear possible to be drawn within this study, as the respondents did not have any work experience in Germany or the European Union. The conclusion is that young engineering specialists enter the labour market and employment in the European Union without gender based discrimination experience.

The present study was limited by the engagement of only few respondents. Another limitation was that the sample was represented by the respondents of only one nationality. The limitation also was that the respondents belonged to one professional group of engineers. The study was also impacted by the fact that the majority of respondents who had work experience were male, while young females were more often affected by gender based discrimination in employment.

A new research question has been put forward: What is the experience of disadvantaged groups in gender based discrimination in employment in the European Union?

The results of the study facilitate the conclusion that the exposure of gender based discrimination in employment varies depending on a professional field. Young people who are employed in cinema, theatre, hospitals, etc. are more often affected by gender based discrimination. Young people who mostly work alone and in the field with less room for interpretation are rarely impacted by gender based discrimination.

Acknowledgement

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METODOLOGICAL ASPECTS OF THE FORMATION OF AN ENTREPRENEURIAL ECOSYSTEM

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Abstract

Purpose and aim of the study: *The purpose of the study is to determine the theoretical and conceptual foundations of the process of forming an entrepreneurial ecosystem. The task of the study is to summarize the theoretical and methodological support of the studied issues and to substantiate the methodological approach to the formation of an entrepreneurial ecosystem.*

Design /Methodology / Approach: *The study used general scientific and special methods: scientific abstraction, analysis and synthesis, induction and deduction, systemic and comparative analysis, structural and logical, an ascent from the abstract to the concrete, and the method of parametric estimates. The literature was selected using the databases Google Scholar, MDPI, Science Direct and Scopus.*

Main Findings: *The analysis of the theoretical and methodological aspects of the entrepreneurial ecosystem and the formation of its structure shows that there is no systematic approach to determining the links and nature of interaction (including inter-level interaction) between different participants of the entrepreneurial ecosystem. It has been established that the structure of entrepreneurial ecosystems is unique and is able to provide systemic support for entrepreneurial activity by providing access to markets, finance, human and intellectual capital.*

Originality: *The study reveals the process of formation of the entrepreneurial ecosystem in the aspect of developing a strategy for the entry of new enterprises into it.*

Implications: *The results of the study make it possible to synthesize the ideas of territorial models of innovation and entrepreneurship, to carry out strategic positioning of the enterprise in the entrepreneurial ecosystem in order to provide attractive value propositions for consumers in the long term.*

Keywords: *entrepreneurial ecosystem, concept, formation, structure, principles, new enterprises, strategic orientation, methodological tools.*

Introduction

In recent decades, there has been a global and growing interest in the formation and development of entrepreneurial ecosystems, which are one of the key drivers of economic growth and contribute to the achievement of many sustainable development goals. Entrepreneurial ecosystems play a crucial role in achieving entrepreneurial success along the entire value chain, as they provide the necessary infrastructure, access to knowledge, and networking for business success. In addition, the value of individual enterprises is directly considered by the professional community in terms of the productivity of their innovation and entrepreneurial activities aimed at creating value not only for the entrepreneur but also for the wider society, which is reflected in the concept of the entrepreneurial ecosystem. Despite numerous studies of various aspects of the entrepreneurship process, the methodological aspects of the formation of an entrepreneurial ecosystem remain insufficiently developed, which makes it difficult to understand the strategic orientation of its participants, the degree of influence on entrepreneurial activity, and determines the relevance of the research topic.

The issues of defining the entrepreneurial ecosystem and forming its structure are addressed in the scientific works by Stevencon & Jarillo-Mossi (1986), Van de Ven (1993), Valdez (1998), Prahalad (2005), Cohen (2006), Isenberg (2010; 2011; 2014), Mason & Brown (2013), Malecki (2018), Spigel (2017; 2020), Spigel & Harrison (2018), Stam (2010; 2015), Stam & Spigel (2018), Wurth et al. (2022). The scientists have moved from research aimed at studying the role of entrepreneurs in ensuring the economic development of both regions and the country as a whole to developing the concept of an entrepreneurial ecosystem, which offers a special view of the clustering of economic activity, promotes the development of ecosystem strategies, innovation systems, the knowledge economy and national competitiveness policy.

At the same time, despite the positive results achieved, there is still no systematic approach to determining the links and nature of interaction (including inter-level interaction) between different participants in the entrepreneurial ecosystem, and assessing the synergistic effectiveness of their activities. Given the interest of politicians, scientists, entrepreneurs and society in building a new innovative structure of entrepreneurship to accelerate the country's economic growth and improve the welfare of citizens, the definition of principles and strategies for the formation of an entrepreneurial ecosystem deserves a comprehensive study in the theoretical and methodological dimension.

The purpose of the study is to determine the theoretical and conceptual foundations of the process of formation of an entrepreneurial ecosystem.

The task of the study is to summarize the theoretical and methodological support of the studied issues and to substantiate the methodological approach to the formation of an entrepreneurial ecosystem.

The scientific novelty of the study is to solve the most important scientific and applied problem - further development of the theoretical provisions of the entrepreneurial ecosystem, as well as to study the process of entry of new enterprises into entrepreneurial ecosystems.

Research methods - general scientific and special methods: scientific abstraction, analysis and synthesis, induction and deduction, systemic and comparative analysis, structural and logical, an ascent from the abstract to the concrete, method of parametric estimates.

The research period is 2022-2023.

Study results and discussion

The world economic science and international organizations, including the Organization for Economic Co-operation and Development (OECD), define the concept of an entrepreneurial ecosystem as holistic and interactive in nature (Mason & Brown, 2013), noting that it arose on the basis of such basic concepts such as regional agglomeration (Fujita & Thisse, 2002), innovative regional agglomeration (Sahenian, 1994), industrial agglomeration (Porter, 1990), (Feldman et al., 2005) national innovation systems (Lundvall, 1992) and national entrepreneurship systems (Acs et al., 2014), which shaped economic development at various levels.

Having examined the essence of these concepts that preceded the concept of an entrepreneurial ecosystem, we concluded that they differ in terms of goals, composition of participants, their role and nature of interaction in the created system, and generally reflect the evolution of approaches to entrepreneurship development in various time periods at the regional, sectoral and national levels.

It should also be noted that each of them contains important elements of entrepreneurial ecosystems, but none of them has a comprehensive systemic solution for not only the structure and institutions but also for each individual entrepreneur who should be supported to ensure their own and the economy's growth.

Given the peculiarities of doing business in today's uncertain environment, the uniqueness of the entrepreneurial ecosystem approach is that it provides an economically sound and dynamic perspective for creating opportunities for new activities and industries.

Therefore, the concept of an entrepreneurial ecosystem is intended to become the basis on which the ideas of territorial models of innovation and

entrepreneurship are synthesized, and it is this concept that is the answer to the challenges of a turbulent external environment.

A review of the literature shows that most studies in this area indicate that, despite various common characteristics, each entrepreneurial ecosystem is different from the other.

The structure of entrepreneurial ecosystems is unique and may differ in different geographical communities, but its important feature is the ability to provide systemic support for entrepreneurial activity by providing access to markets, finance, human and intellectual capital.

In addition, we agree with the authors who argue that the application of systems theory is relevant in the study of entrepreneurial ecosystems, as they consist of elements (components) that cannot function well in isolation and, as a result, must interact with each other to lead to a successful or well-functioning entrepreneurial system (Daniel et al., 2018).

The study by Mason & Brown (2013) attempts to summarize the characteristics of successful entrepreneurial ecosystems. In their opinion, they include:

1. Previous history of business or industry.
2. Presence of «large operating enterprises».
3. Presence of a success story.
4. Growth of entrepreneurial ecosystems through the creation (or entry) of new enterprises with innovative potential in the context of business, social recovery and economic growth in the regions where they are created.
5. Communication links.
6. Cultural characteristics.
7. Availability of finance.
8. Interaction with universities.
9. Possibility of obtaining the services of specialized specialists.

In our opinion, these signs are not definitive, and their list may change influenced by various factors of the investment and business environment.

In other words, the process of forming an entrepreneurial ecosystem requires an individual approach that correlates with the development of existing entrepreneurial assets in a particular region.

Given the above, we can distinguish the following basic principles of entrepreneurial ecosystem formation, which reflect not only the interdependent and multilevel nature of their participants but also the process of value generation and creation in them:

- transboundary processes of the entrepreneurial ecosystem;
- self-organization, self-regulation, self-development;
- joint generation and use of information, innovation, and intellectual resources;

- unlimited project implementation in time (one project initiates the implementation of others);
- dynamism, flexibility, openness to external challenges;
- customer focus;
- network organizational design;
- collaboration based on partnership, trust, cooperation and mutual assistance;
- balance of goals and objectives;
- cyclicality (new knowledge as the "energy" of exchange between partners);
- priority of resource saving policy;
- preservation and development of the potential of each project participant.

By following these principles, entrepreneurial ecosystems at the micro level can create competitive advantages and value for individual enterprises and market segments, and thus shape the results of regional innovation (Cunningham et al., 2018).

It should be noted that to date, a limited number of scientific works have been devoted to the study of an interesting and complex area of entrepreneurial ecosystem formation - the process of new enterprises entering entrepreneurial ecosystems (Eiriz & Barbosa, 2022; Kuratko et al., 2017)

The arrival of new businesses can be beneficial for developing the capacity and potential of entrepreneurial ecosystems, but it can have some unintended consequences (Audretsch et al., 2019)

In our opinion, given that the formation of an entrepreneurial ecosystem is a resource-intensive process with an uncertain outcome, the decision to enter a new enterprise should be strategically justified.

In order to determine the strategic orientation of an enterprise, we propose a methodological toolkit for strategic analysis based on the method of parametric estimates.

This method consists of calculating compensatory and non-compensatory estimates of the company's parameters. During a compensatory assessment, the weaknesses of the enterprise can be compensated for by its strengths. In this case, additive criteria are used to compare different companies. In a non-compensatory assessment, the weaknesses of an enterprise cannot be compensated for by its strengths, and lexicographic criteria are used.

Parametric analysis determines the impact of external and internal factors on the criteria of specific strategies. When forming a set of criteria, one should limit oneself to a small number of basic criteria.

The sequence of strategic analysis of an enterprise based on the method of parametric estimates consists of the stages shown in Fig. 1.
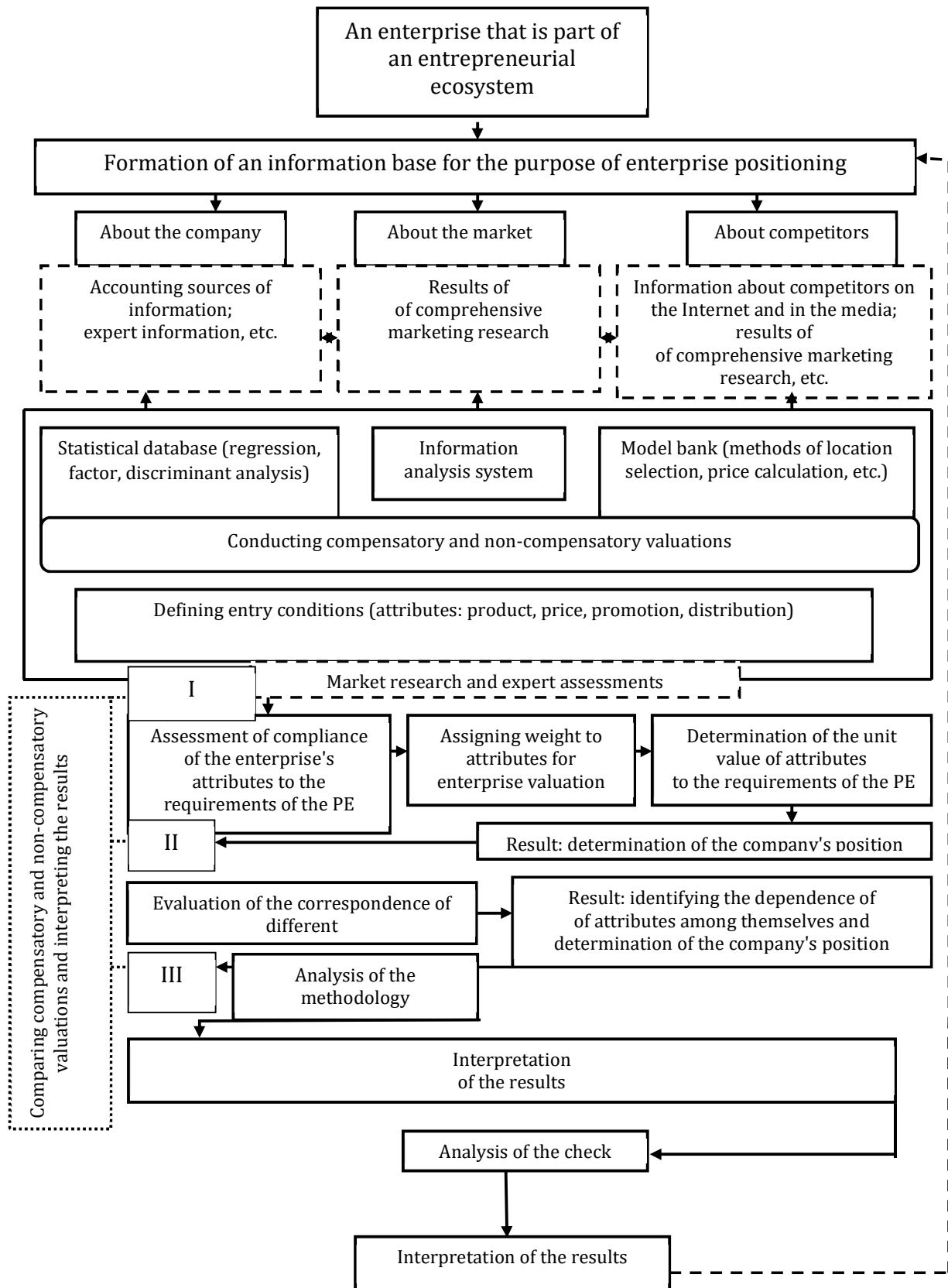
Fig. 1 Stages of strategic analysis based on the method of parametric estimates (compiled by the author)

It should be noted that it is advisable to use the function of importance of enterprise attributes as an integral indicator for comparison. Determining this function is a difficult task.

In our opinion, it is necessary to apply a method of assessing the importance of attributes based on diagnosing the degree to which their real values for the consumer correspond to the desired ones. It is assumed that the greater the importance of each particular attribute for the consumer is, the more fully its characteristics meet the consumer's needs.

In a compensatory valuation, the overall importance of the company's parameters (U) can be determined by the following formula:

$$U = d_1 \times T + d_2 \times Z + d_3 \times P + d_4 \times R, \tag{1}$$

where T – is an indicator that indicates the degree of compliance of the enterprise's parameters with the consumer's requirements;

Z – is an indicator that indicates the degree of compliance of the company's price parameters with the consumer's requirements;

P – is an indicator that indicates the degree of compliance of the company's promotion parameters with consumer requirements;

R – is an indicator that indicates the degree of compliance of the company's distribution parameters with the consumer's requirements;

d_1, d_2, d_3, d_4 – coefficients indicating the importance of the attributes T, Z, P, R, respectively.

Additionally, the weighting factors for these parameters ($d_1; d_2; d_3; d_4$) must meet the evaluation requirements determined by the formula:

$$0 \le d_1 \le 1; 0 \le d_2 \le 1; 0 \le d_3 \le 1; 0 \le d_4 \le 1; d_1 + d_2 + d_3 + d_4 = 1 \tag{2}$$

Single parametric indicators can be divided into five different groups.

The first group includes indicators whose increase in value is desirable for the buyer.

An example is improving product quality. A single parametric indicator for this group can be calculated using the formula:

$$q_i^1 = \frac{P_i - P_i^{min}}{P_i^{\wedge} - P_i^{min}} \tag{3}$$

where P_i^{min} – is the minimum value of the i-th parameter at which the company's products are allowed to enter the market;

$P_i^{\wedge}$ – is the value of the i-th parameter at which the buyer fully satisfies his/her needs;

P_i – is the real value of the i-th parameter of the enterprise under analysis.

The condition for the entry of the company's products into the market according to the indicators of the first group will be the restriction reflected in the formula:

$$P_i \leq P_i^{min} \tag{4}$$

The second group includes indicators whose reduction is desirable for the buyer. An example is a decrease in the purchase price. The single parametric indicator for this group is calculated by the formula:

$$g_i^2 = \frac{P_i^{max} - P_i}{P_i^{max} - P_i^{\wedge}} \tag{5}$$

where P_i^{max} – is the maximum value of the i-th parameter at which the company's products are allowed to enter the market.

The condition for the entry of the company's products into the market according to the indicators of the second group will be the restriction reflected in the formula:

$$P_i \leq P_i^{max} \tag{6}$$

The third group includes indicators that are desirable for consumers. The unit indicator for this group will be equal to one (i.e., $g_i^3 = 1$) if the company has one, i $g_i^3 = 0$, if it is missing.

The fourth group includes indicators whose absence is desirable for the consumer. The unit indicator for this group will be equal to one (i.e., $g_i^4 = 1$) if it is not in the product, and $g_i^4 = 0$, if available.

The fifth group includes indicators whose deviation in both directions from the normatively specified parameter is unacceptable for the consumer.

A condition for the entry of a product into the market according to the quality indicators of the fifth group will be the restriction represented by the formula:

$$P_i^{min} \leq P_i \leq P_i^{max} \tag{7}$$

There are two possible cases here: when the parameter exceeds the desired level and when it is below this level. According to each case, the unit parametric indicator will be calculated by the ratio:

$$\left[\begin{array}{l} \text{якщо } P_i \geq P_i^{\wedge}, \text{то } g_i^5 = \frac{P_i^{max} - P_i}{P_i^{\wedge} - P_i^{min}} \\ \text{якщо } P_i \leq P_i^{\wedge}, \text{то } g_i^5 = \frac{P_i - P_1^{min}}{P_i^{\wedge} - P_i^{min}} \end{array} \right. \tag{8}$$

In a non-compensatory valuation, the overall significance of the company's attributes is calculated using the formula:

$$U = \sum_{i=1}^{n} 10^{-(i-1)} g_i \qquad (9)$$

where n – number of indicators taken into account by the consumer when choosing a counterparty.

It should be noted that the order in which indicators are taken into account is determined by their priority for the consumer.

The methodology for calculating parametric indicators in non-compensatory valuation g_i is similar to the methodology used in the compensation assessment, but, firstly, when calculating the third and fourth group indicators g_i is given importance 0.9, not one; second, if the value g_i, calculated for other groups of indicators exceed the value of 0.9, they should be standardized. Normalization is carried out taking into account all suppliers of similar products to the market for homogeneous customers. The normalized value of a single parametric indicator for an enterprise of any group is calculated by the formula:

$$g_i^{norms} = 0{,}9 \times \left(\frac{g_i}{g_i^{max}} \right) \qquad (10)$$

where g_i – is the calculated value of the i-th parametric indicator of the enterprise according to the compensatory valuation method;

g_i^{max} – is the maximum value of the i-th parameter for all enterprises in the selected market.

When positioning the company's products in the selected market, it is necessary to determine two characteristics:

1. The characteristic of compliance of the enterprise's attributes with the requirements of the consumer;

2. The characteristic of the correspondence of attributes between each other.

The unit importance of attributes, calculated according to the compensatory and non-compensatory methods of assessing the enterprise's position described above using the formulas (Acs et al., 2014) and (Isenberg, 2010), is the first characteristic of positioning. However, the value of the unit significance does not reflect the degree of correspondence of the attributes of enterprises between themselves. Therefore, the second characteristic of positioning is to determine for each enterprise the distance between it and the enterprise with the «ideal» value of the parameters.

The distance between the studied enterprise and the «ideal» one (ξ_i) is determined by the formula for the entire set of parameters n:

$$\xi_{i} = \sqrt{\sum_{i=1}^{n}(g_i^{'} - g_i)^2} = \sqrt{\sum_{i=1}^{n}(1 - g_{i)}^2} \qquad (11)$$

Thus, the parametric analysis based on attributes using compensatory and non-compensatory valuation methods allows us to identify the position of an enterprise relative to its competitors in the selected market segment.

Conclusions

The results of the study revealed that entrepreneurial ecosystems are the most progressive modern concept of entrepreneurship development in general, which promotes the development of ecosystem strategies and adheres to such criteria of sustainable development as environmental responsibility, equality and social inclusion, financial integration and good governance. In today's business environment, the strategic factors that are crucial for the effective implementation of an entrepreneurial ecosystem are: the availability of innovative developments integrated into the global innovation space that provide competitive advantages to their participants; deep and coordinated cooperation of all ecosystem elements that interact in a very complex and idiosyncratic way, and maximize their potential and promote synergistic growth. In this regard, the question arises of theoretical substantiation of the process of formation of entrepreneurial ecosystems in the context of the concept of an entrepreneurial ecosystem.

In the process of defining the essence of the concept of entrepreneurial ecosystem, it was found that the concepts that preceded it contain important elements of entrepreneurial ecosystems, but, unlike it, do not provide systemic support for entrepreneurial activity by providing access to markets, finance, human and intellectual capital.

The results of generalizing the features of successful entrepreneurial ecosystems show that their list may change influenced by various factors of the investment and business environment, and as a result, the formation of an entrepreneurial ecosystem requires an individual approach that correlates with the development of existing entrepreneurial assets in a particular region. Based on this, we have identified the basic principles of formation of entrepreneurial ecosystems, which reflect not only the interdependent and multi-level nature of their participants but also the process of generating and creating value in them.

The analysis of literature sources has shown that to date, a limited number of scientific works have been devoted to the study of one of the areas of formation of entrepreneurial ecosystems - the process of entry of new enterprises into entrepreneurial ecosystems. Given that the formation of an entrepreneurial ecosystem is a resource-intensive process with an uncertain

outcome, the decision to enter a new enterprise should be strategically justified.

In order to determine the strategic orientation of an enterprise that is part of an entrepreneurial ecosystem, we propose a methodological toolkit for strategic analysis based on the method of parametric estimates. The application of this method allows us to carry out strategic positioning of an enterprise in the entrepreneurial ecosystem: to determine the impact of external and internal factors on the criteria of specific strategies, the competitive position of an enterprise in a particular market segment, the achieved level of competitiveness due to the synergistic effect of interaction of many components, and, in general, to provide attractive value propositions for consumers in the long term.

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CIRCULAR ECONOMY STRATEGIES FOR REDUCING FOOD WASTE IN SCHOOLS: A SYSTEMATIC LITERATURE REVIEW

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Abstract.

Purpose and aim of the study: *As the transition to a circular economy (CE) and the reduction of food waste is a priority strategic goal for policy planning at global and European Union (EU) level, but food waste in catering has become a major sustainability issue, the aim of the paper is to identify CE strategies to reducing food waste in schools based on a systematic literature review.*

Design / Methodology / Approach: *The research employed qualitative methods: five-step systematic literature review methodology by Denyer & Tranfield, (2009), analysis and synthesis, as well as the monographic method. The literature was selected using the databases Google Scholar, MDPI, ScienceDirect and Scopus.*

Main Findings: *Based on the systematic literature review, approaches for implementing CE strategies to reduce food waste in school canteens were discovered.*

Originality: *This study provides a new perspective on the implementation of CE "R strategies" to reduce food waste in schools.*

Implications: *The results of the study can be a basis for school and canteen administration to implement CE policies and waste management practices that will promote responsible food consumption and support sustainable food consumption and waste reduction strategies, and create added value for school canteens, the environment and society in general.*

Keywords: *circular economy, R strategies, food waste, sustainability.*

Introduction

Since 2011, questions about zero-waste food policy in the EU Member States were increasingly considered on the EU agenda at all political levels. In 2015, the group of Ministers of Finance and Governors of Central Banks of G20 Countries (hereinafter G20) announced that "the reduction of food

losses and wastes is a good goal for G20 collective actions" (European Court of Auditors, 2016), and the UN General Assemblies adopted the Sustainable Development Programme for 2030 (or Agenda 2030), which includes 17 sustainable development goals (hereinafter SDGs) and 169 related goals that should be achieved by 2030. In relation to the author's theme, Goal 12 envisages responsible consumption and production - halving the amount of global food wastes per capita at the retailer and consumer level, as well as reducing food losses in production and supply chains, which can help to ensure food security and move towards a resource-efficient economy (UNGA, 2015).

Food waste from out-of-home dining has become a major sustainability issue (Dhir et al., 2020), therefore, hospitality businesses, including school canteens, must follow responsible practices and consider sustainable production and consumption behaviours to reduce food wastes (Camilleri, 2021). It has been found that food service businesses can pursue a number of responsible practices by implementing preventative measures and recycling practices to limit food losses and waste, as well as reduce environmental impacts (Camilleri, 2021; Lopez et al., 2019). That is why the food industry can become one of the main areas to apply the CE model, yet the current level of CE implementation in the food system makes it difficult to combine theory and practice (Fassio & Tecco, 2019).

CE is currently being popularized all over the world. Issues such as food security and environmental impacts such as resource depletion and greenhouse gas emissions associated with food wastes are the focus of local, national, and European policy makers, as well as international organizations and researchers from various sectors (Schanes et al., 2018).

The transition to a CE requires innovative solutions in all value chains (Holzer et al., 2022), and food is one of the main CE product value chains. The CE concept aims to create a food system that ensures that food does not create waste. (Ellen MacArthur Foundation, 2022).

Catering in schools is essential in shaping students' eating habits and attitudes toward food (García-Herrero et al., 2019; 2021), so it is important for school management to plan and organize the catering process in such a way that it promotes responsible food consumption and supports sustainable food consumption and waste reduction strategies.

Therefore, the aim of the research is to identify the CE strategies to reducing food waste at schools based on a systematic literature review.

The tasks of the research are to perform a literature analysis on CE strategies in reducing food waste and to identify how they could be used in the catering process in schools.

This research used the five-step systematic literature review method by Denyer & Tranfield (2009), analysis, and synthesis, as well as the monographic method.

Research results and discussion

To achieve the goal, the present research was carried out using a five-step systematic literature review methodology (Denyer & Tranfield, 2009): 1) question formulation; 2) locating studies; 3) study selection and evaluation; 4) analysis and synthesis; 5) reporting and using the results.

The research question is as follows: how can a CE approach be used to reduce food waste in schools?

Using the keywords "circular economy" and the name of the relevant R strategy, "in school catering", the literature was selected using the databases Google Scholar, MDPI, ScienceDirect and Scopus.

Based on the titles of the papers, abstracts, keywords in the text, the most relevant papers were selected, from which those that answered the research question were chosen and analysed. The results are reported below.

The CE is a new concept that emphasizes various strategies (e.g., reduce, reuse and recycle) to decouple resource use from economic growth, reduce wastes and emissions, and keep the highest utility throughout the product life cycle (Holzer et al., 2022). Various CE strategies can be used to prevent excessive and rapid environmental degradation and social inequality, both locally and globally. The main purpose of the CE is to eliminate waste. If waste is unavoidable, it should be adequately controlled to be safe for human health and the environment (Khaw-ngern et al., 2021).

In the scientific literature, the main fundamental principles of the CE on which CE strategies are based are "reduce", "reuse" and "recycle", which are defined as the "3Rs" (Ghisellini et al., 2016; Liu et al., 2017). But since the food supply chain plays a vital role in increasing economic, environmental, and social sustainability issues, focusing on the 3Rs is no longer enough in the context of the CE (Vlajic et al., 2021), and over time they have evolved to the framework of 10R strategies (Table 1), described by the authors Holzer et al. (2022) and Potting et al. (2017).

The authors analysed the strategies indicated in Table 1 in reverse order from bottom to top, because according to the authors Holzer et al. (2022) and Potting et al. (2017) studies, the strategies shown in Table 1 are based on the waste hierarchy of the waste framework directive (European Commission, 2008), which was adopted to reduce environmental impact by increasing the extent of circularity, thereby strategies that promote sustainable product production and use (e.g., a product as a service, product

sharing) are preferred over product life extension, as the need for natural resources is determined. Based on priorities set in the food waste hierarchy, prevention should be regarded as the first strategy against food waste, considering re-use or recycling of food waste only where prevention is not possible (Cicatiello et al., 2020).

Table 1 The 10R Framework (Holzer et al., 2022; Potting et al., 2017)

Strategies		Explanation
Smarter product use and manufacture	R1 Refuse	Make the product redundant by abandoning the function or by performing the same function by a radically different product
	R2 Rethink	Make product use more intensive (e.g., through products or by placing multi-functional products on the market)
	R3 Reduce	Increase efficiency in the manufacture or use of products by consuming less natural resources and materials
Extend the lifespan of the product and its parts	R4 Re-use	Re-use by another consumer of a discarded product that is still in good condition and performs the original function
	R5 Repair	Repair and maintenance of defective products so they could be used for their original function
	R6 Refurbish	Restore an old product and bring it up to date
	R7 Remanufacture	Use parts of a discarded product in a new product to perform the same function
	R8 Repurpose	Use a discarded product or its parts in a new product with different function
Useful application of materials	R9 Recycle	Process materials to have the same (high grade) or lower (low grade) quality
	R10 Recover	Incineration of materials for energy recovery

The useful applications of materials. This group's strategies for recycling and recovery are more concerned with the recycling of materials and their incineration with energy recovery; however, they can be attributed to the catering sector like recovering and recycling wasted food through donation, salvaging, processing, industrial reuse and composting (United States Environmental Protection Agency, 2016; 2023).

R10 Recover. The scenarios of this strategy are very modern and technological, but the authors believe that in the future they could also be used in school canteens because FW is a carbon-rich waste stream that could be used for the recovery of a wide range of energy and materials, from fuels/energy to chemical components to bio-plastics (Santagata et al., 2021), for example, use of microbial fuel cells (MFCs) due to their ideal approach in the generation of electricity and parallel treatment of organic food wastes. The MFCs are significant as an innovative approach using microorganisms and oxidizing organic food wastes into bioelectricity

(Kumar et al., 2022a). The so-generated commodities show various benefits such as reduced environmental impacts, deriving from the avoided disposal and the avoided extraction of natural resources, and the reduced economic cost of FW as a feedstock (Santagata et al., 2021).

R9 Recycle. This includes options such as recycling food wastes for animal feed (Ali, 2020), using a traditional technology (composting) and a radical innovative one (insects as feed) (Borrello et al., 2017). The recycling of food by-products, which can also be used in animal and human nutrition, is also mentioned in the context of this strategy (Jackowski et al., 2020).

Extend the lifespan of the product and its parts. The purpose of this group's strategies is to retain goods and their parts in the economy as long as possible, while at the same time maintaining or improving their value (Morseletto, 2020). The European Parliament (2016) underlines that the longer life of products means that it is necessary to take appropriate measures to combat planned obsolescence and increase consumer rights by improving product information. The authors believe that to effectively implement these strategies, it is required to strengthen the waste management policy of school canteens, where FW is not thrown away, but collected and transferred to implement other strategies.

R8 Repurpose. This strategy can be applied using food waste and by-products as a resource (Kumar et al., 2022b), for example, by using tallow for biodiesel production, capturing methane produced in the onsite wastewater treatment system for electricity generation, using tallow to generate the remaining electricity needs and using biomass for thermal energy generation (Colley et al., 2020), or using food waste to produce building blocks for use in bioplastic production (Visco et al., 2022).

R7 Remanufacture. This strategy is intimately linked with the revalorization of by-products for the generation of high-revenue bioactive compounds (Montone et al., 2021).

R6 Refurbish. Literally restoring spoiled food and bringing it up to date is impossible, but this strategy can be applied as the management of food products that have not been served for various causes and are thus destined to be discarded and moved to landfill, thereby representing only a cost (Giuseppe et al., 2014).

R5 Repair. Food repair is a relational practice that links an eating body with organic matters, producers and farmers, soils, supermarkets, modes of preservation and packaging, as well as kitchen technologies, food preparation, cooks, and other eaters (Abrahamsson, 2019). The author Abrahamsson (2019) articulates the various, different skills and resources that are used when food gets repaired with the following examples: individuals collecting and eating discarded food from dumpsters; collective dinners to eat foods that have expired their due date; and people growing

and eating food in communal gardens in a city. In the context of school canteens, this strategy could be applied by donating uneaten food, or food that has expired but has not yet been spoiled.

R4 Re-use. In scientific literature, this strategy is mentioned in context of food management practices such as "food freezing" or "reuse leftovers for new recipes" (Principato et al., 2022), also valorise food losses into animal feed to contribute to a reduced environmental and climate footprint of animal products and food waste avoidance (Pinotti et al., 2021).

Smarter product use and manufacture. From the CE point of view, these are the most circular strategies. The food industry is under growing pressure to produce high-quality and minimally processed foods by using sustainable approaches and ingredients, as well as increasing demands to replace animal products with plant-based products (Mahony & van Sinderen, 2022). Besides, the challenge of persuading people to change their eating habits to more environmentally friendly food consumption patterns become more and more relevant (Vermeir et al., 2020); therefore, it is necessary to improve the availability and price of sustainable food, as well as to promote a healthy and sustainable diet among consumers. The key elements are improving consumer information, strengthening sustainable food procurement, and promoting the introduction of fiscal measures supporting sustainable food consumption (European Commission, 2023).

R3 Reduce. Strategic opportunities to reduce food loss and waste, sustainable use of resources in the food supply chain (Iagăru et al., 2023; Lemaire & Limbourg, 2019; Reynolds et al., 2019) and reduction in the carbon footprint throughout the chain of food supply (Bhatia et al., 2023).

R2 Rethink. Rethink is mainly focused on rethinking the behaviour and perception of the CE by consumers and organizations (Sitadewi et al., 2021). Rethink comes first as individuals consider and question their habits (Mak et al., 2021). It has been studied that educational, skills-based school interventions to decrease food waste by encouraging schoolchildren to be more involved at home in choosing and/or preparing food to take to school can lead to food waste behaviour change to the good side (Boulet et al., 2022).

R1 Refuse. This strategy can be applied by excluding from the menu recipes that children do not like (Pagliarino et al., 2021). Most of the establishments do not have menu alternatives, consumers can only decide whether to order the food offered. In order to increase the amount of food actually eaten, it would be desirable to remove less-liked dishes from school catering menus (Tóth et al., 2023), and it is also highly recommended to periodically review the menus and not include in them the foods that schoolchildren do not want (Ellison et al., 2019), because school menus

should be based not only on the requirements of the relevant legislation but also on modern students' understanding of nutrition (Lonska et al., 2022).

The results show that "R strategies" in transition to a CE are the most widely described strategies in the scientific literature (Khan & Haleem, 2021), and they can be widely used in various industries, including the food sector (Morseletto, 2020; Khaw-ngern et al., 2021).

Conclusions and suggestions

As the transition to a CE and the reduction of food waste is a priority strategic objective in policy planning on the global and EU scale, and food waste in catering has become a major sustainability issue, school catering businesses could implement responsible practices by introducing preventive measures and recycling practices to reduce food losses and wastes, and the impact on the environment.

The systematic literature review results show CE "R strategies" implementation approaches to reducing food wastes at school canteens.

The results of the research could serve as a basis for school and canteen administration to implement CE policies and waste management practices that will promote responsible food consumption and support sustainable food consumption and waste reduction strategies, and create added value for school canteens, the environment and society in general.

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BUSINESS DIVERSIFICATION OPPORTUNITIES FOR SMALL AND MEDIUM ENTERPRISES IN LATGALE REGION

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Abstract.
Purpose and aim of the study: *The present research aims to identify and assess business diversification opportunities for small and medium enterprises in Latgale region.*
Design / Methodology / Approach: *The research also conducted an expert survey, and all the experts indicated that the introduction of new products/services is an important and very important opportunity for small and medium enterprises to grow. In addition, most of the experts indicated that implementing a diversification strategy by a company would contribute to reducing/diversifying risks thereto.*
Main Findings: *The research identified the following disadvantages that could arise from business diversification: a decrease in quality (all available resources and attention are redistributed to several industries/products of diversification) and a lack of resources (human, technical and financial), depending on the kind of diversification strategy and the specifics of the company's economic activities.*
Originality: *The research gives insight into the theoretical aspects of diversifying the economic activities of enterprises and analysed development opportunities for small and medium enterprises in Latgale region.*
Implications: *With the rapid growth of the market, small and medium enterprises need be able to effectively adapt to changing conditions, and consequently business diversification becomes important for such enterprises.*

Keywords: *small and medium enterprises, business diversification, Latgale region.*

Introduction

Small and medium enterprises (SMEs) play a significant role in the growth of the national economy and in contributing to the business environment (Pedraza, 2021; Liepaja Special Economic Zone, [s.a.]). They represent a major source of business skills, innovation and employment, a driver of job creation and global economic growth, accounting for 90% of the

total businesses and more than 50% of employment worldwide. The role of SMEs in economic growth in Latgale region is particularly important because Latgale is one of the economically weakest regions of Latvia, where the business environment is less developed than that in the rest of Latvia, affecting product sales and investment in the region. To foster increase in the performance of SMEs in Latgale region, the enterprises need to expand their economic activities. By diversifying its economic activities, the enterprise increases the competitiveness, diversifies the risks, and exploits the available resources in a more efficient way (Le, 2019). Business diversification is a relatively important factor in the development of SMEs in Latgale region because in this way, the enterprises reduce their risks and gain opportunities to operate in new markets. Diversifying economic activities lead to an increase not only in the enterprise's financial performance but also in overall economic growth in the region (Latgale Planning Region, 2022).

The present research aims to identify and assess business diversification opportunities for small and medium enterprises in Latgale region. The research topic represents business diversification by small and medium enterprises in Latgale region.

To achieve the research aim, the following specific research tasks were set:
1. To give insight into the theoretical aspects of business diversification and the kinds of strategy for implementing it.
2. To analyse the development of and business diversification opportunities for small and medium enterprises in Latgale region.

The following hypothesis was put forward: implementing a diversification strategy by the enterprise reduces the impact of risks on the performance. The novelty of the present research involves identifying and assessing business diversification opportunities for small and medium enterprises in Latgale region in the period 2017-2023. The research examined the nature of business diversification and strategies for diversifying economic activities, analysed development opportunities and support mechanisms for small and medium enterprises and conducted an expert survey on development opportunities for small and medium enterprises in Latgale region.

The research employed the following methods: the monographic method to objectively explain the data obtained, logical construction to draw conclusions based on other authors' knowledge and data, as well as analysis, synthesis, induction and an expert survey.

Research results and discussion

1. Concept and nature of business diversification

The term diversification has different meanings in the theoretical literature. For the first time, the concept of diversification was described by Gorts as a process that reduces the impacts of adverse conditions in one of the economic activities of the firm on the firm's overall performance. Thus, it reduces the risks associated with unpredictable changes in the firm's profitability across industries (Gorts, 1962). Today, researchers use the term diversification to refer to a strategic choice for business expansion (Le, 2019) to increase the variety of final products, vertical integration and the number of "core areas" of economic activity in which the firm is engaged (Penrose, 1995), a method for firm expansion applied when choosing an industry in which to operate (Liangding et al., 2007), as well as dispersion of the concentration of financial, operational or geographical risks (Hayes, 2022a).

As regards the reasons for diversification, Ansoff grouped them into four categories (Ansoff, 1957):

- first, the company cannot achieve the intended goal due to its expansion strategy;
- second, the company has too much surplus, which far exceeds the expansion needs;
- third, the company has more than an expansion strategy when new market opportunities are more profitable;
- fourth, the prospects for expansion and diversification are uncertain in the particular case (Kannan & Saravanan, 2012).

Whenever a company faces a decrease in market opportunities and stagnant sales in its core business, it is a signal to diversify. Other key factors are as follows:

- the company has a strong and well-known brand that could be transferred to another company's product;
- by diversifying the business in a closely related area of economic activity, a new opportunity for cost reduction emerges;
- the company can expand into industries whose technologies and products complement its current business.

The impact of diversification on the company's value manifests itself as the creation of new lines of business within the company through the process of internal development. Some researchers have found that implementing diversification in a company contributes to its growth and performance, reduces the impact and probability of risks, increases the company's sales revenue and expands its market share, thereby increasing its profits.

Researcher H. Igor Ansoff introduced the term diversification strategy as a separate business strategy (Vogl, 2018). A diversification strategy could be defined as business expansion or entering new markets that are different from the company's current product lines or markets. Another definition of a diversification strategy is as follows: a strategy implemented by managers to achieve business growth by entering a new industry and making above-average profits by taking advantage of the opportunities that emerge (Anıl & Yiğit, 2011). A diversification strategy is a company's strategy to increase its growth by changing or expanding the products the company produces or offers for sale (MasterClass, 2022).

Some researchers have concluded that a diversification strategy involves expanding the company's economic activity or product line, redistributing its resources to achieve growth, gaining an advantage over competitors and earning higher profits.

2. Business diversification strategies and the kinds thereof

Some researchers (Al Sayegh, 2010; Vogl, 2018; Anil & Yigit, 2011; Xie et al., 2021) distinguish several kinds of diversification strategy, indicating that organizations expand the boundaries of their operations by focusing on their technical capacity or market position, or both, leading to horizontal, vertical, concentric or conglomerate diversification (Dhir, 2015). Horizontal diversification closely relates to the company's core business but is outside its current market and product line (Anıl & Yiğit, 2011). Horizontal product diversification means introducing new but unrelated products into the company's product range. Implementing a horizontal strategy helps the company increase the quality of both current and new products. If the company analyses its entire current product line before coming up with a new product, it gives an opportunity for the company to improve the current products and reduce production costs. Introducing new product lines requires the company to access new markets and distribution channels (WallStreetMojo Team, [n.d.]). This provides an opportunity for cooperation with other regions or market segments. Implementing horizontal diversification can lead to a negative result, i.e. the company might fail to attract new customers, and there might also be difficulty in managing the product introduced.

Vertical diversification represents a growth strategy, as the companies diversify their business operations throughout the supply chain (Kriya Formerly MarketFinance, 2022). The company expands forward or backward in the supply chain or production process. During vertical integration, a business combines two or more stages of production that are usually managed by other companies (StudySmarter, 2023). Such a strategy brings

benefits such as lower production costs, higher delivery quality, development of product distribution channels and higher profits (Borad, 2023), yet the strategy can create disadvantages such as difficulty in managing resources, lower efficiency and profitability and could cause an increase in production costs (Hayes, 2022b).

Concentric diversification refers to a company expanding its current product range to supply related products or services. However, such a strategy requires the company to supply products that are more in line with its core business (Kriya Formerly MarketFinance, 2022). Concentric diversification is also called linked diversification. Under the strategy, the company introduces a new related product that is similar in nature and in terms of production, consumption, price distribution and promotion (Khan, 2012). The strategy involves dealing with another industry that benefits from access to the company's core competencies. Under the strategy of concentric diversification, the company can diversify into a related business (Wilfred et al., 2014). Applying this particular approach, the company seeks to increase its market share by introducing a series of new products that could not only attract the attention of current customers but also attract new customers (Tatum, 2023).

Implementing a concentric diversification strategy by a company can bring advantages such as full use of the company's infrastructure, an increase in market share as well as cost savings, whereas the disadvantages could be an increased risk factor, as well as the possibility of harming current business operations (Bhasin, 2022a; Bhasin, 2022b).

Conglomerate diversification means that the new activity is completely unrelated to the parent company, and the purchase and exploitation of equipment and technologies does not depend on the technological or other competencies. The most common reasons for this strategy are to reduce risk, increase total profits, raise new capital or cash, attract new customers or become a bigger force in capital markets (Mint Tools, 2022).

The key advantage of the conglomerate diversification strategy is the reduction of dependence on a particular market or product line, whereas the disadvantage is the higher probability of risks, as well as the fact that the new structure is too unrelated to the current business.

A company that has decided to implement a diversification strategy needs, before the implementation, examine the kinds of diversification strategy and their advantages and disadvantages and choose the most suitable strategy according to the company's current position in the market and current resources and goals, so that the diversification strategy is consequently effective and profitable.

3. Trends in the development of small and medium enterprises in Latgale region and expert assessments of business diversification opportunities for small and medium enterprises in Latgale region

SMEs make up most of the businesses and employment in Latvia, which is also relevant to Latgale region. SMEs are an essential driver of regional development, contributing to economic growth and employment. In 2021, 10% of the total companies in Latvia were registered Latgale region, while the trend shows that from 2017 to 2021 in Latgale region, the number of companies decreased by 1966 or 10.3% (Official Statistics Portal, 2022a; Official Statistics Portal, 2022b). Most of the companies employed up to 9 employees, accounting for 93.4% of the total companies in Latgale region. The companies represented mostly local and family businesses operating in several market sectors. In Latgale region, 4.1% of the total companies employed 10-49 employees, only 0.67% employed 50-249 employees, while only 0.01% employed 250 and more employees (Official Statistics Portal, 2022c; Official Statistics Portal, 2022d). It could be concluded that theoretically in Latgale region (there were data only on the number of employees, while annual turnover and balance sheet data were missing for a full analysis), the SME category comprised 99.95% of the total number of companies.

A survey of experts having experience with and knowledge of SMEs in Latgale region was conducted to identify development opportunities for SMEs in Latgale region. The Google Forms platform was used to create a survey and obtain answers from the experts. The persons who had experience with SMEs in Latgale region, such as enterprise owners, persons in leading positions, lecturers as well as other persons who could share their experience and give recommendations on SMEs, were identified as experts. The expert survey was conducted in the period from 20 April 2023 to 20 May 2023. A total of 20 questionnaires were sent and 13 questionnaires were received. The survey had four closed-ended and three open-ended questions. An analysis of the data revealed that the occupations of the respondents included positions such as a lecturer, a business consultant, a project manager, a leading researcher, a professor, farm owners and business managers, as well as there was a representative of the administration of the Rezekne Special Economic Zone and a representative of the Latgale Regional Department of the Central Finance and Contracting Agency (CFCA). The experts surveyed mainly represented national institutions, educational institutions, owned companies as well as financial support institutions. Answering the question about their experience with SMEs in Latgale region, the respondents had indicated many years of experience in company management (on average 15), experience in support organizations and

public administration, project management and business consulting, as well as experience in knowledge and technology transfer.

In the experts' opinion, the most useful support opportunities for SMEs in Latgale region were national support programmes, as well as European Union support programmes, whereas less important were expert-mentor consultations.

The most important factors that could hinder the development of SMEs in Latgale region, according to the experts, were business risks, low consumer demand, as well as the long distance of infrastructure from Riga.

In the experts' opinion, the most important support opportunities for SMEs in Latgale region were the attraction of financing, the expansion of foreign trade, as well as the introduction of new products/services.

To identify how business diversification affected the performance of companies, the experts were asked to note, in their opinion, the main advantages that a company could get from diversifying its economic activities. The most experts (43%) believed that the main advantage that a company could get from diversifying its activities was risk mitigation and diversification. The fewest experts answered that the main advantages were higher competitiveness (7%) and higher consumer buying power (7%).

It could be concluded that, according to the experts, the most significant advantage that a company could get from diversifying its economic activities was risk reduction or diversification. If there was a downturn in one of the industries in which the company operated or the performance of the company decreased, the economic activities could be diversified at the expense of another industry, which created some stability and reduced the impact of negative economic processes on the company.

Implementing a diversification strategy by a company could also create disadvantages. The most significant disadvantages faced by the company when diversifying its economic activities, according to the experts, were a lack of resources (38%), as well as a lack of financing (31%). The experts pointed out that in order to diversify the company's economic activities, it was necessary to invest substantial resources, namely, equipment, human resources, knowledge as well as funds. However, a very few experts indicated consumer distrust of a new product (8%) and a lack of innovative ideas as disadvantages (8%).

It could be concluded that, according to the experts, the most significant disadvantages faced by a company when diversifying its economic activities were a lack of resources, as well as a lack of financing, which was an important factor in the development of the company. By investing resources in an additional industry, the company took the risk of decreasing the performance of the current industry and contributing to the new industry incompletely.

Conclusions

The term diversification means expanding the kind of economic activity, engaging in another industry or creating new products, thereby reducing the impacts of risks and other negative factors on the company's performance.

Companies decide to diversify in order to increase their profits and confidence in market power, protect the company against financial shocks as well as effectively use the excess resources of the company.

A diversification strategy involves expanding the company's economic activity or product line, redistributing its resources to achieve growth, gaining an advantage over competitors and earning higher profits. The choice of a diversification strategy is affected by the company's available resources and position in the market.

Small and medium enterprises, making up most of the total enterprises, are important contributors to the national economy, are actively involved in the creation of new jobs and new products and also contribute to the development of the business environment.

In 2021, 10% of the total companies in Latvia were registered Latgale region, while the trend shows that from 2017 to 2021 in Latgale region, the number of companies decreased by 1966 or 10.3%.

In the experts' opinion, the most useful support opportunities for SMEs in Latgale region were national support programmes, as well as European Union support programmes, whereas less important were expert-mentor consultations. The most important factors that could hinder the development of SMEs in Latgale region, according to the experts, were business risks, low consumer demand, as well as the long distance of infrastructure from Riga.

In the experts' opinion, the most important support opportunities for SMEs in Latgale region were the attraction of financing, the expansion of foreign trade, as well as the introduction of new products/services.

The most significant advantage that a company could get from diversifying its economic activities, according to the experts, was risk reduction or diversification. If there was a downturn in one of the industries in which the company operated or the performance of the company decreased, the economic activities could be diversified at the expense of another industry, which created some stability and reduced the impact of negative economic processes on the company.

The most significant disadvantages faced by a company when diversifying its economic activities, according to the experts, were a lack of resources as well as a lack of financing, which was an important factor in the development of the company. By investing resources in an additional industry, the company took the risk of decreasing the performance of the current industry and contributing to the new industry incompletely.

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PROBLEMS AND OPPORTUNITIES FOR THE BUSINESS ENVIRONMENT IN THE REZEKNE SPECIAL ECONOMIC ZONE

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Abstract.
Purpose and aim of the study: *The present research aims to identify and analyse problems and opportunities for the business environment in the Rezekne Special Economic Zone.*
Design / Methodology / Approach: *The research employed the following methods: descriptive and graphic, analysis, an expert survey, as well as SNW (strengths, neutrals and weaknesses) analysis and the SNW typological index.*
Main Findings: *The most important problems for the business environment in the Rezekne SEZ, according to the experts, were as follows: a lack of suitable land plots and buildings for starting production; a lack of qualified labour; rare and poor communication between Rezekne SEZ businesspersons (etc.), as well as opportunities such as additional tax relief for companies from the Rezekne SEZ; additional advantageous criteria for national, EU, ALTUM etc. project evaluation for businesses having Rezekne SEZ company status; opportunities for cooperation with Rezekne Academy of Technologies (etc.).*
Originality: *Based on an expert survey, an SNW analysis and the SNW typological index, the research identified the most important problems for the business environment in the Rezekne SEZ.*
Implications: *An analysis of the situation in Rezekne city and Rezekne municipality regarding the national business environment reveals regional differences, which makes it necessary to perform an analysis of the business environment in the Rezekne SEZ in order to identify the main problems that hinder the creation of a favourable.*

Keywords: *business environment, special economic zone, regional development, Rezekne SEZ.*

Introduction

The fast emergence of special economic zones (hereinafter SEZ) in the world (Puri-Mirza, 2022) has a significant impact on the economic situation in and wellbeing of countries. In recent decades, special economic zones have become a popular instrument of economic policy aimed at creating attractive investment prerequisites for businesses in developed countries. SEZs are

special geographic areas within a country, where laws and regulations differing from general national legislation are applicable to businesses. The laws established for a SEZ are aimed at creating a more favourable business environment for businesses. Despite all the advantages of SEZs, it is necessary to perform a regular analysis of the business environment in the SEZs in order to identify problems faced by companies operating there, as well as to be able to find opportunities that favourably affect the development of companies and the business environment.

Contemporary author E.W. Barbieri has emphasized that SEZs are a powerful economic development tool based on tax and operational strategy reforms, resulting in job creation and capital attraction to new territories (Barbieri, 2020). Authors A. Ambroziak and A. Hartwell have found that SEZs are established to foster regional development. The authors had examined the case of Poland, analysing several indicators: business investment, unemployment etc. and concluded that the establishment of SEZs had a positive effect particularly in the least developed regions of Poland, whereas the effect of SEZs was weak or even negative in highly developed regions (Ambroziak & Hartvells, 2017).

The research problem is that despite the advantages provided by the Rezekne SEZ, statistical data indicate that there is a high unemployment rate in Rezekne city and Rezekne municipality, thereby usually portraying Latgale as the least developed region of Latvia; therefore, the research focuses on analysing the business environment in the Rezekne SEZ to identify the main problems that hinder the creation of a favourable business environment and the overall development of the region and opportunities that can increase the current quality of the business environment in the Rezekne SEZ.

The present research aims to identify and analyse problems and opportunities for the business environment in the Rezekne Special Economic Zone.

To achieve the aim, the following specific research tasks were set:
1) To give insight into the theoretical principles of the business environment and special economic zones;
2) To examine problems and opportunities for the business environment in the Rezekne Special Economic Zone based on an expert survey.

The following research hypothesis was put forward: there are problems in the Rezekne Special Economic Zone that do not contribute to the development of the business environment.

The theoretical framework of the present research was based on scientific research information from research paper databases, online resources, theoretical books as well as materials published by the Rezekne Special Economic Zone.

The research employed the following methods: descriptive and graphic, analysis, an expert survey, as well as SNW (strengths, neutrals and weaknesses) analysis and the SNW typological index.

The expert questionnaire data were processed using SPSS Statistics.

Research results and discussion

1. Theoretical aspects of the business environment and special economic zones

Business success depends on the availability of various resources such as financing, human resources, skills etc. By combining all the factors, a company can adapt to a particular environment and the changes therein. Business development and success depend on factors in the business environment in which the company operates (Cherunilam, 2016).

The constantly changing business environment of the 21st century, which is specific to the global economy, creates a burden to businesspersons to seek more successful and newer solutions that would contribute to faster, better and resource-efficient results. Nowadays, the ability to adapt to changes in the business environment is considered to be one of the elements of successful business development (Taouab & Issor, 2019). The authors believe that a complete understanding of the current business environment and its advantages and disadvantages enables a businessperson to find the most successful tools to use for the growth of the company and the successful creation and implementation of a business strategy.

Research studies by several researchers have been devoted to a theoretical review and analysis of the business environment and the concept and components thereof (Commander & Svejnar, 2011; Kraja & Osmani, 2015; Akpoviroro, 2018; Sardak & Movchanenko, 2018). The present research has summarized the characteristics and definitions of the business environment given by some researchers:

- the business environment is a variable that requires constant research and consequently facilitates strategic, dynamic and successful cooperative decision-making and the creation of new products and services (Ostos et al., 2016);
- a good business environment is a basic element to attract business gatherings, release investment potential, improve the credibility and influence of the entire country and promote economic development. (Liang et al., 2021);
- the quality of the business environment is considered to be the country's ability to provide businesspersons with a sufficient level of freedom and

low taxes, and the country's ability to produce products cheaply and efficiently at minimal production capacity (Hajduova et al., 2021).

The authors of the present research conclude that the definitions of a business environment could be very different, depending on the particular situation; however, despite this, all the definitions include the same main elements: the role of national governments in shaping the business environment, strategic decisions made by company managements, which are based on detailed environmental analyses, as well as the company's ability to adapt to various changes using the available resources.

According to the definitions given by contemporary researchers, the external business environment is a set of factors known to the company that affect its performance, thereby creating constraints and opportunities, and are beyond the company's control. All external forces closely relate to one another (Piccio & Manigo, 2022) and can represent direct (suppliers, consumers, intermediaries) (Ghimire, 2020) as well as indirect (economic, political, environmental, technological, socio-cultural and demographic) factors (Adagba & Shakpande, 2017; Suryana et al., 2017).

The internal business environment is an environment where specific business decisions are made. It is an environment that a businessperson can influence and change, and it depends on the decisions made by the company manager (Vagre-Abizāre, 2011). The internal environment consists of: the vision, mission, goals and values of the company (Brătianu& Bălănescu, 2008); the company's internal resources: employees and technologies (Sankar & Mahesh, 2012); the organizational culture and climate, the manager's work style, organizational structure (Hans, 2018; Vagre-Abizāre, 2011). Therefore, the authors conclude that there are factors in the business environment that the company can influence, yet there are also external factors that could not be controlled by the company.

The concept of special economic zones in their current form emerged in the 1950s when they were popularly known as export processing zones, and later as free zones. A SEZ is a geographically defined and fenced-in area that has a number of location-specific advantages.

In the world, special economic zones are used as a tool for promoting development and attracting foreign investments (Mayburov & Sinenko, 2017). The term special economic zone covers a wide range of zones, e.g. free trade zones, export processing zones, industrial parks, economic and technological development zones, high-tech zones, science and technology parks, free ports, enterprise zones and others (Zeng, 2016). The research gives a summary of the most common kinds of special economic zones (Table 1).

Table 1 Overview of the most common kinds of SEZs in the world
(compiled by the authors based on Zeng, 2016)

Name	Definition
Free trade zone	FTZs (also known as duty-free zones) are fenced-in areas that have commercial warehouses, storage and distribution facilities, as well as distribution points.
Comprehensive special economic zone	Comprehensive SEZs (also referred to as multi-functional economic zones) are large-size areas that provide a mix of industrial, service, and urban operations. In some cases, such zones might encompass an entire city or jurisdiction such as Shenzhen (city) and Hainan (province) in China.
Industrial park	Industrial parks (also called industrial zones) primarily represent manufacturing sites.
Customs bonded zone	Customs areas (also known as customs warehouses) are special buildings or other protected areas where goods are stored, handled or manufactured without paying the duties that would normally apply. To some extent, a bonded zone is similar to a free trade zone or a free port. However, the main difference is that a customs zone is subject to customs laws and regulations, while a free trade zone is exempt from them.
Specialized zone	Specialized zones include science/technology parks, petrochemical plant zones, logistics parks and airport zones.
Eco-industrial zone or park	Eco-industrial zones or parks focus on ecological improvements, waste reduction and environmental protection. They often employ the concept of "industrial symbiosis" and green technologies to achieve energy and resource efficiency. Given the severe environmental challenges, an increasing number of countries adopt this new kind of zone.

The authors conclude that the main common advantage of a SEZ is the provision of support to businesspersons, which could take the form of various tax relief, specialized zones for business, advantageous transport roads and corridors, distribution hubs for logistics purposes etc.

Some research studies (Puri-Mirza, 2022) found that between 1997 and 2002, there was a rapid acceleration in the establishment of economic zones (from 845 to 3000 units, respectively). The number of SEZs tends to increase worldwide, and this solution is gaining acceptance. However, different achievements in the economy, countries and regions indicate that such zones are not an unambiguous source of success for comprehensive development. To achieve success, economic zones need to be properly and accurately established and carefully adapted to the specific situation in the country. SEZs cannot be applied as an economic tool to any situation and country or its region. Given the complex and heterogeneous business environment in which special economic zones function, a clear vision is needed of how to manage them in accordance with the needs of the country (Zeng, 2016).

It could be concluded that each kind of SEZs has advantages and disadvantages; therefore, the businessperson needs to assess available opportunities and resources needed to operate and develop in the specific business environment.

2. Expert ratings of problems and opportunities for the business environment in the Rezekne SEZ

Regional development and significant regional disparities are a significant problem in areas with an unfavourable socio-economic situation. To deal with this problem, many Eastern European countries, including Latvia, established special economic zones and free ports as a regional development tool aimed at reducing disparities between regions, attracting investments and creating new jobs in particular areas (Ziedina & Pelse, 2017).

Several special economic zones have been established in Latvia. In the less developed region of Latvia – Latgale – two special economic zones have been established, whereas in well-developed regions such as Kurzeme and Riga have two free ports and one SEZ (Ziedina & Pelse, 2019).

To effectively identify and analyse problems and opportunities for the business environment in the Rezekne SEZ, a questionnaire for experts was created with reference to the Turiba Business Index 2022 indicating the quality of the business environment in Latvia (Turība University, 2022). The businesses that have received the status of Rezekne SEZ commercial company were surveyed on problems and opportunities for the business environment in the Rezekne SEZ. The questionnaires were sent by e-mail. The questionnaire data were processed using SPSS Statistics and Microsoft Excel.

The questionnaire survey involved 9 experts representing positions such as a manager (3 experts), an accountant (1), an executive director (1), an assistant manager (1), a technical director (1), a personnel selection specialist (1) and the chairman of the board (1). The average length of service of the experts was 11.4 years, and the average number of employees in the companies represented was 102 employees.

The experts gave their opinions on the extent to which the advantages provided by the Rezekne Special Economic Zone were important for businesses (Figure 1), rating the availability of qualified labour and tax relief granted by the Rezekne SEZ for businesses for conducting business as the most important (both advantages were rated as "very important" by 7 respondents or 78% of the total experts), as well as costs and resources that contributed to higher competitiveness for businesses (6 respondents or 67%).
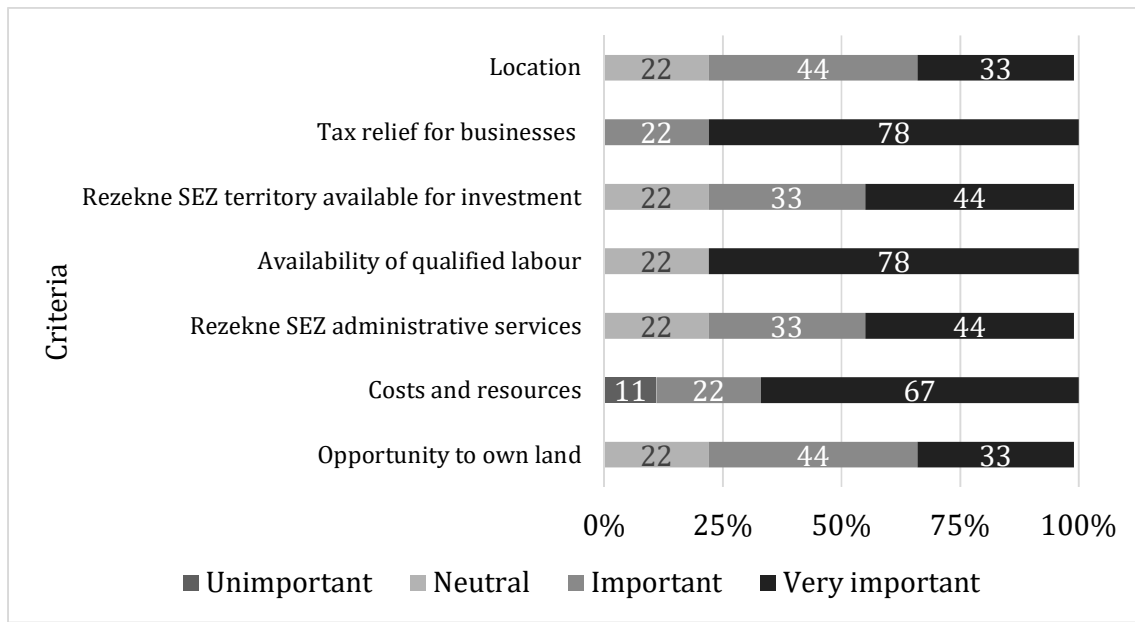
Fig.1 Expert ratings of the advantages provided by the Rezekne SEZ for companies (compiled by the authors)

An analysis of the expert opinions revealed that the respondents rated each of the advantages provided by the Rezekne SEZ based on what was the most important for their company's core economic activity. For example, lower production and resource costs were very important for manufacturing companies, whereas for companies that provided property rental services, an important criterion was the potential acquisition of land where to build additional buildings for the services provided. Besides, the experts gave quite positive and mostly high ratings to the current business environment in the Rezekne SEZ and future growth opportunities for the Rezekne SEZ companies represented by the experts. Rating the business environment in the Rezekne SEZ as "very positive", 22% or 2 experts rated future growth opportunities for their companies operating in the Rezekne SEZ also as "very good". In contrast, 67% or 6 experts gave the answer option "4" to the current business environment, of which one expert gave the answer option "3" to future growth opportunities for his/her company operating in the Rezekne SEZ, while four experts gave the answer option "4" and one expert rated the opportunities as "very good". None of the 9 experts rated neither the current business environment in the Rezekne SEZ as "very negative", giving the answer option "2", nor future growth opportunities for their companies operating in the Rezekne SEZ as "very poor", giving the answer option "2". Accordingly, it could be concluded that the higher the current business environment in the Rezekne SEZ was rated, the higher the future growth opportunities for the Rezekne SEZ companies surveyed were rated.

When rating the hindering factors (high tax burden, shadow economy, lack of financing, insufficient support from local governments, legal framework for business, high production costs, logistics for exports and imports, corruption, tough competition and raw material procurement) for successful business in Rezekne, the experts had the opportunity give multiple answers.

An analysis of the data received revealed that 6 experts (25%) believed that the current hindering factor for successful business in Rezekne was the high tax burden, followed by the shadow economy, which was noted by four experts (16.7%). It was emphasized that this was an external factor in the business environment, which indirectly affected the business environment and no businessperson was able to influence this factor (Vagre-Abizāre, 2011). According to the information provided by the Ministry of Finance of the Republic of Latvia on combating the shadow economy, effectively combating the shadow economy involves long-term coordinated and complex measures implemented by several national institutions, and for the implementation, all sectoral ministries need to continue a constructive dialogue with sectoral organizations, the national institutions involved and non-governmental organizations (Ministry of Finance, 2023). A percentage breakdown of respondent answers revealed that 8.3% answers concerned each of the factors such as a lack of financing, insufficient support from local governments, the legal framework for business, high production costs, logistics for exports and imports, as well as the level of corruption in the city.

The factors that, according to the experts, hindered the least the development of business in Rezekne were tough competition and the procurement of raw materials (ticked only once). An analysis of the expert answers revealed that the experts emphasized the fact that businesspersons in Rezekne were capable of creating competitive advantages for their companies, maintaining their market position in competition with other industry participants. Businesses operating in the Rezekne SEZ were provided with good opportunities for the procurement of raw materials to manufacture goods and services; therefore, this factor did not represent a hindrance to doing business.

In addition to the above, the questionnaire survey established expert ratings of whether the business environment in the Rezekne SEZ was different from the business environment at national level. An analysis of the information gathered from answers to the question revealed that the business environment in the Rezekne SEZ was mostly rated as more favourable than that at national level: 33% experts rated the business environment in the Rezekne SEZ as "the same as in the country", while 56% rated it as "more favourable as that at national level", and none of the experts gave a rating that meant it was "less favourable than that at national level".

The experts based their ratings on the clarifications given, which are summarized in the following responses:

1. Commercial companies that have been granted the status of Rezekne SEZ commercial company are granted tax relief that is not available to the businesses that do not operate in the Rezekne SEZ;
2. A more attractive business environment is available in the Rezekne SEZ, which gives businesses better opportunities to enter the global market owing to the consultations, training and informative events provided by the Rezekne SEZ;
3. In the Rezekne SEZ, ready-made rental spaces are available for starting and performing economic activities, which saves time and financial resources for the purchase and furnishing of the spaces.

The expert survey also helped to determine whether the current Rezekne SEZ businesspersons had identified problems related to the quality of the business environment in the Rezekne SEZ. Of the total experts, 44% or 4 noted that they had not observed problems, whereas 56% had encountered problems in the business environment in the Rezekne SEZ, for example:

- the Rezekne SEZ did not have enough suitable land plots and buildings to start production (one expert);
- a lack of qualified labour (1);
- rare and poor communication between Rezekne SEZ businesspersons (2);
- enough information was not provided to foreign companies about Rezekne SEZ companies and the Rezekne Special Economic Zone (3).

The experts (67%) gave the following recommendations on how to improve the current business environment in the Rezekne SEZ:

- infrastructure needs to be further improved;
- additional tax relief for Rezekne SEZ companies should be introduced from taxes such as personal income tax and mandatory state social insurance contributions;
- additional advantageous criteria for project evaluation for businesses having Rezekne SEZ company status and applying for national, EU as well as ALTUM funding need to be introduced;
- more professional development courses for employees and employers need to be held;
- businesspersons need to be informed about the advantages provided by the Rezekne SEZ;
- promotion of qualified labour (talents);
- more cooperation with Rezekne Academy of Technologies.

According to the experts, the range and quality of services provided by the Rezekne SEZ were sufficiently wide and high (4 experts gave the maximum rating of 5 and 5 experts – a rating of 4 on a 5-point scale, where 1 meant completely unsatisfactory and 5 was completely satisfactory), as well

as Rezekne SEZ companies were interested in receiving additional services and consultations that would help to foster business development. The expert ratings allowed us to conclude that the topics of consultation and the services that would contribute the most to the business of companies were as follows: investment attraction (14.6%), regional, international and global market analysis, exports and imports (12.2%) and marketing and project management (9.8%). Personnel selection and evaluation, however, was noted least frequently (2.4%).

Based on the results of the expert questionnaire survey, a SNW analysis was performed as part of the research, which allowed us to identify the competitiveness of the business environment components of the Rezekne SEZ.

Performing the SNW analysis allowed us to identify the level of competitiveness of an organization, as well as the weak, strong and neutral sides of a company. Employing SNW analysis, a company can improve its strengths or eliminate its weaknesses (Shtal, Buriak, Amirbekuly, 2018). As part of the SNW analysis, the SNW typological index was also calculated (equation 1) (Forands, 2004).

$$I = \frac{1 \times S + 0.5 \times N + (-1 \times V)}{n} \tag{1}$$

Where I – SNW typological index;
         S, N, V - number of respective indicators;
         n – number of respondent responses.

The index for the Rezekne SEZ ($I = \left(1 \times 19 + 0.5 \times 30 + (-1 \times 23)\right) \div 72) = 0.15$. The SNW typological index value of 0.15 showed that the strength of components of the business environment in the Rezekne SEZ was low, meaning that the competitiveness of the business environment was not promoted. The components of the business environment, which could be qualified as elements of strong (19) and neutral (30) sides of the Rezekne SEZ business environment, in total, represented a higher ratio than the weak sides did (23).

Conclusions and suggestions

The research found that the Rezekne SEZ administration and companies should hold both formal and informal events at least once every 3-4 months, in which company representatives are given an opportunity to meet and communicate in person, thereby intensifying and improving their mutual relations both as Rezekne SEZ companies and as cooperation partners. Thus, the problem of poor communication among Rezekne SEZ companies would be solved.

The Rezekne SEZ companies positively rated the range of services and consultations provided by the Rezekne SEZ administration to them; however, despite this, the representatives of Rezekne SEZ companies would also like to receive consultations and services related to the following fields: investment attraction, market analysis, marketing, as well as consultations on issues related to exports and imports. Thus, the hypothesis put forward proved to be true, as there were problems in the business environment in the Rezekne SEZ, which did not contribute to the development of the business environment. The Rezekne SEZ administration, in cooperation with business support institutions, could draw up a freely available document for Rezekne SEZ companies, which contains information on institutions, as well as their contact information, that provide support on topics of interest to businesspersons, thereby providing support to the companies in moments when additional consultations are needed to solve their problems.

Referring to the information published by the Parliament of the Republic of Latvia (Parliament of the Republic of Latvia, 2023), the Rezekne SEZ administration, in cooperation with other SEZs and free ports located in Latvia, should submit a proposal to the Parliament or ministries on potential amendments to the legislation governing SEZs and free ports located in Latvia with the aim of granting additional tax relief from personal income tax and mandatory state social insurance contributions, especially for companies operating in economic zones.

In addition, Rezekne SEZ companies whose economic activities closely relate to engineering, e.g. manufacturing companies, should cooperate with the Engineering Faculty of Rezekne Academy of Technologies and the students to develop innovations for the companies, thereby making full use of the resources of the higher education institution located in Rezekne city as a support instrument for businesses.

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ASSESSMENT OF SOLAR ENERGY PRODUCTION AND CONSUMPTION

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Abstract.
Purpose and aim of the study: *The present research aims to investigate and assess the production and consumption of solar energy.*
Design / Methodology / Approach: *The research employed the following methods: descriptive and logical construction were used for reviewing and analysing research papers and other information sources, as well as for scientific discussion. Statistical analysis was employed to process and analyse secondary data on trends in the use of solar panel systems in the world and in Latvia. The graphic method was applied to better represent and compare the research results.*
Main Findings: *It was concluded that the share of solar energy in the world tended to increase significantly. However, Latvia lagged far behind the neighbouring countries in terms of solar energy generation and was in last place in the entire European Union in terms of total installed capacity of solar panel systems. In Latvia, a significant increase in solar energy consumption could be observed from 2022.*
Originality: *The research examined the technology of generating solar energy and factors in the output of solar energy, summarized information on trends in solar energy consumption in Latvia and the world and identified the role of solar energy in Latvia by comparing the share of solar energy consumption with the share of consumption of other renewable energy sources and the situation in neighbouring countries and the world.*
Implications: *The present research represents the basis for further research on solar energy production and consumption*

Keywords: *electricity, photovoltaics, renewable energy, solar energy.*

Introduction

The demand for electricity in the world tends to increase, and it is largely met by exploiting fossil energy sources. However, the fossil energy reserves are limited and the consumption of fossil energy contributes to climate change. Several countries and organizations around the world propose decreasing climate change and meeting the growing demand for electricity by renewable energy.

In Latvia compared with other countries, the use of solar energy to produce electricity is a relatively new way of generating renewable energy. In view of the simple structure, easy installation and maintenance, solar collectors were much more widely used to obtain thermal energy in Latvia for a long period (Rivža et al., 2012).

Solar irradiance is the main source of energy for organisms living on the planet Earth. The Sun is the closest and also the most researched star. However, research on the use of solar energy for electricity generation has begun relatively recently (Bravo Hidalgo et al., 2018; Maka & Alabid, 2022).

The present research *aims* to investigate and assess the production and consumption of solar energy.

The following *specific research tasks* were set to achieve the aim:
1) to give insight into solar energy production and identify factors in the output of solar energy;
2) to examine the production and consumption of solar energy in the world;
3) to examine the production and consumption of solar energy in Latvia.

The following *research hypothesis* was put forward: the share of renewable energy, including solar energy, in total energy generation tends to increase both in Latvia and in the world.

The research employed qualitative and quantitative *methods.* The descriptive and logical construction methods were used for reviewing and analysing research papers and other information sources, as well as for scientific discussion. Statistical analysis was employed to process and analyse secondary data on trends in the use of solar panel systems in the world and in Latvia. The graphic method was applied to better represent and compare the research results.

The research was based on a review of research papers and statistical data from various institutions.

Research results and discussion

1. Solar energy production and factors in the output

Solar energy is a kind of renewable energy, and it alone is capable of meeting several hundred times the global demand for energy. Nowadays, the most common devices for producing solar energy are solar collectors and solar photovoltaic panels (Gong et al., 2019). Solar collectors are devices for producing thermal energy by using solar energy. They capture solar energy and convert it into heat by means of a heat-transfer agent. Water or air is mostly used as the heat-transfer agent. Solar collectors are relatively simple in design, easy to install and maintain, as well as relatively cheap (Tian &

Zhao, 2013; Gopalakrishna & Dey, 2022). Therefore, solar collectors were much more commonly used than solar photovoltaic panels in Latvia over a long period. Solar photovoltaic panels or solar cells (hereinafter solar panels) are devices that generate electricity from solar energy. They were invented much later than solar collectors (Fraas, 2014). Solar panels are most often placed on the ground and roofs or facades of buildings. The direct current generated by a solar panel is converted into alternating current by an inverter. The electricity generated could be immediately self-consumed, transferred to the common electricity grid or stored in batteries (Fares & Webber, 2017).

The legal framework for solar electricity production equipment in Latvia, considering the rapid progress in this field, has changed significantly over time: new legal acts have been adopted and current ones have been amended, the terminology used has been improved etc. The changes could be viewed positively, as several requirements have been eased (Ministry of Economics, 2022). The current legal acts divide solar electricity production equipment into two categories, depending on the power of the inverter: microgenerators and power plants (System Connection Rules…, 2021). A microgenerator is an electricity generation device that includes the production device itself (solar panels) and related devices (inverter etc.) with a capacity of up to 11.1 kW. A microgenerator is intended for alternating current generation with an operating current of up to 16 A per phase. This means that the capacity specified for the inverter may be up to 3.7 kW in single phase and up to 11.1 kW in three phases (System Connection Rules …, 2021). A power plant is an electricity generation facility, which includes a production facility (solar panels) and related equipment (inverter etc.) with a capacity of over 11.1 kW. A power plant is intended for alternating current generation with an operating current of over 16 A per phase (System Connection Rules …, 2021; 2022).

A simplified sequence of steps to be taken by owners of solar energy microgenerators and power plants is shown in Figure 1.

As shown in Figure 1, the requirements for solar power plant owners to generate electricity and transfer it to the common electricity grid are much more time-consuming, complex and resource-intensive than those for solar microgenerator owners.

The amount of electricity generated by solar panels is affected by several factors. The main one is solar irradiance. This variable largely depends on geographical location and meteorological conditions.

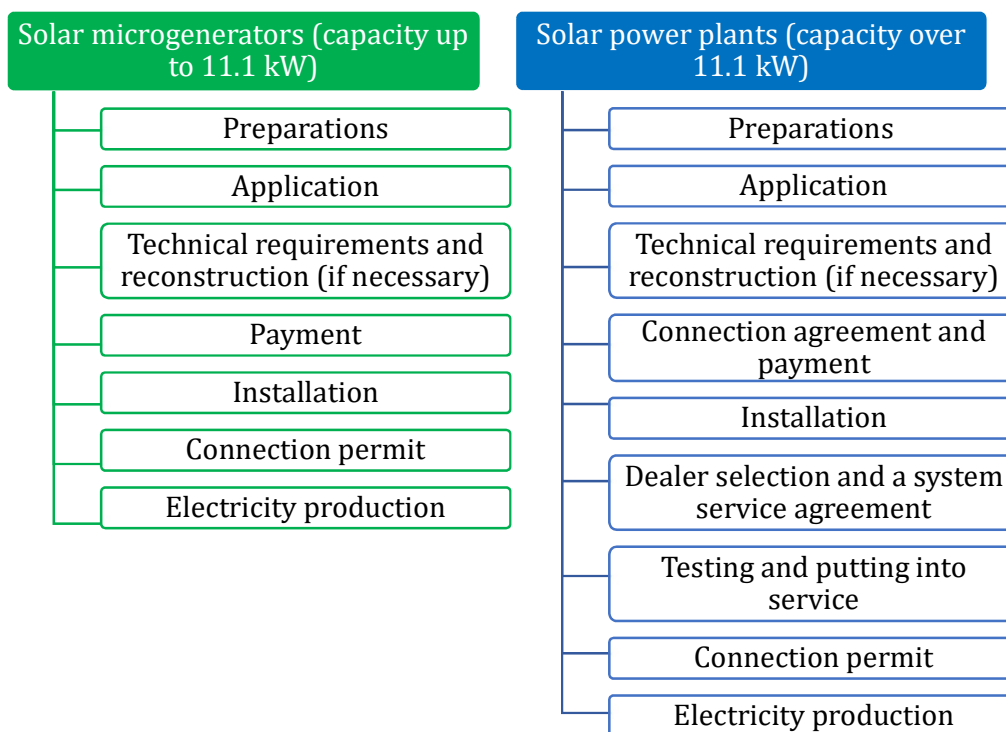| Solar microgenerators (capacity up to 11.1 kW)	Solar power plants (capacity over 11.1 kW)
Preparations	Preparations
Application	Application
Technical requirements and reconstruction (if necessary)	Technical requirements and reconstruction (if necessary)
Payment	Connection agreement and payment
Installation	Installation
Connection permit	Dealer selection and a system service agreement
Electricity production	Testing and putting into service
	Connection permit
	Electricity production

Fig.1 Comparison of the steps to be taken by owners of solar microgenerators and power plants to start generating electricity for the electricity grid (authors' construction based on Sadales tīkls, 2023a; 2023b)

Southern Europe has higher potential for the use of solar energy for electricity production; however, under ideal conditions in Latvia, on average, 1000 kWh of electricity could be generated by 1 m² of solar panels per year. However, this amount of electricity is only theoretical because in that case the efficiency of solar panels should be 100%, whereas at the beginning of 2023, the efficiency of solar panels available on the market did not exceed 25% (Aydin et al., 2020; Solargis, 2021; Jude, 2023).

The amount of electricity generated by a solar panel is also significantly affected by the position of the solar panel relative to the azimuth of the Sun and the angle of the solar panel itself to the horizon (Yoon et al., 2023). Solar panels can generate the most electricity if they are placed directly perpendicular to the Sun (Hafez et al., 2017; Abdallah et al., 2020). However, the Sun's angular height above the horizon is a variable. It depends on the geographical location, the time of day and the season, as the angular height of the Sun above the horizon is lower in winter and higher in summer. For example, in Latvia, the lowest angular height of the Sun above the horizon is at the winter solstice, on 22 December, when it does not exceed 11° at noon. In contrast, the Sun has its highest angular elevation above the horizon at the summer solstice, 21 June, when it exceeds 55° at noon (Suncalc, 2023).

Various obstacles and their shadows on solar panels can significantly reduce the amount of electricity generated because the solar panels are connected to each other in series and, in some cases, in parallel, yet their cells are connected to each other in series. Therefore, even a small amount of shading on the surface of a single solar panel can significantly reduce the total output power of the system (Sathyanarayana et al., 2015; Satpathy et al., 2022). Sathyanarayana et al. (2015) found that bird-shape shading, which covered only 4% of the surface of solar panels, reduced their efficiency by more than two-fold. Coşgun and Demir (2022) established that the efficiency of solar panels was affected by dust. In meteorological conditions in Latvia, dust is effectively cleaned by rain.

No less important factor that affects the efficiency of solar panels is temperature because when the solar panel cells heat up, output power losses occur. A research study conducted in Latvia by Stanka et al. (2020) concluded that when solar panels heated up above 25 °C, their output power decreased by 0.4% per degree Celsius. Consequently, an output power loss of 11.4% or 12.63 W/m^2 was observed when solar panel cells heated up to 53.5 °C.

2. Production and consumption of solar energy in the world

Mitigating climate change and meeting the high demand for energy are the main goals of energy policy. Renewable energy has high potential to solve the problems caused by achieving the goals in the nearest future. However, such a solution requires coordinated and coordinated action, as well as several significant changes in the energy policies of various organizations and countries (Olabi & Abdelkareem, 2022).

Several countries and organizations around the world have set various goals to achieve the objectives stated by the Paris Agreement. For example, in 2018, the EU adjusted its 2014 target by 5%, so that by 2030 the share of renewable energy in the total consumption of energy in the EU would reach 32% (Frank et al., 2016; Quintana-Rojo et al., 2020). However, Denmark has set an even more ambitious goal to fully meet the country's demand for energy by renewable energy by 2030 (Goldbergs, 2022).

Despite the efforts made by countries and organizations to increase the share of renewable energy, still about 78% of the total demand of energy is met by fossil energy. Unfortunately, it is the consumption of fossil fuels that contributes to global warming and other ecological problems, as well as the depletion of limited fossil reserves (REN21 Secretariat, 2023).

The latest statistical data reveal that the share of renewable energy, incl. solar energy, tends to increase from year to year. The output of electricity has increased very significantly. During the last decade, the demand for electricity has increased by almost 20%, and in 2021 compared with 2011,

the share of renewable electricity increased by 7.9% (REN21 Secretariat, 2023) (Figure 2).
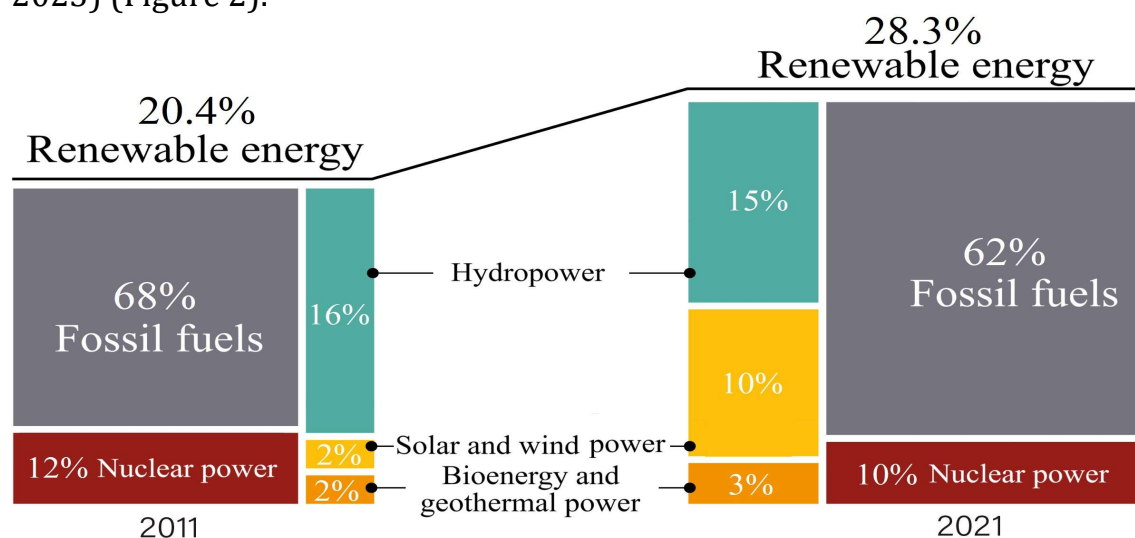

Fig. 2 Share of renewable energy capacity in total generation in 2011 and 2021, % (authors' construction based on REN21 Secretariat, 2023)

As shown in Figure 2, the demand for electricity increased, whereas the share of fossil and nuclear energy decreased. Of all renewable energy sources, the largest amount of electricity was generated by hydroelectric power plants using water flow energy, or hydropower, yet the amount of electricity from solar and wind energy has increased very significantly from 2% in 2011 to 10% in 2021.

An important indicator for analysing trends in the consumption of renewable energy is not only the amount of electricity generated but also the capacity. Statistical data (International Renewable Energy…, 2022) on the percentage share of renewable energy capacity in total generation in 2021 in the world show that of all renewable energy resources, hydropower had the largest capacity in total generation in the world (40.13%), followed by solar (28.01%) and wind energy (26.78%), while a relatively low percentage was reported for bioenergy (4.59%), geothermal energy (0.48%) and marine energy (0.02%). It could be concluded that in the world, the use of renewable energy for electricity production is well diversified because, for example, at night when solar energy does not generate electricity, it could be offset by wind energy or hydropower, and vice versa.

The latest available data show that a particularly significant increase in renewable energy capacity occurred in recent years (Figure 3).
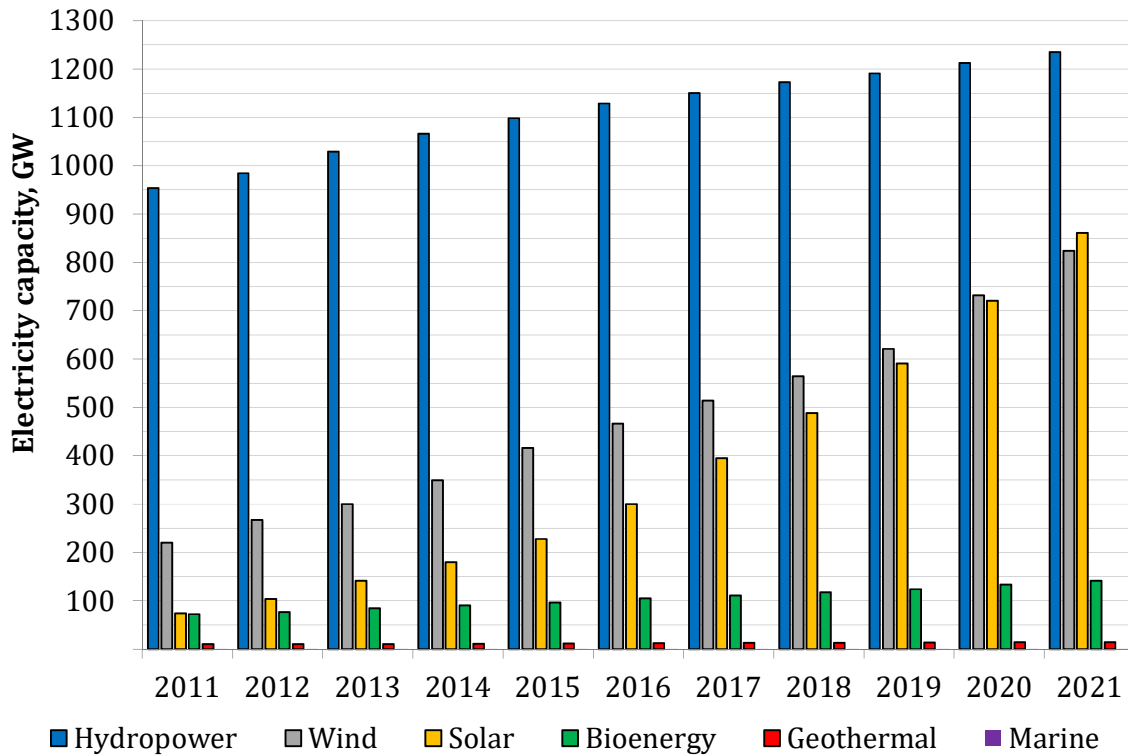
Fig. 3 Renewable electricity capacity in the world from 2011 to 2021, GW (authors' construction based on International Renewable Energy… 2022)

As shown in Figure 3, the total capacity of all renewable energy resources tended to increase, while the total capacity of wind and solar energy increased particularly significantly. Since 2021 in the world, the total capacity of solar energy has exceeded the total capacity of wind energy. In 2011, the total capacity of solar energy used for electricity generation was 74 GW, while in 2021 it was more than 10 times larger at 862 GW.

An advantage of solar panels is that electricity is generated during the day when electricity consumption is the highest and electricity prices are the highest at the electricity exchange (Kannan & Vakeesan, 2016; Albertus et al., 2020). However, solar panels do not produce electricity during the night hours and produce it in small amounts on cloudy days. Establishing large solar panel parks requires a large land area. For example, solar panel systems with a capacity of 1 MW require about 1 ha of land (Goldbergs, 2022), while in some cases even more – 1.6 ha of land (Kabir et al., 2018). Kannan and Vakeesan (2016) and Kabir et al. (2018) pointed out that the share of renewable energy would only increase, considering the high demand for energy as well as climate change mitigation goals. The share of solar energy will continue increasing at a high rate.

3. Trends in the consumption of solar energy in Latvia

In Latvia, the use of solar panels began mostly only during the last decade. In 2012, according to JSC "Sadales tīkls" data, there were 36 microgenerators connected to the common electricity grid (Sadales tīkls, 2023c), and only in 2018 the total capacity of solar panel systems reached 1 MW (CSB, 2022). At the same time, in Estonia and Lithuania, this figure reached tens of MW (Figure 4) (International Renewable Energy ..., 2022).
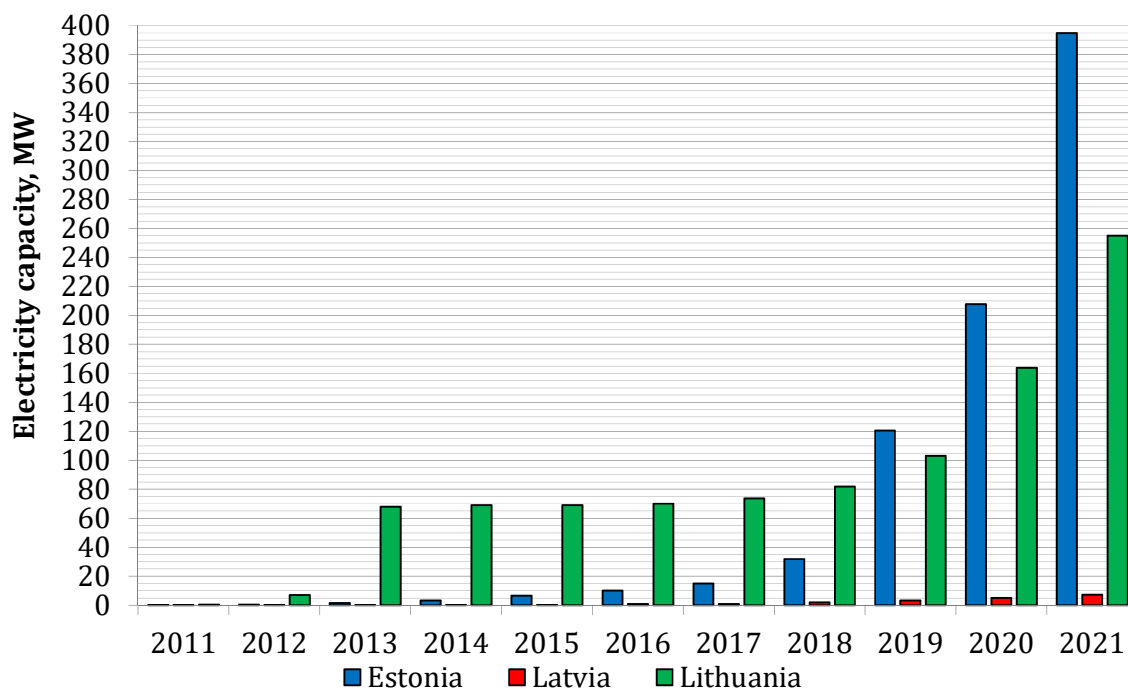
Fig. 4 Solar electricity capacity in the Baltic States from 2011 to 2021, MW (authors' construction based on the CSB, 2022; International Renewable Energy ..., 2022)

As shown in Figure 4, during the last 10 years the total capacity of solar panel systems has significantly increased in Estonia and Lithuania, whereas a minimal increase has been reported in Latvia. Data for 2021 show that the total installed capacity of solar panels in Estonia was 394.77 MW, 255.00 MW in Lithuania, whereas in Latvia only 7.16 MW (CSB, 2022; International Renewable Energy ..., 2022). This means that in Estonia, which is a smaller country and geographically located further north, where the level of solar irradiance is lower, the total installed capacity of solar panel systems in 2021 was more than 50 times larger than that in Latvia.

According to the 2021 data, Latvia was in last place in terms of solar panel use not only among the Baltic countries but also in the entire EU. In addition, the total capacity of solar panel systems in Ireland, which was in

second last place, was almost 20 times larger than that in Latvia with 135.32 MW (International Renewable Energy …, 2022).

A similar situation could be observed in Latvia regarding wind energy. This could largely be explained by already the high share of renewable energy in total electricity generation. The share of renewable energy made up more than half (51.4%) of the total electricity consumption in 2021 (CSB, 2023), while the EU average was only 37.5% (Eurostat, 2023). In 2021 in the EU, only Austria (76.2%), Sweden (75.7%), Denmark (62.6%), Portugal (58.4%) and Croatia (53.5%) had a higher share of renewable energy in total electricity consumption than Latvia (*Eurostat, 2023*).

Besides, the share of renewable energy in the total consumption of energy was 42.1% in Latvia in 2021 (CSB, 2023), which was far above the EU average of 21.8% (Eurostat, 2023) and the 32% target set by the Paris Agreement by 2030 (Quintana-Rojo et al., 2020). In 2021 in the EU, this figure was higher only in Sweden (62.6%) and Finland (43.1%) than that in Latvia (Eurostat, 2023). Consequently, Latvia has not had the motivation to increase and support other kinds of renewable energy production, including wind and solar energy.

In Latvia, the high share of renewable energy in total electricity generation was largely provided by hydropower. In 2021 in Latvia, the total capacity of hydroelectric power plants (HPP) was 1587 MW. The plants generated 2708 GWh of electricity, which accounted for 72.8% of the total renewable electricity generated in Latvia (CSB, 2022). Most of the renewable energy capacity in Latvia was hydropower (87.05%), which was provided by the three largest hydroelectric power plants in the country: the Plavinas HPP (908 MW), the Riga HPP (402 MW) and the Kegums HPP (248 MW). In 2021, their total capacity was 1558 MW, making up 98.2% of the total capacity of hydroelectric power plants in Latvia (CSB, 2022; Latvenergo, 2023).

The capacity of other renewable energy sources in Latvia was relatively small. In 2021 in Latvia, the share of bioenergy capacity in total renewable energy capacity for electricity generation was 8.32%, 4.23% for wind energy and only 0.39% for solar energy (CSB, 2022).

It should be pointed out that in 2022, the situation regarding solar energy consumption improved significantly. At the end of 2021 in Latvia, more than 2000 households had installed solar panel systems, while at the end of 2022, more than 11000 households had them (Vilciņš, 2022). At the end of 2022, according to JSC "Sadales tīkls" data, almost 12 thousand microgenerators were connected to the common electricity grid. A significant increase in the number of microgenerators was reported in 2022. In 2022 compared with 2021, the total number of households having microgenerators increased by 448% (Sadales tīkls, 2023c). This could be explained by high electricity prices in 2022, support measures and relaxed

requirements for installing solar panel systems and connecting them to the common electricity grid (Regulations regarding the Support Programme…, 2021; Vilciņš, 2022; Ministry of Economics, 2022).

According to an electricity supply report by the JSC "Sadales tīkls" for the 1st quarter of 2023, the number of microgenerators exceeded 13 000 at the end of the 1st quarter, while their total capacity exceeded 100 MW. In addition, the total capacity of solar microgenerators and power plants was approximately 140 MW at the end of Q1 2023 (Sadales tīkls, 2023d).

At the beginning of 2023, the JSC "Sadales tīkls" stated that several solar power plants with a total capacity of approximately 900 MW were at the stages of design, contract conclusion as well as construction and putting into service. In addition, the declaration of solar microgenerators and the connection to the grid was still actively ongoing (Sadales tīkls, 2023d).

The potential of solar energy for generating electricity is very large, and the total capacity of solar panel systems tends to increase rapidly in the world. Latvia is no exception, and since the beginning of 2022, the capacity of solar panel systems has increased several times. However, Latvia is still significantly behind the rest of EU Member States in terms of solar energy use.

Conclusions and suggestions

The amount of electricity generated by solar panels is affected by solar irradiance, which depends on geographical location and meteorological conditions. The amount of electricity generated by a solar panel is also significantly affected by the position of the solar panel relative to the azimuth of the Sun and the angle of the solar panel itself to the horizon, various obstacles and their shadows on the solar panel as well as temperature because power losses occur when the solar panel cells heat up.

The requirements for solar power plant owners to generate electricity and transfer it to the common electricity grid are much more time-consuming, complex and resource-intensive than those for solar microgenerator owners.

The share of solar energy in total electricity generation increases rapidly in the world. In 2021 compared with 2011, the total capacity of solar panel systems increased more than 10 times. Since 2021 in the world, the total capacity of solar energy used for electricity generation has exceeded the total capacity of wind energy, reaching 28.01% of the total renewable energy capacity.

In terms of solar energy use, Latvia was not only in last place among the Baltic States but also in the entire EU. A rapid increase in the number of solar panel systems in the household sector could be observed in Latvia in 2022.

At the beginning of 2022, 2145 households had solar microgenerators, while at the end of 2022, their number had increased several times, reaching 11764 households.

At national level, the Ministry of Climate and Energy should contribute to significantly increasing the share of other renewable energy resources, except for hydropower. The diversification by increasing the share of wind and solar energy can provide electricity even in periods when hydroelectric plants do not generate enough electricity.

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]OPPORTUNITIES TO FOSTER THE DEVELOPMENT OF STUDENTS' SOCIAL ENTREPRENEURSHIP COMPETENCES AT HIGHER EDUCATION LEVEL

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Abstract.
Purpose and aim of the study: *The aim of the study is to explore the development of social entrepreneurship competences at higher education level, to identify which competences are relevant for social entrepreneurship and what methods can be used to develop them.*
Design / Methodology / Approach*: General research methods are used in the research: information analysis and synthesis, content analysis, for obtaining quantitative data - questionnaires, and for obtaining qualitative data - structured interview and focus groups.*
Main Findings: *The study explored the theoretical underpinnings of social entrepreneurship competencies, highlighted their role in promoting innovation, social impact and responsible entrepreneurship, and collected examples of best practice in creating an ecosystem within universities with structured support for the development of student competencies.*
Originality: *The originality of the study lies in the possibility of detailed analysis of the existing experience in this field in different European countries and subsequent adaptation of solutions to Latvian reality.*
Implications: *Social entrepreneurship, with its focus on innovative solutions to societal issues, has gained significant prominence in recent years, prompting the need for educational institutions to adapt their curricula to empower students in this domain.*

Keywords: *competences, social entrepreneurship, careers, higher education.*

Introduction

Unemployment, its consequences, pandemics, immigration problems, social exclusion and environmental degradation are the challenges of the 21st century for every country. There are many different ways of tackling

social problems, for example by placing the burden of responsibility and accountability entirely on the state, but the level of public spending on social problems depends on a country's overall income and cannot be disproportionate. Alternative solutions must therefore be found, based on solidarity and cooperation between people.

Whereas in the past the production model was based mainly on linear economics aimed at maximising consumption and production, the concept has changed over time and with more and more evidence of the limited availability of resources in the world. Muhammad Yunus (1997), Nobel Laureate and founder of the social economy, said that the mission of a social enterprise is to impact people's lives, not to count the money earned. It is the concept of social entrepreneurship that means that by doing business, people not only earn a living, but also solve problems that are important to society. Unfortunately, it should be noted that the ideas of social economy are not yet so popular in the Latvian society compared to Western Europe.

Developing competences in entrepreneurship can be done at all levels of education, but it is most effective at the level of higher education, because when working with students this process takes place at a deliberate level and the students themselves, knowing what competences will help them in their careers, will be able to develop them independently through practical work in the study process. The role of the docents in this process is to provide information and, using the right pedagogical methods, to guide and support students, creating an ecosystem for structured development.

The aim of the study: to explore the development of social entrepreneurship competences at higher education level, to identify which competences are relevant for social entrepreneurship and what methods can be used to develop them.

The research tasks are:
- Conduct a comprehensive literature review to identify and analyse the existing theoretical frameworks, definitions and theoretical foundations related to social entrepreneurship competencies;
- Develop a quantitative research methodology to assess the impact of social entrepreneurship competencies on innovation and social impact.
- To Analyse the experiences of universities and institutions known for their successful support systems and programs aimed at developing students' social entrepreneurship competencies. Conduct in-depth case studies to explore best practices, patterns, and frameworks in these ecosystems.

- Research object: social entrepreneurship competences. Subject of the study: promoting the development of students' social entrepreneurship competences at higher education level.

Hypothesis: the competences required for social entrepreneurship are different from those required for business.

The work was based on the analysis of specialised literature and scientific studies and on contingent analysis. The following methods were used for data collection: questionnaire for quantitative data, structured interview and focus groups for qualitative data. The study used a mixed research methods approach for data processing and analysis. A triangulation model is used, in which one method of data extraction is the main one, while data extracted by another method plays a complementary role in the study. The research design used face-to-face questionnaires and structured interviews conducted remotely using MSTeams and Zoom platforms.

Novelty of the research: development of recommendations for the application of social entrepreneurship competences development methods and eco-environmental design based on the experience of 5 EU universities.

Study period: 2021-2023.

Research validation: in the framework of the SeinHE project, through joint workshops and discussion clubs.

Research results and discussion

Literature review

Social entrepreneurs, like any entrepreneur, need a broad set of competences. However, their importance, scope or focus may be greater or even different in the context of social entrepreneurship because of their social mission. For example, social entrepreneurs may choose the legal status and economic orientation of their organisation (i.e. non-profit, for-profit, hybrid). Social entrepreneurs also need to decide what outcomes (social, commercial and/or environmental value) to aim for and how to combine them (Zahra et al., 2014).

Moreau and Mertens (2013) argue that social enterprise management should use a competency model. According to their research, such a model should be incorporated into the competencies of managers to develop a strategy to be aware of, achieve the multiple objectives of social enterprises; know, understand and mobilise internal management systems; manage different external stakeholders; manage staff and volunteers; manage financial aspects and know, understand and be able to position the social economy.

In addition, Rossano et al. (2019) identify three competences that they consider crucial for social enterprises: agility, resilience and governance.

Agility in this context refers to the ability to react and adapt quickly to change, and can be related to the firm's operations, partners and customers (customer contribution to product innovation). Resilience, on the other hand, refers to a company's ability to resist, absorb and respond to inevitable change. It can also mean something new, if necessary. Agility and resilience are particularly necessary in a fast-changing environment and are closely linked to innovation, which is why researchers consider them to be competences for social entrepreneurship. The third competency, leadership collaboration, refers to a leader's ability to organise for discussion, communication and collaboration in order to support innovation for employees and business partners.

Amini et al. (2018), on the other hand, identified eight core competences that are all individual competences: personal competences (e.g. self-acceptance), strategic thinking, organisational skills, communication skills, networking, HR ageing, social participation development and group goal identification. Most of these eight competences can also be found within EntreComp .

As innovation and social change are closely integrated into social entrepreneurship, there is a certain demand for creativity and innovative thinking. Shek and Lin (2015, cited in Rossano et al. 2019) describe social entrepreneurs as reformers and revolutionaries who want to address social problems that are not fully solved by government, philanthropic or commercial organisations, using fundamental or systemic strategies to address them. They can also be seen as people who find creative ways of doing things, using underused resources to address a social problem or social need.

Innovation and creativity, as well as challenging traditional ways of thinking, were also highly valued by Miller et al. (2012), adding that it is important to focus on innovation from both an economic and a social perspective. In other words, innovations in social entrepreneurship should not only be novel and cost-effective, but also deliver social value in a way that is accessible to the intended beneficiaries.

Social entrepreneurs may have to make decisions between their social mission and their business activities. shows that harnessing social values while building a business can increase profitability (Choi & Gray, 2011). However, some scholars argue that social enterprises face contradictions in balancing social and business objectives (Choi, 2006; Tracey & Phillips 2007; Myyryläinen et al., 2021).

In the case of social enterprises, skills and competences related to communication with customers, suppliers and other stakeholders, as well as social and interpersonal relationships, are crucial, as social entrepreneurship

often involves building new value chains and business models (Bacigalupo et al., 2016).

Because of the innovative nature of social entrepreneurship, entrepreneurs in this context can be seen as reformers and revolutionaries who solve social problems or as people who find creative solutions to the use of underused resources to address a social problem or social need. Social entrepreneurship often involves the creation of new value chains and business models, which also emphasises the need for competences such as networking, collaboration and mobilisation (Tracey & Phillips, 2007).

The literature review shows that there is not much research on the role of skills and competences for successful careers as social entrepreneurs, but the EntreComp framework study conducted by the Joint Research Centre of the European Commission, which laid the foundations for the study and classification of competences needed for a successful career in entrepreneurship, should be highlighted as an important one. The competences described in the EntreComp framework are also present in social entrepreneurship. For example, it has been interpreted that most of the competences required in social enterprises are similar to those in commercial enterprises (Amini et al., 2018). In a study of the EntreComp framework, the required competencies and social entrepreneurship skills that practitioners rated as important were collected and compared to competencies taught in social entrepreneurship courses at different universities. The survey revealed that the competency considered most important by both practitioners and educators was the ability to solve problems. While problem solving is a general competency in the context of social entrepreneurship, it can be broader, as the problems of social entrepreneurs are often deep, intractable and embedded in communities, government or infrastructure.

Methodology

Research base: research and data collection from 5 universities in the European Union - Kaunas University of Applied Sciences, LAB University of Applied Sciences, Thomas More Kempen, University of Nicosia and Rezekne Academy of Technologies - within the SeinHE project.

The common feature of the research groups - students of different specialisation groups, social enterprises, institutions supporting social entrepreneurship, university lecturers. The distinguishing characteristic is nationality (Lithuania, Finland, Belgium, Cyprus and Latvia).

The authors participated in the SeinHE project and had the opportunity to take part in data acquisition from 5 universities of the European Union and to process the data in a percentage, as well as to carry out the validation of

the methods after the realisation of the project at the Rezekne Academy of Technologies.

The SEinHE project's main objectives are to understand the related competences for social entrepreneurship. The project team organised the collection of cross-cultural data in the context of the consortium members' respective country of origin. The aim of the data collection was to understand the views of docents in different disciplines, business docents, business incubators, social entrepreneurs and business organisations, as well as student groups on social entrepreneurship. Both qualitative and quantitative methods were considered, and a mixed methods approach by Tashakkori & Creswell was also used to maximise the benefits of both.

data was collected quantitatively with as wide an audience as possible and then analysed using content analysis.

data collection was organised in several stages. Project partners from five universities participated in the data collection, so that each was responsible for the data collection in their own country. The authors were responsible for the data collection in Latvia. All interviews were semi-structured thematic interviews. Interviewees could receive the interview questions in advance if they so requested. interviews lasted on average one hour, were recorded on Zoom and then transcribed and translated into English in cases where the interview was originally conducted in another language. In total, the data collection lasted from February to July 2021.

Five entrepreneurship lecturers and two business incubator specialists were interviewed in each country, while the remaining interviews were with university lecturers from different disciplines. Five institutions collected responses to the online survey using the Webropol platform. Two social entrepreneurs from each country were also interviewed. The criteria for selecting the entrepreneurs were set so that the interviewed enterprise met the EU requirements for the definition of social entrepreneurship (European Commission 2020). The selection criteria for the selected enterprises were related to having a clear social mission, being continuously active in the market and being a non-governmental organisation.

One social enterprise organisation from each of the 5 country partners was also interviewed. The selected organisation had to have a broad vision and/or play an active role in the field of social entrepreneurship in their country or region.

Finally, each partner institution (LAB University of Applied Sciences (Lithuania), Thomas More Kempen (Belgium), Rezekne Academy of Technologies (Latvia) and University of Nicosia (Cyprus)) interviewed groups of three to five Masters or Bachelor students. The main descriptions of the data sets can be seen in Table 1 below.

The SEinHE project has partners from five institutions. Each partner had collected and analysed the interviews. The partners shared a common analysis framework and each group of respondents to the study had a common set of questions on social entrepreneurship. During the student interviews, students were informed about the EU definition of social enterprise in order to reduce differences in perception of the concept.

Table 1 Data collection descriptions (Compiled by the authors)

Target group of respondents	Institution	Volume
Lecturers for the Entrepreneurship course	LAB University of Applied Sciences (Lithuania), Thomas More Kempen (Belgium), Rezekne Academy of Technologies (Latvia) and University of Nicosia (Cyprus).	25 interviews
Representatives of business incubators	Business incubators in Lithuania, Latvia, Finland, Belgium and Cyprus.	10 interviews
Social entrepreneurs	Companies that meet the EU standards for social enterprise in Lithuania, Latvia, Finland, Belgium and Cyprus.	20 interviews
Students	Masters and Bachelor students from LAB University of Applied Sciences (Lithuania), Thomas More Kempen (Belgium), Rezekne Academy of Technologies (Latvia) and Nicosia University (Cyprus).	100 students : 2 groups per country, 10 people per group
Support organisations	Organisations supporting SUs or social enterprise associations from Lithuania, Latvia, Finland, Belgium and Cyprus	5 interviews
University lecturers	Lecturers from LAB University of Applied Sciences (Lithuania), Thomas More Kempen (Belgium), Rezekne Academy of Technologies (Latvia) and Nicosia University (Cyprus).	A single survey with 10 questions.

Research results

The key findings of the study were that, as revealed above, the competences of social entrepreneurs are similar to those of entrepreneurship in general, but because of the social mission, some of the entrepreneurial competences are becoming more important than others.

It should also be noted that, depending on the sector and business model, social entrepreneurs need to consider different ownership and stakeholder groups and build value chains and networks accordingly. The study has crystallised 5 key competences for a successful career as a social entrepreneur:

1. innovative thinking

2. networking, or communications;
3. problem-solving skills
4. cooperation, or working together;
5. identifying and creating societal values

Today, modern higher education is focusing on the introduction of innovative teaching methods. The right combination of traditional and innovative teaching methods helps to develop students' cognitive interests and creative abilities and to prepare them for practical work. In today's fast-changing world, where competition is becoming fiercer by the day, students' lack of practical experience and skills can become a serious and significant barrier to their employability and career development. In this context, modern teaching methods aimed at developing certain practical skills in students are becoming increasingly popular. The departure from the classical academic tactic of lecture-seminar-exam is becoming widespread, especially in Western universities. The use of various new methods greatly enhances the process of learning the material, teaches students to think and actually apply the knowledge acquired in lectures.

Conclusions and suggestions

The main impacts for the development of students' social entrepreneurship competences could be:

Educators at all levels of education to try to change the paradigm and stereotypes about the purpose of entrepreneurship by explaining to students that business profits can be not only a financial benefit, but can be calculated as a value, or a contribution to society, providing a livelihood for the entrepreneur and solving an important societal problem.

In Universities, in all curricula, to update and stimulate lecturers to use examples from social enterprise practice in the organisation of the study process.

In Universities, when organising the study process, find a way to create free electives or organise hackathons related to the acquisition of social ecomomics guidelines, working more practically in groups made up of students from different specialisations or even students from different Latvian or foreign universities. This will allow students to develop both communication and innovative thinking competences.

Universities, in collaboration with local authorities, to find opportunities to create a community collaboration platform where, working together, various local entrepreneurs, business angels, lecturers and other stakeholders can advise students on career opportunities in social entrepreneurship and addressing local community issues.

In an era characterised by complex global challenges and growing socio-economic disparities, the cultivation of social entrepreneurial competences among students is paramount for creating a more equitable and sustainable future. Successful support systems and programmes aimed at developing students' social entrepreneurship competences will help achieve the Global Sustainable Development Goals faster and more effectively.

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ANALYSIS OF THE STARTUP EXPERT SURVEY RESULTS IN LATVIA

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Abstract.
Purpose and aim of the study: *The aim of the research is to assess the environment for start-ups in Latvia and to identify the opinions of startup experts about factors influencing the start-ups. The tasks of the research are the following: Carry out a theoretical analysis of information about Latvian start-ups; To select experts and conduct a survey on startups; To summarize the results of the survey. Research period – December 2022 - February 2023.*
Design / Methodology / Approach: *General scientific research methods were used in the research: the monographic or descriptive research method, the survey method and a non-parametric statistic for rank correlation or Kendall's W (Kendall's coefficient of concordance).*
Main Findings: *The research has concluded that the most important factors, which affect startups, are financial management and finding/solving the real problem of the customer. Almost half of the respondents considered that the regulatory framework in Latvia was complicated. The author concludes that strategic management skills and financial competencies are the most important competencies to start a new business. The experts involved in the survey were relatively unanimous.*
Originality: *The originality of the research is based on the increase the total number of startups and the dynamic development of start-up companies in Latvia. So far there are just few scientific papers in Latvia about the topic of start-ups. Startup expert interviews are very important in the industry in order to evaluate the environment for startups.*
Implications: *The paper will promote startup research in Latvia.*

Key words: *start-ups, experts, surveys, economy, entrepreneurship*.

Introduction

The Latvian start-up ecosystem consists of more than 500 start-ups, of which more than half operate in the information and communication services sector, and more than 20% in goods production and in the field of professional, scientific and technical services. In recent years, the number of people working in start-ups has also grown rapidly, increasing by 12% from 2016 to 2020, i.e. up to 6000 employees. In addition, the wage of employees in start-ups is almost twice as high as the average in the country. In 2022, Latvian start-ups attracted

investments of 61 million euros, the largest financing rounds were Juro, Giraffe360, Aerones, Colizeum and SaltoX. According to the results of the "Global Startup Ecosystem Index 2022" study by StartupBlink, the Latvian startup ecosystem ranked 43rd among 150 countries of the world, and it has the potential to become a technological centre with access to the European market (Ministry of Economics, 2023). The relevance of the research is based on the increase the total number of startups and the dynamic development of start-up companies in Latvia. The aim of the research is to assess the environment for start-ups in Latvia and to identify the opinions of startup experts about factors influencing the start-ups. The tasks of the research are the following: Carry out a theoretical analysis of information about Latvian start-ups; To select experts and conduct a survey on startups; To summarize the results of the survey. Research period – December 2022 - February 2023. General scientific research methods were used in the research: the monographic or descriptive research method, the survey method and a non-parametric statistic for rank correlation or Kendall's W (Kendall's coefficient of concordance).

The main driving force of economic growth is productivity-based competitiveness, the increase of which requires specific actions in five main areas: investments, innovations, human capital, the business environment and increase in export capacity (Ministry of Economics, 2022). A new company is not necessarily a start-up, that is, a start-up does not mean "young", but uncertainty about the business model and about the success of the new products and services offered in the market.

When developing MVP´s and business models, start-up firms have to define and implement new products and new services, develop new markets, establish logistic chains, look for financial resources, etc. A technological start-up firm can be organized as a portfolio of projects in a project-based organization. In a start-up firm, the business model is being validated by the market, so it is necessary to be very efficient when introducing new "minimum viable products" (and services) into the market (Pajaresa et al., 2016). Start-ups must provide bankers with factual information about their businesses to retain a strong connection with them during these uncertain times. Proactively sharing well-quantified negative situations and response strategies is essential to controlling lenders. The lender management factor is purely based on the opinions of experts (Sreenivasan & Suresh, 2023). The opinions of the experts are a very important factor in company action.

Methodology

For the faster growth of start-ups, the government offers a wide range of support, such as innovation vouchers, favourable regulation for start-ups and start-up visas, which is also positively evaluated by the industry. In autumn 2022, the Startup Ecosystem Development Strategy 2022-2025 was approved with the aim of promoting the development of a strong and unified ecosystem of start-ups, introducing activities and attracting talents to start-ups. On the other hand, promoting the development of research and the commercialization of research products, the Law on the Support of Start-Ups has been developed and a temporary residence permit has been created for the founders of start-ups, which allows citizens of third countries to obtain the right of residence in Latvia with the aim of establishing a start-up and carrying out work on the development of their product and attracting investment from a qualified venture capital investor (Ministry of Economics, 2023). In order to promote the growth of startups, leading institutions in Latvia have developed various strategically important documents that provide significant support and advice.

The Latvian startup ecosystem is young and dynamic. It is big enough to ensure all advantages of a regional entrepreneur-friendly business hub, but it is small enough to provide sample networking opportunities and a sense of belonging. The growth of this ecosystem has been facilitated by a range of stakeholders in the public and private sectors, non-profit organizations and academia (Investment and Development Agency of Latvia, 2022a). In order to assess the environment for start-ups in the Latvian business ecosystem, an expert survey was developed. The experts were selected according to the following criteria: connection with start-ups, length of professional activity and experience. The experts were selected from the following institutions: the Ministry of Economics, the Ministry of Finance, LIAA, Start in.lv, LVCA, LATBAN, Riga TECHHUB, Magnetic Latvia, Labs of Latvia, LLKC, Altum, Business incubators.

At the beginning of the survey, the expert's name, surname, position, the expert's experience in the business sector were identified.

Seven experts from various Latvian institutions were surveyed in the expert survey. An analysis of the experts' profiles in Table 1 reveals that the average length of work of the surveyed experts with start-ups was 8.7 years, which is a long period to be able to objectively assess the factors influencing start-ups.

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Table 1. Expert profile (compiled by the author)

Expert	Experience	Position	Years
A	Development of business ideas and promotion of export capacity of companies	Head of the business incubator	7
B	Analysis and forecasting of economic development, including business and enterprise development, in the context of the overall economic development of Latvia	Deputy manager in the state administration	>5
C	Development of policy documents	Deputy manager in the state administration	5
D	Work experience with startups that gives the opportunity to see their challenges, wins and losses.	Senior project manager	7<
E	Business consulting, project management, management of organizational units in business support institutions	Head of the business incubator	10
F	Have experience in work with start ups	Professor	15
G	Participation in projects, both scientific and practical	Professor	12

The questions of the expert survey revealed the challenges faced by start-ups, as the experts were asked to assess the regulatory framework for business in Latvia (legislation, regulatory acts); they were asked to evaluate the skills/competencies that are important in the professional activities of start-ups, they were asked to indicate which of the business models is the most effective for start-ups; factors that would improve the formation and development of start-ups were identified; the probability and impact of risks were assessed; which of the start-up sectors was the most important was assessed, as well as the opinions of the respondents on the support needed for start-ups and the current role of start-ups in the business ecosystem.

Results

The expert survey asked to assess the challenges faced by start-ups. As the most important factors, the experts indicated financial management (30% very important and 70% important) and finding the real problem of the customer (20% very important and 80% important), while ineffective marketing, lack of demand, the administrative burden and other factors were indicated as insignificant factors.
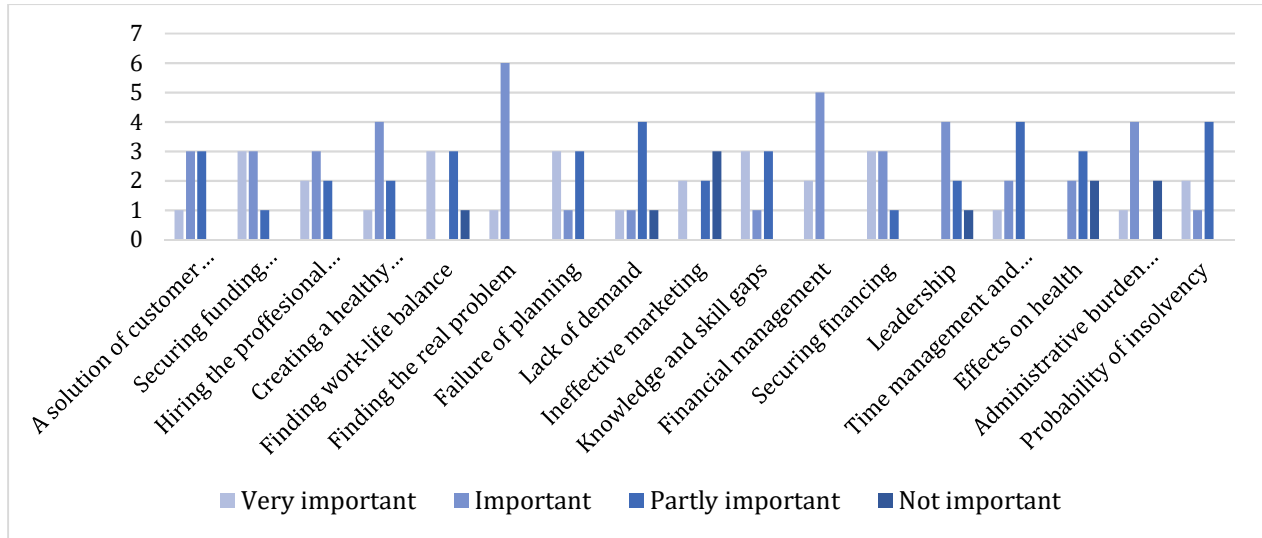
Fig.1 Challenges for start-ups (compiled by the author)

As additional answers, the experts indicated other challenges faced by start-ups - exchange of experience between start-ups, building a community where challenges can be shared and support received. Complex regulatory legislation, lack of information/complexity about start-up regulation and development opportunities, complex administrative procedures and tax payment procedures. Confidence in yourself that You can do it, fear of taking risks and think more broadly. Lack of appropriate education, lack of knowledge and experience.

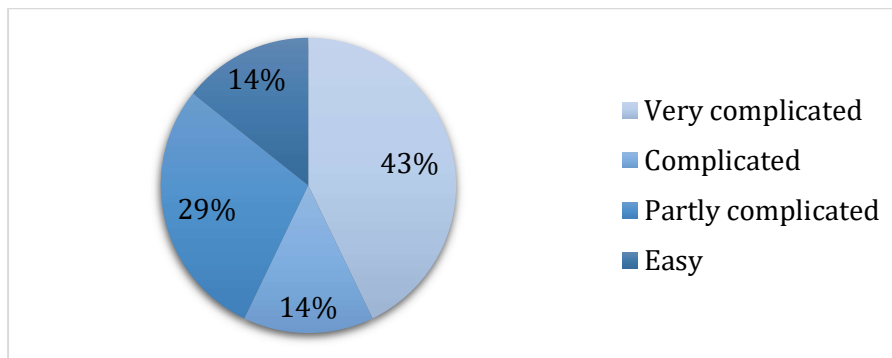**Fig.2 Regulatory framework for business in Latvia** (compiled by the author)

The experts were asked to evaluate the regulatory framework for business in Latvia: legislation, current regulatory acts. Of the respondents, 43% answered that the regulatory framework in Latvia was complicated. This shows that when starting a business, you have to carefully follow legal aspects and face various obstacles and challenges.
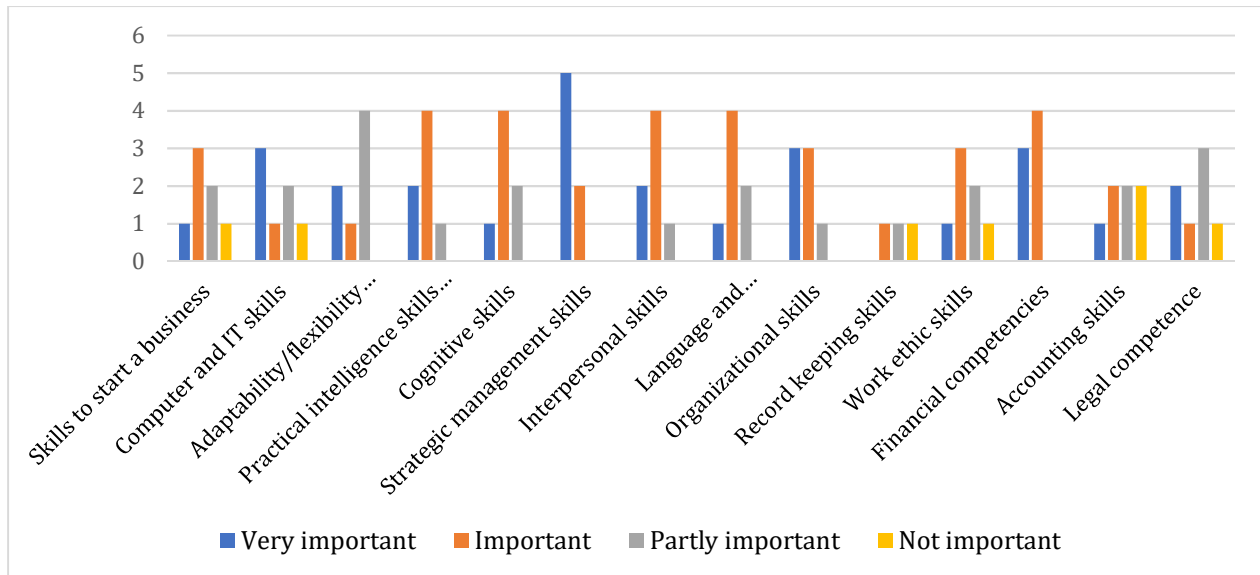
Fig.3 Skills and competences of start-ups (compiled by the author)

In the question of skills/competences, the experts assessed which ones were important in the professional activity of start-ups: as the most important, the experts noted strategic management skills, organizational skills and financial skills, practical intelligence skills (solving complex problems), while cognitive skills, interpersonal skills language and communication were also noted as important. Skills to start a business, computer and IT skills were marked as insignificant, and record-keeping skills and work ethic skills were marked as insignificant.

The scientific literature includes an important indicator to evaluate the overall association for more than two rankings, i.e., the so-called Kendall's coefficient of concordance(Kendall & Smith, 1939; Kendall 1962). The value of the coefficient of concordance may vary within a range of $0 \le W \le 1$; $W=0$ if there is no agreement among experts and $W=1$ if all the experts are unanimous. It is assumed that a sufficient value of the coefficient of concordance is $W \ge 0.50$, which means that the experts' unanimity is high enough (Kendall, 1955). The Kendall's Concordance Coefficient W is a number between 0 and 1 that indicates interrater agreement (SPSS Tutorials, 2023).

In order to evaluate experts' unanimity, the author of the paper made calculations (see Table 2) of evaluation criteria: the skills and competences of startups based on the results of the survey of experts. The period of the research was December 2022 - February 2023, and 7 experts were interviewed.

Table 2 Expert ratings of competences of startups, December 2022 - February 2023. (author's calculations based on the results of the survey of experts)

Evaluation criteria	Experts							L_i	D_i	D_i^2	R	Place (L_i rank)
	A	B	C	D	E	F	G					
	Rank Ri											
Skills to start a business	4	4	3	2	5	4	3	25	21	441	4	ll
Computer and IT skills	5	3	5	2	5	3	4	27	23	529	4	ll
Adaptability/flexibility skills	5	4	5	5	3	3	3	28	24	576	4	ll
Practical intelligence skills	4	4	5	5	3	4	4	29	25	625	4	ll
Cognitive skills	4	3	4	5	3	4	4	27	23	529	4	ll
Strategic management skills	4	5	4	5	5	5	5	33	28	784	5	lll
Interpersonal skills	4	4	4	5	3	4	5	29	25	625	4	ll
Language and communication	4	4	4	5	3	3	4	27	23	529	4	ll
Organizational skills	5	4	4	4	5	5	3	30	26	676	4	lll
Record keeping skills	4	3	3	3	3	3	1	20	17	289	3	l
Work ethic skills	4	4	3	5	3	4	1	24	21	441	3	l
Financial competencies	5	4	4	5	5	4	4	31	27	729	4	lll
Accounting skills	4	2	3	3	5	4	2	23	17	289	6	l
Legal competence	5	3	3	3	4	4	2	24	21	441	3	l
n=14 m=7								$\sum L_i$ =377		S=7503		

A, B, C, D, E, F, G – experts
L_i - sum of ranks
D_i - sum of the ranks minus the mean of the sum of the ranks
D_i^2 - D_i in a square
R - rank (Racene, 2017)

Average calculation of the rank sum $L_{average}$

$$L_{aver} = \frac{\sum L_i}{n} = \frac{377}{14} = 27 \qquad (1)$$

$\sum L_i$ -sum of all ranks
n- number of evaluated factors

Calculation of the concordance coefficient W

$$W = \frac{12S}{m^2 n(n^2-1)} = \frac{12 \times 7503}{7^2 \times 14(14^2-1)} = \frac{90036}{134456} = 0.669 \quad (2)$$

The performed calculation revealed that the experts relatively unanimous 0≤0.669≤1 have assessed the competences of startups (see 1., 2. formula), which is indicative of the surveyed respondents' concurrence of opinions. Analysing the given answers (Table 2), the author concludes that strategic management skills and financial competencies are the most important competencies to start a new business.
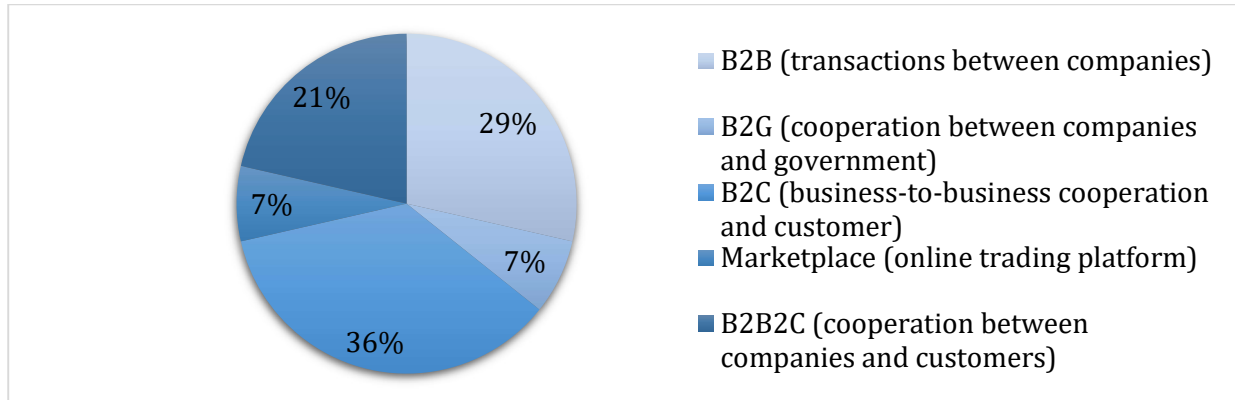

Fig.4. Models of start-ups (compiled by author)

The experts were asked: In your opinion, which of the business models for start-ups is the most effective? To the question, 36% respondents answered that B2C (cooperation between a company and a customer) and 29% answered B2B (transactions between companies), while the mentioned business models, according to the experts, indicated the efficient operation of companies.

The Investment and Development Agency of Latvia defined Top Start-up Industries: Saas, Fintech, HealthTech, Hardware, BioTech, EdTech, Crypto, AdTech, eCommerce, Medtech, ICT, Aerospace, IoT, FoodTech, DeepTech, CleanTech (Investment and Development Agency of Latvia, 2022c). The Latvian tech sector in Europe is booming. In 2022, Latvia raised 6.5 million dollars in capital (after raising 9.9 million dollars in 2021). Whether you are an experienced investor, a determined founder, or a resourceful operator, this year's list of top 34 tech start-ups is worth exploring. It includes companies of various sizes, ranging from those experiencing rapid growth to smaller, creative start-ups (Investment and Development Agency of Latvia, 2022b). The experts defined the most popular start-up industries: Advanced Manufacturing (57.1%) and Bio tech (42.9%), also Agri Tech, AI, Big data, Deep Tech, Health Tech, Med Tech, Robotics, Space Tech, Sustainability (28.6%) industries were very important.

To the question about potential risks in work with startups, the respondents answered in the survey that the highest potential risks in work

with startups were lack of finances, personnel risks (inability to work, non-performance), a price rise, risks of losing cooperation partners/investors. Personnel risks are named as the highest potential risk impact in the operation of startups.

As additional answers, there were mentioned: **s**elf-sufficiency and the idea that I am ready, perfect. A product, service is never ready, it is in perpetual motion. And the previously mentioned psychological state of entrepreneurs, which is very poor, or not at all, talked about in Latvia. Because an entrepreneur psychologically has to go through many moments - financing, responsibility towards employees, cooperation with partners, customers, family. Business is 25h/8 days a week. It is a very stressful occupation. The other risks are subordinated. It is also important that in Latvia, we have a relatively weak base of scientists for the creation of innovative products, or more precisely - there is no meaningful controlling mechanism so that the entrepreneur does not waste time waiting for the scientist to finally develop a prototype. We have come across several examples of scientists killing the whole idea because their work on the products is taking too much time. And in the case of innovation/technology issues, time is what allows you to overtake your competitors faster. Lack of knowledge, education, when it "gets into your head" and achievements.

Conclusions

The Latvian startup ecosystem is young and dynamic, it can ensure all advantages of a regional friendly business environment, but the ecosystem is too small to provide sample networking opportunities. In order to assess the environment for start-ups in the Latvian business ecosystem, an expert survey was conducted. As the most important factors, the experts indicated financial management (30% very important and 70% important) and finding the real problem of the customer (20% very important and 80% important). As additional answers, the experts indicated other challenges faced by start-ups - exchange of experience between start-ups, building a community where challenges can be shared and support received. Complex regulatory legislation, lack of information/complexity about start-up regulation and development opportunities, complex administrative procedures and tax payment procedures.

Of the respondents, 43% answered that the regulatory framework in Latvia was complicated. Analysing the given answers, the author has concluded that strategic management skills and financial competencies are the most important

competencies to start a new business. The performed calculation showed that the experts were relatively unanimous, as 36% respondents answered that B2C (cooperation between a company and a customer) and 29% answered B2B (transactions between companies) business models for start-ups were the most effective. The experts defined the most popular start-up industries: Advanced Manufacturing (57.1%) and the Bio tech (42.9%) industry. As concerns the risks, the highest potential risks in work with startups were lack of finances, personnel risks (inability to work, non-performance), a price rise, risks of losing cooperation partners/investors. In general, the startup environment needs to be developed and improved more intensively in order to attract potential investors.

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ASSESSMENT OF THE IMAGE OF THE BORDER GUARD PROFESSION

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Abstract.
Purpose and aim of the study: *Based on an assessment of the image of the border guard profession, the research aims to develop proposals on the possibilities of managing the image with the aim of building an attractive image of and positive public opinions on the profession, contributing to sustainable competitiveness of the profession and attracting potential new employees to the service.*
Methodology: *Information for the research was obtained from research papers on the formation and management of the image of a profession, relevant legal acts and surveys.*
Main findings: *The research results revealed that the image of the border guard profession currently presented in the media and to the public is relatively positive, although there are increasingly frequent discussions on the low competitiveness of the border guard profession and other professions related to internal affairs in the labour market; consequently, the government services are beginning to lack personnel.*
Originality: *To date, the image of the border guard profession has been little recognized and the potential for it has been little researched.*
Implications: *The present research represents the basis for further research on developing the brand of the border guard profession.*

Keywords: *expert opinion, media monitoring, image of the border guard profession, public opinion, image management, image building.*

Introduction

The State Border Guard currently faces serious challenges on the state border, as well as there is little interest in the border guard profession among potential employees and the service lacks employees, which in turn poses risks to the main mission of the State Border Guard, i.e. ensuring the inviolability of the Latvian state border and preventing illegal migration. Based on an assessment of the image of the border guard profession, the research aims to develop proposals on the possibilities of managing the image with the aim of building an attractive image of and positive public

opinions on the profession, contributing to sustainable competitiveness of the profession and attracting potential new employees to the service.

Specific research tasks:
1) to give insight into theoretical findings on the image of a profession and the possibilities of managing the image;
2) to monitor the image of the border guard profession in the media and to analyse current public opinions on the image of the border guard profession in Latvia;
3) to identify the opinions of Latvian border guards and external border guard experts about the image of the border guard profession;
4) to develop proposals on the possible management of the image of the border guard profession.

To achieve the research aim, the following *research methods* were employed:
1) descriptive data analysis for analysing and synthesize the collected data for drawing conclusions on the image of the border guard profession;
2) online surveys for identifying and examining the opinions of the public and border guards themselves on the image of the border guard profession;
3) online expert surveys for identifying and analysing the opinions of external experts and border guard experts on the image of the border guard profession;
4) content analysis for measuring the image of the border guard profession.

Research period: 2020-2023.

Research hypothesis: the image of the border guard profession needs to be managed to build an attractive image of the profession as well as promote the social status, authority and visibility of the profession.

To identify the contribution of the image of the border guard profession to the visibility of the profession among the public and increase its competitiveness in the labour market, the present research performed an analysis of the potential for the image of the border guard profession and the possibilities of managing the image, which represents the **novelty** of the research.

Research results and discussion

The concept of a profession has attracted the attention of many researchers, especially sociologists. The scientific community has considered it in various aspects and contexts. British sociologist Mike Sacks defines the concept of a profession as (..) a special kind of occupation (or profession) that may be entered into only after special training that

combines both a professional ethos and special skills. (..) it possesses unique and positive characteristics, including distinctive knowledge and skills (..) (Sacks, 2012). However, Canadian researchers Sylvia R. Cruess, Sharon Johnston and Richard L. Cruess refer to a profession as an (..) occupation, the basic element of which is work based on a complex set of knowledge and skills possessed (...). The members of a profession are governed by codes of ethics and are commited to competence, integrity and morality, altruism and the promotion of public goods in their field (Cruess et al., 2010). In their research study Nursing Professionalism: An Evolutionary Concept Analysis, Iranian researchers Fataneh Ghadirian, Mahvash Salsali and Mohammad Ali Cheraghi have analysed the characteristics of a profession and concluded that (..) a profession is characterized by a series of factors: 1) the body of knowledge acquired through formal education, 2) a high level of competence, 3) inclusion criteria, 4) the professional certification process, and 5) a set of behavioural and attitudinal norms, known as professionalization (Ghadirian, 2014). After researching the nature of professionalism, Israeli sociologist Rakefet Sela-Sheffy refers to status and power as an important factor in the viability of a profession, emphasizing that, however, there might be different views about where professional status lies. She also states that the formation of a "profession entails formalizing and standardizing knowledge and skills, and establishing means of control of their acquisition and implementation, to secure legitimacy and autonomy (..) (Sela-Sheffy, 2023).

The term image (..) is a kind of image of public ideas and stereotypes, which has emerged from experience. Sociologist Aleksejs Vorobjovs, agreeing with the ideas of French scientist Gustav Lebon, emphasizes the role of the image in the formation of public opinion: "An image is an emotionally saturated idea that embodies liveliness and later causes action (..)". According to A.Vorobjovs, an image is something that inspires and influences a certain part of society, which willingly obeys a certain character with their emotional experience and attitude (..) (Vorobjovs, 2002). Some authors have found that (..) an image could be defined as a picture of public perceptions that has a certain stimulating message and its own extent of credibility (Zarina et al., 2022). The image of a profession represents a description of the characteristics of a profession, which is characterized by most of the characteristics of the profession (Dobrzinskiene, 2121) and by higher education, knowledge and social status (Adams, 2023). According to Dutch researcher Yvonne ten Hoeve, the image of a profession is one of the elements that shape the professional identity and self-confidence of employees (Hoeve, 2013). L. M. Roberts has found that a professional image forms through interpersonal communication because "people constantly observe (..) behaviours and

create theories about (..) competence, the character and commitment, which are quickly disseminated throughout (..) the workplace" (Roberts, 2017). In the context of the image of a profession, it should be understood that individual identity is one of the inclusive factors in the development of professional identity in a person. The authors agree with an opinion that (..) professional identity emerges (..) from the process of activity development (Armstrong, 2017), which is influenced by the working environment, work values, educational attainments, satisfaction with the job and self-confidence, traditional cultural and social values (Hoeve, 2013) and (..) forms through interaction with other colleagues and has a strong influence on the self-esteem and empowerment of the members of a particular profession (..) (Hoeve, 2017). Accordingly, an individual's subjective feelings, in interaction with external factors, stimulate the formation of initially individual belongingness and later professional identity.

Developments at the State Border Guard and the professional Code of Ethics are important in shaping the image of the border guard profession and in strengthening the professional identity of border guards themselves. According to the Code of Ethics, the image of the border guard profession should involve values and qualities such as: professionalism, diligence, attentiveness, accuracy, cleanliness, tidiness, orderliness, practicality, hospitality, honesty, motivation, objectivity, politeness, positivity. The Code of Ethics also condemns an arrogant and authoritative management style, abusive behaviour, rude behaviour, greed, self-interest, interest lobbying, "fraternization" for self-interest etc. (Valsts robežsardzes amatpersonas..., 2020).

After summarizing the theoretical findings, the authors of the present paper conclude that the profession image context indicates the overall picture of attributes and values of a profession, while at the same time presenting it as a unique, constantly-functioning as well as dynamically-changing system of perceptions and activities. The image of a profession is a purposeful and unified picture of perception of social activities, which is demonstrated by a professional through his/her specific knowledge, unique skill and performance in the process of multifactorial interaction. This shows the social status, authority and visibility of the profession itself in society. Besides, the authors conclude that research on a profession and the image thereof could be conducted by employing various methods and from different social and research aspects.

To assess the image of the border guard profession, the authors monitored the image of this profession in the media (in the national media, in the national language) as part the research, employing the random selection method and selecting research papers according to certain keywords. The authors set a three-year research period from 2020 to 2022,

which was a long enough period to assess the image of the border guard profession reflected in the media. Analysing the media and the availability of their archives, the authors mainly focused on the research papers available on the Internet. The list of research papers also included those referring to television shows or radio broadcasts. To make the assessment of the image in the media more comprehensive, the authors reviewed the national/public (state), commercial, sectoral and regional media portals and websites, as well as one regional printed newspaper reflecting life in a border area.

Monitoring media content on the image of a border guard in the period from 2020 to 2022 showed that, overall, the image of the border guard profession was quite positive. The media had quite extensively informed the public about the daily routine of border guards, their professional activities and achievements as well as reflected their social activities; however, both the border guards themselves and experts (border guard and external experts) believed that in order to improve the image of the border guard profession and promote the visibility and popularity of the profession, the media, especially social media, should present the border guard profession even more actively and reflect the real routine of a border guard.

The authors concluded that in recent years, the media increasingly informed the public about the growing shortage of personnel in the State Border Guard and the factors contributing to it: low and uncompetitive remuneration, heavy workloads and employee dissatisfaction, which, of course, had a negative impact on the image of the border guard profession. Both the border guards themselves and the experts named the same problems, thereby emphasizing the impacts of the factors on the competitiveness of the profession in the labour market.

To identify public opinions about the image of the border guard profession, the authors conducted an anonymous survey consisting of 20 questions from 14 to 18 April 2022. The survey was placed on the online survey portal Visidati.lv created by the survey company SolidData. To identify comprehensive public opinions about the image of border guards, the authors set the range of potential respondents. To obtain quality data, the following criteria were set for the target audience: persons who use computers, mobile phones and social media on a daily basis; young people aged 15 and over; adults up to 69 years; persons from various regions of Latvia. Given the popularity of social media, potential respondents were reached using the Messenger tool of the social medium Facebook. For personal reliability and credibility, the authors used their Facebook profile accounts. Random sampling was applied to examine and select the elements of the sample. To identify the opinions of the public, the authors reached

people of different ages, genders and educational levels: both familiar people and complete strangers. In total, 150 individual invitations were sent to participate in the anonymous survey: 50 persons aged 15 to 29 years, 50 persons aged 30 to 39 years and 50 persons aged 40 and over. It should be noted that the authors have already published part of the results of this survey in a research paper entitled The Image of the Border Guard in Society (Zarina et al., 2022). Out of 150 potential respondents reached, almost half participated in the survey, i.e. 69 (46%). Of them, 28 were men aged 17 to 50 and 41 were women aged 17 to 62. The average age of the respondents was 36.9 years. The respondents were from Jelgava, Valmiera, Rezekne, Daugavpils, Jurmala, Riga, Pieriga as well as towns, sparsely populated areas and rural areas.

From 16 April to 1 May 2023 as part of the research, the authors conducted an online survey on the image of the border guard profession also among border guards. The purpose of the survey was to identify the opinions of Latvian border guards about the image of the profession they represented, the factors therein and the possibilities for improving the image. To reach the target audience, the implementation of the survey was coordinated with the head of the State Border Guard. In total, 129 Latvian border guards responded to the survey invitation and answered 16 questions. The profile of the survey participants was identified, broken down by gender, age and place of service. In total, 71 (55% of the total respondents) men and 58 (45%) women took part in the survey. The most respondents were those aged 40 to 49 (54 persons, 41.9%) and 30 to 39 (49 persons, 38%). However, those aged between 18 and 29 (16 persons, 12.4%) were the least represented respondents. The authors found that in view of the fact that a service period of a border guard is up to 50 years and a border guard rarely extends the service period, respondents aged 50 and over were quite inactive, as only 10 persons or 7.8% of the total respondents took part in the survey. A breakdown of the respondents' service places revealed that the most respondents were from the Ventspils Regional Department (22 persons, 17.1%) and the Vilaka Regional Department (21 persons, 16.3%) of the State Border Guard. The answers were also given by: 20 persons (15.5%) from the Ludza Regional Department, 18 persons (14%) from the State Border Guard College, 14 persons (10.9%) from the State Border Guard Headquarters, 13 persons (10.1%) from the Daugavpils Regional Department, 8 persons (6.3%) from the Riga Regional Department, 7 persons (5.5%) from the Main Department and 6 persons (4.7%) from the Aviation Department of the State Border Guard.

Most of the public and border guards interviewed recognized the importance of the profession in the country.

It was important for the border guards to be aware the role of their work and gain public appreciation. The survey found that 65% respondents were proud or partially proud to be border guards and belong to the community of this profession (Figure 1).
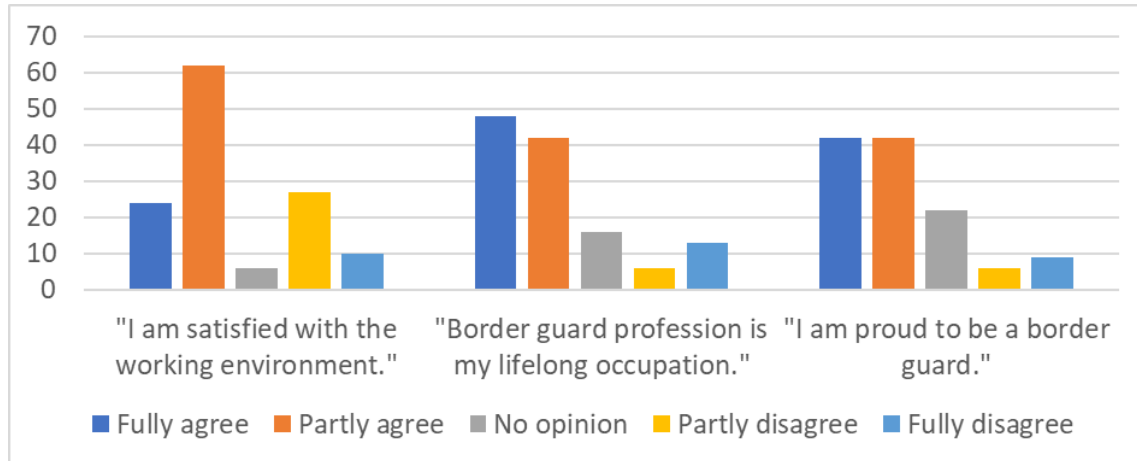

Fig.1. Distribution of respondent answers to the question "Do you agree with the following statements?" (based on the survey of border guards, 2023)

In contrast to long-standing border guards, the younger generation of border guards were not sure that they would be self-realized in this profession throughout their service period (up to 50 years). The survey participants partly agreed that the border guard profession was prestigious in Latvia today, meaning that the public had no confidence in the prestige of this profession today. Most of the border guards partly agreed with this statement as well (Figure 2).
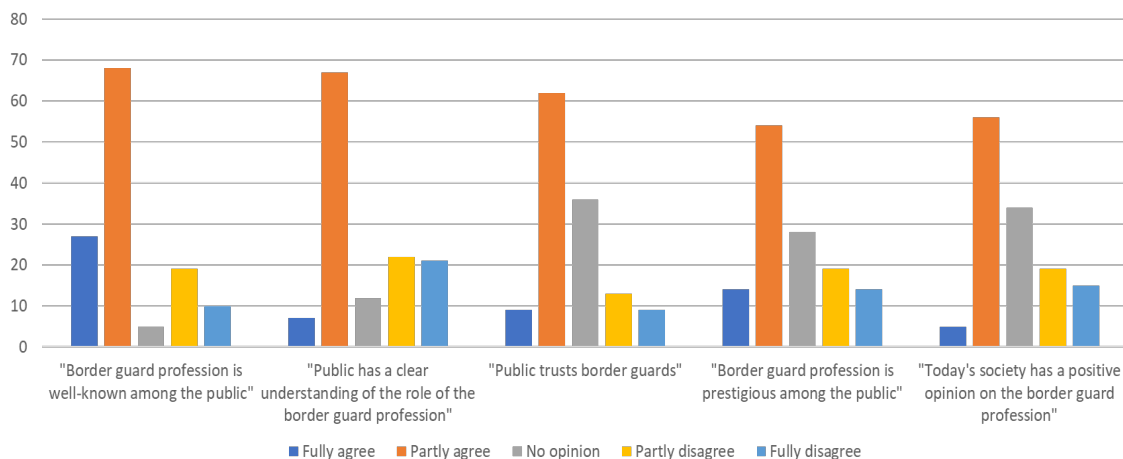

Fig.2. **Distribution of respondent answers to the question Do you agree with the statements below about the image of the border guard profession?"** (based on the survey of border guards, 2023)

According to the border guards, the prestige and competitiveness of the profession was not promoted at the national level, yet it was done at the professional level.

From 16 April to 15 May 2023 as part of the research, the authors conducted two online expert surveys on the image of the border guard profession: an expert survey on the image of the border guard profession and the possibilities of managing the image for the heads of the border guard departments, and a survey of external experts on the image of the border guard profession and the possibilities of managing it. The purpose of the surveys was to identify the opinions of and ratings by the experts regarding the image of the border guard profession and the possibilities of managing it. The profile of the experts was built up based on their ages and work experience in their field of professional activity. In total, 16 experts participated in both surveys, including 11 heads of the border guard departments, as well as 5 external experts. Both the public and the border guards and experts recognized that every border guard was jointly responsible for promoting the prestige and reputation of the border guard profession. According to some experts, any border guard, by developing his/her professional identity, contributes to increasing the prestige of the profession.

The survey results revealed that the respondents were quite knowledgeable about working conditions for border guards and admitted that in this profession, the most burdensome obstacles were as follows: the tough working environment, the military hierarchy, bureaucratic procedures within the service, increased risks of danger, heavy workloads and illegal border crossers. Both the border guards and the experts were of the same opinion, stressing that the above-mentioned factors in the working environment should be mitigated and the working conditions for border guards should be improved by developing border guarding infrastructure, introducing modern technologies into border guarding, improving communication and raising salaries. The survey revealed that when meeting a border guard, the public, first, assess the appearance, physical fitness level, communication skills and professionalism of the border guard, second, are aware of the specifics of the border guard work and the achievements, and third, are happy to learn positive things about the border guards, fourth, are not happy about negative news and observations regarding the border guard's inaction or criminal behaviour.

Today, managing the image of the profession is important for every industry as well as institution that manages the work of professionals in the industry and demonstrates the social status, authority and visibility of the profession itself in society. To influence the public's perception of the work of professionals, present the uniqueness, importance, dynamism and

development of the profession and influence the competitiveness of the profession itself in the labour market, it is necessary to manage the image of the profession. Therefore, to change public perceptions of the profession, ensure public trust and attract potential employees to the government institution, national policy makers and the administration of the State Border Guard need to change the usual management pattern both at the national and the institutional level, increasingly introducing flexible business management tools, for example, implementing profession image marketing activities.

In the opinion of the authors, forming and managing the image of the profession should start inside the organization/institution in which, first, there should be a discussion with the members of the profession about both their satisfaction with their working environment and their contribution to the development of the institution/industry; second, the satisfaction of users of services provided by members of the profession should be measured and analysed to find out what the image of the profession is at a particular period. Third, there should be a strategic plan for improving the image of the profession, with members of the profession playing an important role. The most motivated members of the profession should be encouraged to play a leadership role and encourage other colleagues to present their profession. Fourth, the prevailing stereotypes about the image of the profession should be eliminated and an attractive image of the profession should be created by showing the real work of professionals in the media. Fifth, members of the profession should be given an opportunity to raise their qualifications and realize themselves in the professional field. In the nearest future, it is desirable to design a special marketing programme for the image of the profession, which would include three levels of activities: at the national level, a long-term support programme should be developed to contribute to the professional status and prestige of border guards through improving the working environment and increasing the competitiveness of the border guard profession. At the organizational level, the administration of the State Border Guard and policy makers should design and implement a policy and programme aimed at contributing to the image of the border guard profession, design a strategic action plan for raising the professional self-confidence of border guards as well as guidelines for recruiting new employees. At the individual level, border guards should daily improve their professional image and present it, as well as popularize their professional image by their own examples through performing their official responsibilities and acting professionally and responsibly.

Coming up with proposals for improving the image of the border guard profession, the experts were of the same opinion and recommended that

managing the image of the border guard profession should focus on strengthening the sense of satisfaction in the border guards and developing the internal communication culture at the State Border Guard, which is based on trust and respect, as well as on increasing the competitiveness of the profession by raising border guard salaries and improving the working environment for them.

Conclusions and suggestions

1. Successfully managing the image of the profession leads to the attractiveness and viability of the image and confirms the legitimacy of the image in the eyes of stakeholders. It involves strategic communication, brand development, media monitoring as well as organizational performance of stakeholders: identification, self-realization and representation. In principle, it is a marketing strategy aimed at improving and changing public opinions about the image.
2. The media monitoring, the survey of the public and the survey of border guards showed that in Latvian society, there are stereotypical views about the image of the border guard profession and about public expectations (the image of the profession is idealized and detached from reality); therefore, many young individuals are confused about their career choice when starting their service.
3. The internal satisfaction of members of the profession with their jobs, the working environment, as well as the satisfaction of individuals and the public with the performance and work quality of members of the profession is of great importance in shaping the image of the profession. The more positive the working environment is, the more motivated, satisfied, open and kinder are the members of the profession, and the higher the quality of their work is, the more satisfied the public are.
4. Shaping and managing the image of the border guard profession should be aimed at changing public perceptions because this, in turn, makes it necessary to develop diverse communication with the public. The visibility and public appreciation of the image of the profession requires a dialogue between the stakeholders: the leading national institution, members of the profession and the public. Maintaining feedback increases public trust as well as builds and manages positive impressions of the profession.
5. To change public perceptions of the profession, ensure public trust and attract potential employees to the government institution, national policy makers and the administration of the State Border Guard need to change the usual management pattern, increasingly introducing flexible

business management tools, e.g. implementing profession image marketing activities.

6. To improve the image of the profession in the future, the impact of satisfaction of border guards on the image of the profession, as well as the impact of the image of the profession on the competitiveness of the profession itself should be researched more extensively.

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ASSESSMENT OF THE GOVERNMENT FINANCIAL POLICY: THE SITUATION IN LATVIA

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Abstract.

Purpose and aim of the study: *the research aim is to evaluate the factors influencing national financial policy, their socio-economic impact, and assess Latvia's fiscal policies.*

Design/Methodology/Approach: *the study uses the monographic, logical constructivism, content analysis methods, and the comparison method for opinions and concepts. The paper is based on theoretical knowledge, studies of foreign and Latvian authors, as well as Latvian laws and other regulatory documents on the relevant issues.*

Main findings: *The research highlights the main challenges in the making of national financial policies. The research identifies the most important factors that need to be considered when making national financial policies.*

Originality: *The research takes a comprehensive approach to the analysis of national financial policies. The study uses a variety of data sources and methodological approaches.*

Implications: *The findings of the research can be used to inform the development of more effective national financial policies. The study provides a valuable resource for policymakers, researchers, and practitioners.*

Keywords: *national financial policy, fiscal policy, state budget, taxes, government spending.*

Introduction

Today is marked by significant fluctuations in social and economic development in the world, and especially in Europe, which have undoubtedly had an impact on development processes in Latvia, which have called for measures to reorganise and restructure the economy in specific time periods: complex geopolitical conditions, population migration, a economic slowdown in Europe.

All this has been aggravated by the spread of the Covid-19 pandemic, the war started by Russia in Ukraine, which has completely changed the situation in Europe, notably in the field of energy, causing the energy price shock crisis, immigration problems and other political issues.

Thus, the importance of the decisions taken by national policy-makers to address the problems caused by the geopolitical situation is growing, along with the effectiveness of government activity. Traditionally, all this has been based on the performance objectives set in accordance with the defined

national development strategy and the specific priorities established by the government in a specific political and economic situation.

All this brings into focus the notion of the financial resources required for government activity, or more generally, public finances, and their management with the aim of making a positive contribution to economic growth, the quality of public services, and the overall welfare of the country.

Several socio-economic problems are currently prevailing in Latvia: social stratification, emigration, unorganised education and healthcare systems, the grey economy, slowing economic growth, and heavy public administration. All this calls for a sound and effective national financial policy, identifying the most important factors that influence it and to what extent they are objective or subjective in nature. An assessment of potential risks in the context of securing national finances is also important.

Overall, it can be argued that an effective national financial policy requires not only the definition of the objectives of government activities but also an assessment of how the various financial policy instruments affect the socio-economic situation in the state.

The research aim is to evaluate the factors influencing national financial policy, their socio-economic impact, and assess Latvia's fiscal policies.

The main research objectives are the following:
1. Evaluate economic beliefs on national financial policy and assess policy implementation;
2. Identify influencing factors, examine Latvia's fiscal policy, and develop improvement recommendations.

The research novelty is that it highlights the main challenges in the making of national financial policies, identifies the most important factors that affect these, i.e. administrative, political, economic, and international.

The research hypothesis: the effectiveness of national financial policy in a given economic and political situation is influenced by objective and subjective factors.

The study uses the monographic, logical constructivism, content analysis methods, and the comparison method for opinions and concepts.

The paper is based on theoretical knowledge, studies of foreign and Latvian authors, as well as Latvian laws and other regulatory documents on the relevant issues.

Literature Review

Economic theory and practice emphasise that the decisions of governments (politicians) are the main factor influencing a country's development in both social and economic contexts. Implementation of any measures adopted by the government requires monetary resources.

Traditionally, these have been provided through tax payments, generating the financial resources for the state. These are allocated to the implementation of the objectives set by the state, i.e. the priorities set by the government, their directions, the financing of the relevant activities (Greene, 2020).

This brings into focus the notions of public finances and the factors that influence their provision – taxes, government spending – which are assessed in the context of national financial policy. Nowadays, it has become an important subject of both economic and political debate. By implementing national financial policy measures, the government has a clear impact on the socio-economic situation in the country and its potential development prospects in the short and long term (Donaldson, 2006).

It can be clearly agreed that national financial policy has an important role in promoting the stability and sustainable development of a country's economy and that, in determining how public finances are generated and used, an understanding of the impact of these processes on society as a whole (private sector, business sector) is essential (Baumann & Bradbury, 2023).

It can thus be argued that the government, by ensuring appropriate national financial policy measures, must be generally responsible for the efficiency of collection and use of public finances (Giovann et al., 2021).

National financial policy is defined as the strategy and action plan developed and implemented by the government with regard to the drafting and implementation of the state budget and all related economic and social issues. It is part of a broader economic policy and includes decisions and measures taken to manage public finances, influence economic activity and ensure the provision of public services to the population (Gorina et al., 2017).

In economic theory, the debate on national financial policy has resulted in different opinions on which should be given more attention - taxes, government spending, or the state budget as a whole. The author believes that, given the main aspects that determine the state budget, one has to agree with the argument that all of these, including both taxation and government spending, accurately outline the importance of fiscal policy. Traditionally, fiscal policy is nowadays defined as a set of measures whereby social and economic processes in a country are regulated through government spending and taxation (Greene, 2020).

It is important to emphasise that it is implemented by the government through the state budget, which is defined as the state's revenue and expenditure plan, established and approved for a given period of time, and whose main supporting instruments are taxes, budget spending, and government borrowing (Nice, 2002).

It needs to be emphasised that there is a diversity of opinions in economic theory, with several approaches explaining particular economic

problems differently, including the effects of fiscal policy on key indicators of economic activity: gross domestic product growth, employment, the price level, the foreign trade balance, the government budget deficit. However, it is argued that fiscal policy measures have an important role in the national economy because the government uses them to influence the goods and services, financial and labour markets, as well as to address problems related to income redistribution and social justice in society (Mikesel, 2007).

Thus, different approaches to fiscal policy-making exist and are emerging in economic theory and national financial practice when implementing tax and government spending policies. However, it has to be pointed out that no perfect fiscal policy is possible because there are always various factors to consider, which require specific measures to solve the problems. Some of the factors that influence fiscal policy are similar in many countries; however, their degree of impact may vary considerably, and there may also be factors that are specific to a particular country (Tobias et al., 2022).

These have already been assessed and highlighted in previous periods (Kavale & Žubule, 2016). However, it must be emphasised that, especially now, considering both the economic and social situation, which has been affected by the Covid-19 pandemic in 2019-2021, as well as the geopolitical situation, countries are reinforcing aspects of government activity that are closely tied to the specific measures affecting fiscal policy. These are also relevant for Latvia, whose economy can be generally described as small and open. It can therefore be argued that the following factors are crucial in the design and implementation of national financial policies:

▪ International factors: Participating in various international organisations (WTO, IMF, EU, UN, NATO), it is understood that the member states are bound by certain contractual obligations (including financial) which oblige the member states to comply (membership fees, administrative instruments, financial aid, international requirements for public finances), therefore the following aspects are essential:
  ✓ this requires all international financial commitments to be reflected in annual national budgets;
  ✓ in this context, it has to be taken into account that certain requirements from international organisations can have both positive effects (especially when domestic politicians fail to take certain important decisions, such as fiscal discipline) as well as negative effects, especially in situations where such requirements are not consistent with the country's national interests;
  ✓ the government must respond to changes in the global economy, financial markets, economic trends in partner countries, geopolitical events and the problems arising from population migration. These

factors can emerge rapidly and unexpectedly and threaten a country's economic development, which may require governments to adjust their established fiscal policies, which can also provoke public frustration.

▪ The political factor – the most frequently highlighted factor with a strong potential impact on government decisions; politicians tend to increase government activity and its role in the economy, bringing about an increase in the government machinery and costs. This is known as fiscal policy distortions; problematic issues – funding for specific activities or programmes that has little economic justification, short-term tax policies, uncertainty in the social sphere.

▪ The administrative factor, which correlates closely with the notion of government effectiveness in influencing fiscal policy measures. It is important to emphasise that, in highlighting the need for administrative research, economists have already emphasised in previous periods the aspects of assessing government performance – what the government can feasibly and successfully do with the greatest possible efficiency at the lowest possible cost (Fry & Brian, 2008). It can be argued that the administrative factor should be viewed broadly as the institutional support for fiscal policy.

▪ The socio-economic development of the country (indicators of gross domestic product, employment, inflation, public finances) and the resulting objectives and priorities set by the government, all of which call for the adoption and implementation of fiscal policy measures appropriate to the situation.

It can be concluded that the factors influencing fiscal policy are both subjective and objective in nature and can affect the overall state budget in different ways. Thus, in the context of administration of public finances, it has to be understood that these decisions will always involve government compromises, which result from the underlying factors. This means that a permanent and stable fiscal policy is essentially impossible. In certain situations, the general public wants a stable and predictable fiscal policy; however, it is important for governments to pursue flexible fiscal policies in order to be able to react to changes in one of these groups of factors in a timely manner and, if necessary, to revise decisions taken in the past (Park et al., 2023; Isaiah et al., 2019).

Research results and discussion

In a structural analysis of public finances and their administration and spending, it is important to understand the main components that influence

national financial policy and their potential impact on socio-economic processes in the country. The following can be identified as key:

- Budget policy – the process of drafting the state budget, identifying possible revenues and expenditures to ensure the achievement of set objectives in the context of social and economic welfare (assessing and deciding on the allocation of public funding to various government sectors, programmes, activities);
- Tax policy involves designing the tax system and ensuring its efficient operation and is concerned with generating the monetary resources required for government activity, affecting taxpayers and society as a whole;
- Fiscal policy involves budgetary and tax policy measures and is an essential component of national financial management, as it is the main factor influencing a country's economic development;
- National debt policy determines how much a country is prepared to borrow and how these borrowings will be used; thus, emphasising the level of national debt highlights debt repayment capacity (amounts, time frames, interest payments) as an important aspect. It needs to be emphasised that it is most closely linked to government borrowing.

    Thus, it can be concluded that, overall, government financial policy:

- involves measures aimed at promoting economic growth with a positive impact on social and economic welfare;
- affects the potential capacity of the government to achieve its economic objectives, as indicated by gross domestic product, employment, inflation, export and import indicators.

It can therefore be argued that the design and implementation of national financial policy is a complex process, which requires analysis of the economic and social situation and the appropriate policy decisions. In this context, the economic, political, administrative, ideological, and international aspects are important (International Federation of Accountants, 2022).

In Latvia, in the context of the national financial policy assessment, an analytical study of the state budget for 2023 has been performed, identifying the factors that have influenced specific decisions regarding the fiscal performance of the country.

It has to be emphasised that when adopting Latvia's state budget for 2023, the government has associated it with the medium-term budgetary framework. This means that the main potential indicators of the national budget for 2023-2025 have been set out in a single law. Overall, this is considered positive, as it shows long-term fiscal policy measures. However, it cannot be denied that the influence of various factors (political, economic, geopolitical) can change fiscal decision-making.

The key indicators describing Latvia's fiscal policy in 2023 are the following:

- Latvia's consolidated state budget revenue for 2023 is planned at 12.7 billion euro;
- Expenditure is planned at 14.7 billion euro;
- Compared with the budget for 2022, the state budget revenue in 2023 is projected to be higher by 2.025 billion euro and state budget expenditure is projected to be higher by 2.233 billion euro (Par valsts budžetu 2023.gadam, 2023).

It can be concluded regarding the above that national fiscal policy measures are influenced by several factors in a given situation. The items of Latvia's state budget for 2023 are shaped by the geopolitical situation in the region, the government's commitment to support the Latvian population by partially compensating for the increase in energy prices and the planned support to Ukraine in its fight against Russian aggression. The main objective set by the government for 2023 is the implementation of the economic transformation, prioritising national security, education, energy, competitiveness, quality of life, personal and public health by allocating 710 million euro in additional funding:

- 215 million euro from fiscal space (additional money available to finance various measures);
- 141 million euro from financial resources to be reallocated during budget implementation and additional contributions to the state budget from state capital companies;
- 354 million euro allocated from outside the fiscal space for one-off investments to strengthen national security and to support Ukraine (Finanšu ministrija, 2023).

It has been stressed that all this should ensure a balanced achievement of the objectives set out in the government's declaration. Without denying the planned commitment of the government, it has to be emphasised that there may be some risks with negative implications for the national economy as a whole and for the situation in the area of public finances. All this could affect the taking of new decisions on government policy and consequently appropriate fiscal measures. Thus, the notion of fiscal sustainability, i.e. the capacity of the government to provide sufficient monetary resources to finance the prioritised measures, has to be highlighted as the main issue.

When assessing Latvia's state budget items for 2023, it has to be emphasised that they were shaped primarily on the basis of an assessment of the macroeconomic situation. In the context of Latvia, it should be stressed that this is currently taking place in the circumstances of high uncertainty, which is mainly influenced by geopolitical events.

It is emphasised that Latvia's economic development is currently most affected by the situation in its main foreign trade partner states, many of which are among the countries most affected by the Russian war and the price rises. In 2023, GDP is forecast to fall by 0.6%, whereas in 2024 and 2025, GDP growth is forecast at 3.0%. In the author's opinion, all this acts as a factor influencing the instability of public finances, which makes predicting fiscal policy measures more difficult in terms of fiscal space management, and consequently the potential state budget deficit and government debt figures.

In accordance with the projected macroeconomic indicators, and taking into account the government's decisions on additional financing for priority measures, the general government budget balance was updated in the state budget for 2023, setting the deficit at 4.2% of GDP. The maximum debt ceiling allowed is therefore set in the general government budget at 19.2 billion euro, or 45% of GDP. It also provides for the possibility of additional financing measures to raise financial resources in time to repay the planned debt in the event of favourable financial market conditions or in the event of risks with a negative impact on the national economy and the government deficit. In the absence of the above circumstances, the national debt is projected at 18 billion euro, or 42% of GDP.

Having assessed the potential national financial policy measures and the results in Latvia, it can be concluded that the administration of public finances is currently affected by all the issues discussed above, i.e. the economic, political, and international aspects. All this illustrates the correlative effects of the factors (objective and subjective) that influence national fiscal policy which shapes the administration of public finances and consequently the socio-economic situation in the country.

Conclusions

Decisions of the government (politicians) are the main factor that influences a country's social and economic development. However, any decision taken by the government requires monetary resources to implement. Traditionally, these have been provided through tax payments, generating the financial resources for the state.

Based on the fact that national financial policy has an important role in promoting the stability and sustainable development of the national economy, it has become an important subject of both economic and political debate, since in determining how public finances are generated and used, an understanding of the impact of these processes on society as a whole (private sector, business sector) is essential.

Thus, different approaches to fiscal policy-making exist and are emerging in economic theory and national financial practice when implementing tax and government spending policies. However, it has to be pointed out that no perfect fiscal policy is possible because there are always various factors to consider, which require specific measures to solve the problems. The economic, political, administrative, international factors can be highlighted as key.

It can be concluded that the factors influencing fiscal policy are both subjective and objective in nature and can affect the overall state budget in different ways. Thus, in the context of administration of public finances, it has to be understood that these decisions will always involve government compromises, which result from the different factors.

It can therefore be argued that designing and implementing a national financial policy is a complex process, which requires analysis of the economic and social situation and the appropriate policy decisions. In this context, the economic, political, administrative, and international aspects are important.

When assessing Latvia's state budget figures for 2023, it has to be emphasised that these are, firstly, affected by the geopolitical situation in the region, and secondly, by the government's commitment to support the Latvian population by partially compensating for the increase in energy prices and also by the planned support to Ukraine in its fight against Russian aggression.

The Latvian government has set the implementation of the economic transformation as its main objective for 2023 and has prioritised national security, education, energy, competitiveness, quality of life, personal and public health by allocating 710 million euro in additional funding.

In the author's opinion, all this acts as a factor influencing the instability of public finances, which makes the predictability of fiscal policy measures more difficult in terms of fiscal space management, and consequently the potential state budget deficit and government debt figures.

Having assessed the potential national financial policy measures and expected outcomes in Latvia, the author proposes to public policy makers (representatives of the executive and legislative powers) that they should not ignore but should take into account all aspects that influence the administration of public finances (tax, government spending, government borrowing policies) with their potential to have a positive impact on the solutions to problems that arise in a given situation. It needs to be emphasised that all this relates to the correlative effects of the factors (objective and subjective) that influence the national fiscal policy which shapes the administration of public finances and consequently the socio-economic situation in the country.

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