

**Rezekne Academy of
Technologies**
Faculty of Economics and
Management
Research Institute for
Business and Social
Processes

**City Unity College
Nicosia**
Department of Business
Administration
Department of Tourism
and Hospitality
Management

Journal of Regional Economic and Social Development

Historical title: Latgale National Economy Research

Volume 16

Rezekne, 2024

Journal of Regional Economic and Social Development (Historical title: Latgale National Economy Research) No. 1 (16)
Rezekne: Rezekne Academy of Technologies, City Unity College Nicosia, 2024. 187 p.

Recommended for publication by the Scientific Council of the Research Institute for Business and Social Processes of the Faculty of Economics and Management of the Rezekne Academy of Technologies on 22 November 2024.

Recommended for publication by the City Unity College Nicosia Research committee on 28 November 2024.

Scientific editorial board

Iluta Arbidane, *Rezekne Academy of Technologies, Latvia*

Gintautas Buzinskas, *Utena University of Applied Sciences, Lithuania*

Constantinos Charalambous, *City Unity College Nicosia, Cyprus*

Zanete Garanti, *City Unity College Nicosia, Cyprus*

Gunta Grinberga Zalite, *Latvia University of Life Sciences and Technologies, Latvia*

Marina Gunare, *Baltic International Academy, Latvia*

Joanna Hernik, *West Pomeranian University of Technology, Szczecin, Poland*

Elina Konstantinova, *Ventspils University College, Latvia*

Chrysostomi Maria Kyrillou, *City Unity College Nicosia, Cyprus*

Iveta Mietule, *Rezekne Academy of Technologies, Latvia*

Naila Musayeva, *Azerbaijan Tourism and Management University, Azerbaijan*

Sandra Sprudzane, *Rezekne Academy of Technologies, Latvia*

Ewa Rollnik-Sadowska, *Bialystok University of Technology, Poland*

Rasa Subaciene, *Vilnius University, Lithuania*

John Violaris, *City Unity College Nicosia, Cyprus*

Hristina Runceva, *Tasev, Ss. Cyril and Methodius University, Skopje, Republic of N. Macedonia*

Anda Zvaigzne, *Rezekne Academy of Technologies, Latvia*

Andra Zvirbule, *Latvia University of Life Sciences and Technologies, Latvia*

Chief editors: Anda Zvaigzne, *Rezekne Academy of Technologies, Latvia*

Zanete Garanti, *City Unity College Nicosia, Cyprus*

Executive editor: Inta Kotane, *Rezekne Academy of Technologies, Latvia*

Reviewers

Iluta Arbidane, Rezekne Academy of Technologies, Latvia

Zanete Garanti, City Unity College, Nicosia, Cyprus

Gunta Grinberga Zalite, Latvia University of Life Sciences and Technologies, Latvia

Inta Kotane, Rezekne Academy of Technologies, Latvia

Iveta Mietule, Rezekne Academy of Technologies, Latvia

Anita Racene, IK A.R.Z. PLUSS, Latvia

Linda Silina, "Latvian Rural Advisory and Training Centre" LTD, Latvia

Sandra Sprudzane, Academy of Technologies, Latvia

Anda Zvaigzne, Rezekne Academy of Technologies, Latvia

All papers in this publication are peer-reviewed.

No part of the publication may be reproduced without the written permission of **Rezekne Academy of Technologies** and **City Unity College Nicosia**

The journal will be included in databases: **Index Copernicus, EBSCOhost Business Source Corporate Plus.**

Online ISSN 2661-5800. (Historical ISSN 1691-5828; Online ISSN 2256-0955)



This journal is distributed with an international license:
Creative Commons Attribution 4.0 International License

© **Rezekne Academy of Technologies, City Unity College Nicosia 2024**
© **Group of authors, 2024**

CONTENTS

Andreas Ahrens, Antonia Castellani, Maria Chiara Di Francesco, Jelena Zascerinska, Mihails Zascerinskis, Anastasija Bikova, Irina Abjalkiene, Olga Gukovica, Ludmila Aleksejeva. Chess as an Educational Tool for Social Inclusion and Employment	8
Liene Amantova-Salmane. Stakeholder Concerns and Management Principles in Project Management	21
Lucija Burmeistere, Anita Puzule. Tax Gap and an Assessment of Factors Affecting it in Latvia	33
Kristiana Jurkane, Lienite Litavniece, Anda Zvaigzne. A Practical Example of the Digital Twin in Active Leisure and Entertainment Tourism: Activities with Horses	48
Konstantins Korklis, Iluta Arbidane, Daina Znotina. Analysis and Development Possibilities of the Management Functions of a Hunting Society	57
Gunita Kubuka, Anda Zvaigzne, Aija Cerpinska. Competitiveness Factors in the Personnel Policy of the Latgale District Court	69
Kristine Lele, Inta Kotane. Sustainable Development in Education: A Case Study of General Education Schools	81
Nikos Mardas, Constantinos Charalambous. Improving Cyprus Fire Service Performance Through Modern HR Management Practices and Job Satisfaction	96
Viktorija Piscalkiene, Simona Jankauskaite, Rasa Vaitkiene, Daina Znotina. Reasons for Stress Among Students Studying Business Studies in Lithuanian and Latvian Higher Education Institutions	107
Rihards Rizovs, Atis Litaunieks. Improvement in Opportunities/ Methodology for Enhancing the Physical Training of Cadets from the State Border Guard College	118
Elvijs Stepens, Inta Kotane. Mortgage Loan Market in Latvia	133

Jakhongir Valiyev, Inta Kotane. Enhancing the Payment System in Uzbekistan	148
Aija Vonoga. External Factors Driving and Limiting Start-ups in Latvia	163
Ervins Ziemelis, Anda Zvaigzne, Linda Silīņa. Effectiveness Assessment of the Internal Control System at National Institutions in the Area of Conflict of Interest and Corruption in Latvia	172

Foreword

We are pleased to present the latest edition of The Journal of Regional Economic and Social Development, a collaboration between the Research Institute for Business and Social Processes of Rezekne Academy of Technologies and City Unity College Nicosia. 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 explore the diverse aspects of regional economic and social development. The journal continues to explore critical themes in economic and social development, drawing on a rich collection of peer-reviewed articles that provide valuable insights for academics, policymakers, and practitioners.

The latest collection of articles in Issue 1 Volume 16 (2024) covers a wide array of topics, reflecting the diverse research interests and expertise of our contributors, both academics and industry practitioners and professionals. One significant theme is the role of innovative educational tools in promoting social inclusion. The article on chess as an educational tool provides a view at how this traditional game is being employed to enhance social inclusion and employment opportunities for disadvantaged groups in Europe.

The articles also explore intricacies of stakeholder concerns in project management. This work highlights the necessity of strategic stakeholder management to minimize challenges and foster successful project outcomes, aligning with the global push towards sustainable project management practices. The assessment of the tax gap in Latvia further broadens our understanding of fiscal policy and economic regulation, examining the impact of the shadow economy and suggesting improvements in tax administration.

The concept of digital transformation is explored through the use of digital twins in active leisure and entertainment tourism. This innovative approach demonstrates the potential of digital tools to elevate service management and customer experience in the tourism sector. Employment dynamics remain a critical topic, as evidenced by the study on competitiveness factors in the personnel policy of the Latgale District Court.

The mortgage loan market in Latvia, explored in one of the articles, provides a comprehensive analysis of the interplay between real estate, fiscal policy, and economic development, highlighting factors influencing the market. Sustainability in education is another pivotal theme, with research focusing on sustainable development in general education schools. This study reflects on the increasing recognition of sustainable habits' importance in curricula.

Further, financial systems take center stage in the article on payment system enhancements in Uzbekistan, which provides a strategic view on leveraging modern technology for economic modernization. An exploration of stress factors among business students in Lithuania and Latvia offers insights into improving

educational environments to better support student well-being. The role of job satisfaction in public safety is explored through the lens of the Cyprus Fire Service, offering recommendations for enhancing service quality through modernization efforts. Finally, the effectiveness of internal control systems in managing conflict of interest and corruption risks in Latvia serves as a critical reminder of the importance of robust governance frameworks. On behalf of the Editorial Board, we extend our gratitude to the authors, reviewers, and the dedicated editorial team for their invaluable contributions in developing Issue 1, Volume 16 (2024). We hope that the research presented herein provokes thought and inspires action in the ongoing demand for economic and social advancement.

Chief editors:

Anda Zvaigzne, Rezekne Academy of Technologies, Latvia
Zanete Garanti, City Unity College Nicosia, Cyprus

CHESS AS AN EDUCATIONAL TOOL FOR SOCIAL INCLUSION AND EMPLOYMENT

**Andreas Ahrens¹, Antonia Castellani²,
Maria Chiara Di Francesco³, Jelena Zascerinska⁴,
Mihails Zascerinskis⁵, Anastasija Bikova⁶, Irina Abjalkiene⁷,
Olga Gukovica⁸, Ludmila Aleksejeva⁹**

¹ Dr.-Ing. habil. (Electrical Engineering), Professor, Hochschule Wismar University of Applied Sciences Technology, Business and Design, Wismar, Germany,

e-mail: andreas.ahrens@hs-wismar.de

² Senior researcher, Skill Up, Rome, Italy,

e-mail: a.castellani@skillupsrl.it

³ Junior researcher, Skill Up, Rome, Italy,

e-mail: mc.difrancesco@skillupsrl.it

⁴ Dr. paed., Leading researcher, Centre for Education and Innovation Research, Riga, Latvia,

e-mail: iizi.info@inbox.lv

⁵ Scientific Assistant, Centre for Education and Innovation Research, Riga, Latvia,

e-mail: mihails.zascerinskis@gmail.com

⁶ MA student, Hochschule Wismar University of Applied Sciences Technology, Business and Design, Wismar, Germany, e-mail: anastasija.bikova@hs-wismar.de

⁷ Scientific Assistant, Centre for Education and Innovation Research, Riga, Latvia,

e-mail: irinaabjalkiene@inbox.lv

⁸ Scientific Assistant, Centre for Education and Innovation Research, Riga, Latvia,

e-mail: srripka@inbox.lv

⁹ Scientific Assistant, Centre for Education and Innovation Research, Riga, Latvia,

e-mail: asava@inbox.lv

Abstract.

Purpose and aim of the study: *The paper's aim is to describe and analyse best practices in use of chess as an educational tool for enhancing disadvantaged groups' social inclusion and employment in selected European countries.*

Design / Methodology / Approach: *The methodology of descriptive research and study was employed in the present research. A focus group interview was leveraged as the method of data collection in May 2024. A total of 15 respondents from Latvia, Italy, and Spain participated in the interview. Categorisation as a classification method in a descriptive study was used for data analysis.*

Main Findings: *The data analysis demonstrated that Italy and Spain utilised chess as an educational tool in a non-classical way, while Latvia continued to keep chess as an educational tool in a conventional manner.*

Originality: *The originality of the paper is shown by three categories of use of chess as an educational tool for disadvantaged groups. The categories were identified as target group, level of initiative, and classical/non-classical use of chess as an educational tool.*

Implications: *The researcher community could invest more efforts into analyses of use of chess for social inclusion and employment of disadvantaged groups due to the chess game's unique capabilities.*

Keywords: *categorisation, chess game, classification, disadvantaged groups, employment, prison inmates, social inclusion.*

Received: 9 September 2024 **Revised:** 26 September 2024 **Accepted:** 28 October 2024
Published: 16 December 2024

Introduction

Sustainable development implies active involvement of all society members in social and economic life (Ahrens et al., 2023). Ensuring the active participation of disadvantaged members of society in social and economic life requires specific educational efforts from the community. Disadvantaged groups conventionally have a low level of education (Farquharson et al., 2022) despite education remaining a key factor in social integration and employment of all the society members in general and disadvantaged groups particularly.

Another important factor that is often experienced by many disadvantaged groups is their mobility limitation. It can be due to some physical disabilities, vision impairment (Siu, 2010), or, for example, a prison sentence.

An analysis of the limitations disadvantaged groups might have led to the selection of chess as an educational tool (Jankovic & Novak, 2019) for strengthening disadvantaged groups' social inclusion and employment. Chess is a convenient model to be used for disadvantaged groups' social inclusion and employment, as chess helps in studying individual thinking patterns (Dvoryatkina & Simonovskaya, 2021). Also, the relation between strength of play and patterns involving problem solving exist (Ferreira & Palhares, 2008). Chess helps to improve decision making, analysing the situation (Senthil & Ravindran, 2023) and resource management. By understanding the psychology (problem solving, pattern recognition, decision making, etc) of players and opponents, the steps in the game as well as social inclusion and employment can be determined (Dvoryatkina & Simonovskaya, 2021).

The scientific relevance of this research is reflected in the increased understanding of use of chess as an educational tool for strengthening disadvantaged groups' social inclusion and employment.

The research question is put forward: can chess be used as an educational tool for strengthening disadvantaged groups' social inclusion and employment?

The aim of this research is to describe and analyse best practices in use of chess as an educational tool for enhancing disadvantaged groups' social inclusion and employment in selected European countries.

The tasks of this research:

1. To analyse scientific literature on chess as an educational tool for social inclusion and employment of disadvantaged groups.
2. To establish links between sustainable development, social inclusion, social stability, well-being, welfare, and employment.
3. To carry out an empirical study to describe best practices in use of chess as an educational tool for enhancing disadvantaged groups' social inclusion and employment in selected European countries.
4. To draw conclusions.

Classification as a method of descriptive research was utilised in this research. A qualitative study will be implemented. The originality of the paper is shown by a classification of the use of chess as an educational tool for enhancing disadvantaged groups' social inclusion and employment. The method of data collection was a focus group interview. The data were collected in May 2024. The findings of this research disclose the classification of use of chess as an educational tool for enhancing disadvantaged groups' social inclusion and employment in selected European countries. The novel nature of this research is shown by the classification of use of chess as an educational tool in selected European countries.

Research results and discussion

Theoretical Analysis

Sustainable development is rooted in social inclusion (Cano-Hila, 2022) for all social groups including disadvantaged groups. It should be noted that disadvantaged groups include groups of migrants, ethnic minorities, people with disabilities, isolated people, lonely elderly people, children, people from remote areas, people who face economic, social and/or cultural barriers, etc. (Ahrens et al., 2024).

Social inclusion means such a society in which all people feel valued, their differences are respected, and their basic needs are met so they can live in dignity (Robo, 2014). Social inclusion implies that no one should be left behind (United Nations, 2016). Social inclusion lays the paved path to social stability. And social stability is closely linked to employment. Employment supports peoples' well-being and welfare (Ahrens et al., 2024).

Social inclusion as well as employment of disadvantaged groups, on the one hand, and their well-being and welfare, on the other hand, impact each other. Social inclusion and employment improve well-being and welfare of disadvantaged groups. Conversely, the worsening of well-being and welfare of disadvantaged groups decreases their opportunities for social integration and employment.

Figure 1 illustrates links between sustainable development, social

inclusion, social stability, well-being, welfare, and employment.

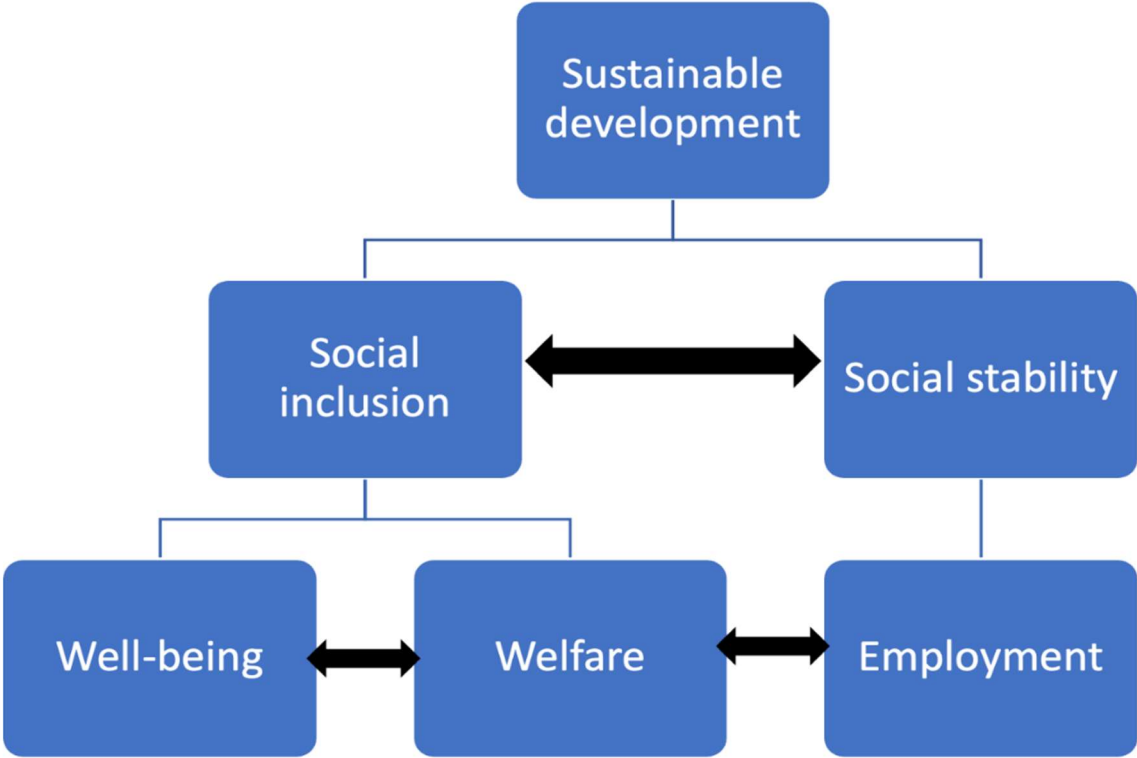


Fig.1 Links between sustainable development, social inclusion, social stability, well-being, welfare, and employment (authors’ construction)

These relationships between social inclusion and employment of disadvantaged groups, on the one hand, and their well-being and welfare, on the other hand, need a specific attention, more time, and extra efforts from the community.

Personal well-being is related to education (White, 2012). Education impacts personal success or, in other words, well-being in its conventional understanding (White, 2012). Higher levels of education and, consequently, qualifications are strongly associated with better prospects in the labour market (Farquharson et al., 2022). It means that more and higher education leads to better well-being and welfare. Therefore, education is considered as an opportunity for strengthening disadvantaged groups’ social inclusion and employment.

In education, a variety of tools can be used for improving disadvantaged groups’ social inclusion and employment. Chess as an education tool was selected as the chess game enhances the inclusiveness of disadvantaged groups, as regarded by chess federations, social workers, youth trainers, and others (Ahrens et al., 2024). Inter-connections between social inclusion, well-being, education, and chess are demonstrated in Figure2.

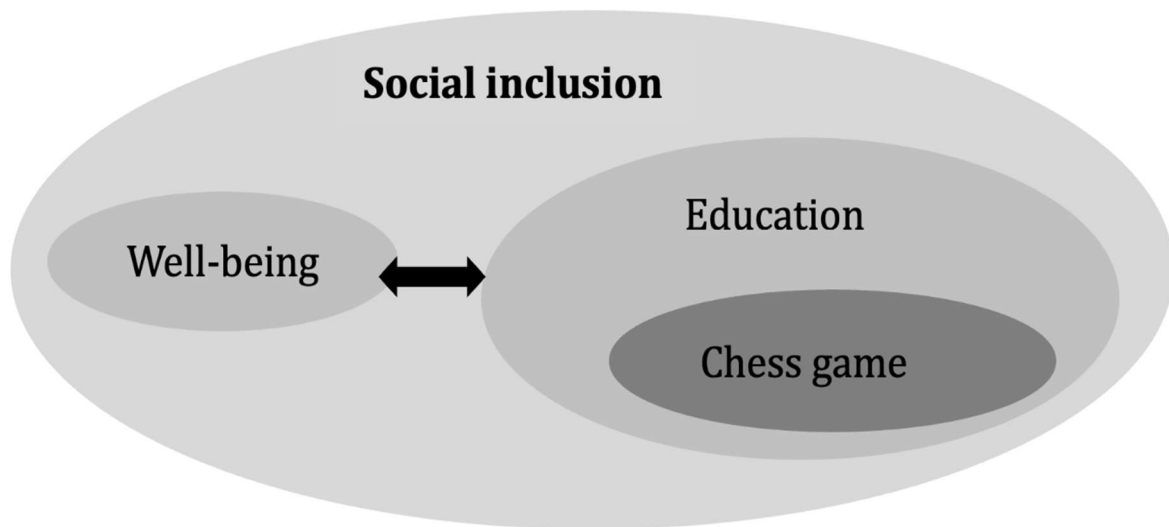


Fig.1 Inter-connections between social inclusion, well-being, education, and the chess game (authors' construction)

Chess as an education tool obtains unique capabilities for personal development and upbringing (Romanova et al., 2018). Chess gamers benefit from learning mathematics, logics, problem solving, resource management (Ahrens et al., 2024).

Thus, the chess game is expected to increase the educational level of a member of a disadvantaged group. A higher educational level is supposed to enrich personal well-being. Enriched personal well-being is assumed to strengthen the person's social inclusion.

It should be noted that the theoretical interconnections between the chess game and social inclusion have been emphasized: a chess play may impact the improvement of the individual's metacognition, thereby increasing this individual's inclusiveness (Ahrens et al., 2024).

Methodology of the Study

The research question that enabled the present research was formulated as follows: What kind of best practices in use of chess as an educational tool enhances disadvantaged groups' social inclusion and employment in selected European countries?

The purpose of the empirical study was to collect, analyse and classify best practices in use of chess as an educational tool to enhance disadvantaged groups' social inclusion and employment in selected European countries.

The empirical study was descriptive, as the study intended to describe best practices. Features of best practice are to be identified via classification. Classification is used to create categories that are internally homogeneous and externally heterogeneous (Krippendorff, 2004; Patton, 2002) in all kinds

of environmental interaction (Leinen, 2020). Categorisation is helpful for decision making (Seger & Peterson, 2013), prediction, and inference (Leinen, 2020).

The methodological process of this descriptive study was organised in three phases (Ahrens et al., 2019):

1. Phase 1 – Data Collection,
2. Phase 2 – Data pre-processing and processing, and
3. Phase 3 – Data analysis and interpretation.

The empirical study was implemented in June 2024. The method of data collection was a focus group interview. A focus group interview is useful for examining the existence of knowledge as well as the construction of opinion on this knowledge in a cultural context (Kitzinger, 1995). The selection of respondents for taking part in the focus group interview was based on three criteria (Zaščerinska et al., 2015):

- respondent's knowledge of a given topic,
- respondent's cultural difference and education's diversity (occupation, training, etc), and
- participant's hierarchy in the group.

Greater heterogeneity of the group's respondents implies fewer respondents in this group (Okoli & Pawlovski, 2004).

The focus group interview was based on the question to be answered by the respondents: What best practices in use of chess as an educational tool enhances disadvantaged groups' social inclusion and employment in your country?

The data analysis was based on content analysis and interpretation. The combination of both - content analysis and interpretation – facilitated an interpretive content analysis. Interpretive content analysis allows for linking the categories, namely programmes and methods in this research, in the coding process and in the analysis of results (Drisko & Maschi, 2024). Therefore, data reliability was ensured. It should be pointed out that reliable data refer to data that can be a trusted basis for analysis and decision-making (Talend, 2024). A content analysis and interpretation were carried out by the researchers who had been engaged in the interview organisation and implementation (Ahrens et al., 2018).

The sample was composed of 15 respondents. Nine respondents were educational trainers who represented Italy, Latvia and Spain. Six other respondents were chess trainers from the same countries, namely Italy, Latvia and Spain. All the respondents obtained training experience from disadvantaged groups. Eight respondents were female, and seven respondents were male. Table 1 summarizes the characteristics of the sample respondents.

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

Characteristics	Females	Males	Total
Number of respondents	8	7	15
Number of respondents with training experience from disadvantaged groups	8	7	15

Interview results, findings and discussion

The data were collected on 27-28 May 2024. The data were collected during the transnational ICARUS project meeting in Perugia, Italy. The task was to share best experience in using chess as an educational tool when working with a disadvantaged group.

Two educational trainers from Latvia presented chess training programmes available in Latvia for prisoners as shown in Table 2:

Table 2 Chess training programme in Latvia (compiled by the authors)

Nr.	Programme title	Programme aim	Link
1.	Chess in the Prison Programme in Latvia	It promotes positive use of leisure time for inmates, improving their behaviour, helping to reduce violence and developing communication skills.	https://x.com/FIDE_chess/status/1799369975087484940; https://www.fide.com/news/1811?fbclid=IwY2xjawFE9Z1leHRuA2FlbQIxMQABHYgET0z4OoWm5PDV4X0KJJRwfUrI dt-KJUdy liCnAFfoGG1LaZqLPWUw aem uCY006BtWv7VpxweN9AMWA
2.	Chess for the Freedom Programme	It helps people who have made mistakes in the past serve their sentences to be prepared for their new lives and to make sure they feel responsible for each move they make	https://x.com/FIDE_chess/status/1799369975087484940; https://www.fide.com/docs/regulations/Social%20Commission%20Chess%20for%20Freedom.pdf
3.	Chess in the Prison Programme supported by the European Chess Union	It aims to use chess as a cognitive rehabilitation tool for prison in-mates along with those currently and formerly incarcerated.	https://www.europechess.org/with-chess-to-freedom-project-chess-in-prison/

Two chess trainers from Italy shared their experience in leveraging chess as an educational for working with people with mental problems, as revealed in Table 3.

Table 3 Chess training for people with mental problems in Italy
(compiled by the authors)

Nr.	Method	Tasks
1.	Pattern recognition	To describe patterns in the format of -a tree -a map
2.	Skimming	To use skimming for the analysis of -the whole chess board, and -chess pieces
3.	Macro and micro vision	To make a decision on further actions, taking responsibility for the use of choices and their consequences, via the analysis of pros and cons of -the whole chess board, and -chess pieces
4.	Resource management	To use chess pieces in an effective manner while sacrificing the chess pieces, converting a pawn into a queen and knight, a short- and long-term perspective on game outcomes as well as empathy

Two chess trainers from Spain revealed their methods in utilising chess as an educational for working with autists and people with cognitive problems, as revealed in Table 4.

Table 4 Chess training for autists and people with cognitive problems in Spain (compiled by the authors)

Nr.	Method	Tasks
1.	Mnemonic techniques	-To give people's names to chess pieces -To put chess pieces in a random way, to ask for the pieces' names -To re-install the pieces, and ask for the pieces' names again -To add extra pieces, and start from the beginning -To discuss chess pieces' colour, shape, and place on the chess board
2.	Pawn race	To keep as many pawns as possible in a chess game
3.	Chess as a metaphor	To describe imprisonment status (transfer, punishment, free, etc.) using chess pieces

For categorisation, the country of the method, a target group, and the level of initiative (Siu, 2010) were chosen. Table 5 gives an overview of the analysis of experience in using chess as an educational tool for disadvantaged groups presented by the focus group respondents.

Table 5 Categorisation of the methods (compiled by the authors)

Nr.	Method	Country	Target group	Level of initiative
1.	Chess in the Prison Programme in Latvia	Latvia	prisoners	Government
2.	Chess for the Freedom Programme	Latvia	prisoners	Organisation
3.	Chess in the Prison programme supported by the European Chess Union	Latvia	prisoners	European
4.	Pattern recognition	Italy	people with mental problems	Trainer
5.	Skimming	Italy	people with mental problems	Trainer
6.	Macro and micro vision	Italy	people with mental problems	Trainer
7.	Resource management	Italy	people with mental problems	Trainer
8.	Mnemonic techniques	Spain	autists and people with cognitive problems	Trainer
9.	Pawn race	Spain	autists and people with cognitive problems	Trainer
10.	Chess as a metaphor	Spain	autists and people with cognitive problems	Trainer

Table 6 presents the countries' profiles for the use of chess as an educational tool in their work with disadvantaged groups.

Table 6 Country profile in use of chess as an educational tool (compiled by the authors)

Nr.	Category	Latvia	Italy	Spain
1.	Target group	Prisoners	People with mental problems	Autists and people with cognitive problems
2.	Level of initiative	Organisation	Trainer	Trainer
3.	Classic/non-classic use	Classic	Non-classic	Non-classic

The finding was that Italy and Spain used chess as an educational tool for different groups of disadvantaged people, while in Latvia chess was utilised for one disadvantaged group, namely, prisoners. However, Latvia's respondents pointed out that many prisoners in general and particularly in Latvia had mental and cognitive problems. Another finding was that Italy and Spain used chess in a non-classic way for disadvantaged groups, while Latvia kept the classic way or, in other words, playing chess and using chess as an educational tool. An interesting finding was that in Italy and Spain, the use of chess as an educational tool for disadvantaged groups was initiated by trainers, while in Latvia – by organisations including governmental institutions. It can be explained that, in Latvia, any training in prison is institutionalised. In comparison, the respondents from Italy and Spain provided trainings to other groups of disadvantaged trainees as well.

Conclusions and suggestions

The literature analysis established two conceptual links. The first link connects as well as provides the hierarchy between sustainable development, social inclusion, social stability, well-being, welfare, and employment. The second link shows the inter-connections between social inclusion, well-being, education, and chess. Following the logical chain of these theoretical links, chess is defined as an educational tool for social inclusion and employment of disadvantaged groups.

These two conceptual links are innovative scientific elements of this research.

The empirical study's results arrived at three categories of use of chess as an educational tool for disadvantaged groups. The categories were identified as a target group, the level of initiative, and the classical/non-classical use of chess as an educational tool. The data analysis demonstrated that Italy and Spain utilised chess as an educational tool in a non-classical

way, while Latvia continued to keep chess as an educational tool in a conventional manner.

These three categories (target group, level of initiative, and classical/non-classical use of chess game) enhanced the scientific relevance of this research by increasing the understanding of use of chess as an educational tool for strengthening disadvantaged groups' social inclusion and employment.

The present research and study have some limitations. The theoretical analysis was limited by the number of existing publications on the topics available via google search. The empirical analysis was limited by the engagement of only few respondents from three European countries. The focus group interview might include limitations in depth of insights and the risk of biased responses.

Future research should involve more respondents from more countries in empirical studies. Comparative studies on this topic are of great research interest, too.

Acknowledgement

The presented work has been carried out within the Project "Including Chess as a Re-education Up-Skilling Tool" (ICARUS), KA220-ADU - Cooperation partnerships in adult education, Project Number 2023-1-IT02-KA220-ADU-000152409.

We are thankful to the respondents who took part in the focus group interview, and those who have contributed to this thematic issue, for their time and effort.

References

1. Ahrens, A., Gruenwald, N., Zašcerinska, J., & Melnikova, J. (2019). A Novel Design of the Pre-Processing Stage of Data Mining for Educational Purposes. *Proceedings of the 9th BRCEBE & 12th ICEBE, Sibiu, România, 16 - 19 October 2019*, 368-376.
2. Ahrens, A., Purvinis, O., Zašcerinska, J., Micevičienė, D., & Tautkus, A. (2018). *Burstiness Management for Smart, Sustainable and Inclusive Growth: Emerging Research and Opportunities*. IGI Global. DOI: 10.4018/978-1-5225-5442-4
3. Ahrens, A., Zascierinska, J., Bikova, A., Aleksejeva, L., Zascierinskis, M., Gukovica, O., & Abjalkiene, I. (2024). Chess Play as a Means of Improving Inclusiveness of Disadvantaged Groups. *Education. Innovation. Diversity*, 1(8), 134 - 142.
4. Ahrens, A., Zascierinska, J., Zascierinskis, M., & Bikova, A. (2023). Gender Discrimination in Youth Employment: A Case Study in Germany. *Journal of Regional Economic and Social Development*, 15, 7-16.
5. Cano-Hila, Ana Belén. (2022). Understanding Social Inclusion in Contemporary Society: Challenges, Reflections, Limitations, and Proposals. *Social Inclusion*, 10(2), 1-5.

6. Drisko, James W., & Tina Maschi. (2024). Interpretive Content Analysis, Content Analysis, Pocket Guides to Social Work Research Methods (New York, 2015; online edn, Oxford Academic, 19 Nov. 2015).
7. Dvoryatkina, S., & Simonovskaya, G.A. (2021). Using Chess for Identifying and Correcting “Problem Areas” in the School Math Course. *TEM Journal*, 10(1), 451-461. ISSN 2217-8309, DOI: 10.18421/TEM101-57, February 2021.
8. Farquharson, C., McNally, S. & Tahir, I. (2022). Education inequalities. IFS Deaton Review of Inequalities.
9. Ferreira, D., & Palhares, P. (2008). Chess and problem solving involving patterns. *The Mathematics Enthusiast*, 5(2), Article 8. <https://doi.org/10.54870/1551-3440.1105>
10. Jankovic, A., & Novak, I. (2019). Chess as a Powerful Educational Tool for Successful People, In: Tipurić, Darko Hruška, Domagoj (Ed.): *7th International OFEL Conference on Governance, Management and Entrepreneurship: Embracing Diversity in Organisations. April 5th -6th, 2019, Dubrovnik, Croatia, Governance Research and Development Centre (CIRU)*, Zagreb, 425-441.
11. Kitzinger, J. (1995). Education and debate Qualitative Research: Introducing focus groups. *BMJ* 1995; 311:299-302 (29 July).
12. Krippendorff, K. (2004). *Content analysis: an introduction to its methodology*. Sage Publications Inc., Thousand Oaks, California.
13. Leinen, P. (2020). *The importance of categories*. <https://www.linkedin.com/pulse/importance-categories-patrick-leinen>
14. Okoli, C., & Pawlovski, S. (2004). The Delphi Method as a Research Tool: an example, design considerations and applications. *Information and Management*, 42(1), 15-29.
15. Patton, M.Q. (2002). *Qualitative, research & evaluation methods*. Sage publications Inc., Thousand Oaks, California.
16. Robo, M. (2014). Social inclusion and inclusive education. *Academicus International Scientific Journal*, 10(2):181-191
17. Romanova, I., Vasylieva, M., & Podberezskyi, M. (2018). Chess therapy as a new trend in training of future social pedagogues. *Journal of Physical Education & Sport*, 18, 1820. DOI: 10.7752/jpes.2018.s4266
18. Seger, CA, & Peterson, EJ. (2013). Categorization = decision making + generalization. *Neurosci Biobehav Rev*. 2013 Aug;37(7):1187-200. DOI: [10.1016/j.neubiorev.2013.03.015](https://doi.org/10.1016/j.neubiorev.2013.03.015)
19. Senthil, B. Arul, & Ravindran, D. (2023). Relationship Between Chess and Management – An Overview. *Journal Formation of Competencies of Gifted Individuals in the System of Extracurricular and Higher Education*, 1 (2023). <https://doi.org/10.18372/2786-823.1.17464>
20. Siu, K.W.M. (2010). *Enhancing social inclusion: Universal chess design for blind people*. https://www.researchgate.net/publication/289782918_Enhancing_social_inclusion_Universal_chess_design_for_blind_people
21. Talend. (2024). *What is data reliability? Definition and assessment guide*. A Qlik Company.
22. United Nations. (2016). *Leaving No One behind: The Imperative of Inclusive Development. Report on the World Social Situation 2016*. <https://www.un.org/esa/socdev/rwss/2016/full-report.pdf>.

23. White, J. (2012). Education and Well-being. In Susan David, Ilona Boniwell, and Amanda Conley Ayers (Eds.), *The Oxford Handbook of Happiness, Section 6: Positive Education Chapter 41: Education and well-being*. Publisher: Oxford University Press.
24. Zaščerinska, J., Aļeksejeva, A., Aļeksejeva, L., Gloņina, O., Zaščerinskis, M., & Andreeva, N. (2015). Formal Adult Education in Latvia: Focus Group Interview. In O. Clipa & G. Cramariuc (eds.), *Educatia in societatea contemporana. Aplicatii* (287-294). Iasi, Romania: Editura LUMEN.

STAKEHOLDER CONCERNS AND MANAGEMENT PRINCIPLES IN PROJECT MANAGEMENT

Liene Amantova-Salmane

Mg.soc.sc., lecturer, Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: Liene.Amantova-Salmane@rta.lv

Abstract.

Purpose and aim of the study: the aim of the paper is to develop principles that project managers should consider when managing the concerns of stakeholders. To achieve this aim, the following tasks have been set: to examine the concept of stakeholder concerns and determine the actions to be taken before implementing stakeholder concern management principles.

Design/Methodology/Approach: the monographic and descriptive methods, the logical construction method, the graphical method.

Main Findings: the paper examines the concept of stakeholder concerns and highlights the key management principles: responding to weak signals, a joint decision-making process, and information transparency. Based on the research findings, focusing on these solutions can significantly reduce stakeholder concerns. By decreasing the level of these concerns, managing the stakeholder becomes easier, leading to project success. Collaboration with stakeholders is essential for the successful implementation of any project.

Originality: the paper proposes the circumstances in which the concept of stakeholder concerns should be used and develops previously unpublished principles for managing stakeholder concerns in project management.

Implications: based on the research findings and applying the author's proposed principles, stakeholder concerns can be significantly reduced, minimizing these concerns facilitates the management of stakeholders and increases the likelihood of project success. The author's recommendations are relevant for practical project managers and researchers.

Keywords: stakeholder concerns management, stakeholder engagement, stakeholder theory.

Received: 5 November 2024 **Revised:** 20 November 2024 **Accepted:** 29 November 2024
Published: 16 December 2024

Introduction

Researchers like Cleland (1986), Burgoyne (1999), Freeman (2002), and Dervitsiotis (2003) highlight that stakeholder management is a vital feature of a project manager's responsibilities, as project success relies on numerous individuals, including those not directly under the manager's control. Stakeholder management means defining the project individuals and institutions involved or interested in the project, facilitating proactive management to mitigate stakeholder activities that could negatively influence the project, and supporting the project team in leveraging stakeholder maintenance for project goals (Cleland, 1986; Karlsten, 2008).

<https://doi.org/10.17770/jresd2024vol16.8294>

This is an open access article under the Creative Commons Attribution 4.0 International License

TAX GAP AND AN ASSESSMENT OF FACTORS AFFECTING IT IN LATVIA

Lucija Burmeistere¹, Anita Puzule²

¹ Bc. oec., Rezekne Academy of Technologies, Rezekne, Latvia, e-mail: lucija.b@inbox.lv

² Mg.oec., lecturer, researcher, Rezekne Academy of Technologies, Rezekne, Latvia, e-mail: anita.puzule@rta.lv

Abstract.

Purpose and aim of the study: *The purpose of the study is to analyse the theoretical aspects of the tax gap and to investigate its extent in Latvia, emphasizing the main factors affecting the tax gap concerning the shadow economy index.*

Design / Methodology / Approach: *The research employed the following methods: descriptive and graphic, statistical analysis, the comparison method, logical construction, and correlation analysis.*

Main Findings: *The results of the study showed that there was a relationship between the tax gap and the shadow economy because as the undeclared or unpaid income to the state budget (the element forming the tax gap) increases, the indicator of the shadow economy index increases. Of the factors affecting the tax gap, the quality of regulation, government efficiency, tax revenue, and gross domestic product per capita have a greater impact on it. It is important to improve tax administration procedures by promoting cooperation with taxpayers to reduce the tax gap.*

Originality: *The research has carried out a scientific discussion regarding components of the tax gap, calculation methods influencing factors, and performed a mutual analysis of Latvian tax gap-related indicators to identify the main causes.*

Implications: *Due to the tax gap, the budget does not receive revenues that could be directed to other sectors of the economy and creates competition distortions between honest and dishonest taxpayers, so it is important to study the factors influencing it and look for ways to reduce it.*

Keywords: *complete/partial non-disclosure of tax income, macro approach, micro approach, shadow economy, tax gap, tax revenue.*

Received: 10 November 2024 **Revised:** 19 November 2024 **Accepted:** 26 November 2024

Published: 16 December 2024

Introduction

The tax gap is an indirect economic activity that is difficult to observe or measure and has not been fully explored. The State Revenue Service (SRS) and the state administration have taken measures and preventive actions aimed at reducing the tax gap; therefore, in general, the amount of the tax gap has been reduced, but it has not been possible to reach the Organization for Economic Cooperation and Development (OECD) indicators of high-income countries. The indicator of "political stability" is especially different, which in 2020 was 73.1 percentile in OECD high-income countries, but in Latvian it reached only 60.9 percentile (Baklouti & Boujelbene, 2020). This

<https://doi.org/10.17770/jresd2024vol16.8324>

This is an open access article under the Creative Commons Attribution 4.0 International License

fact is the reason for the tax gap and the size of the shadow economy because the institutional quality of Latvia is at a low level. Despite the fact, that taxpayers remain more satisfied with the actions and measures taken by the SRS, trust in it is still variable. In Latvia, issues related to the tax gap have been studied by A. Sauka and T. Putnins (2024), M. Juruss et al. (2018), A. Joppe (2009), E. Brekis (2007), but it has not been fully explored.

The authors believe that the problem of the research results from the negative consequences of the tax gap felt by both the state and the economic actors, i.e. unfair competition, inequality between taxpayers, negative impact on the overall economy and development of the country, directly on government revenues, which is the justification for the present study.

The purpose of the study is to analyse the theoretical aspects of the tax gap and to investigate its extent in Latvia, emphasizing the main factors affecting the tax gap concerning the shadow economy index.

To achieve the goal, the following research tasks have been set:

1. To evaluate the essence of the concept of the tax gap, its constituent components, and calculation methods.
2. Identify the main factors influencing the tax gap.
3. To study the interrelationship between the tax gap and the shadow economy index in Latvia.

The novelty of the research: a scientific discussion has been conducted regarding the components of the tax gap, calculation methods, and influencing factors, and a cross-analysis of the Latvian tax gap and related indicators has been performed.

The research employed the following methods: descriptive and graphic, statistical analysis, the comparison method, logical construction, and correlation analysis.

Study period: from 2009 to 2022.

Research results and discussion

1. Theoretical analysis of the tax gap and related concepts

Before exploring the concept of the tax gap and, within the framework of this study, the objectives related to this phenomenon, it is necessary to identify the understanding of the concept of the shadow economy.

In Latvia, various methods are used to identify and evaluate the extent of the shadow economy:

1. The shadow economy index, as a % of gross domestic product (hereinafter - GDP) - according to F. Schneider's methodology.
2. The shadow economy index (% of GDP) based on calculations and data obtained from studies by Latvian researchers A. Sauka and T. Putnins.
3. Assessment of the tax gap (% of potential revenues) – the DG TAXUD of the

European Commission - specifically a value added tax (VAT) shortfall (Brusbarde, 2023).

The shadow economy has an impact on differences in tax revenues, having the impact on the tax gap as well. If economic transactions are not registered at all, this contributes to the reduction of the amount of tax collected and the creation of a larger tax gap.

The authors collected explanations of the concept of the tax gap, emphasizing the differences and common features (Table 1).

Table 1 Definitions of the tax gap (compiled by the authors)

Author	Definition
B. Russell (2010)	Tax revenue foregone as a result of the "shadow economy" represents a very significant component of the total tax gap (i.e. the difference between actual and potential tax revenues)
M.S. Khwaja & I. Iyer (2016)	The difference between the revenue potential (legal) and the actual revenue collected is common
HM Revenue & Customs (2024)	The difference between the amount of "theoretical tax liability", in theory, be paid if all individuals, businesses, and companies complied with the letter of the law and the amount that is paid
E. Toder (2007)	The gross tax gap is the difference between tax liability in any year and the amount of tax that is paid voluntarily and on time. The net tax gap is the gross tax gap in any tax year, less the current year's tax liability payments that occurred later as a result of voluntary late payments or enforcement actions by the responsible authority.
J. Andreoni et al. (1998)	A popular measure of tax evasion, which reflects the difference between taxes collected and taxes owed to the state budget
H. Elffer et al. (1987)	Deliberate non-compliance resulting in paying less tax than is owed to the government
State Revenue Service (2023)	The ratio of the amount of undeclared and declared but unpaid taxes to the potential tax revenue that would be calculated and collected under the condition that all taxpayers fulfil their tax obligations in full
L. Darzina (2023)	The difference between the taxes collected and the amounts that the government would collect if it lived in an ideal world where all taxpayers were very strict in fulfilling their statutory obligations

The authors want to emphasize that there are different approaches to the definitions of the tax gap. B. Russell (2010) emphasizes the great connection between the emergence of the tax gap with the shadow economy and the manifestation of its consequences because it occurs when taxpayers do not report part of their tax revenues. Similarly, the tax gap is defined by M.S. Khwaja & I. Iyer (2016), but in their study, they use "tax space", where a positive difference between the tax gap and the tax space indicates that the legally imposed tax regimes in a country are significantly higher than what the country's economy could afford. In Latvia, the revenue potential is higher than the actual revenue, thus a tax gap arises.

HM Revenue & Customs (2024) defines potential income as 'notional tax liability' and highlights the main cause of the tax gap - individuals and businesses not complying with national tax laws.

E. Toder (2007) classifies this phenomenon as a gross tax gap and a net tax gap, with these two concepts together depicting the tax gap.

J. Andreoni et al. (1998) emphasize that the tax gap is the figure that the taxpayer "owes to the public budget". H. Elffer et al. (1987) suggest that this tax evasion is deliberate and depends mainly on the behaviour of the taxpayer. The definition of the SRS (2023) also provides for influencing factors, which mainly relate to the taxpayer's financial condition, the complexity of tax legislation and the "circumvention possibility", the organizational structure of the tax authority, ethics, and tax moral norms. The tax gap relates to gaps that are not directly physically observable and that taxpayers do not disclose to the tax authority (Guo-Hawkins, 2023).

R. Murphy (2019) divides the tax gap into three parts, covering all the reasons and purposes for not reporting tax income, which can be considered as components of the tax gap. To determine whether the tax debt of the particular taxpayer is observed, the SRS has tax declarations; the author of the research created a tax gap component scheme according to the object of measurement - the tax declaration (Fig. 1).

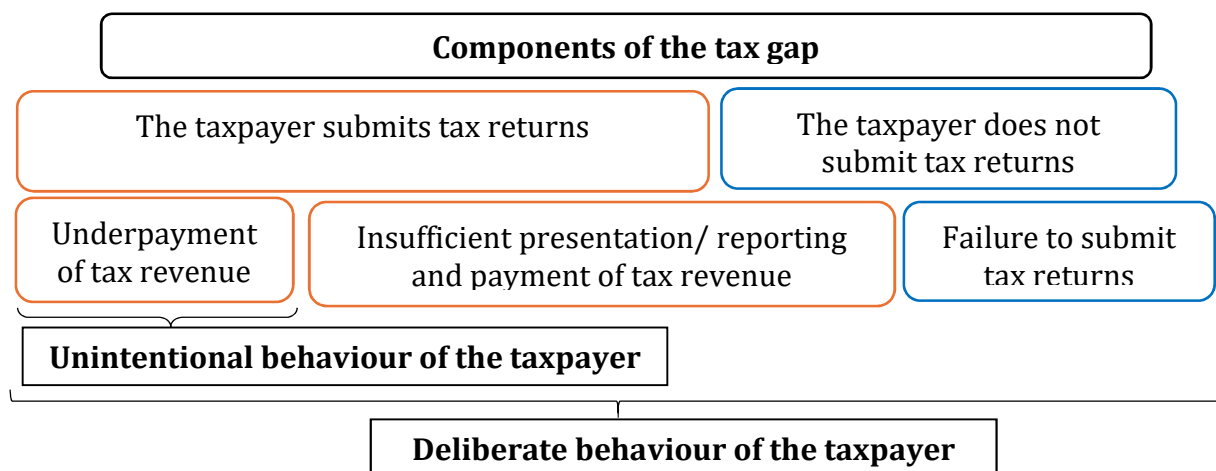


Fig.1 Components of the tax gap (compiled by the authors based on Murphy, 2014)

The authors conclude that these three tax gap-forming components are not mutually exclusive and form the total tax gap/difference.

So, from the definitions in the compilation, the author concludes that the tax gap is, in a sense, the country's strategic indicator, with the help of which the SRS determines the quality of tax administration, as well as how widespread tax evasion is among taxpayers, determining the scale of this gap. This has consequences for the trends and changes in the tax collection rate - how much of the potentially expected the state has received in its budget

from all taxes.

2. Methods of measuring the tax gap

The tax gap is not a precise indicator because, just like the shadow economy, its extent is difficult to determine because one of the main factors is the behaviour and transparency of taxpayers. Its detection methods require a detailed study of information, and these data are also mostly used to draw additional attention to problematic areas and thus support the development of methods to combat the risks of tax evasion.

In Latvia, the total annual tax gap is calculated taking into account the following tax gaps: personal income tax (PIN), social insurance contribution (SIC), enterprise income tax (CIT), property tax, VAT, excise (alcohol/tobacco/ fuel) other (vehicle, gambling, import) tax gaps (Putnins, 2023). However, data on the extent of tax gaps for the following taxes are available on the SRS website:

- VAT;
- mandatory state social insurance contributions and PIT (National Revenue Service, 2022).

The VAT gap is the difference between the potential VAT under the current tax policy and the VAT collected (Barra, 2023). There is a similar explanation and definition for all other types of taxes, only taking the amount of tax income expected from the specific tax and paid by taxpayers.

Both employees and employers might be interested in entering the informal economy by paying less (or not paying at all) SIC to increase disposable income and reduce labour costs accordingly (Dybka et al., 2016). Those European Union (EU) Member States that publish estimates of the tax gap do so in a too-limited way in an attempt to produce a sufficiently comprehensive estimate of the tax gap (Murphy, 2019).

There are no direct calculation methods for calculating the tax gap, so the tax gap is assessed using analytical methods, comparing the number of tax liabilities declared by taxpayers with the number of tax liabilities resulting from macroeconomic indicators (macro analysis method) or specific industry-specific development trends (microanalysis method).

One of two approaches is usually used to estimate the tax gap:

- 1) the macro approach (top-down) uses aggregate data, with two alternatives: the tax gap may be estimated by taking data from the underground economy and applying an effective tax rate; or by using macroeconomic indicators, such as national consumption or gross domestic product;
- 2) the micro approach (bottom-up) uses microeconomic data based on the reported returns by taxpayers and, based on the results from audits

implemented by the tax administration, it is possible to infer the amount that should have been declared by each taxpayer. For this, it is necessary to have the results of the enforcement efforts stratified by tax brackets (Durán-Cabré et al., 2019).

The top-down approach often, which is used for indirect domestic taxes, uses aggregate data to estimate the tax base. This base is then used to calculate a theoretical value of tax that should be paid and collected, by applying an effective tax rate. The actual amount of tax paid and collected is then subtracted from the theoretical value to estimate the tax gap. The bottom-up approach, which is often used for direct taxes, uses administrative tax data to estimate a tax gap. In general, non-compliance is measured using a statistically representative sample of taxpayers that have been audited, which is then extrapolated to the entire taxpayer population to produce a tax gap estimate. This estimate of non-compliance is often based on data from audits or surveys (Canada Revenue Agency, 2020).

It can be concluded that both methods are similar, the only difference is in the initial stage, as data are collected on the potential tax income of a given type of tax in the state budget.

The author's methods of determining the tax gap were more transparently summarized in the table, separating direct and indirect methods (Table 2).

Table 2 Indirect and direct methods in tax gap measurement (compiled by the authors based on Joppe, 2008; Raczkowski, 2015)

Group	Method	Description
Indirect methods	Disposable income method	Disbursements from the bank account and savings in the household sector are compared with the income reported on the tax return
	GDP method	Estimated GDP using the expenditure method is compared with estimated GDP using the revenue method
	Unexplained differences in financial accounts	Savings, which are calculated from income and consumption, are compared with reports from financial institutions. Funds deposited abroad can be identified using this method.
	VAT non-compliance	The theoretically calculated VAT is compared with the VAT tax returns
	Monetary methods	Calculation of "surplus" cash
Direct methods	Surveys, interviews	Taxpayer surveys (mail and interviews)
	Audits	Randomized audits designed for systematic appropriateness of results analysis.

It can be concluded that to achieve reliable results, it is necessary to

combine several methods that will help the tax administration to address the reduction of the tax gap. For example, M. Juruss et al. (2018) conducted a study on the gap in the excise tax on cigarettes, using a top-down methodology and choosing certain stages of research. The research method used in Latvia for the analysis of the labour tax gap includes the analysis of each workplace. If it is visible that there are significant deviations from the norm in the workplace, then the amount of undeclared income can also be perceived (Darzina, 2023).

A small tax gap is even healthy for a country, as too much positive tax space indicates that the country is not fully utilizing its revenue potential to its full economic capacity. Likewise, weak tax administration leads to reduced productivity. On the other hand, if a country taxes its economy well above its inherent capacity, it creates a greater incentive to avoid paying taxes because, in fact, the economy imposes more taxes on people than they can afford (Khwaja & Iyer, 2016).

According to the authors, the purpose of combating the SRS tax gap is to reduce the economic inequality between those who follow the law and those who do not. Therefore, it can be argued that the tax gap is and remains an unsolved problem of tax administration, where great attention should be paid to reducing the main contributing factors.

3. Factors affecting the tax gap

To be able to reduce the tax gap, it is essential to identify the contributing factors. They can be divided into two groups: economically based factors and understanding and knowledge factors. Economically based factors include the desire to save on unpaid tax revenue in the budget, and the ability to easily get involved in creating a tax gap - all that is needed is the taxpayer's own will and skill, as well as low risk if you act economically and wisely. Awareness and knowledge factors include a lack of guilt, ignorance about the use of tax revenues paid to the national budget, and low trust in the country (Hassan & Schneider, 2016). On the other hand, M. Kiani et al. (2015) divide them further into monetary, regulatory, institutional, socio-ethical, and economic factors.

Monetary factors include tax evasion due to their volume, regulatory factors include avoiding the burden of legislation and regulatory regulation, while institutional factors include corruption, low quality of political institutions and the weak rule of law, mistrust of government, and effective use of public budgets (Hassan & Schneider, 2016). They are further divided into socio-ethical factors, which include bribery, increasing self-employment, and actions that depend on the way of thinking of the society, as well as economic factors, which are the unemployment rate in the country,

recession, national debt, and other economic indicators. Among the monetary reasons, the most important reason for the increase in the tax gap indicator is the increase in the tax revenue, as well as the related high bureaucracy and the inefficiency of the legal framework (Kiani et al., 2015; Bayar et al., 2020).

The Allingham-Sandmo model predicts that if the total income of taxpayers increases, then taxpayers automatically have a greater tendency to avoid taxes (Brekis, 2007). However, this is not a uniform decision because, according to the authors, it depends on the taxpayers' mindset. D. Nerudova & M. Dobranschi (2019) note that the most important drivers of the tax gap arise from the shadow economy. The authors have already pointed out the close connection and dependence between the shadow economy and the tax gap.

It is important to assess the influence of the quality of state institutions on the size and development of the tax gap, which is linked to the factor category "quality of regulation". The complexity of tax legislation can help to achieve tax policy goals, but it also imposes accounting, planning, calculation, and recordkeeping requirements on taxpayers and can lead to errors and underpayments (US Government Accountability Office, 2023). The authors recognize that intense and overly strict tax regulation and the complexity of tax legislation create limited freedom in the business environment, as well as bureaucracy, as a result of which the desire to create a tax gap is increasing.

To reduce the level of the tax gap in Latvia, it is necessary to focus mainly on factors contributing to its reduction. Understanding how and why taxpayers do not comply is important to help maintain the integrity of the tax system and protect the government's revenue base (Canada Revenue Agency, 2023). The authors believe that the more effective the government's support for entrepreneurs will be, the more favourable the relationship between the members of the business environment and the government will be, and the more the taxpayers will be deterred from getting involved in creating a tax gap.

4. Comparative analysis of the tax gap and the shadow economy in Latvia

Although the tax gap has existed for a long time, its measurements and available statistical data are relatively limited, so the authors of the paper considered it necessary to conduct a comparative analysis of the tax gap and the shadow economy (Table 3).

Table 3 shows that the indicators of the shadow economy index decreased more rapidly only in 2023 than in 2022, by 3.6 percentage points. Although tax gaps in 2022, compared with 2020, showed a tendency to decrease (PIN gap by 0.6 percentage points, SIC gap by 0.3 percentage points,

VAT gap by 5.0 percentage points), the authors would still like to note that the connection between these phenomena exists because the shadow economy is made up of many different components, and one of the components is the non-disclosure of tax income; therefore, if there is a connection, it is worth observing the influence of the factors causing the tax gap in the continuation of the research.

Table 3 SIC, PIN, VAT, and the shadow economy index in Latvia in 2020-2022 (compiled by the authors based on SRS, 2023; European Commission, 2023; Putnins & Sauka, 2024)

Pointer	2020	2021	2022	2023
Shadow economy index, % of GDP	25.5	26.6	26.5	22.9
VSAOI gap, %	17.8	18.0	17.5	...
IIN gap, %	20.0	20.0	19.4	...
VAT gap, %	9.0	7.3	4.0(forecast)	...

The authors examined four influencing factors (quality of regulation, government efficiency, GDP per capita, and tax burden), which, according to the correlation calculations, have had a greater impact on the changes in the size of the shadow economy in Latvia and which have influenced the changes in the size of the tax gap. The regulatory quality indicator indicates the government's ability to formulate and implement sound policies and regulations that enable and promote the development of the private sector (Apaza, 2009). "Regulation quality" is viewed concerning taxpayers' satisfaction - with the government's tax policy, with the quality of business legislation, and with government support for entrepreneurs (Fig. 2).

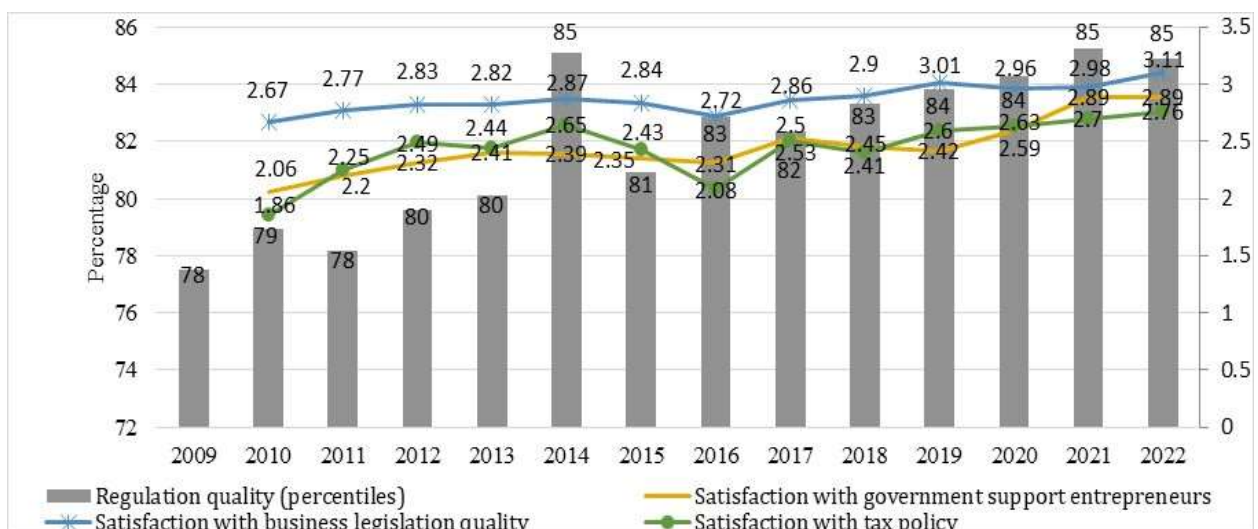


Fig. 2. Factors influencing the quality of regulation in Latvia in 2009- 2022(compiled by the authors based on Putnins & Sauka, 2023; World Bank, 2023)

The quality of regulation has a growing trend, as fairer, more transparent and fairly applied tax regulations and other indicators of regulatory factors, as well as the initiative shown by the state and support for business participants affect changes in the size of the shadow economy and the tax gap. The taxpayer rating system introduced in 2024 can improve the situation, as it allows taxpayers to become familiar with the risks that arise in connection with tax issues.

The next influencing factor to be analysed is government efficiency - corruption control and political stability, as well as their impact on the index of the shadow economy, which has an impact on the tax gap (Fig. 3).

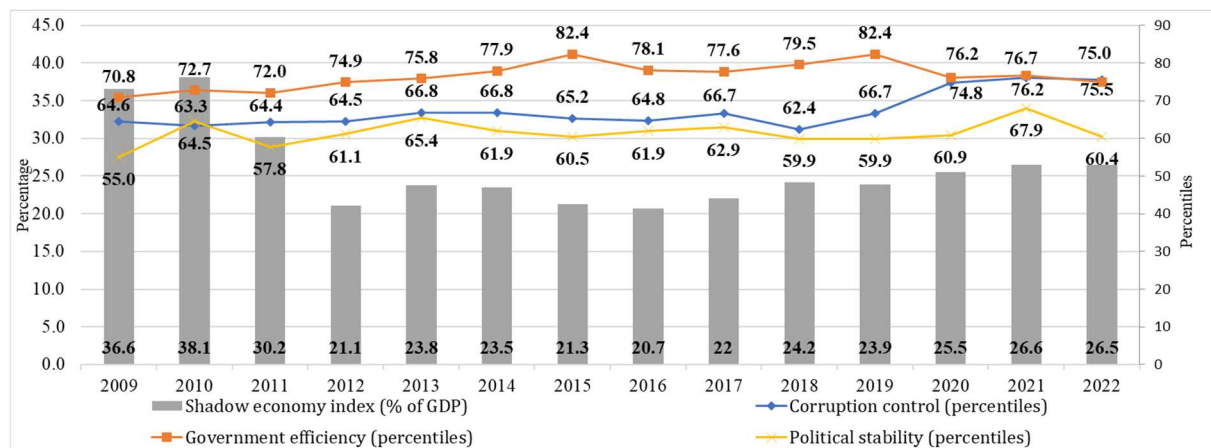


Fig. 3 Government efficiency, corruption control, political stability, and the shadow economy index in Latvia in 2009-2022 (compiled by the authors based on Putnins & Sauka, 2023; World Bank, 2023)

The government efficiency indicator is visible when this indicator increases, causing a decrease in the shadow economy index, and vice versa, as observed in 2012, 2014, 2015, 2017, and 2020. The indicator of political stability has been the most fluctuating one, for example, in 2018 compared with 2017 when political stability decreased by 3 percentage points, the shadow economy index increased by 2.2 percentage points. The change in the corruption control index has been relatively steady until 2018, but in 2021, the value of this indicator increased sharply to 76.2 percentiles, which was a positive trend. The authors concluded that the 3 aggregated governance indicators affected changes in the size of the shadow economy index and thus the tax gap, but this effect may vary depending on the type of indicator and was not as pronounced over the entire period.

However, the influence of institutional factors is important for reducing the size of the tax gap, so the authors compared the data obtained in the study by A. Sauka & T. Putnins and the customer satisfaction study conducted by the SRS (Table 4).

Table 4 Satisfaction with the operation of the SRS and trust in the SRS in Latvia for 2020-2022 (compiled by the authors based on Putnins & Sauka, 2023; SRS, 2023)

Ways	A. Saukas & T. Putnins study				SRS study					
					2020		2021		2022	
	2010	2020	2021	2022	%	balls	%	balls	%	balls
Satisfaction with the activity of the SRS	3.21	3.41	3.56	3.60	65.8	3.29	66.9	3.35	67.1	3.36
Confidence in the SRS	x	x	x	x	39.3	1.97	51.0	2.55	41.7	2.09

In general, satisfaction with the SRS has increased by 0.39 points from 2010 to 2022 when the size of the tax gap also decreased. Public trust in the SRS was fluctuating and in 2022 compared with 2021, it decreased by 0.46 points. As a positive factor for the increase in satisfaction, we can mention the SRS' consultation and communication remotely, developing technological skills and their application for process development, which was mostly facilitated by the limitations caused by Covid 19.

Next, the tax revenue is evaluated, which is considered an important factor affecting changes in the size of the tax gap (Fig. 4).

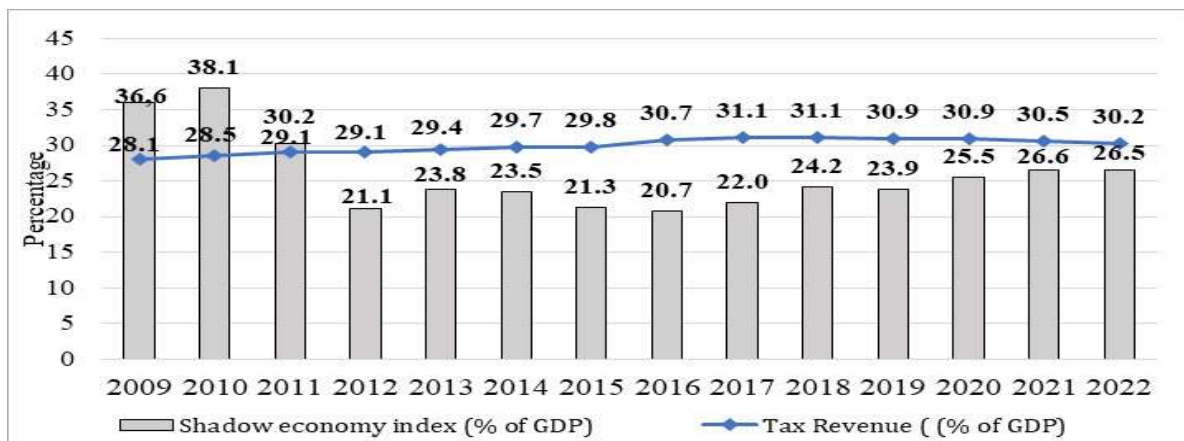


Fig.4 Tax revenue and shadow economy index in Latvia 2009 - 2022. (compiled by the authors based on Putnins & Sauka, 2023; OECD, 2023)

However, the aggregated indicators did not show that the tax revenue had a significant impact on the tax gap. Rather, we should refer again to the socio-ethical factors, taxpayers' opinions, character traits, and tax morals, because it can be concluded that taxpayers will never be satisfied with the tax revenue and there will always be a section of taxpayers who will want to not report their incomes and avoid paying taxes fully or partially.

The size of GDP and GDP per capita are also factors affecting the tax gap (Fig. 5).

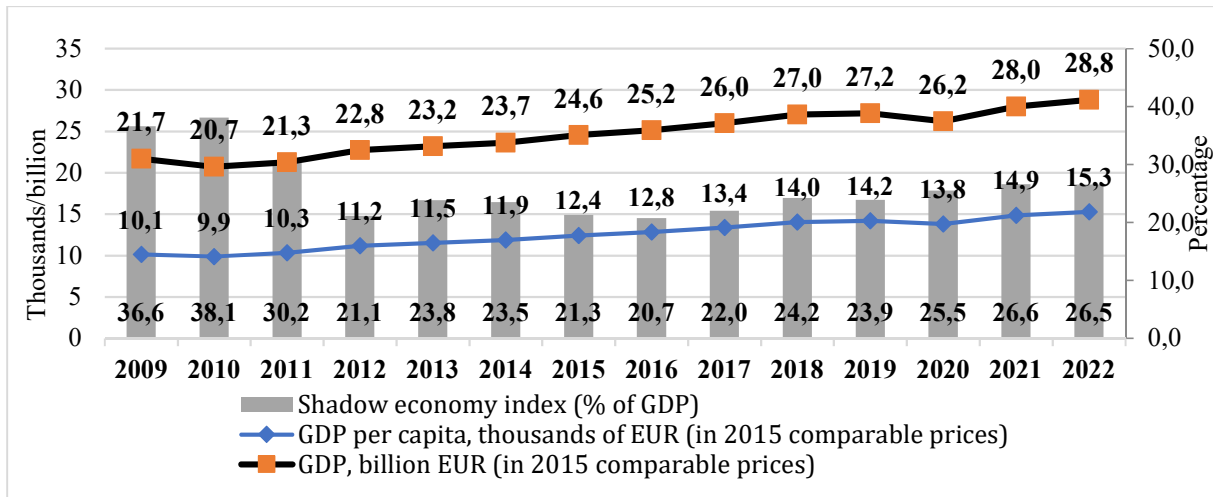


Fig. 5. GDP, GDP per capita, the shadow economy index in Latvia in 2009-2022 (compiled by the authors based on Putnins & Sauka, 2023; Central Statistical Board, 2023)

Fig. 5 shows that the GDP and the GDP per capita increased steadily every year, except in 2020, increasing by 8.1 percentage points in the studied period, while the shadow economy index fluctuated. As prosperity increases, business participants are less interested in engaging in shadow economy activities to obtain additional funds and improve their current position, thus the tax gap also decreases. Baklouti and Boujelbene (2020) note that this relationship is bidirectional, meaning that changes in the shadow economy can also lead to changes in economic growth.

The authors concluded that the Covid-19 pandemic had and still hurts the country's economy, as the country's economic indicators worsened as a whole, the economic factors affecting the tax gap also hurt the increase in the size of the tax gap. For the reduction of the share of factors affecting the tax gap, the authors note the attention of the responsible authorities of the state not only to the economic factors of the state but also to the opinion of taxpayers, developing a friendlier, more suitable, and viable environment for the business environment.

Conclusions and suggestions

1. The tax gap is an indirect economic activity that is difficult to observe or measure, and the phenomenon is not yet fully explored and understood. The shadow economy interacts with the tax gap and is a consequence of the shadow economy.
2. No matter which of the methods the SRS chooses, it is still impossible to accurately determine the extent of the tax gap; therefore, to achieve reliable results, it is necessary to combine several methods that will help the tax administration to solve the reduction of the tax gap.

3. The factors affecting the tax gap are not mutually exclusive, so it would be more correct to examine the impact of these factors on the shadow economy and thus on the tax gap combined.
4. The quality of regulation has a growing trend, as fairer, more transparent and fairly applied tax regulations, as well as the initiative shown by the state and support for business participants affect changes in the size of the shadow economy and the tax gap.
5. The effect of government efficiency is seen when it increases, leading to a decrease in the shadow economy index. Satisfaction with the SRS increased by 0.39 points from 2010 to 2022 when the size of the tax gap also decreased.
6. A higher tax revenue leads to less after-tax income, which is one of the factors in the shadow economy that contributes to avoiding paying taxes and increasing the size of the tax gap. The influence of socio-ethical factors also appears here.
7. As prosperity increases, business participants are less interested in engaging in shadow economy activities to obtain additional funds and improve their current position, thus the tax gap also decreases.
8. The Ministry of Finance, the SRS, and other state institutions should pay more attention to the provision of government support to entrepreneurs, tax regulation, and regulatory factors, creating an efficient and favourable business environment and reducing the tax revenue and administrative revenue.
9. The SRS should work on changes in administrative procedures to strengthen the capacity of the internal and external organizational activities of the tax administration for more effective tax collection, which will allow more effective recognition of the tax gap, as well as modelling of the expected scenario plan.
10. To encourage taxpayers to be honest, the Ministry of Finance, the SRS, and other state institutions should develop a stricter control system for the implementation of business, as well as ensure that the expected penalty is higher than the tax rate, which will facilitate the avoidance of shadow economy activities.

References

1. Andreoni, J, Erard, B, & Feinstein, J. (1998). Tax compliance. *Journal of Economic Literature*, 36(2), 818–860.
2. Apaza, C.R. (2009). Measuring Governance and Corruption Through the Worldwide Governance Indicators: Critiques, Responses, and Ongoing Scholarly Discussion. *Political Science and Politics*, 42(1), 139–143. <https://doi.org/10.1017/S1049096509090106>

3. Bayar, Y., Remeikiene, R., Androniceanu, A., Gaspareniene, L., & Jucevicius, R. (2020). The Shadow Economy, Human Development and Foreign Direct Investment Inflows. *Journal of Competitiveness*, 12(1), 5-21. <https://doi.org/10.7441/joc.2020.01.01>
4. Baklouti, N., & Boujelbene, Y. (2020). A Simultaneous Equation Model of Economic Growth and Shadow Economy: Is There a Difference Between the Developed and Developing Countries? *Economic Change and Restructuring*, 53(1), 151-170. DOI:10.1007/s10644-018-9235-8
5. Barra, P.A., Hutton, E., & Prokofyeva, P. (2023). *Corporate Income Tax Gap Estimation by using Bottom-Up Techniques in Selected Countries: Revenue Administration Gap Analysis Program*. International Monetary Fund.
6. Brēķis, E. (2007). *Latvijas ēnu ekonomikas modelēšana: Nodokļu politikas aspektā* [Promocijas darbs]. <https://ej.uz/jkgr>
7. Brusbārde, B. (2023). Nodokļu politika un tās iespējas. <https://www.slideshare.net/LatvijasBanka/nodoku-politika-un-ts-iespjas>
8. Canada Revenue Agency. (2020). *Tax Gap: A Brief Overview*. <https://ej.uz/gcrs>
9. Centrālā statistika pārvalde. (2023). *Iekšzemes kopprodukts pavisam, uz vienu iedzīvotāju un uz vienu nodarbināto*. https://data.stat.gov.lv/pxweb/lv/OSP_PUB/START_VEK_IK_IKP/IKP010/
10. Dārziņa, L. (2023). Darbaspēka nodokļu plaša mazinās, bet aplokšņu algu tradīcija nemainās. *LV portāls*. <https://ej.uz/n8zj>
11. Dybka, P., Karska, M., Kowalczyk, M., Olesiński, B., Opala, P., Rozkrut, B., Torój, A., Bona, B., Pociask, M., & Skrzypek, A. (2016). *Reducing the Shadow Economy through Electronic Payments*. https://assets.ey.com/content/dam/ey-sites/ey-com/en_pl/topics/eat/pdf
12. Durán-Cabré, J.M., Esteller Moré, A., Mas-Montserrat, M., & Salvadori, L. (2019). The Tax Gap as a Public Management Instrument: Application to Wealth Taxes. *Applied Economic Analysis*, 27(81), 207-225. <https://doi.org/10.1108/AEA-09-2019-0028>
13. Elffers, H., Weigel, R.H., & Helsing, D.J. (1987). The Consequences of Different Strategies for Measuring Tax Evasion Behavior. *Journal of Economic Psychology*, 8(3), 311-337. [https://doi.org/10.1016/0167-4870\(87\)90026-2](https://doi.org/10.1016/0167-4870(87)90026-2)
14. European Commission. (2023). *VAT gap in the EU*. https://taxation-customs.ec.europa.eu/taxation/vat/fight-against-vat-fraud/vat-gap_en#report-2023
15. Guo-Hawkins, E. (2023). *Addressing the Tax Gap*. <https://ej.uz/jar2>
16. Hassan, M., & Schneider, F. (2016). Size and Development of the Shadow Economies of 157 Countries Worldwide: Updated and New Measures from 1999 to 2013. *Journal of Global Economics*, 4(3), 1-14. DOI: 10.4172/2375-4389.1000218
17. HM Revenue & Customs (2024). *Official Statistics. Tax gaps: Background*. <https://www.gov.uk/government/statistics/measuring-tax-gaps/tax-gaps-main-findings>
18. Joppe, A. (2008). *Nodokļu administrēšanas pilnveidošana*. [Promocijas darbs]. <https://ej.uz/41o5>
19. Jurušs, M., Šmite-Roķe, B., Gasūne, L. (2018). Excise Duty Gap on Cigarettes. *Engineering Economics*, 29 (4), 419-423. <https://doi.org/10.5755/j01.ee.29.4.20335>
20. Khwaja, M.S., & Iyer, I. (2016). Revenue Potential, Tax Space, and Tax Gap: A Comparative Analysis. *World Bank Policy Research Working Paper No. 6868*.
21. Kiani, M., Ahmed, A. & Zaman, K. (2015). Combining Qualitative and Quantitative Approaches for Measuring Underground Economy of Pakistan. *Quality & Quantity*, 49, 295-317. <https://doi.org/10.1007/s11135-013-9987-1>

22. Murphy, R. (2014). *The Tax Gap. Tax Evasion in 2014—and what can be done about it.* Public and Commercial Services Union. <http://openaccess.city.ac.uk/16565/>
23. Murphy, R. (2019). *The European Tax Gap. Tax Research UK* <https://www.sipotra.it/wp-content/uploads/2020/02/The-European-Tax-Gap.pdf>
24. Nerudova D., & Dobranschi, M. (2019). Alternative Method to Measure the VAT gap in the EU: Stochastic Tax Frontier Model Approach. *Plos One*, 14(1), e0211317. <https://doi.org/10.1371/journal.pone.0211317>
25. Organisation for Economic Cooperation and Development. (2023). *Tax revenue.* <https://data.oecd.org/tax/tax-revenue.htm>
26. Putniņš, J.T. (2023). Ēnu ekonomikas sekas – zaudēto nodokļu ieņēmumu aplēses. *LV portāls.* <https://lvportals.lv/norises/351778-enu-ekonomikas-sekas-zaudeto-nodoklu-ienemumu-apleses-2023>
27. Putniņš, T., & Sauka, A. (2024). *Ēnu ekonomikas indekss Baltijas valstīs 2009.–2023. gadā.* <https://ej.uz/5nyy>
28. Putniņš, T., & Sauka, A. (2023). *Ēnu ekonomikas indekss Baltijas valstīs 2009.–2022. gadā.* <https://ej.uz/vqj2>
29. Raczkowski, K. (2015). Measuring the Tax Gap in the European Economy. *Journal of Economics and Management*, 21(3), 58-72.
30. Russell, B. (2010). Revenue Administration: Managing the Shadow Economy. *International monetary fund.* <https://www.imf.org/external/pubs/ft/tnm/2010/tnm1014.pdf>
31. Toder, E. (2007). What Is the Tax Gap? *Tax Notes.* <https://www.urban.org/sites/default/files/publication/46126/1001112-What-is-the-Tax-Gap-.PDF>
32. U.S. Government Accountability Office. (2023). *Tax Gap: Modest Reductions in the Gap Could Yield Large Fiscal Benefits.* <https://www.gao.gov/assets/gao-23-106448.pdf>
33. Valsts ieņēmumu dienests (2023). *Valsts ieņēmumu dienesta attīstības stratēģijas 2020.-2022.gadam stratēģisko rezultātīvo rādītāju izpilde 2020.-2022.gadā.* <https://www.vid.gov.lv/lv/media/15573/download?attachment>
34. Valsts ieņēmumu dienests. (2022). *Nodokļu plaisu apmēri.* <https://www.vid.gov.lv/lv/nodoklu-plaisu-apmeri>
35. Valsts ieņēmumu dienests. (2023). *Nedeklarētā darba samaksa (“aploksņu alga”) vispārējā nodokļu režīmā strādājošiem un tās radītā nodokļu plaisa 2022.gadā.* <https://www.vid.gov.lv/en/media/18936/download?attachment>
36. Valsts ieņēmumu dienests. (2023). *Pievienotās vērtības nodokļa (PVN) plaisas novērtējums par 2021. gadu.* <https://www.vid.gov.lv/lv/media/2209/download?attachment>
37. World Bank (2023). *Worldwide Governance Indicators.* <http://info.worldbank.org/governance/wgi/Home/Reports>

Modern methods of managing stakeholders emphasise the technical and methodical approach. Research by KPMG (2017) revealed that 80% of high-performing companies had devoted stakeholder management procedures (Suvvari & Saxena, 2023).

The specific problem of the study is the great importance of stakeholders in the success of a project and the fact that stakeholders usually have various concerns during the preparation and implementation of the project. Therefore, the aim of the paper is to develop principles that project managers should consider managing the concerns of stakeholders. To achieve this aim, the following tasks have been set: to examine the concept of stakeholder concerns and determine the actions to be taken before implementing stakeholder concern management principles. The study includes a novelty: it proposes the circumstances in which the concept of stakeholder concerns should be used and develops previously unpublished principles for managing stakeholder concerns in project management.

Research methods applied: the paper is based on the monographic and descriptive method to explore the available literature on the research problem, the logical construction method to arrive at conclusions and proposals and the proposed practically applicable principles for the management of the concerns of stakeholders, and the graphical method to discover interrelations, characteristics of these principles.

Research period: 2022-2024

Hypothesis: focusing on stakeholder concern management principles can significantly reduce stakeholder concerns.

Research results and discussion

The concept of stakeholder concerns

Project management is a coordinated set of activities assumed to realise positive changes within a limited resource (including time), generally connecting unique tasks with specific technical, financial and time resources. Project success cannot be realised without analysing key stakeholders' concerns. If not doing so much will increase project costs. Project management is a mutual and traditional idea for resolving numerous tasks. These are naturally one-time tasks with defined time, technical and financial objectives. Success in a project cannot be achieved without analysing the corners of key stakeholders. The lack of such analysis can lead to higher project costs.

Every project may encounter stakeholder concerns - situations where stakeholders are worried that certain project management decisions or actions will negatively impact their circumstances or well-being, and they are

prepared to oppose the project, even though this negative impact has not yet manifested. In the management literature, only specific, critical aspects of stakeholder concerns are addressed as management problems. As a result, the development of tools for managing stakeholder concerns in projects has been hindered. This study helps to fill this gap and outlines the key principles of stakeholder concern management in project management. A previous study on stakeholders has shaped numerous definitions in the academic works. For example, Cleland (1986) defines project stakeholders as "individuals and institutions that share a stake or an interest in the project." Stakeholders can be measured as part of a communication system that can affect the project (Eden & Ackermann, 1998). Each stakeholder classically has different interests and priorities, which can generate conflicts or inconsistencies with the project (Harrison & John, 1996; Karlsen, 2008).

If stakeholder management in a project is not sufficiently confirmed, it can lead to surprising difficulties and doubts within the project. For example, a clear and complete meaning of project success and failure may not be recognised (Meredith et al., 2000). As an outcome, the project manager may attempt to realize goals that were never planned by the stakeholders (Karlsen, 2002).

One of the cornerstones of the stakeholder concept is the framework developed by American sociologist Arthur Bentley in 1908 regarding political groups and government employees, which was later applied to commercial organizations as well (Bentley, 1908). The concept of stakeholders was developed by Freeman (1984). He defined stakeholders as "any group or individual who can affect or is affected by the achievement of an organization's objectives" (Freeman, 1984). As illustrated Elias with co-authors, this idea has grown into four key areas: corporate planning, corporate social responsibility, organizational theory, and systems theory (Elias et al., 2002). Through the status of this new viewpoint, stakeholder management theory has been debated using instrumental, descriptive, and normative methodologies (Jones, 1995).

Juliano (1995) describes stakeholders as persons, groups, or teams that are influenced by the project. The PMBOK Guide (1996) describes stakeholders as individuals and organizations that are dynamically involved in the project or whose interests may be positively or negatively affected because of project or successful project achievement (Karlsen, 2002).

The appearance of the stakeholder concept in project management relates to the understanding that a project relying solely on project management interests cannot effectively respond to the possibility and nature of changes in the project situation. The fundamental principle of this concept is that the interests of stakeholders must be considered. Managers who can reflect on the interests of numerous stakeholders are able to

warrant project success and accomplish aims. In contrast, those who cannot do so endanger project successful implementation.

Identifying the stakeholders and their concerns is one of main jobs to be done by the project manager. The stakeholders are measured as more important, as they participate in the decision-making process and directly benefit from the project (Ray & Shastri, 2023).

It should also be noted that an increase in the number of stakeholders can significantly increase project complexity. Each of these parties typically has its own interests and concerns within the project, which can lead to different priorities and conflicts (Karlsen, 2002).

Freeman and his co-authors support the relationship of communities to stakeholder theory (Freeman, 1984) and suggest that meaningful engagement with affected communities can be achieved. Community is a social process of human interaction and can be better understood through its dimensions in relation to a particular approach or theory (Freeman & Menghwar, 2024). Such an approach allows for meaningful engagement of communities - stakeholders - in project implementation and ensures the success of the project.

The author of this research suggests using the term “stakeholder concerns” in circumstances in which stakeholders are fearful that specific project management actions or decisions will negatively affect their environments or well-being and prepared to face the operation of the project, although this negative impact has not happened however established itself. For example, a decision to disregard the principles of socially responsible procurement for a project, to neglect The New European Bauhaus requirements in a building renovation project, to avoid conducting public consultation activities, or a failure to clarify to the public the rapid increase in funding and time consumption required for project implementation, etc.

Concerns prompt stakeholders to take counteractions, meaning they undertake various measures aimed at disrupting the implementation of planned project decisions. For example, public organizations may publicly condemn the actions of the project management, etc. Managing stakeholder concerns becomes particularly important in the context of the project management's relationships with the local community and public organizations. A significant characteristic of stakeholder concerns is their ability to evolve over time. Initially, concerns may be expressed by individual people (such as representatives of the local community or public organizations). However, over time, different stakeholders may begin to express these concerns. Eventually, a point is reached where heightened public attention arises. A timely failure to identify or address the changing expectations of stakeholders can be considered a strategic risk that requires

special attention (Frynas, 2005). Paying attention to the concerns of key stakeholders and responding to them is essential at all stages of project planning and implementation, as it significantly affects the successful progression of the project. An approach that focuses on stakeholder concerns is critically important because it must be responsive to these concerns. A project can only succeed with the support and advocacy of stakeholders.

Reviewing the available research on stakeholder concerns, the following studies stand out. Smith et al. (2017), along with co-authors, developed criteria to identify key stakeholder concerns regarding coastal resource protection and analysed them. The researchers utilized a multi-level decision-making method to analyse policies that protect coastal resources, which could yield greater social, economic, and ecological benefits if potential collaboration and compromise effects are considered. A total of 19 indicators that encompass stakeholder concerns were identified.

Karlsen (2002) reflects in his study a survey of project managers conducted in Norway to gather their opinions on stakeholder management. The study's outcomes specify that more power is needed in developing stakeholder management approaches. Project clients and end-users are considered significantly more important than other stakeholders. Engaging with these parties is crucial for project success, as clients define and fund the project, while end-users determine the usefulness of the project outcomes. Stakeholder concerns create problems and uncertainty in project execution. The respondents pointed to several reasons, such as "decisions were not made," "unexpected specification changes," "the client focused too much on details," "the stakeholders did not understand their role in the project," or "the end-user did not know their needs." These observations highlight the importance of communication with stakeholders during the project. Interestingly, the analysis did not reveal any specific stakeholder that caused more problems, concerns, or uncertainty than others. The study also demonstrates that more effort is required to improve stakeholder management strategies and plan development (Karlsen, 2002). It particularly emphasizes the need for a new vision.

A collective of authors, analysing stakeholder concerns in various construction project phases using social network analysis (Dadpour et al., 2019), identified strategies to reduce stakeholder concerns. The authors suggest placing greater emphasis on addressing environmental issues and mitigating the influence of political factors on the project. Additionally, they indicate that experienced contractors and consultants should be engaged in project implementation based on their expertise, and that accurate project timelines and cost estimates are essential.

Principles of stakeholder concern management

To effectively apply the values of stakeholder concern management, the first step is to identify and examine the stakeholders. By identifying the key stakeholders, we can distinguish their needs, prospects, concerns, and possible forms of resistance. Stakeholder analysis helps map the different groups, determining their influence as well as their preferred communication channels and styles. This aids in tailoring communication and engagement strategies for each group and addressing specific concerns.

The second step is to create a clear and compelling vision and narrative for the project, explaining the expected benefits and opportunities, as well as the role of stakeholders in the project. The narrative should align with the organization's values and contain both rational and emotional aspects. It must be communicated to stakeholders through various information channels tailored to each stakeholder group.

The third step is to engage and empower stakeholders by giving them a sense of control and responsibility. This can be achieved through communication and collaborative action planning. By involving and empowering stakeholders, they can become more motivated to support the project.

The fourth step is to report concerns that may arise from stakeholders. Concerns can be triggered by various factors, such as loss of control or trust, insufficient information or communication, conflicting interests, or values, among others. It is likewise significant to screen and measure the level of stakeholder concerns, familiarising them with communication plans and strategies conferring to the actual condition.

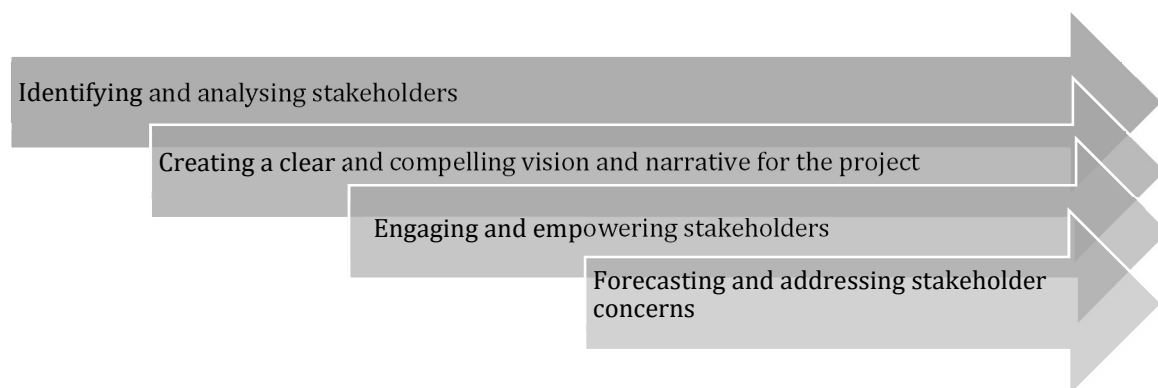


Fig.1 Actions to take before implementing stakeholder concern management principles (compiled by the author)

Stakeholder concerns can develop and increase over time. The motive why only a small group of people (or individual stakeholders) may direct concerns at an assumed instant is that the project's activities have not yet

developed obvious to the wider community. The project management must respond to these concerns before they escalate to a significant level of conflict. To prevent or mitigate stakeholder concerns, the author suggests considering the following principles of concern management.

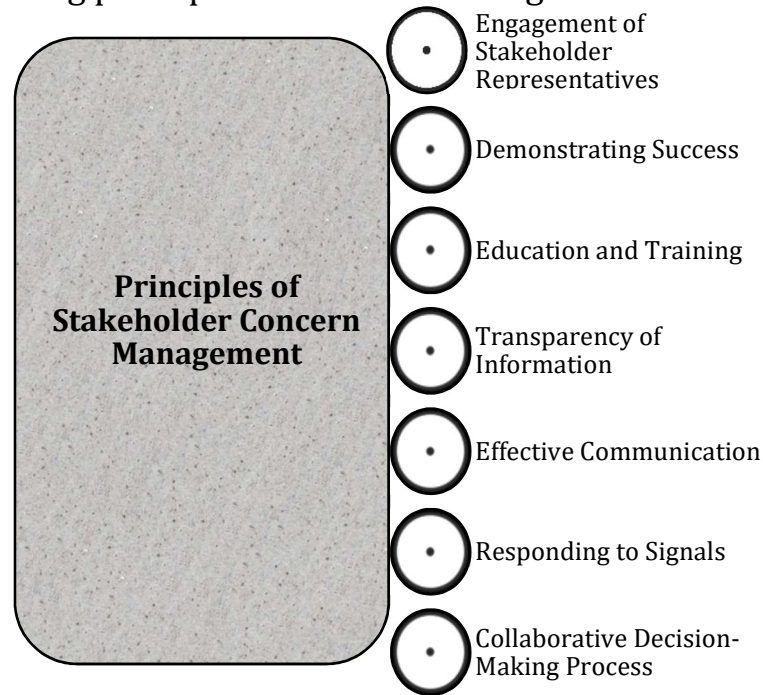


Fig.2 Principles of stakeholder concern management
(compiled by the author)

Engagement of stakeholder representatives

Engagement of stakeholders, based on the significance of identified stakeholders, requires appropriate methods for each stakeholder's involvement, according to Reed (2008). The methods must be chosen and tailored to the context of decision-making, considering the objectives, the type of participants, and the appropriate level of engagement (Reed, 2008). Identified stakeholders can be involved in various ways, as there are different methods for engaging stakeholders. While it is crucial to involve all stakeholders to collectively enhance understanding and identify threats in the sector, Allen et al. (2013) emphasized that the types of engagement should consider the context of the stakeholders, such as environmental and sociocultural factors, considering any complexities and potential obstacles that may affect their level of engagement. Thus, Nordstrom et al. (2016) concluded that appropriate engagement of different stakeholders would create a shared understanding of the anticipated outcomes (Osobajo, et al., 2021).

Demonstrating success

Whenever possible, it is important to share stories that illustrate the expected benefits and improvements that engaged stakeholders can anticipate. While storytelling is often considered less valuable in organizations compared with rigorous forms of knowledge that can be classified, categorized, calculated, and analysed, it is a traditional way to convey knowledge and culture (Sole & Wilson, 2002). Finnish researchers Eskola and Hundal (2021), referencing other authors, specify that before organizational data were created through a non-stop dialogue between tacit and explicit knowledge (Nonaka, 1994). However, moving into the future, we are entering an era of knowledge management where the attention on the change of tacit and explicit knowledge is no longer sufficient. Instead, the main importance is placed on the management of narratives or stories (Snowden, 2002; Eskola & Hundal, 2021).

Education and training

Sometimes, stakeholder concerns arise from a lack of knowledge. Providing education and training can assist these stakeholders. Analysing the training needs of stakeholders is an important step toward the successful implementation of the project. It is crucial to explore the training topics and determine which methodologies will be the most effective. This is essential in the planning process, as the project's success largely depends on whether stakeholders are equipped with the necessary skills, information, and insights to mitigate their concerns.

Transparency of information

The lack of information transparency contributes to the spread of various negative suspicions about the project (Claasen & Roloff, 2012). Therefore, stakeholder concerns will persist even if the project is secure. Information transparency eliminates the opportunity for rumours and doubts about the project to proliferate. By ensuring information transparency, it becomes more challenging for various speculations regarding the potential negative impacts of project management decisions or actions to arise. It is important to share the reasons behind the decisions made, the expected benefits, and the potential challenges. Uncertainty can increase resistance, as stakeholders may fill information gaps with assumptions. An open and clear statement endorses a better consideration of the situation.

Effective communication

Effective communication with stakeholders is a prerequisite for the successful implementation of a project. A project will succeed only if the requirements and needs of the involved parties are met, which can only be understood through effective communication. Each group of stakeholders has its own unique perspectives and expectations, making it essential to tailor the communication strategy to address their specific concerns. Active

listening and empathy are important components of effective communication (PMBOK Guide) (2021). Different groups of stakeholders may prefer various communication channels. By adapting communication channels to stakeholders' preferences, information becomes more accessible and easier to comprehend. Freeman et al. (2010) emphasize that normative stakeholder theory asserts that managers must maintain support from stakeholder groups and that organizations should have a place where stakeholders' interests are maximized in the long term. However, Ihlen (2012) notes that communication can be both a process and a result (verbal or written).

It is significant that it is impossible not to connect with stakeholders. Silence can also be observed as a form of communication. Communication with stakeholders has an ethical possibility, as it is necessary to guarantee their participation. In principle, the stakeholder concept indicates that relationships with one's social environment are important, and these relationships have both ethical and strategic implications (Ihlen, 2012).

Responding to signals

It is essential to respond to and influence the concerns of stakeholders that do not have an obvious impact. Stakeholders without direct leverage to affect the project can unite among themselves, thereby accumulating influence against the project. A typical example is the coalition of representatives from local communities or joint actions by multiple public organizations. By working together, stakeholders can significantly impact the course and outcome of project implementation. The project management must address concerns before they reach a noticeable conflict stage. Stakeholders without direct leverage may seek assistance from other advocates, such as public organizations, interest groups like the media, and/or other influential organizations like political parties and financial institutions. Establishing a continuous feedback exchange system with stakeholders can regularly gather information about their concerns and timely obtain data on emerging issues. Such regular engagement and communication demonstrate a commitment to responding to stakeholder concerns.

Collaborative decision-making process

A primary cause of stakeholder concerns is that they have not voluntarily agreed to the negative impact of decisions or actions. In a situation of concern, stakeholders clearly express this reason: "No one listened to us." According to the stakeholder classification proposed by M. Clarkson (Clarkson, 1994), concerned stakeholders consider themselves to be forced risk bearers who must cope with the decisions or actions of the organization.

Conclusions and suggestions

Stakeholder management is a critical component of project management, as stakeholder concerns shift throughout a project's lifecycle. Effective stakeholder management involves clearly defining the project for individuals and institutions engaged or interested in the project, recognizing that a project is sensitive to stakeholder actions and decisions. One of the essential steps in stakeholder management is addressing their concerns and planning responses.

The paper examines the concept of stakeholder concerns and highlights the key management principles: responding to weak signals, a joint decision-making process, and information transparency. Based on the research findings, focusing on these solutions can significantly reduce stakeholder concerns. By decreasing the level of these concerns, managing the stakeholder network becomes easier, leading to project success. Collaboration with stakeholders is essential for the successful implementation of any project.

If the project management provides stakeholders - who depend on it or are depended upon - the right to be heard and commits to responding to their concerns, the organization stands to gain. This approach allows the project to strengthen its legitimacy and, through dialogue with stakeholders, confirm or recreate shared values that positively affect the project's reputation.

Collaboration with stakeholders enables them to achieve a level of sustainable development that benefits both the stakeholders and society. Such collaboration, based on stakeholder knowledge, helps to determine appropriate strategic development directions for the project. Effective use of the developed principles allows for an understanding and analysis of their needs, expectations, and opinions; timely identifying potential difficulties and opportunities from the stakeholders' perspective; and pinpointing the most significant issues causing concern among the stakeholders.

The author of this research suggests the circumstances for using the term "stakeholder concerns". This is the theoretical contribution of the paper. The principles developed by the author have practical significance because they are applicable to practical project management.

Considering that it has been proven that the success of a project depends on the involvement of stakeholders in the preparation and implementation of the project (Cleland (1986), Burgoyne (1999), Freeman (2002), Dervitsiotis (2003)), the paper emphasizes that stakeholders may have concerns that have a significant impact on the implementation of the project, and the developed stakeholder concern management principles ensure adequate management of concerns. Thus, the research hypothesis - focusing

on stakeholder concern management principles can significantly reduce stakeholder concerns – has been proven.

Overall, it can be concluded that overcoming stakeholder concerns requires a thoughtful and diverse approach. Actively listening, tailoring communication, offering education and training, implementing, and maintaining a continuous feedback cycle, highlighting success stories, and involving stakeholder representatives can sustain stakeholder support and eliminate or reduce stakeholder concerns.

References

1. Allen, E., Kruger, C., Leung, F. Y., & Stephens, J. C. (2013). Diverse perceptions of stakeholder engagement within an environmental modelling research team. *Journal of Environmental Studies and Sciences*, 3 (3), 343-356. <https://doi.org/10.1007/s13412-013-0136-x>
2. Bentley, A.F. (1908). *The Process of Government*. <https://archive.org/details/in.ernet.dli.2015.216238/page/n23/mode/2up>
3. Claasen, C., & Roloff J. (2012). The Link between Responsibility and Legitimacy: The Case of De Beers in Namibia. *Journal of Business Ethics*, 107 (3), 379-398. <https://doi.org/10.1007/s10551-011-1045-0>
4. Clarkson, M. (1994). A risk based model of stakeholder theory. *Proceedings of the second Toronto conference on stakeholder theory*, 18-19. <https://doi.org/10.4236/oalib.1111382>
5. Cleland, D.I. (1986). Project Stakeholder Management. *Project Management Journal*, 17 (4), 36-44. <https://doi.org/10.1080/10429247.2002.11415180>
6. Dadpour, M., Shakeri, E., & Nazar, A. (2019). Analysis of Stakeholder Concerns at Different Times of Construction Projects Using Social Network Analysis (SNA). *International Journal of Civil Engineering*, 17(4). <https://doi.org/10.1007/s40999-019-00450-1>
7. Eden, C., & Ackermann, F. (1998). Making Strategy, the Journey of Strategic Management, *Sage Publications*. <https://doi.org/10.1016/j.ejor.2006.02.002>
8. Elias, A.A, Cavana, R.Y., & Jackson, L.S. (2002). Stakeholder analysis for R&D project management. *R&D Manag*, 32 (4), 301–310. <https://doi.org/10.1111/1467-9310.00262>
9. Eskola, A., & Hundal, S. (2021). Organizational Storytelling Translated to Successful Business. *Asian Journal of Business and Management*, 9 (2) <https://doi.org/10.24203/ajbm.v9i2.6408>
10. Freeman, R.E. (2010). *Strategic management: a stakeholder approach*. Cambridge University Press.
11. Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & De Colle, S. (2010). *Stakeholder theory: The state of the art*. Cambridge University Press.
12. Freeman, R.E., & Menghwar, P.S. (2024). *The Routledge Handbook on Meaningful Stakeholder Engagement. Stakeholder Theory and Communities*. 43-55. <https://doi.org/10.4324/9781003388227-4>
13. Frynas, J.G. (2005) The False Developmental Promise of Corporate Social Responsibility: Evidence from Multinational Oil Companies. *International Affairs*. 81 (3). 581–598. <https://doi.org/10.1017/CB09780511815768>

14. Harrison, J.S., & John, C.H. (1996). Managing and Partnering with External Stakeholders. *Academy of Management Executive*, 10 (2). 46-60. <https://doi.org/10.5465/AME.1996.9606161554>
15. Ihlen, Ø. (2012). Communicating with stakeholders. *Encyclopaedia of corporate social responsibility*, 393-398. https://doi.org/10.1007/978-3-642-28036-8_597
16. Jones, T.M. (1995). Instrumental stakeholder theory: a synthesis of ethics and economics. *Acad Manag Rev*, 20 (2). 404-437. <https://doi.org/10.2307/258852>
17. Juliano, W J., (1995). External Communication as an Integral. Part of Project Planning, *PM Network*. 18-20. <https://www.pmi.org/learning/library/external-communication-integral-project-planning-5180>
18. Karlsen, J. T. (2008). Forming relationships with stakeholders in engineering projects. *European J of Industrial Engineering*, 2 (1), 35-49. <https://doi.org/10.1504/EJIE.2008.016328>
19. Karlsen, J.T., (2002). Project Stakeholder Management November. *Engineering Management Journal*, 14 (4). <https://doi.org/10.1080/10429247.2002.11415180>
20. Osobajo, O.A., Koliouis, Y., & McLaughlin, H. (2021). Stakeholder engagement: a conceptual framework and initial validation to foster sustainability development in a maritime cluster. *European journal of sustainable development research*, 5(1). <https://doi.org/10.21601/ejosdr/9664>
21. PMBOK Guide (1996). *Project Management Institute, A Guide to the Project Management Body of Knowledge*.
22. PMBOK Guide (2021). *Project Management Institute, A Guide to the Project Management Body of Knowledge*.
23. Reed, M. S. (2008). Stakeholder participation for environmental management: a literature review. *Biological conservation*, 141 (10), 2417-2431. <https://doi.org/10.1016/j.biocon.2008.07.014>
24. Smith. A., Yee, S.H., Russell, M., Awkerman, J., & Fisher, W.S. (2017). Linking ecosystem service supply to stakeholder concerns on both land and sea: an example from Gwa'ncica Bay watershed, *Ecol Indic* 74, 371-383. <https://doi.org/10.1016/j.ecolind.2016.11.036>
25. Sole, D., & Wilson, D. (2002). Storytelling in Organizations: The power and traps of using stories to share knowledge in organizations. [http://www.providersedge.com/docs/km_articles/Storytelling in Organizations.pdf](http://www.providersedge.com/docs/km_articles/Storytelling_in_Organizations.pdf)
26. Suvvari, S.K., & Saxena, V.D. (2023). Stakeholder Management in Projects: Strategies for Effective Communication. *Innovative Research Thoughts*. 9(5):188-201 <https://10.36676/irt.v9.i5.1479>
27. Ray, G., & Shastri, H. (2023). Identifying stakeholders and their concerns in green building projects - a review. *Madhya Pradesh Journal of Social Sciences*. 28 (2). [https://www.researchgate.net/publication/378527287 IDENTIFYING STAKEHOLDERS AND THEIR CONCERNS IN GREEN BUILDING PROJECTS -A REVIEW](https://www.researchgate.net/publication/378527287_IDENTIFYING_STAKEHOLDERS_AND_THEIR_CONCERNS_IN_GREEN_BUILDING_PROJECTS_-A_REVIEW)

A PRACTICAL EXAMPLE OF THE DIGITAL TWIN IN ACTIVE LEISURE AND ENTERTAINMENT TOURISM: ACTIVITIES WITH HORSES

Kristiana Jurkane¹, Lienite Litavniece², Anda Zvaigzne³

¹PhD student, Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: jurkane.kristiana@gmail.com

²Dr.oec., associated professor, Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: lienite.litavniece@rta.lv

³Dr.oec., associated professor, Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: anda.zvaigzne@rta.lv

Abstract.

Purpose and aim of the study: Based on the need to classify leisure and entertainment tourism services, the research aims to give an example of the practical application of the digital twin in leisure and entertainment tourism – horse riding.

Design / Methodology / Approach: The research employed the monographic and descriptive methods to analyse the definitions of active leisure and entertainment tourism as well as a semi-structured interview with Latgale region farms providing equestrian activities to tourists to identify the compliance of tourism services supplied by each farm with the criteria set by the classification by applying the NewStarT digital twin prototype.

Main Findings: Based on the results of the interview, it was found that out of the 10 farms interviewed, 3 farms scored 100% and that these farms met all seven of the criteria for successful management of the service.

Originality: The research gives insight into the practical application of the digital assistant to assess the compliance of tourism services supplied by a farm with the criteria set by the classification.

Implications: The research results could be used for the implementation of the digital tool to assess the compliance of a leisure tourism service – horse riding –, as well as to develop recommendations for farms whose tourism services supplied are not 100% compliant.

Keywords: active leisure, classification, digital twin, entertainment tourism, horse riding, management.

Received: 21 October 2024 **Revised:** 7 November 2024 **Accepted:** 19 November 2024

Published: 16 December 2024

Introduction

There is insufficient complementarity of tourism products supplied in Latgale region, as other tourism service providers are perceived as competitors rather than cooperation partners. Defining precise and unambiguous tourism categories and managing the tourism industry requires digital tools to make data-driven decisions.

<https://doi.org/10.17770/jresd2024vol16.8283>

This is an open access article under the Creative Commons Attribution 4.0 International License

Complementarity is an important concept in organizational analysis, as it applies an approach to explaining patterns of organizational practices, whether they fit with certain business strategies and why various organizations apply different patterns and strategies. A formal complementarity analysis focuses on interactions between interrelated decisions (Brynjolfsson & Milgrom, 2013).

Building cooperation between businesses is an important factor in persuading tourists to stay longer in a destination of their choice. Businesses should not be perceived as competitors, thereby jointly supplying a range of leisure and entertainment services.

Competitiveness can have several different definitions, depending on whether it refers to individual businesses or groups of businesses. However, the competitiveness of an individual business usually involves its ability to survive in the market and make a profit. Competitiveness refers to the competition between products supplied by various businesses in the same market (Peneder & Rammer, 2018).

Both of these factors need to be defined and developed in order to successfully manage the supply of active leisure services that can appeal not only to local tourists visiting the available tourist attractions but also to foreign ones.

The research problem relates to leisure and entertainment tourism, particularly horse riding, as there is no single classification thereof to successfully manage the supply of this tourism service, which is included in different tourism categories, thereby confusing current and potential tourists. Besides, tourists cannot assess the expected quality of this tourism service.

The research aims to give an example of the practical application of the digital twin in leisure and entertainment tourism – horse riding –, based on the need to classify leisure and entertainment tourism services.

To achieve the aim, the following specific research tasks were set: to review the literature on the definitions of active leisure and entertainment tourism and to use a digital assistant to identify the compliance of horse-riding services in Latgale region by conducting interviews with farms.

The research employed the monographic and descriptive methods to analyse the definitions of active leisure and entertainment tourism as well as a semi-structured interview with Latgale region farms providing equestrian activities to tourists to identify the compliance of tourism services supplied by each farm with the criteria set by the classification by applying the NewStarT digital twin prototype.

Research results and discussion

The tourism industry is one of the largest industries in the world. It emerged to meet the need of individuals to travel and see various places as part of travel, including hospitality (e.g. accommodation, restaurants), transport (e.g. airlines, car rental), travel facilitation and information (e.g. tour operators, tourist information centres), tourist attractions and entertainment (e.g. heritage sites, traditional and cultural events) (Romos, 2023).

The travel and tourism industry contributed 9.1% to global GDP in 2023, an increase of 23.2% from 2022 and only 4.1% below the 2019 level (WTTC, 2024).

Active leisure and the physical and intellectual renewal of individuals is one of the main objectives of tourism. The driving force of tourism involves relieving the tensions of civilization through active leisure, the creation of wealth, the restoration of working capacity and the preservation and improvement of health. This includes a wide range of tourism activities, from exploring remote and exotic places or enjoying a holiday by the sea to taking part in cultural programmes and various forms of entertainment. Entertainment tourism shares many characteristics with wellness tourism, medical tourism and health tourism. Nowadays, spending quality time during a trip is important for sports tourists. The main objectives of entertainment tourism are to actively participate in a leisure activity or to attend a sporting or cultural event as a spectator, e.g. to go to a play at the theatre. Intellectual leisure activities are also part of tourism. Cultural tourism includes visits to castles, manor houses, museums, etc. Gastronomy, such as wine tasting, is also important from this perspective. Tourist leisure mainly involves activities undertaken by the tourists themselves. They can make use of the leisure opportunities offered by the destination's natural or man-made environment (Készült az Új, 2015).

Active tourism involves physical activities in nature and combines sport, culture and adventure into an original tourism product. For more than 150 years, tourists have spent their free time doing activities in unique natural areas (Education and Culture DG Lifelong Learning Programme. 2017).

Active tourism is a kind of leisure and travel, with the tourists themselves doing all or part of the activities required for the trip (Brencis, 2003).

A person becomes an active tourist if the person derives leisure from traveling on his or her own as well as provides accommodation and food him/herself, which ultimately involves more or less physical exertions. Therefore, an indication of active tourism is physical exertions as part of

relaxation (nervous tension relief, mental and physical resting) (Chang & Hong, 2018).

It is important to assess the capacity and functionality of resources for active tourism (Luo & Lam, 2017).

The term leisure experience covers the whole range of motivations, expectations, psychological and embodied states and outcomes experienced by an individual before, during or after the leisure time (Gatti et al., 2022).

Tourists enjoying active leisure activities want to take advantage of the additional services available in the surrounding environment, which are available in many tourist attractions, e.g. a water attraction service is available during a walk along the lake, which gives the tourist the opportunity to enjoy also entertainment tourism experiences at one site.

The authors summarised the definitions of active leisure from various literature sources and concluded that active leisure is an adventure planned by a tourist individually according to his/her own wishes and needs; the tourist also plans the way the active leisure time is spent, thereby resulting in positive emotions and experiences while enjoying the surrounding natural landscape. It is also up to each tourist to decide how to spend their time and what resources to use for the activity. Each tourist can evaluate individually how well the activity has been planned and whether the experience has been enjoyable. Active leisure involves physical activities, yet a tourist does not have to be a professional athlete, and it is up to each tourist to choose how much exertion they do to get positive emotions from the activities.

Entertainment tourism is a kind of tourism that aims to gain an unforgettable experience. Entertainment tourism has become increasingly popular nowadays. It encourages tourists to travel the world for entertainment. Entertainment includes, e.g. concerts, magic shows, dance performances etc. Entertainment activities represent tourism products designed to meet the needs of tourists and to create memorable experiences and positive emotions (Koorts et al., 2022).

Entertainment tourism involves an activity that can stimulate, encourage and create an exciting and magical experience (Vogel, 2014).

The authors concluded that the definitions of entertainment tourism refer to various entertainment activities that provide tourists with new emotions, experiences and positive memories, and one of the reasons why visitors come to enjoy entertainment tourism is to relieve the stress they experience in their daily routine. Entertainment tourism also includes various cultural activities such as concerts, theatre performances, water attractions etc. Any entertainment activity involves adventures with no age limit for a tourist, and

everything depends on the preferences and needs of each tourist. Besides, entertainment tourism plays an important role in the growth of the tourism industry, as tourists often make their choices based on the entertainment activities available in the destination.

The authors analysed in more detail the sub-category Activities with horses. The choice of this sub-category was based on the authors' personal interest in further investigating and analysing the variety of such services supplied by farms in Latgale.

The equestrian tourism literature generally agrees that it originated in France in the 1950s and 1960s. Since then, it has become a well-organised industry of equestrian tourism (Gilbert & Gillett, 2014).

Activities with horses involve the use of equine resources, regardless of the breed: horse rental, horse riding, horseback riding competitions, sporting events, exhibitions and shows, parades, animation games, day or multi-day horse hiking, panoramic and field horse riding and many other activities innovatively designed for groups or individual tourists (Grefe & Pickel-Chevalier, 2015).

There are two main aspects of equestrian tourism: horse riding and horse attractions for various audiences and therefore various success factors. This involves socializing with like-minded people, relaxing and developing riding skills, as well as learning something new about horses, especially the local breed (Tomljenović et al., 2018).

Horses have been involved in tourism for centuries as a means of transport for humans and their luggage and for amusement, yet there is surprisingly little research conducted on horses. Several authors have illustrated the cultural role of horses in places from Australia to Iceland and Morocco and how this heritage has been used, modified and sometimes transformed for tourism purposes. Horseback riding is a popular activity on various trails (Dashper, 2020).

Based on the classification criteria for the sub-category of leisure and entertainment tourism – activities with horses –, summarised in Figure 1, a structured interview was conducted to find out whether the supply of farm services met the classification criteria. The interview covered farms offering horse riding activities to visitors in Latgale region. The interview consisted of 30 questions.

The goal of the interview was to find out how farms classified their services supplied, what visitors could experience when visiting the farm, as well as to identify the demand for farm services and factors in the development of the farm.

Farms offering "activities with horses" were searched on various tourism portals such as Latvia travel, Latgale travel, visitlatgale, horseriding.lv, Rural Traveller, and on municipality websites – sections for tourism.

After aggregating the information available on all the portals about farms offering horse riding activities in Latgale, the research identified 21 farms. Based on the available contact information, the authors contacted the farms by e-mail or by phone, familiarizing them with the research conducted as part of the research project.

Of the 21 farms found on the tourism portals, 10 offered activities with horses and 11 no longer did it, yet their services were referred to as still available. One farm could not be contacted. When searching for farms, the authors faced inaccurate farm names, 3 farms on each website had different names, yet all of the farms still offered activities with horses to visitors.

The interview was conducted with each farm individually, setting the most convenient time and platform to contact via Zoom, Whatsapp or phone. The authors contacted by phone the farms that did not reply to the emails sent and the farms that did not have an email address listed.

The interviews with the farms were conducted between 24/04/2024 and 13/05/2024. The results of the interviews were analysed by the authors using the NewStart digital tool to identify whether the services offered were managed according to the classification criteria set for the category "activities with horses". Figure 1 shows what the NewStart digital tool looked like and what criteria were set for the category "activities with horses". After the interviews with the farms were completed, the authors employed the digital tool to analyse the compliance of each farm's service offered with the criteria. If a farm met a criterion, the answer was marked as "yes", if it did not meet a criterion, the answer was marked "no". The result represents a percentage that allowed us to conclude whether the service met the criteria set for the category.

Active recreation and entertainment >> Activities with horses	
1. Enjoy horse riding, get to know the surrounding natural resources in the process, gain new feelings.	No <input checked="" type="checkbox"/> Yes
2. A fixed price for the time spent on the hike and the number of people participating. Each farm developed individual service offers.	No <input checked="" type="checkbox"/> Yes
3. Evaluate the accommodation offer according to your wishes and needs. (e.g. guesthouses, castles and manors, hotels, campsites, etc.).	No <input checked="" type="checkbox"/> Yes
4. Provision of wholesome food, freely available water, freedom of movement appropriate to the species or walks at least once a day, full rest (for working horses every six hours of work - two hours of rest). The room where the animal is kept meets the size and physiological requirements of the animal. Compliance with aspects related to horse welfare.	No <input checked="" type="checkbox"/> Yes
5. Sleighs, carts, carriages. Appropriate equipment for horse riding (saddles, horse blankets, bridles, etc.)	No <input checked="" type="checkbox"/> Yes
6. Families (for children of different ages); interest groups (e.g. horse lovers, animal lovers, etc.).	No <input checked="" type="checkbox"/> Yes
7. Nature trails. Routes can be short, circular or linear, which are offered individually by each farm.	No <input checked="" type="checkbox"/> Yes

Results
Complete the following

Fig.1 Screenshot from the NewStart digital tool (authors' construction)

Figure 1 shows seven classification criteria for the sub-category "Activities with horses", which indicate the successful management of the service "Activities with horses". The development of a unified set of criteria helps to analyse the services offered by each farm and identify the percentage of compliance with the criteria for the service.

Figure 2 shows a situation where a farm did not meet one of the criteria.

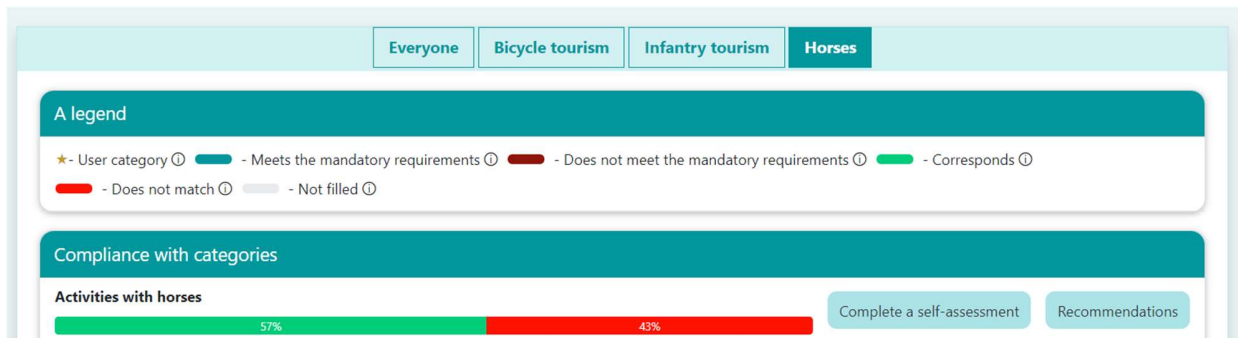


Fig.2 Results for a situation if a criterion was not met by the farm
(authors' construction)

Figure 2 shows a farm whose service offered met only 57% of the classification criteria, while 43% did not meet the criteria for successful management of the service "activities with horses". In the example given, Farm X scored 57 % because there was no possibility for visitors to ride a horse and, during the ride, enjoy the surrounding countryside, as well as there were no hikes offered and no routes for horse riding were designed. There was a possibility to ride a horse or pony on this farm. Of the 10 farms interviewed, four farms scored 57% and three farms scored 71% in terms of criteria met.

Conclusions and suggestions

1. A well-structured and predictable classification system helps businesses to develop and increase the quality and availability of their services. A single classification of "active leisure" and "entertainment tourism" can facilitate and encourage new businesses to supply tourism services in Latgale region.
2. The interview involved 10 farms. After analysing the information obtained by the digital tool NewStart for the sub-category of active leisure and entertainment tourism, only three farms met 100% criteria for activities with horses. The remaining farms did not provide an opportunity to go hiking on specially created routes, which were nature trails, or the routes

were short, circular or linear, while an opportunity to go horseback riding was offered only in a special paddock or farm area. Besides, the farms that scored 57% did not provide an opportunity for riding a horse because there were no established hiking trails and, as a result, the visitors could only enjoy a horse or pony ride and go on a cart, carriage or sledge ride through the farm area.

3. The main reason for not offering horseback riding on the farm was a lack of horses or the farm had old horses and, therefore, new horses needed to be raised and trained.
4. Developing a classification for the successful management of tourism services would help to improve the current services offered on seven farms, as the farms did not achieve 100% compliance with the criteria for activities with horses, according to the digital tool NewStart. The tool indicated what needed to be done to achieve 100% compliance.
5. Horse farms should use the digital twin to successfully manage their services offered. The digital twin can help to structure the range of services supplied and gives an opportunity to improve the services. This would encourage visitors to visit the farm and use the services available.
6. The farms that scored 71% compliance with the criteria for activities with horses need to increase the number of horses for riding. Increasing the number of horses would not only attract visitors who want to learn to ride a horse but would also reach the part of the audience that knows how to ride horses.
7. The farms that scored 57% need not only to provide horse riding in a special paddock but complement their services with hiking opportunities along specially designed routes where visitors can enjoy not only the riding process but also the surrounding natural landscape.

Acknowledgments

This research was funded by the Latvian Council of Science, project "Digital twins for promoting the development of tourism competitiveness and complementarity: the example of Latgale region", project No. lzp-2022/1-0350

References

1. Brynjolfsson, E., & Milgrom P. (2013). *Complementarity in Organizations*. <https://doi.org/10.1515/9781400845354-003>
2. Peneder, M., & Rammer. C. (2018). *Measuring Competitiveness*. https://www.wifo.ac.at/wp-content/uploads/upload-6919/s_2018_competitiveness_60838.pdf

3. Romos, C.M.Q. (2023). *Contemporary Approaches of Digital Marketing and the Role of Machine Intelligence*. <https://www.igi-global.com/chapter/analyses-of-visitors-experiences-in-museums-based-on-e-word-of-mouth-and-tripadvisors-online-reviews/327556>
4. WTTC (2024). *Economic Impact Research*. <https://wttc.org/research/economic-impact>
5. Készült az Új. (2015). *Recreational tourism, the recreation of tourists*. http://www.jgypk.hu/tamop15e/tananyag/html/Rekreacio_I_angol/ii4_recreational_tourism_the_recreation_of_tourists.html
6. Education and Culture DG Lifelong Learning Programme. (2017). *Active Tourism handbook*. <http://www.visitdaugavpils.lv/wp-content/uploads/2017/06/Akt%C4%ABv%C4%81-t%C5%ABrisma-rokasgr%C4%81mata.pdf>
7. Brencis, A. (2003). *Active Tourism*. Turība University, Riga. 223 p.
8. Chang, T. M., & Hong, C. Y. (2018). *Safety first: The effect of recreation safety climate on recreation perception*. 398-410. http://www.ahtmm.com/wp-content/uploads/2018-8th_AHTMM_proceedings_2018_1.pdf
9. Luo, J.M., & Lam. C.F. (2017). *Entertainment Tourism*. 76 p. <https://doi.org/10.4324/9781315162652>
10. Gatti, E.T.J., Brownlee, M.T.J., & Bricker, K.S. (2022). Winter recreationists' perspectives on seasonal differences in the outdoor recreation setting. *Journal of Outdoor Recreation and Tourism*, 37. <https://doi.org/10.1016/j.jort.2021.100366>
11. Koorts, H., Salmon, P.M., Swain, C.T.V. et al. (2022). A systems thinking approach to understanding youth active recreation. *Int J Behav Nutr Phys Act* Vol 19 (53), <https://doi.org/10.1186/s12966-022-01292-2>
12. Vogel, H. L. (2014). *Entertainment industry economics: A guide for financial analysis*. United Kingdom: Cambridge University Press.
13. Gilbert, M. & Gillett, J. (2014). Into the mountains and across the country: emergent forms of equine adventure leisure in Canada. *Society and Leisure*, 37(2), 313-325.
14. Grefe, G., & Pickel-Chevalier, S. (2015). *The equine business: the spectacular growth of a new equine segment market in FC*. Wageningen Academic Publishers: Wageningen, 61-76.
15. Tomljenović, R., Boranić-Živoder, S., & Čorak, S. (2018). Horse riding tourism- definitional conundrum. *International Rural Tourism Congress, Congress Proceedings*. https://www.fthm.uniri.hr/images/kongres/ruralni_turizam/4/znanstveni/Tomljenovic_BoranicZivoder_Corak.pdf
16. Dashper, K. (2020). Holidays with my horse: Human-horse relationships and multispecies tourism experiences. *Tourism Management Perspectives*, 34, 100678. <https://doi.org/10.1016/j.tmp.2020.100678>

ANALYSIS AND DEVELOPMENT POSSIBILITIES OF THE MANAGEMENT FUNCTIONS OF A HUNTING SOCIETY

Konstantins Korklis¹, Iluta Arbidane², Daina Znotina³

¹ Mg.soc.sc., assistant, State Border Guard College, Rezekne, Latvia,
e-mail: konstantins.korklis@rs.gov.lv

² Dr.oec., professor, Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: Iluta.Arbidane@rta.lv

³ Mg.soc.sc., lecturer, Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: Daina.Znotina@rta.lv

Abstract.

Purpose and aim of the study: to perform an analysis of the management functions of hunting societies, identify internal and external factors that influence their performance, and propose ways for improvement.

Design/methodology/Approach: During the study, the activities of the hunting society have been described, the boards of directors of hunting societies have been interviewed, the strengths and weaknesses of the hunting society have been analysed, proposals have been developed for improvement of the activities of the hunting society.

Main Findings: The study examines how the society's leadership can contribute to sustainable resource use and protection. The hunting society must be effective and well-organised to perform its functions successfully.

Originality: The paper analyses the management functions of the hunting society as well as the possibilities to improve its management processes. The work of the hunting society and its management are also capable of influencing public attitudes towards hunting, as well as the use of natural resources.

Implications: The study development process analyses how to build successful collaboration with the rest of society, and how to successfully overcome the challenges facing hunting societies. For example, environmental change, lack of resources or negative public attitudes.

Keywords: hunting society, hunting, leadership functions, society.

Received: 17 November 2024 **Revised:** 28 November 2024 **Accepted:** 3 December 2024

Published: 16 December 2024

Introduction

A hunting society is a voluntary union of persons established in order to achieve the objective specified in the articles of society, which is not profitable (Biedrību un nodibinājumu likums, 2003). Societies usually combine groups of people with the same views and hobbies. When setting up a hunting society, efforts should be made to bring together the common objectives of the members. One of these aims is to organise hunting for members of the hunting society.

Hunting societies in Latvia are critical to ensuring sustainable wildlife management, protecting natural resources, and maintaining ecological balance. These voluntary organizations are entrusted with managing wild game populations, ensuring legal hunting practices, and promoting conservation efforts.

The problem of the study: hunting societies face numerous challenges, including inefficient management structures, financial constraints, territorial conflicts (raiderism), and limited engagement with public institutions.

The aim of this study is to analyse the management functions of hunting societies, identify internal and external factors that influence their performance, and propose ways for improvement.

The novelty of the study. This research provides valuable insights for strengthening the management processes within these organizations and improving their role in environmental sustainability and resource management. By using SWOT analysis and qualitative interviews with key stakeholders, the study seeks to contribute to the development of more effective hunting society structures and policies, ultimately fostering better public understanding and support for sustainable hunting practices.

Over the course of their work, the authors used the following **research methods:** the monographic method, the qualitative study method (interview), SWOT analysis and the environmental profiling method, and the logical analysis method.

Study **hypothesis:** the management functions of hunting societies are organised efficiently, but there are opportunities to improve them.

Research results and discussion

A society is a voluntary union of persons established in order to achieve the objectives set by the society and which is not profitable. Societies may establish natural and legal persons with a specific scope of activity and perform an economic activity (Biedrību un nodibinājumu likums, 2003).

A hunting society is a legal organization that brings hunters together for collective and individual hunting, as well as bringing hunters together to promote sustainable and responsible hunting practices, as well as protect the natural environment and animal populations. These types of societies can offer various advantages to their members, including hunting education, participation in hunting activities, participation in nature conservation projects and participation in legislative processes.

The main course of operation of hunting societies in Latvia is the organisation of individual and collective hunting in accordance with the interests of the hunting society (members), observing the requirements of the laws and regulations of the Republic of Latvia (see Figure 1). The legal

framework of hunting societies is essential in order to ensure the proper functioning of hunting societies and to protect both the members and public interests as a whole, the legislation shall be independently reviewed and improved in order to meet the needs of hunters and the needs of the hunting society.



Fig.1 Laws and regulations of the Republic of Latvia binding to a hunting society (created by authors)

The management of natural resources, especially in organizations dealing with wildlife management and conservation, has been extensively studied in the context of both public and private entities. Successful leadership in these sectors often involves balancing ecological, economic, and social factors (Samant & Sangle, 2016). As a central element in wildlife management, hunting societies must also adopt a balanced approach to leadership, ensuring that hunting activities are sustainable while respecting ecological boundaries and contributing to conservation efforts.

Sustainable leadership in these organizations is directly tied to the development of clear policies, the monitoring of wildlife populations, and the integration of members into decision-making processes (Ehnert et al., 2016). The governance of hunting societies must, therefore, integrate principles of sustainable development, focusing on long-term resource management and fostering cooperation among diverse stakeholders, including hunters, landowners, government agencies, and conservationists (Piwowar-Sulej, 2021). Bagnoli and Megali (2011) highlight that sustainable resource management requires organizations to balance ecological goals with human activity. In hunting societies, this balance is crucial, as their role extends

beyond simply providing recreational opportunities to members; they must also contribute to managing wildlife populations in a way that does not harm ecosystems or local communities.

According to Barton and Størkersen (2008), hunting societies must adhere to principles of sustainable use, ensuring that hunting quotas are scientifically determined and implemented in collaboration with environmental authorities. This is essential not only for preserving wildlife but also for maintaining public support and legal standing. Gossling, Hall, and Weaver (2009) argue that public perception of hunting is shaped by how effectively hunting societies demonstrate their commitment to conservation. The challenge, therefore, is to promote sustainable hunting practices while fostering trust with both the public and regulatory bodies.

The values of the society of hunters lie in their internal culture, which is and will be the reason that ensures the development of the society of hunters. When a society builds on its own internal values, it positions itself as a place of democracy and understanding. In such an environment the members of the society will be always loyal and promote the development of the society. An important moment in the society is the creation of a shared vision that helps members of the hunting society to see common, otherwise ambitious goals and move in their direction. If the members of the hunting society have a common purpose and a correct understanding of their role in society, then it generally promotes the motivation of the society and consolidates the members of the hunting society.

The internal culture of the hunting society must include respect for nature, animals, hunting ethics and hunting traditions. Such guidelines are essential in order to maintain ethical and sustainable hunting practices, which are important not only for the hunting society but also for the society of the Republic of Latvia. The proper internal culture of the hunting society promotes cooperation and trust among members of the hunting society. If members of the hunting society respect and trust each other, it promotes communication and proper decision-making. Building the right dialogue between the board and members is the way to ensure that each Member is free to express their ideas and concerns and participate in solving the hunting society's problems. Such proper dialogue also promotes responsible and respectful behaviour towards other members of the hunting society, as well as towards nature and Latvian society.

A society, as an organisation, is a social system whose nature is different from that of national culture, largely because its members do not normally grow up there. On the contrary, they gain a certain influence in the decision-making process in order to join the organisation and are only included in the organisation's culture on working days and can be abandoned at any time by staff (Hofstede & Hofstede, 2010).

Culture in this context is also a form of personality expression and self-affirmation that is essential in different sciences, including leadership science. The cultural understanding of organisations in the field of governance is closely linked to its activities and development (Dubkēvičs, 2009).

The internal culture of the hunting society and its values play an important role in it. The negative internal culture of the hunting society may create and cause conflicts between the management of the society and their members, endangering the existence and development of the hunting society in the future. The internal culture of the hunting society develops mainly on the basis of the values put forward by its board of directors or founders, so it is necessary to create a consciously positive internal environment.

The authors of the work point out that the internal culture of the hunting society and its values are and will be the decisive moments that will contribute to the sustainable development of the society, ensuring the effective functioning of the hunting society, strengthening its role in nature protection and in Latvian society. But if, however, a negative culture and an unhealthy internal hunting society policy develop within the hunting society, it can lead to discord and tensions between its members and the board. Such situations cause divisions within the organization, which can lead to the dissolution of the hunting society. The internal culture of the hunting society often evolves from situations from which no society is protected and forms unwittingly, accentuating the values of the board or the opinions of its founders, so it is important to be aware and maintain the internal environment and culture.

Table 1 Factors influencing the hunting society (created by authors)

Internal factors influencing the activities of the hunting society	External factors influencing the activities of the hunting society
<ul style="list-style-type: none"> • The management of the hunting society and the structure of its organisation; • Financial stability; • Active involvement of members in the life of the hunting society; • The internal culture and values of the hunting society. 	<ul style="list-style-type: none"> • National laws and regulations; • Changes in public opinion; • The status of the game population at the hunting station and the availability/unavailability of areas; • Financial movements; • International association of hunting societies.

The authors conclude that the activities of the hunting society depend on both internal and external factors (Table 1) that arise during the operation of the hunting society. External factors, although not directly influenced by the hunting society, can nevertheless be predicted by analysing

and predicting their impact on the society. Internal factors, on the other hand, form among the members of the hunting society itself, and it is essential that the board of directors of the hunting society, as the executive and decision-making power of the hunting society, is a deliberate factor.

The role of the board of directors of the hunting society is to ensure the welfare of its members, guarantee transparent and reasoned decision-making processes and promote forthcoming and friendly attitudes within the society. The analysis of the activities of the board and their development possibilities is an essential step in ensuring the successful operation and long-term development of the hunting society. This type of analysis helps to assess the current functioning of the board, identify best practices and identify directions that require improvement and improvement.

In the analysis process of the hunting society, it is important to identify how well the current board is able to achieve the objectives of the hunting society. This includes strategic planning, resource management, operational organisation and effective communication with members of the hunting society.

At the same time, it is necessary to assess whether the executive board has sufficient resources and expertise to manage all responsibilities successfully and to achieve the objectives set. After analysis, it is possible to identify exactly what development opportunities are required for hunting societies. They may relate to the experience of the executive board and the improvement of its competences, organisational structures or the improvement of its work processes.

A regular survey of hunting society members on board work can provide valuable feedback that would help to improve the regularity of board operations. It is also possible to review and improve actions to make decision-making faster and more efficient.

Development opportunities may also include the introduction of technologies or more active cooperation with other hunting societies and state institutions. Such cooperation can help not only to improve the activities of the hunting society but also provide more opportunities to achieve the objectives set. Analysis of the activities and possible improvements of the board of directors of the hunting society is an important process for ensuring the long-term operation of the society.

In order to identify the advantages and disadvantages of the activities of hunting societies, as well as possible development directions, which could be realized in the near future, the authors of the work organised three separate interviews with the chairpersons of the boards of hunting societies, the day-to-day activities of which related to the organisation, management and planning of the activities of hunting societies. The interviews were conducted

between 01/04/2024 and 30/04.2024. The following persons were selected as interviewees:

- 1) Chairman of the Board of the society of hunters and anglers “Piekuns”;
- 2) Member of the Board of directors of the Latgale society of hunters and anglers, as well as Chairman of the Board of directors of the society of hunters “Nautreni”;
- 3) Chairman of the Board of the hunting society “Hunters' Club Murmastiene”.

According to the authors, one of the main positive factors in the hunting society is effective organisation, a favourable working climate and an appropriate management style. Therefore, in subsequent analyses, the authors used the SWOT method to identify the main factors influencing the activities of hunting societies.

Table 2 SWOT analysis results for the hunting societies
(created by authors)

Strengths (Internal environment factors)	Weaknesses (Internal environment factors)
<ul style="list-style-type: none"> • Process for the recording and monitoring of wild game animals. D = 10 • Members of the hunting society with common objectives. D = 10 • Structured management model. D = 10 • Effective organisation of the flow of documents through the “Mednis” mobile application. D = 7 • Contribution to the economic development of the Republic of Latvia by reducing the devastation of forest animals and threats to road traffic. D = 6 • Management of hunting areas within the framework of one hunting society. D = 4 • Cooperation with PES and other societies to achieve the objectives set. D = 2 • Experienced hunters. D = 1 	<ul style="list-style-type: none"> • Hunting is becoming an expensive hobby, requiring significant financial investment. D = 10 • Cooperation in the recording of hunting data and the setting of limitations on the devastation of game. D = 10 • Hunting societies, which hunt the specified hunting area, shall not participate in the distribution of hunting animal limits. D = 10 • Rotation of hunting grounds (raiderism). D = 10 • Infrastructure development is seen as an initiative by hunting societies. D = 9 • Generational shifts in hunting societies are slow, if not visible. D = 7 • The different opinion of the members of the hunting society may lead to division within the society. D = 5

Opportunities (External environment opportunity factors)	Threat (external environment threat factors)
<ul style="list-style-type: none"> • Involvement of hunters in national defence measures. D = 10 • Use of technological development for improvement of the records of game animals. D = 10 • Improvement of the mobile application “Mednis”. D = 10 • Conducting events to promote hunting. D = 5 • Improvement of the infrastructure of hunting societies. D = 3 	<ul style="list-style-type: none"> • Loss of hunting grounds. D = 8 • Poaching. D = 8 • Young people's interest in hunting is decreasing, which poses challenges for the management of hunting areas. D = 4 • Competition from hunting societies can lead to poor relations between them. D = 3

An environment profiling method was used to assess the internal and external environments of hunting societies, by which the significance of each factor was assessed in order to determine which of these are the most relevant:

- factor significance in the industry: 3-large; 2-moderate; 1-small;
- factor impact on the organization: 3-strong; 2-moderate; 1-small;
- factor impact direction: +1 - positive; 0 - neither positive nor negative; -1 - negative.

The severity was calculated according to the following formula (Barney & Hesterly, 2020):

$$D = A * B + C \text{ where;} \tag{1}$$

D – degree of significance of the factor;

A - importance of the factor in the sector;

B - impact of the factor on the organisation;

C - direction of influence of the factor.

The research analysed the most relevant of the factors. After conducting a SWOT analysis, the authors concluded that the hunting societies had two main strengths. Firstly, a correct and correct process for the recording and monitoring of wild game animals by each hunting society on its hunting grounds. As a second strength, one can highlight the common goals of members of hunting societies, which are achieved applying a structured leadership model. Achieving goals is a core task for leadership, and therefore goals and the leadership style are key indicators for hunting societies. Experienced hunters are recognised as the weakest strength because their contribution to the development of hunting societies is limited, and they stick to old hunting traditions that are inconsistent with modern hunting policies and methods.

After an analysis of Table 2, it can be seen that the weaknesses of hunting societies are due to hunting becoming an expensive hobby, requiring significant financial investment. Hunting societies are often not involved in the distribution of game limits, and there are problems with the rotation of hunting grounds (raiderism). The analysis revealed that these weaknesses were mainly due to the challenges of the 21st century, such as financial demands, devastation and deprivation of hunting grounds, which weaken hunting societies from within. This type of approach can lead to irreversible consequences, as animal populations becoming uncontrollable can negatively affect forestry and agriculture, as well as increase the risk of road accidents on roads in Latvia.

In order to remedy this situation, closer cooperation between hunting societies and public authorities monitoring the hunting sector would be necessary, allowing the hunting societies themselves to set the limits for game animals to a greater extent, thus adapting to the specific needs.

Raiding hunting grounds is another major problem caused by unbalanced legislation and insufficient control of it. Hunters, often, move between different hunting precincts, which sometimes make positive changes, allowing undercamped areas to be settled. However, raiderism often also takes the form of illegal acts of taking over hunting rights from other hunting societies, which can lead to conflicts and jeopardise the existence of these hunting societies. This problem requires clearer legislation and clearer rules to protect other hunting societies' rights to specific hunting areas.

The authors conclude that closer and clearer cooperation between the State Forest Service and hunting societies is needed to address issues of granting game limits and prevent opportunities for raiderism. In order to promote long-term hunting practices and reduce conflicts between hunters and landowners, mechanisms should be developed to allow hunting societies to become more actively involved in the distribution of game volumes.

The SWOT analysis showed that external development directions included the use of technological development for improvement in the registration of game animals at hunting stations, improvement and development of the mobile application "Mednis", as well as measures for popularisation of hunting in Latvia. These development directions will allow hunting societies to develop and improve hunting practices, attracting young hunters and facilitating the recording of hunter organisations and game animals.

The threat section says hunting societies face a number of threats that can disrupt their operations. Hunting societies indicated loss of hunting areas and poaching as the primary threat. Competition for resources and territories with other hunting societies leads to hunting societies fighting.

These factors can significantly weaken the sustainability and efficiency of hunting societies. Loss of territory can occur for a variety of reasons, from land owners' wishes to land sales. In order to prevent this situation, hunting societies need to be flexible and adapt to different circumstances, actively working with landowners and forest managers to ensure access to new hunting grounds and preserve hunting grounds.

In order to ensure the existence of hunting societies, a systematic approach to problem solving is necessary, fostering both long-term hunting practices and closer cooperation between the parties involved in hunting.

Conclusions and Suggestions

1. The authors conclude that hunting societies have two main strengths. Firstly, a correct and correct process for the recording and monitoring of wild game animals by each hunting society on its hunting grounds. Secondly, a structured management model and common objectives linked to the management of the chairman of the board of directors of the hunting association, which include effective internal work and division of responsibilities. The analysis of SWOT carried out also points out the weaknesses of the hunting society, one of which is the incorrect distribution of hunting limits for game animals and the second one is the raiderism of hunting grounds.
2. The National Forest Service needs to work more closely with hunting societies in the distribution of game limits; to mitigate the raiderism of hunting areas and its negative impact, it is important to promote sustainable hunting practices and cooperation between hunting societies and landowners.
3. According to the analysis of SWOT, hunting societies have two main development directions. The first course of development is the use of technological solutions to improve the recording of wild game. The second way that may reinforce its importance over time is the involvement of hunting societies in the field of national defence. Hunters are armed and familiar with the open-air conditions that make them potentially useful in national defence.
4. The main threats are the risk of loss of hunting grounds and poaching. The first threat is particularly serious because, if the aim of the hunting society is to organise and manage hunting, then losing the available hunting area may be difficult, if not impossible, for the society to continue its activities.
5. The State Forest Service, together with the joint stock company Latvian State Forests, must continue to modernise the information system "Mednis", which would include the creation of new functions or updates that provide a comprehensive view of the hunting process and activities

of hunting societies. Extending the possibilities of the mobile application “Mednis”, for example by allowing hunting societies to see the boundaries of hunting areas of all hunting organisations and the information binding thereto (registration of contracts), could be useful.

6. In order to prevent the loss of hunting areas of hunting societies from raiderism by other hunting societies or manipulation by landowners, the Ministry of Agriculture together with the State Forest Service should introduce a new regulatory framework that protects hunting societies from such unfair practices. The authors of the work propose to create a new or amend the current Hunting Law or to edit hunting regulations that would lay down clear criteria and procedures for switching hunting contracts, as well as provide for sanctions for unfair conduct by hunting societies.
7. The Ministry of Defence should develop the involvement of hunters and hunting societies in the protection of the state, as they are experienced and trained for forest life and shooting. Their understanding of the nature of shooting and its damage can be helpful, especially if combined with military training.

References

1. *Administratīvās atbildības likums*. (2018.g. 25.okt.). Latvijas Republikas likums. <https://likumi.lv/ta/id/303007-administrativas-atbildibas-likums>
2. Bagnoli, L., & Megali, C. (2011). Measuring performance in social enterprises. *Nonprofit and Voluntary Sector Quarterly*, 40(1), 149–165. <https://doi.org/10.1177/0899764009351111>
3. Barney, J. B., & Hesterly, W. S. (2020). *Strategic management and competitive advantage: Concepts and cases* (6th ed.). Pearson.
4. Barton, D. N., & Størkersen, T. (2008). Sustainability in hunting: Sustainable use of wildlife. *Ecological Economics*, 67(3), 626–634.
5. *Biedrību un nodibinājumu likums*. (2003.g. 30.okt.). Latvijas Republikas likums.. <https://likumi.lv/ta/id/81050-biedribu-un-nodibinajumu-likums>
6. Dubkēvičs, L. (2009). *Organizācijas kultūra*. Rīga: Jumava.
7. Ehnert, I., Parsa, S., Roper, I., Wagner, M., & Muller-Camen, M. (2016). Reporting on sustainability and HRM: A comparative study of sustainability reporting practices by the world's largest companies. *International Journal of Human Resource Management*, 27(1), 88–108. <https://doi.org/10.1080/09585192.2015.1024157>
8. Gössling, S., Hall, C. M., & Weaver, D. (2009). *Sustainable tourism futures: Perspectives on systems, restructuring and innovations*. Routledge.
9. Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind. Intercultural cooperation and its importance for survival*. USA: McGraw-Hill.
10. *Ieroču aprites likums*. (2019.g. 14.marts). Latvijas Republikas likums. <https://likumi.lv/ta/id/305818-ierocu-aprites-likums>
11. *Krimināllikums*. (1998.g. 17.jūn.). Latvijas Republikas likums. <https://likumi.lv/ta/id/88966-kriminallikums>

12. *Latvijas Republikas Satversme*. (1922.g. 7.nov.). Latvijas Republikas likums. <https://likumi.lv/ta/id/57980-latvijas-republikas-satversme>
13. *Medību likums*. (2003.g. 8.jūl.). Latvijas Republikas likums. <https://likumi.lv/ta/id/77455-medibu-likums>
14. *Medību noteikumi*. (2014.g. 22.jūl.). MK noteikumi Nr. 421. <https://likumi.lv/ta/id/267976-medibu-noteikumi>
15. *Par Latvijas Republikas Uzņēmumu reģistru*. (1990.g. 20.nov.). Latvijas Republikas likums. <https://likumi.lv/ta/id/72847-par-latvijas-republikas-uznemumu-registru>
16. Piwowar-Sulej, K. (2021). Core functions of sustainable human resource management: A hybrid literature review with the use of H-Classics methodology. *Sustainable Development*, 29(4), 671–693. <https://doi.org/10.1002/sd.2166>
17. Samant, S. M., & Sangle, S. (2016). A selected literature review on the changing role of stakeholders as value creators. *World Journal of Science, Technology and Sustainable Development*, 13(2), 100–119. <https://doi.org/10.1108/WJSTSD-01-2016-0002>
18. *Vides aizsardzības likums*. (2006.g. 2.nov.). Latvijas Republikas likums. <https://likumi.lv/ta/id/147917-vides-aizsardzibas-likums>

COMPETITIVENESS FACTORS IN THE PERSONNEL POLICY OF THE LATGALE DISTRICT COURT

Gunita Kubuka¹, Anda Zvaigzne², Aija Cerpinska³

¹ Mg.soc.sc. Rezekne Academy of Technologies, Rezekne, Latvia,

e-mail: gunita.kubaka@inbox.lv

² Dr.oec., associated professor, Rezekne Academy of Technologies, Rezekne, Latvia,

e-mail: anda.zvaigzne@rta.lv

³ Mg.soc.sc., lecturer, Rezekne Academy of Technologies, Rezekne, Latvia,

e-mail: aija.cerpinska@rta.lv

Abstract.

Purpose and aim of the study: to assess factors in the competitiveness of the personnel policy implemented by the Latgale District Court and provide solutions to the enhancement.

Design / Methodology / Approach: The research employed the monographic and descriptive methods, document content analysis and conducted an unstructured interview with an assistant to the chairperson of the Latgale District Court. The research also conducted a survey of employees to identify competitiveness factors relating to the internal strengths of and strategic potential for the Latgale District Court and the degree of significance of the competitiveness factors; the expert method and Kendall's W were applied to determine the consistency of expert opinions.

Main Findings: The results of the Latgale District Court personnel survey revealed that the remuneration and motivation system, the culture and wellbeing at the organization, and leadership aspects were important factors for the employees. The system of social guarantees provided by the Latgale District Court had been developed in detail, including additional leave, holiday allowances, health insurance, optical vision aids, employer-paid compulsory health check-ups, as well as various benefits. The most important factors in the competitiveness of human resource (HR) policy identified by the expert survey were as follows: stability and sustainability of the job, availability of modern technological equipment, the motivation system, including social guarantees, and the remuneration system, personnel selection and recruitment, the working environment and the organizational culture.

Originality: a competitiveness analysis of the personnel policy implemented by the Latgale District Court was conducted for the first time, thereby revealing strengths, neutrals and weaknesses in the personnel policy.

Implications: The present research revealed that the personnel policy implemented by the Latgale District Court was competitive; however, there are also aspects that need to be improved to ensure the efficient performance and long-term development of the court.

Keywords: competitiveness, competitiveness factors, Latgale District Court, personnel policy.

Received: 9 September 2024 **Revised:** 26 September 2024 **Accepted:** 28 October 2024

Published: 16 December 2024

Introduction

Global labour market trends indicate the need for public authorities to learn to use resources efficiently and become more productive while

<https://doi.org/10.17770/jresd2024vol16.8271>

This is an open access article under the Creative Commons Attribution 4.0 International License

consuming less, as well as to have a competitive workforce (OECD, 2021).

Although the public consider public authorities to be bureaucratic institutions, with strictly defined subordinate structures, and their activities are also governed by the relevant legislation, human resource policies need to evolve in line with the time and requirements. Given that personnel tend to get older, retirement ages are raised and people have to work longer, the development of the personnel also needs to be planned (OECD, 2017).

The Latgale District Court is a court of first instance operating in the territory of the Latgale Regional Court and located in Rezekne, Balvi, Daugavpils, Kraslava, Ludza and Preiļi. According to the self-service system HOP, it employs 156 personnel, including the chairperson, the deputies, assistants, judges, clerical and archive personnel, assistant judges, court secretaries, interpreters and technical personnel.

The academic literature refers to the terms personnel, employees, human resources and human capital to describe the workforce and its problems. As regards the terms policy and management, various sources refer to human resource management, personnel management and human capital management. Although the definitions and scope of the terms differ, many sources use the terms synonymously rather than as distinct terms (Praude, 2012; Zilīte, 2013). The present research uses the terms personnel, human resources and employees as similar terms having similar meanings, especially in relation to the performance of public institutions.

The research problem and novelty. New technologies and electronic solutions began to enter the judicial system of the Republic of Latvia long before the pandemic. The personnel policy in the judicial system should be such as to create a competitive advantage over other institutions to hire and retain employees who already have experience and knowledge. Therefore, the research intends to examine whether human resource policies implemented by public institutions are competitive by analysing factors in the competitiveness of the human resource policy implemented by the Latgale District Court of First Instance. Moreover, there is a need to define the concept of competitiveness of human resource policy.

The research aims to assess the factors in the competitiveness of the personnel policy implemented by the Latgale District Court and provide solutions to the enhancement.

The research has assessed the factors in the competitiveness of the personnel policy implemented by the Latgale District Court and provides solutions to the enhancement, hypothesising that the personnel policy of the Latgale District Court was competitive because the factors contributed to effective attraction, retention and development of the workforce.

The research employed the monographic and descriptive methods, document content analysis and conducted an unstructured interview with an

assistant to the chairperson of the Latgale District Court. The employee survey allowed us to assess competitive factors in the internal strengths of and strategic potential for the Latgale District Court by employing using the SNW (strengths, neutrals, weaknesses) analysis method and the typological group index calculation, while the expert method and Kendall's W were used to identify the degree of significance of the competitive factors and the consistency of expert opinions.

Research results and discussion

The concept of competitiveness is complex and is interpreted differently by various sources. Driņķe and Bunkus describe competitiveness as a set of characteristics of a subject (an organization) that is used to achieve a specific goal at a particular place and time (Driņķe & Bunkus, 2022). Schwab explains that “competitiveness is the set of institutions, policies and factors that determine the level of productivity in an economy, which in turn determines the level of prosperity that the economy can achieve” (Schwab, 2017). Competitiveness is also explained as the ability to do a job better by producing quality goods, and furthermore, in a country as in business, policies, systems and resources should be focused on increasing quality and competitiveness in a coordinated way. The concept of competitiveness is interpreted in organizational, sectoral, national and global contexts, yet it is not defined in terms of HR policy and HR competitiveness (Goetsch & Davis, 2006).

Based on the explanations of the concept of competitiveness, the following definition could be proposed: HR policy competitiveness is a set of HR competitiveness factors, which includes HR management elements and strategies that are used to achieve the organization's goals and enhance the organization's own competitiveness.

A successful HR and business strategy results in the success of the organization. Competitiveness is achieved not only by financial and technological capital, but above all by people – human capital (Mathur, 2015). For public institutions too, one of the most important factors in competitiveness is personnel (Bîrcă et al., 2023). They represent also a sustainable source of competitive advantage, which, if properly managed, produce the best product and the best service. Competitive advantage is the ability achieved by exploiting the characteristics and resources to perform at a higher level than others do in the same industry or market (Mathur, 2015). According to the resource-based perspective, HRM adds value and helps to gain sustainable competitive advantage by strategically developing the scarce, difficult to imitate and substitute human resources for an organization. The success of organizations depends on the quality,

dedication, enthusiasm, knowledge and skills of their employees (Armstrong & Taylor, 2023). Researchers Heath, Rowland and Hoskisson agree that human resources represent the value-generating aspects of an organization's competitive advantage and should be incorporated in a strategy as activities pertaining to recruitment, hiring procedures, training, development and all kinds of reward systems. This applies not only to the private sector but also to employees of public authorities (Hitt et al., 2007). Today, human resources represent a competitive advantage, as their behaviour can affect the success of an organization both positively and negatively.

After analysing the diversity of competitiveness factors (Roman et al., 2012), some researchers proposed to group competitiveness factors according to trends in personnel management at public authorities, which are shaped by the changing world, the introduction of new technologies and digitalization, artificial intelligence tools, the ageing of personnel, the competitiveness of countries overall, as well as efficiency, quality, productivity and sustainability: attracting and selecting personnel, which involves finding the best people for the right job:

- talent identification and management;
- leadership aspects;
- competences, skills and knowledge, including both current education and training;
- motivation systems, including reward systems, appraisal systems and bonus systems;
- organizational culture aspects and employee wellbeing.

An analysis of the courts of first instance in Latgale region over a five-year period revealed that until July 2023, there were two courts in Latgale: Daugavpils Court and Rezekne Court, which were established during the territorial court reform implemented in 2016. (Latgale District Court..., 2023). However, in March 2023, the Council of the Judiciary decided to merge the two courts to form a single court – the Latgale District Court. The purpose of the reform was to make the courts more efficient and reduce the time needed for proceedings (Kalniņa, 2023). As a result of the reform, the number of court personnel was not reduced, as this was not the purpose of the reform, and the locations of court personnel did not change, but remained as before in Rezekne, Balvi, Ludza, Daugavpils, Preili and Kraslava. From 1 July 2023, the Latgale District Court have seventeen judges specializing in civil matters, nine judges specializing in land registry matters, nine judges specializing in criminal matters and three investigative judges (Strategy for the..., 2024).

The internal documents that govern an institution's HR policy already show the groups of factors that shape the competitiveness of personnel.

Although the documents do not explicitly define what is meant by competitive advantage, the actions taken are aimed at raising the quality, efficiency and competitiveness of personnel.

To assess the personnel policy of the Latgale District Court, an SNW (strengths, neutralities, weaknesses) analysis was performed; this method assesses the internal strengths of and strategic potential for competitiveness factors, as well as calculates the typological group index, which indicates the strength of internal elements.

The method is universal and is used to assess both business management systems and the management systems c *Table 1 continued* identifies the level of competitiveness of an institution, while assessing its strengths, neutralities and weaknesses by drawing up a list of factors to be examined. The method is effective in assessing potential opportunities. If used by the organization itself, the number of elements of the internal structure could be selected independently to identify and analyse opportunities for further development.

The theoretical literature refers to six groups of HR competitiveness factors and also stresses the internal documents of an institution, focusing on the factors identified. Based on the theory and the documents, 23 elements representing all the groups of competitiveness factors were identified to analyse the personnel situation as well as determine the internal positive aspects and competitive advantages and what still needs to be improved. An electronic survey of Latgale District Court personnel was conducted to assess each element. The personnel were asked to rate each element as a strength, neutral or weakness. The survey was sent to the employees who had an electronic mailbox registered with the court; therefore, the survey did not include technical personnel: cleaners and drivers. Some personnel were absent and could not be reached (based on internal data, 45 personnel were absent and on business trips). A questionnaire was sent to 100 personnel and 46 completed questionnaires were received back. All the questionnaires received were valid. A percentage breakdown of the questionnaire data for each criterion is presented in Table 1.

The SNW analysis of the survey results revealed that the highest ratings were given to the following: strengths: social guarantees 9.09%, neutrals: communication at horizontal level 6.15%, weaknesses: unity in demands 8.82%. The percentage predominance of strength such as social guarantees is a good indication. As regards the neutrals, communication (both horizontal and vertical) dominated, which meant that this area was neither very poor nor very good, i.e. rather moderately rated. However, in relation to the weaknesses, the personnel's unity in demands was most notable, which

could indicate frequent disagreements or confusion over the demands and work responsibilities.

Table 1. SNW analysis results for the HR policy of the Latgale District Court: a percentage breakdown of personnel survey responses ($n = 46$) for each criterion in 2024 (authors' calculations)

No.	Criterion	Strengths as a % of total responses	Neutrals as a % of total responses	Weaknesses as a % of total responses
1.	Remuneration	6.75%	3.17%	2.21%
2.	Bonus system	5.19%	2.79%	8.09%
3.	Motivation system	3.12%	4.47%	7.35%
4.	Social guarantees	9.09%	1.86%	0.74%
5.	Job security	8.83%	1.68%	2.21%
6.	Technical equipment	7.01%	2.79%	2.94%
7.	Physical working environment	3.12%	5.96%	1.47%
8.	Reward system	2.86%	4.66%	7.35%
9.	Training opportunities	5.19%	3.91%	3.68%
10.	Career development opportunities	2.86%	4.66%	7.35%
11.	Working arrangements	5.97%	3.72%	2.21%
12.	Travel opportunities	1.82%	5.77%	5.88%
13.	Unity in demands	1.82%	5.03%	8.82%
14.	Personnel cohesion	3.90%	4.28%	5.88%
15.	Clear division of work responsibilities	3.38%	4.47%	6.62%
16.	Innovation at work	2.86%	5.77%	2.94%
17.	Communication at horizontal level	2.60%	6.15%	2.21%
18.	Communication at vertical level	2.86%	5.96%	2.21%
19.	Employer responsiveness	6.75%	3.54%	0.74%
20.	Management style	5.45%	3.54%	4.41%
21.	Team-bonding events	4.42%	4.84%	2.21%
22.	Evaluation system	2.60%	5.21%	5.88%
23.	Integration measures for new employees	1.56%	5.77%	6.62%

The following equation was used to calculate the typological group index, which indicates the strength of an internal element (Forands, 2018):

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

where I – typological group index,
 S, N, W – number of respective indicators,
 n – number of respondent responses.

The calculation result was as follows:

$$I = \frac{1 \cdot 385 + 0.5 \cdot 537 + (-1 \cdot 136)}{1058} = 0.48$$

The index values ranged from -1 to 1 , where -1 meant very weak competitiveness and 1 meant very strong competitiveness. An index value of 0.48 for the typology group indicated that the strength of internal personnel elements was moderately high and that the competitiveness was positive, yet some aspects need to be improved. All the elements were rated by the personnel as mostly strengths or neutrals, with fewer weaknesses.

The neutrals and weaknesses indicated the factors requiring improvement. The survey results showed that the factors involved the culture and wellbeing of the organization (communication, personnel cohesion and the environment), as well as the motivation and bonus systems, appraisal and development and integration of new employees. In contrast, the weaknesses were dominated by unity in demands and the distribution of responsibilities, also some elements of the motivation system and career development opportunities.

The respondents considered social security, job security, technical equipment and remuneration, employer responsiveness, training opportunities, management style and team-bonding events to be strengths.

The survey results showed that the remuneration and motivation systems, the culture and wellbeing of the organization, as well as leadership aspects were important factors for the employees. The remuneration system was rated as a strength. In 2024, the remuneration system was changed to also focus on factors such as education, length of service and appraisal. The level of remuneration has also increased. The social security system of the Latgale District Court was detailed and included additional leave, holiday allowances, health insurance, optical vision aids, employer-paid compulsory health check-ups and various benefits.

A weakness was the bonus system (8.09% of the total responses). This could be explained by the policy on personnel replacement bonuses, as it provided for a bonus of up to 20% of remuneration for full-time replacement. The motivation system and career development opportunities were also rated as weaknesses. This could be due to the minimal opportunities for the career, as vacancies were not occupied, and there was no need for assistant judges and the Latgale District Court had a low personnel turnover rate.

The research also included an expert survey conducted in May 2024, with five court experts being interviewed to rate the significance of competitiveness factors for the personnel policy of the Latgale District Court and on a scale of 1 (most important factor) to 11 (least important factor). The five experts worked in the field of HR for the Latgale District Court and were also working before the reform until July 2023, see Table 2.

Table 2 Characteristics of the experts (authors' own compilation)

Expert (coded)	Position	Length of service	Education
A	Chair of a court	23 years in the judicial system, 12 years as a judge and 4 years as a chair	Master's degree in law
B	Assistant to the chair of a court in Daugavpils	25 years in the judicial system, 18 years as an assistant to the chair	Professional Master's degree in law
C	Assistant to the chair of a court in Rezekne	29 years in the judicial system	Bachelor's degree in law
D	Head of a Land Registry office	9 years and 3.5 years with personnel	Master's degree in law
E	Deputy head of a Land Registry office	20 years	Professional Bachelor's degree in law

Based on the expert survey, Table 3 shows the experts' ranks (ratings) of the HR policy factors and also the calculation results for the consistency of expert opinions.

Table 3 Ratings of factors in the competitiveness of the HR policy implemented by the Latgale District Court by its personnel in 2024 (authors' own compilation)

Factors (criteria rated)	Experts					Rank summa L_i	$d_i = L_{\text{vīd}} - L_i$	d_i^2	Place (L_i rank)
	A	B	C	D	E				
	Rank/ R_i								
Personnel selection and recruitment	5	3	9	3	4	24	6	36	4.
Motivation system, including social guarantees and the remuneration system	6	4	3	1	7	21	9	81	3.
Working environment and organizational culture	2	2	6	8	9	27	3	9	5.
Level of education required and opportunities for development (training, build-up of competences, learning to innovate)	8	5	8	4	3	28	2	4	6.
Talent identification and management	10	11	10	11	11	53	-23	529	9.
Leadership, management aspects	11	10	11	10	8	50	-20	400	8.
Prestige, reputation and image of the organization	3	8	7	9	1	28	2	4	6.
Job location, region	7	7	2	7	5	28	2	4	6.
Work and life balance (flexible working hours, possibility to work remotely)	9	9	4	5	10	37	-7	49	7.
Modern technological equipment (digital tools, systems, databases, IT infrastructure)	4	1	5	2	6	18	12	144	2.
Stability and sustainability of the job	1	6	1	6	2	16	14	196	1.
$n = 11$	$m = 5$					$\sum L_i = 330$	0	$S = 1456$	

The sequence of the calculation:

L_i – sum of the ranks of the HR policy criteria rated, based on the expert opinions;

L_{vid} – average rank of the criteria rated calculated by the equation:

$$L_{vid} = \frac{\sum L_i}{n} \quad (2)$$

where n – number of HR policy factor criteria rated.

d_i – difference calculated by the following equation:

$$d_i = L_{vid} - L_i \quad (3)$$

d_i^2 – difference squared,

S – sum of the differences squared,

W – coefficient of concordance (Kendall, 1955), calculated by the following equation:

$$W = \frac{12 S}{m^2 n (n^2 - 1)} \quad (4)$$

where m – number of experts.

The expert responses were evaluated according to the degree of consistency of their opinions. The coefficient of concordance varied in the range $0 \leq W \leq 1$. $W = 0$ if there is no correlation between the ranks, $W = 1$ if all experts have ranked the criteria equally. A coefficient of concordance of $W \geq 0.50$ means that the expert consensus is considered to be sufficiently high (Kendall, 1955).

For the expert survey aimed at identifying the significance of factors in the competitiveness of the HR policy implemented by the Latgale District Court, the six main competitiveness criteria for the HR policy described above were selected and supplemented with criteria that could be significant for the competitiveness of the HR policy both for potential employees considering working at the court and for current employees. The criteria proposed for identifying the significance were as follows: personnel selection and recruitment, the motivation system, including social guarantees and the remuneration system, the working environment and organizational culture, the level of education required and development opportunities, talent identification and management, leadership and management aspects, prestige, reputation and image of the organization, the location and region of the job, a work and life balance, availability of modern technological equipment, as well as stability and sustainability of the job.

The coefficient of concordance was $W = 0.53$. This result indicated that the experts surveyed were unanimous in their opinions. The most significant factors for the competitiveness of HR policies were as follows: stability and

sustainability of the job, availability of modern technological equipment, the motivation system, including social guarantees and the remuneration system, personnel selection and recruitment, as well as the working environment and organizational culture. Particular attention should be paid to the mentioned criteria, as a sense of security regarding the sustainability of the job is important for the employee, and a well-organized motivation system, social guarantees and remuneration are also essential. Less important factors, according to the experts, were the level of education required, the reputation and prestige of the institution, the location of the job and the work and life balance. Leadership and management aspects, and talent identification and management were unanimously ranked as the least important factors, although the experts' opinions differed significantly on some criteria.

Conclusions and suggestions

1. The Latgale District Court is a court of first instance operating in the territory of the Latgale Regional Court, merging two courts: (Daugavpils Court and Rezekne Court) from 1 July 2023 and employing 156 judges and personnel.
2. The internal documents of the Latgale District Court, which govern the institution's personnel policy, already reveal the groups of factors in the competitiveness of the personnel. Although the documents do not explicitly define what is meant by competitive advantage, the actions taken are aimed at raising the quality, efficiency and competitiveness of the personnel.
3. The SNW analysis of the survey results revealed that the highest ratings were given to the following: strengths: social guarantees 9.09%, neutrals: communication at horizontal level 6.15%, weaknesses: unity in demands 8.82%. The percentage predominance of a strength such as social guarantees a good indication. As regards the neutrals, communication (both horizontal and vertical) dominated, which meant that this area was neither very poor nor very good, i.e. rather moderately rated. However, in relation to the weaknesses, the personnel's unity in demands was most notable, which could indicate frequent disagreements or confusion over the demands and work responsibilities.
4. The SNW analysis of the survey of Latgale District Court personnel found an index value of 0.48 for the typology group, which indicated that the strength of internal personnel elements was moderately high and that the competitiveness was positive, yet some aspects need to be improved. All the elements were rated by the personnel as mostly strengths or neutrals, with fewer weaknesses. The neutrals and weaknesses indicated the factors requiring improvement. The survey results showed that the

factors involved the culture and wellbeing of the organization (communication, personnel cohesion and the environment), as well as the motivation and bonus systems, appraisal and development and integration of new employees. In contrast, the weaknesses were dominated by unity in demands and the distribution of responsibilities, also some elements of the motivation system and career development opportunities.

5. Based on the expert survey, the coefficient of concordance for the significance of factors in the competitiveness of the personnel policy implemented by the Latgale District Court was found at $W = 0.53$. This result indicated that the experts surveyed were unanimous in their opinions. The most significant factors for the competitiveness of HR policies were as follows: stability and sustainability of the job, availability of modern technological equipment, the motivation system, including social guarantees and the remuneration system, personnel selection and recruitment, as well as the working environment and organizational culture.
6. The hypothesis proved to be true: the HR policy of the Latgale District Court was competitive because the factors included contributed to effective recruitment, retention and development of the workforce. This was proved by the analysis of the factors identified, which involved a review of internal documents, an interview with an assistant to the chair of a court, an SNW analysis and the calculation of the typological group index, a survey of experts to identify the degree of significance of competitiveness factors and the consistency of expert opinions. However, there were also elements to be improved and developed in each group of factors.

References

1. Armstrong, M., & Taylor, S. (2023). *Armstrong's handbook of human resource management practice: A guide to the theory and practice of people management* (16th ed.). Kogan Page, 35.
2. Bîrcă, A., Sandu, C. B., & Matveiciuc, I. (2023). Determinants of Public Institutions Competitiveness: Case Study of the Republic of Moldova. *Administrative Sciences*, 13(10), 214. <https://doi.org/10.3390/admsci13100214>
3. Driņķe, Z., & Bunkus, J. (2022). Effective Operation of State Administration to Increase Competitiveness. *A study on the Efficiency of Public Administration*. Turība University, 8. <https://www.turiba.lv/storage/files/petijums-valsts-parvaldes-efektivitate.pdf>
4. Forands, I. (2018). Little Encyclopedia of Management. *Latvian Education Foundation*, 318-319.
5. Goetsch, D. L., & Davis, S. (2006). *Quality Management: Introduction to Total Quality Management for Production, Processing, and Services* (5th ed.). Pearson Prentice Hall, 47.

6. Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2016). *Strategic management: Competitiveness and globalisation* (7th ed.). Thomas Higher Education, 90-91.
7. Kalniņa, Z. (2023). *Latgale District Court Begins Working*. LV portal. <https://lvportals.lv/tiesas/353051-darbu-sak-latgales-rajona-tiesa-2023>
8. Kendall, M.G. (1955). *Rank correlation methods*. New York, Hafner Publishing Co, 260.
9. *Latgale District Court Begins Working on 1 July*. (2023). Ministry of Justice. LV portal. <https://lvportals.lv/dienaskartiba/352732-1-julija-darbu-saks-latgales-rajona-tiesa-2023>
10. Mathur, P. (2015). Achieving competitive advantage through employees. *International Journal of Arts, Humanities and management studies*, 1(9), 66-71. <https://www.researchgate.net/publication/358366993>
11. OECD (2017), *Skills for a High Performing Civil Service*, OECD Public Governance Reviews, OECD Publishing, Paris, <https://doi.org/10.1787/9789264280724-en>
12. OECD (2021), *Public Employment and Management 2021: The Future of the Public Service*, OECD Publishing, Paris, <https://doi.org/10.1787/938f0d65-en>
13. Praude, V. (2012). *Management*. Book 1 (3th ed.). Burtene, 444.
14. Roman, D. J., Piana, J., Lozano, M.-A. S. P. e L., Mello, N. R. de, & Erdmann, R.H. (2012). Organizational competitiveness factors. *Brazilian Business Review*, 9(1), 25-42. <https://doi.org/10.15728/bbr.2012.9.1.2>
15. Schwab, K. (2017). The Global Competitiveness Report 2017-2018. Geneva: *World Economic Forum*, 11. <https://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017-2018.pdf>
16. *Strategy for the Judicial Administration for 2022-2026*. Judicial Administration. <https://www.ta.gov.lv/lv/darbibas-jomas>
17. Zīlīte, L. (2013). *Personnel Management and Socionics*. Turība University, 7.

SUSTAINABLE DEVELOPMENT IN EDUCATION: A CASE STUDY OF GENERAL EDUCATION SCHOOLS

Kristine Lele¹, Inta Kotane²

¹ Mg.soc.sc., Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: kristine_lele@inbox.lv

² Ph.D., assistant professor, leading researcher, Rezekne Academy of Technologies,
Rezekne, Latvia, e-mail: inta.kotane@rta.lv

Abstract.

Purpose and aim of the study: *The research aims to examine the perception of sustainable development problems in general education schools.*

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 primary (survey) data on students' and teachers' understanding and knowledge of sustainable development. The graphic method was applied to better represent and compare the research results.*

Main Findings: *sustainable development was found to be determined by a balance between the needs of the present and future generations, based on the rational consumption of resources. The research results revealed that awareness of sustainable development is a key driver for sustainable development and that it is important to integrate sustainable development issues into the school curriculum to introduce sustainable habits into society.*

Originality: *The research examined the concept of sustainable development in the context of the education industry, assessing the opinions of general education school students and teachers on sustainable development problems.*

Implications: *The research provides a basis for further research on aspects of sustainable development in general education schools.*

Keywords: *education for sustainable development, students, sustainable development, teachers.*

Received: 29 October 2024 **Revised:** 10 November 2024 **Accepted:** 28 November 2024
Published: 16 December 2024

Introduction

Nowadays, progress interacts with change, which contributes to not only an increase in prosperity and the development of new products but also has irreversible impacts on resource stocks and their capability to renew themselves for use by future generations. The involvement of every resident is essential for the rational use of resources and the mitigation of climate change. Education, which is a fundamental tool for transforming human behaviour, is the starting point for changing individual attitudes and simulating responses to avoid the consequences of current processes. Reasonable resource use and the mitigation of climate change could be achieved by integrating sustainable development issues into the curriculum, holding educational events and activities not only for children but also for adults and explaining the nature and necessity of sustainable development.

<https://doi.org/10.17770/jresd2024vol16.8285>

This is an open access article under the Creative Commons Attribution 4.0 International License

The **research aims** to examine the perception of sustainable development problems in general education schools.

To achieve the aim, the following specific research **tasks** were set:

- 1) to examine the theoretical aspects of sustainable development for the education industry;
- 2) to conduct a survey and assess the aspects of sustainable development in two general education schools in Latvia;
- 3) to draw conclusions and make proposals for raising awareness of sustainable development issues in general education schools in Latvia.

Hypothesis: knowledge and understanding of sustainable development shapes individuals' responses to sustainable development.

The research employed qualitative and quantitative **methods**. The monographic method and logical construction were used to summarise the theoretical aspects of the research problem, analyse them and conduct a scientific discussion. The questionnaire method was used to identify the opinions of teachers and students from general education institutions on their knowledge of sustainable development issues and the integration of sustainable development issues into the curriculum. Statistical analysis (SPSS) was employed to identify and analyse correlations between the survey responses. The graphical method was used to represent and compare the results.

Research results and discussion

1. Theoretical aspects of the concept of sustainable development

Acting for the future of our children is the conceptual meaning of the word "sustainability", and it refers to the ability of an entity or system to create preconditions for long-term balanced self-development and, at the same time, to avoid creating conditions that contribute to the destruction or self-destruction thereof (Tēzaurus.lv). The explanatory and synonym dictionary "Thesaurus" also refers to sustainability (ilgtspējība) alongside another synonym (ilgtspēja), which confirms the semantically equivalent meanings of the words. The balance between rationally meeting the needs of present and future generations, as expressed in the definitions of both sustainability and sustainability, is embodied in the United Nations (UN) Rio Declaration on Environment and Development, which defines sustainability as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (General Assembly, 1992). Globally, the "bible" of sustainability is the Sustainable Development Goals (SDGs) defined by the UN to be achieved by 2030. The SDGs cover all the major issues that need to be addressed for balanced global development

(Swedbank, 2021), focusing on three important dimensions: economic, social and environmental.

Tensions between environmental and societal needs become increasingly pronounced in contemporary science and policy, as there are disagreements about what development, sustainability and the basic conditions for a dignified life for all people mean (Bela, 2018). There are disagreements about the use of the term sustainable, as its genesis can be traced in both etymology and international documents. In Latvian, sustainability emphasises the temporal dimension (to last), while in English sustainability has its origins in the Latin verb *sustinere*, meaning to keep, to limit, to protect (Kušners, 2022). The terms sustainability and sustainable development are often used synonymously, even though they are conceptually different. According to UNESCO, sustainability could best be described as a long-term goal, such as achieving a more sustainable world, while sustainable development, as the name suggests, refers to the many processes and pathways used to stimulate development or achieve progress in a sustainable way, such as the GDGs, which are the global goals that encourage all countries and sectors to work together to tackle the challenges of sustainable development in order to achieve sustainability (Bianchi et al., 2022). There is no consensus on the terms and concepts used to describe education for and about sustainable development: 'education for sustainable development', 'education for sustainable development', 'sustainability education', 'education for a sustainable future', 'development education' etc., yet the common unifying element is targeted educational activities that address global equity and sustainability issues (O'Flaherty & Liddy, 2018).

Sustainable development should emphasise sustainability science, or science for sustainable development. It brings together knowledge about the dynamics of human and environmental systems to facilitate planning, project implementation and practical measure evaluation that promote sustainability and improve the links between various scientific and research disciplines, as well as between policymakers, implementers and society (Zaļoksnis, 2024). Education for sustainable development (ESD) is becoming increasingly important as a response to the pressing societal and environmental challenges facing the world (Torsdotti et al., 2024), hence the importance of addressing ESD, which is inseparable and perceived in context and about sustainability.

In the Environmental Protection Law (EPL) of the Republic of Latvia (2006), the term ESD is defined as education that gives each individual opportunities to acquire the knowledge, values and skills necessary for participation in decision-making on individual or collective actions at the local and global level to increase the quality of life now without compromising the needs of future generations. Chapter 8 of the EPL refers to

environmental science, environmental education and ESD, which means that ESD is nationally enshrined and made compulsory in the Latvian education system. In the EPL, Chapter 8 Environmental Science, Environmental Education and Education for Sustainable Development provides that the Ministry of Environmental Protection and Regional Development in cooperation with the Ministry of Education and Science shall take necessary measures for the development of environmental science to promote scientific activities in the field of sustainable development, environmental protection and environmental education, thereby contributing to research on environmental quality, eco-innovation and environmental technologies, as well as identifying and solving environmental problems. Paragraph 2 of Section 42 stipulates that higher education institutions and colleges shall make a course on environmental protection compulsory, while Paragraph 3 provides that higher education institutions and colleges shall include a course on sustainable development in their teacher training. In addition to the EPL, neither the Education Law (1998) nor the General Education Law (1999) refer to ESD as applicable to general education.

Global Citizenship Education (GCED) should be viewed holistically, is inseparable from ESD and equally relevant at the global, national and local levels. GCED, global education and global learning could be considered largely synonymous concepts with overlapping content and methods of delivery. The three comprehensive concepts are generally considered to encompass a wide range of other “related” fields, e.g. human rights education, peace education, intercultural or multicultural education, anti-racism education, environmental education, development education, education for sustainable development and others (Suša, 2019). The Global Education Guidelines 2021-2025 (Guidelines) is a document that sets the conceptual and contextual framework for global education. The purpose of the Guidelines is to promote the successful integration and use of global education approaches in formal education, non-formal education, public awareness, advocacy and global education partnership activities. Various global education projects, events and campaigns are implemented in Latvia every year, and the experience of the non-governmental sector of Latvia in global education has been appreciated internationally. However, for many years, global education has not been strategically developed because governing bodies do not perceive it as an essential part of their own agenda (LAPAS, 2022). This raises the question of how to contribute to the sustainability of the planet if we are not aware of the seriousness of the problem at the domestic and local levels. Meadows (2020) believes that global sustainability is impossible without local sustainability. It could be concluded that global problems, which are seemingly distant, need to be seen as a whole, without separating the local environment from global processes,

with education playing an important role in transforming thinking not only at the personal level but also at the community and institutional levels.

The authors can conclude that education is one of the cornerstones of sustainable development at all levels: local, national, EU and global. Knowledge-based decision-making and action plans are more likely to succeed. Moreover, knowledge is important not only at the decision-making level but also for residents in their day-to-day decision-making that contributes to the achievement of the SDGs.

With the introduction of the new standard or the implementation of the competences-based approach to curricula, significant changes have occurred in the education system of Latvia, with the emphasis on quality education at all levels of education and at every educational institution (quality education according to the levels of education implemented in a particular educational institution). According to the Regulations Regarding the State Basic Education Standard (2018), the learning outcomes in social and civic learning, science learning, and technology learning (especially the learning outcomes upon finishing grade 9) require the transversal skills “Civic participation” and “Critical thinking and problem-solving” and have to cover such topics as “People are aware alternatives when planning the use of available resources”, “Usage of resources, environmental impacts”, “Socially responsible decision-making” and “Thoughtful design solutions are useful and sustainable”, which are aimed at involvement in global processes, decision-making, responsible actions for sustainability etc. The Regulations Regarding the State General Secondary Education Standard (2019) specify the learning outcomes to be achieved for the transversal skills “Creativity and entrepreneurial ability”, “Critical thinking and problem-solving” and “Civic participation”. The authors believe that the transversal skills acquired in both primary and secondary education are complex, as each of the skills implicitly relates to sustainability. The Regulations Regarding the State General Secondary Education Standard define the skill to be acquired upon finishing grade 12. The topics related to sustainability are incorporated into the learning outcomes for social and civic, science and technology.

An analysis of challenges identified in the Education Development Guidelines (*Izglītības attīstības pamatnostādnes...*, 2021) (insufficient attractiveness and competitiveness of the teaching profession, poor teacher and academic personnel replacement etc.) raises a question of how to ensure and who will ensure ESD in teaching. More than a third or 38% of new teachers considered leaving the teaching profession in the next five years (LETA, 2023), and there was a shortage of 1013 teachers in schools and pre-schools in Latvia at the beginning of the school year 2023/2024 (Laganovskis, 2023), which makes us consider not only the environment but also the education industry as a whole in the context of sustainability.

2. Understanding sustainable development issues in general education schools

The goal of the survey was to identify students' and teachers' knowledge and understanding of sustainable development issues. The research method was a questionnaire survey, with school students and teachers being the target population. The questionnaire was created on the Google Forms platform and sent electronically to the students and teachers of two general education schools: the Balvi State High School (BSHS) and Rezekne State High School No. 1 (RSHS1) from 2 May to 14 May 2024. Of the total students, 57.53% (149) in the BSHS and 10.39% (58) in RSHS1 completed the questionnaires. In total, 207 students completed the questionnaires, 149 or 72% in the BSHS and 58 or 28% in RSHS1. Of the total teachers (45 in the BSHS and 54 in RSHS1), 71.11% (32) (BSHS) and 27.78% (15) (RSHS1) completed their questionnaires.

The students' awareness (I have heard) and knowledge (I know) of the concepts of CO₂ footprint, Green Deal, Biodiversity, Climate Change, Fair Trade, Circular Economy, Social Justice and Gender Equality showed an understanding of environmental and sustainable development issues. The higher level of awareness – "I have heard and I know what it means" – was found among BSHS and RSHS1 students for the concepts "Climate Change" at 85.2% and 93.1%, respectively, "Gender Equality" at 69.2% and 81.1%. The lowest level of awareness – the answer "I have not heard" – among BSHS students was found for the concepts "CO₂ footprint" (43%) and "Green Deal" (38.3%), while among RSHS1 students – the concepts "Green Deal" (53.4%) and "Circular economy" (32.8%). The results revealed that the concepts "Climate Change" and "Gender Equality" had been explained to the students through the curriculum, yet insufficient attention was paid to the concepts "CO₂ Footprint", "Green Deal" and "Circular Economy".

An analysis of the responses of students and teachers to the statement "My school is a sustainable-minded school" revealed that the answers "Rather agree" and "Strongly agree" (hereinafter affirmative answers) were given by 70.47% of students and 87.5% of teachers in the BSHS (Table 1) and 58.62% and 86.66%, respectively, in RSHS1. The BSHS students and teachers were more likely than RSHS1 ones to rate their school as a sustainably minded school. Regarding the need for more educational events/activities on sustainability in school, 55.03% of teachers and 78.13% of teachers in the BSHS and 48.28% and 80% in RSHS1 answered in the affirmative.

Of the total, 53.02% of students and 78.13% of teachers in the BSHS and 43.1% of students and 66.67% of teachers in RSHS1 gave affirmative answers, considering their lifestyle to be sustainable. The BSHS students and teachers rated their lifestyle as sustainable to a greater extent than the

RSHS1 students and teachers did. The results showed that the students and teachers considered sustainability an important topic. However, there were differences between the opinions of the groups. Most of the teachers considered their school to be a sustainable-minded school, rated their lifestyle as sustainable and the teachers were more interested than the students in participating in events/activities on sustainability.

Table 1 Students’ and teachers’ opinions about sustainability in school and lifestyle, % (authors’ calculations, N=207, N=45)

Statement \ Answer	My school is a sustainable-minded school				More education/activities on sustainability should be held at school				My lifestyle is sustainable			
	Students		Teachers		Students		Teachers		Students		Teachers	
	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1
Strongly agree	14.77	15.52	43.75	33.33	19.46	20.69	12.50	13.33	12.75	10.34	6.25	6.67
Rather agree	55.70	43.10	43.75	53.33	35.57	27.59	65.63	66.67	40.27	32.76	71.88	60.00
Neither agree nor disagree	19.46	27.59	-	-	32.89	36.21	12.50	13.33	36.24	43.10	12.50	26.67
Rather disagree	4.70	6.90	9.38	6.67	5.37	1.72	3.13	6.67	6.04	8.62	9.38	6.67
Strongly disagree	5.37	6.90	3.13	6.67	6.71	13.79	6.25	-	4.70	5.17	-	-
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

An analysis of the answers of students and teachers to the statement “I believe that I can influence sustainable development in my school through my actions” (Table 2) revealed that 33.56% of learners and 91.17% of teachers in the BSHS and 55.09% of learners and 80% of students in RSHS1 gave affirmative answers. In the field of sustainable development, everyone's involvement was important. An analysis of the answers of learners and educators to the statement “I believe that it is important what everyone does for sustainability” revealed that 59.73% of students and 96.88% of teachers in the BSHS and 77.59% of students and 93.33% of teachers in RSHS1 answered in the affirmative. An analysis of the answers of students and teachers to the statement “I want to act for sustainable development in my school” showed that 41.61% of students and 87.50% of teachers in the BSHS and 62.07% of learners and 96.67% of teachers in RSHS1 gave affirmative answers. It should be noted that the students’ answers “Neither agree nor disagree” to the statements in Table 2 indicated that they did not have a specific opinion on whether their actions in school were sustainable and on their willingness to act for sustainability. Consequently, the students were not fully sure how and if they could influence sustainable development in their school through their actions. It should be noted that the teachers were more likely than the students to believe that they could influence sustainable

development in their school through their actions, that it was important what everyone did for sustainability and that they were willing to act for sustainability. The teachers' responses also indicated an awareness that they could influence sustainability through their personal actions, yet a lower willingness to take action.

Table 2 Actions for sustainable development by students and teachers, % (authors' calculations, N=207, N=45)

Statement Answer	I believe I can influence sustainable development in my school through my actions				I believe it is important what everyone does for sustainability				I want to take action for sustainable development in my school			
	Students		Teachers		Students		Teachers		Students		Teachers	
	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1
Strongly agree	6.71	18.97	58,82	20.00	22.15	36.21	62.50	73.33	8.72	22.41	37.50	40.00
Rather agree	26.85	36.12	32,35	60.00	37.58	41.38	34.38	20.00	32.89	39.66	50.00	46.67
Neither agree nor disagree	44.30	27.59	8,82	13.33	26.85	13.79	3.13	-	43.62	24.14	12.50	6.67
Rather disagree	14.09	12.07	-	-	8.72	6.90	-	-	7.38	8.62	-	-
Strongly disagree	8.05	5.17	-	6.67	4.70	3.72	-	6.67	7.38	5.17	-	6.67
Total:	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

An analysis of the students' opinions on the statement "I believe it is important to gain knowledge about the environment and climate change" revealed that 61.07% of BSHS students and 77.59% of RSHS1 students gave affirmative answers (Table 3).

Table 3 Students' opinions on the need for knowledge about sustainable development, % (authors' calculations, N=207)

Statement Answer	I believe it is important to gain knowledge about the environment and climate change		I acquire knowledge about sustainable development and climate change as part of my school curriculum		I believe that sustainability issues should be discussed more often within the curriculum	
	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1
Strongly agree	23.49	36.21	14.77	20.69	12.75	27.59
Rather agree	37.58	41.38	38.26	34.48	32.89	36.21
Neither agree nor disagree	24.83	17.24	30.87	32.76	34.90	25.86
Rather disagree	6,04	0	10.07	6.90	11.41	6.90
Strongly disagree	8.05	5.17	6.04	5.17	8.05	3.45
Total:	100.00	100.00	100.00	100.00	100.00	100.00

Of the total, 53.03% of BSHS and 55.17% of RSHS1 students gave affirmative answers to the statement "I acquire knowledge about sustainable

development and climate change as part of my school curriculum”. Of the total, 45.64% of BSHS and 59.80% of RSHS1 students gave affirmative answers to the statement “I believe that sustainability issues should be discussed more often within the curriculum”. It should be noted that the students’ answers “Neither agree nor disagree” indicated that they did not fully understand the concept of sustainable development and factors in it, therefore, not clearly identifying whether these topics related to sustainability issues.

Based on the students’ questionnaire data, it was established whether there was a statistically significant correlation between their opinions on action for sustainable development and knowledge about the environment and climate change (Table 4).

Table 4 Matrix of correlations between the students' opinions on action for sustainable development and knowledge about the environment and climate change (authors' calculations with SSPP, N=207)

Statement	1.	2.	3.	4.	5.	6.
I believe I can influence sustainable development in my school through my actions	-					
I believe it is important what everyone does for sustainability	.625*	-				
I want to take action for sustainable development in my school	.643*	.570*	-			
I believe it is important to gain knowledge about the environment and climate change	.576*	.654*	.572*	-		
I acquire knowledge about sustainable development and climate change as part of my school curriculum	.476*	.439*	.500*	.629*	-	
I believe that sustainability issues should be discussed more often within the curriculum	.550*	.592*	.621*	.733*	.555*	-

**significant at level 0.05 level*

Table 4 shows that there was a moderately strong correlation ($0.5 < |r| < 0.8$) between the following student opinions: it is important to gain knowledge about the environment and climate change, and sustainability issues should be discussed more often within the curriculum ($r = 0.733$); it is important to gain knowledge about the environment and climate change and it is important what everyone does for sustainability ($r = 0.654$), I can influence sustainable development in my school through my actions and I want to act for sustainable development in my school (0.643). The hypothesis that knowledge and understanding of sustainable development determine individuals' actions for sustainable development was confirmed.

The correlation analysis showed that there was a moderately strong statistical correlation between the knowledge-based belief that each individual’s actions can influence sustainable development and the desire to

act for sustainability, as well as the need to acquire additional knowledge related to the environment and climate change. It could be concluded that awareness of sustainable development contributes to sustainable development and that it is important to address sustainable development issues in schools and integrate them into the curricula to introduce sustainable habits in society.

Table 5 Students’ knowledge of sustainability promotion, %
(authors' calculations, N=207)

Statement Answer	I know how to act in school to promote sustainable development		I know what to do at home to promote sustainable development		I want to learn more at school about how we can build a more sustainable future together	
	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1
Strongly agree	8.72	12.07	20.81	22.41	14.09	17.24
Rather agree	34.23	25.86	35.57	41.38	28.86	36.21
Neither agree nor disagree	36.91	37.93	32.21	24.14	42.28	36.21
Rather disagree	12.08	12.07	6.04	3.45	8.05	5.17
Strongly disagree	8.05	12.07	5.37	8.62	6.71	5.17
Total:	100.00	100.00	100.00	100.00	100.00	100.00

Table 5 shows the students’ knowledge of sustainability promotion and of how to act for sustainability at school, at home and a desire to learn more about these issues. The students rated their knowledge of how to act at home rather than at school to promote sustainable development higher. It should be noted that around 37% of students were not sure whether their knowledge of what to do at home to promote sustainable development was sufficient. An analysis of the students’ responses to the statement “I want to learn more at school about how we can build a more sustainable future together” revealed that 42.28% of BSHS and 36.21% of RSHS1 students answered “Neither agree nor disagree”. This shows that the students did not have a certain opinion about their willingness or, on the contrary, unwillingness to acquire more knowledge in school about how we can build a more sustainable future together.

Based on the data from the student survey, it was established whether there were statistically significant correlations between the students’ concern about climate change and environmental problems and their knowledge of sustainability issues (Table 6).

An analysis of the correlation between the students' anxiety about climate change and environmental problems and knowledge on promoting sustainability revealed that a moderately strong correlation ($0.5 < |r| < 0.8$) existed between the opinions on how to act at school to promote sustainable development and how to act at home to promote sustainable development ($r=0.793$) and the opinions on how to act at school and at home and the

desire to gain more knowledge about how to build a sustainable future (r=0.513 un r=0.510).

Table 6 Matrix of correlations between the students' concerns about climate change and environmental problems and their knowledge about promoting sustainability (authors' calculations with SPSS, N=207)

Statement	1.	2.	3.	4.
1. I am concerned about climate change and environmental problems	-			
2. I know how to act in school to promote sustainable development	.164*	-		
3. I know what to do at home to promote sustainable development	.169*	.793*	-	
4. I want to learn more at school about how we can build a more sustainable future together	.265*	.513*	.510*	-

*significant at level 0.05 level

The survey data showed that 34.38% of BSHS teachers took professional development courses on sustainability and 26.67% of RSHS1 teachers. The problem of the ability of teachers to integrate sustainable development issues into their subjects is relevant because the possession of relevant knowledge by teachers is important for students' knowledge about sustainability (Table 7).

Table 7 Teachers' knowledge of sustainability promotion, % (N=207) (authors' calculations)

Statement Answer	I have enough knowledge to integrate sustainability issues into the subject I teach		I know how to act to promote sustainable development at the personal level		I know what to do at home to promote sustainable development		I want to learn more at school about how we can build a more sustainable future together	
	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1
Strongly agree	12.50	26.67	18.75	26.67	25.00	26.67	25.00	6.67
Rather agree	53.13	46.67	50.00	46.67	68.75	53.33	50.00	80.00
Neither agree nor disagree	31.25	6.67	25.00	26.67	6.25	20.00	15.63	13.33
Rather disagree	-	50.00	6.25	-	-	-	6.25	-
Strongly disagree	3.13	-	-	-	-	-	3.13	-
Total:	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

However, despite the survey data on professional development courses on sustainability, a significantly higher proportion of teachers when rating their knowledge about how to integrate sustainability issues in their subjects, as well as about the development of sustainability at the personal level, the development of sustainability at home and the desire to gain more knowledge about how to create a more sustainable future, answered in the affirmative.

Based on the data from the teacher survey, it was established whether there were statistically significant correlations between a professional

development course on sustainability and knowledge about sustainability issues (Table 8).

Table 8 Matrix of correlations between taking a professional development course on sustainability by teachers and knowledge about sustainability (authors' calculations with SPSS, N=57)

	1.	2.	3.	4.	5.
1. I have completed professional development courses on sustainability	-				
2. I have enough knowledge to integrate sustainability issues into the subject I teach	-.352*	-			
3. I know what to do to promote sustainable development at the personal level	-.342*	.775*	-		
4. I know what to do at home to promote sustainable development	-.138*	.609*	.690*	-	
5. I want to learn more at school about how we can build a more sustainable future together	-.143*	-.008*	.109*	.165*	-

**significant at level 0.05 level*

An analysis of the correlation between taking a professional development course on sustainability and knowledge about sustainability revealed that a moderately strong correlation ($0.5 < |r| < 0.8$) existed between the opinions that there was enough knowledge to be able to integrate sustainability issues into the curriculum in the subject and current knowledge of how to act to promote sustainable development at the personal level ($r=0.775$) and knowledge of how to act at school and knowledge of how to act at home ($r=0.690$).

The participation of teachers in professional development courses on sustainability was passive and could contribute to the transfer of knowledge on sustainable development issues in the subjects they taught. However, no strong correlation was found between taking a professional development course on sustainability and knowledge of sustainability issues.

Being aware of the gravity of the current situation and the need for immediate action to promote sustainability, the authors believe that there is a need for even greater national attention to ESD, which has already been identified as a global priority. The absence of a legal framework for the inclusion of sustainability issues in the curricula of general education schools showed that the issues were subject to subjective interpretation. The teacher had autonomy in planning the topics to be taught and how to achieve the objectives set for students, which in turn suggested that the teacher had some autonomy over the curriculum. The authors argue that environmental and sustainability issues were often not central to the curriculum, as the teacher tended to be concerned with the performance of students in their subject, and this was particularly important in the case of centralized

examinations, where the expectations of parents, the school and the local authority needed to be met.

Conclusions and suggestions

Sustainability is about a balance between rationally meeting the needs of present and future generations or using resources rationally without risking scarcity in the future. Education is perceived as one of the foundations for further sustainable development, as it provides answers to societal and environmental challenges. Two concepts are considered in the context of education and sustainability: ESD and GCED. The objectives of ESD cover the environmental, economic and social areas, while GCED refers to human social skills. In general, ESD and GCED are complementary and have in common the knowledge and skills that any individual can acquire at the personal and community levels, with the aim of achieving the sustainable development outcomes set.

The education industry, constantly confronted with rapidly changing public policies, faces new challenges, driven by the vital need to integrate sustainability issues into the curriculum, with the aim of changing attitudes towards environmental problems and sustainable development. The challenges for integrating ESD into the curriculum mainly relate to teachers' attitudes towards the need for and opportunities to integrate ESD into their subjects.

Sustainability was considered an important topic by the students and teachers. Most of the teachers considered their school to be a sustainable-minded school, rated their own lifestyle as sustainable and the teachers were more interested than the students in participating in events/activities on sustainability. The teachers are more likely than the students to believe that they could influence sustainable development in their school through their actions, that it was important what everyone did for sustainability and that they were willing to act for sustainability. The teachers were aware that they could influence sustainability through their personal actions, but were less willing to act.

There was a moderately strong correlation between the following student opinions: it is important to gain knowledge about the environment and climate change and sustainability issues should be discussed more often in school; it is important to gain knowledge about the environment and climate change and it is important what everyone does for sustainability; I can influence sustainable development in my school through my actions and I want to act for sustainable development in my school. The hypothesis that knowledge and understanding of sustainable development determines individuals' actions to promote sustainable development proved to be true.

The students rated their knowledge of how to act at home rather than at school to promote sustainable development higher. The students did not have a strong sense of willingness or, conversely, unwillingness to acquire more knowledge at school about how to build a more sustainable future together. An analysis of the correlation between the students' concern about climate change and environmental problems and their knowledge of how to promote sustainability revealed that there was a moderately strong correlation between opinions on how to act at school to promote sustainable development and knowledge about how to act at home to promote sustainable development and knowledge about how to act at school and at home and the desire to acquire more knowledge about how to build a sustainable future together.

A significantly higher proportion of teachers responded affirmatively when evaluating their knowledge about integrating sustainability issues into the subjects they taught, sustainability development at the personal level, sustainability development at home and the desire to gain more knowledge about how to build a more sustainable future together.

The participation of teachers in professional development courses on sustainability was passive and could contribute to the transfer of knowledge on sustainable development issues in the subjects they taught. However, no strong correlation was found between taking a professional development course on sustainability and knowledge of sustainability issues.

The Ministry of Education and Science of the Republic of Latvia, in cooperation with higher education institutions, should, when developing and accrediting curricula in educational sciences, provide for the study of sustainable development topics, thus preparing new teachers to integrate sustainable development issues into the subjects they taught.

It should be made compulsory for the administrations of general education institutions to ensure that all teachers are trained, thereby regularly renewing their knowledge about ESD, and to hold awareness-raising activities in schools with the involvement of students.

References

1. Bela, B. (zin. red.). (2018). *Ilgtspējīga attīstība un sociālās inovācijas*. Rīga: LU Akadēmiskais apgāds.
https://dspace.lu.lv/dspace/bitstream/handle/7/45405/sustinno_gramata_C.pdf?sequence=1
2. Bianchi, G., Pisiotis, U., & Cabrera Giraldez, M. (2022). *GreenComp — Eiropas ilgtspējas kompetenču sistēma*. Bacigalupo, M., Punie, Y. (redaktori), Eiropas Savienības Publikāciju birojs, Luksemburga. <https://dx.doi.org/10.2760/953086>
3. Education Law (1998). Law of the Republic of Latvia.
<https://likumi.lv/ta/en/en/id/50759>
4. Environmental Protection Law (2006). Law of the Republic of Latvia.
<https://likumi.lv/ta/en/en/id/147917>

5. General Assembly (1992). *Rio Declaration on Environment and Development*. https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151_26_Vol.I_Declaration.pdf
6. General Education Law (1999). Law of the Republic of Latvia. <https://likumi.lv/ta/en/en/id/20243>
7. *Izglītības attīstības pamatnostādnes 2021.–2027. gadam*. (2021). LR Izglītības un zinātnes ministrija (2021). <https://likumi.lv/ta/id/324332>
8. Kušners, E. *Ilgspējība*. Jurista Vārds, 15.02.2022., Nr. 7 (1221), 82.lpp.
9. Laganovskis, G. (2023.g. 2.sept.). *Pedagogu trūkums – steidzami risināma problēma*. <https://lvportals.lv/norises/354492-pedagogu-trukums-steidzami-risinama-problema-2023>
10. LAPAS (2022). *Globālā izglītība: attīstība, koncepts un piemērošana. Globālās izglītības stratēģiskās vadlīnijas 2021.–2025. gadam*. https://lapas.lv/resources/metodikas-un-rokasgramatas/09_gi_vadlinijas_2022/LAPAS-GlobalaIzglitiba-Vadlinijas.pdf
11. LETA (2023). *Jaunu pedagogu piesaistei izglītības iestādēm IZM ieplānojuši 8,6 miljonus eiro*. <https://www.diena.lv/raksts/latvija/zinas/jaunu-pedagogu-piesaistei-izglitiba-iestadem-izm-ieplanojusi-86-miljonus-eiro-14292751>
12. Meadows, M. E. (2020). Geography education for sustainable development. *Geography and Sustainability*, 1, 88.-92. <https://doi.org/10.1016/j.geosus.2020.02.001>
13. O'Flaherty, J., & Liddy, M. (2018). The impact of development education and education for sustainable development interventions: a synthesis of the research. *Environmental Education Research*, 24(7), 1031–1049. <https://doi.org/10.1080/13504622.2017.1392484>
14. *Regulations Regarding the State Basic Education Standard and Model Basic Education Programmes* (2018). Republic of Latvia Cabinet Regulation No. 747. <https://likumi.lv/ta/en/en/id/303768>
15. *Regulations Regarding the State General Secondary Education Standard and Model General Secondary Education Programmes* (2019). Republic of Latvia Cabinet Regulation No. 416. <https://likumi.lv/ta/en/en/id/309597>
16. Suša, R. (2019). *Globālā pilsoniskā izglītība (GPI) nezināmai nākotnei. Pagātnes un šodienas eksperimentu un debašu kartes*. https://iic.lv/wp-content/uploads/2019/11/GPI_nezinamai_nakotnei.pdf
17. Swedbank (2021). *Soli pa solim ilgtspējas virzienā: rokasgrāmata uzņēmējiem*. <https://biznesam.swedbank.lv/upload/content/soli-pa-solim-rokasgramata-uznemejiem.pdf>
18. Tēzauris.lv (2023). *Ilgspēja*. <https://tezauris.lv/ilgtsp%C4%93j%C4%ABba>
19. Torsdottir, A. E., Olsson, D., & Sinnes, A.T. (2024). Developing action competence for sustainability – Do school experiences in influencing society matter? *Global Environmental Change*, 86, 102840. <https://doi.org/10.1016/j.gloenvcha.2024.102840>
20. UNESCO (2022). *Pasaules konference par izglītību ilgtspējīgai attīstībai (2021). Mācāmies mūsu planētas labā. Rīkojamies ilgtspējības vārdā. Berlīnes deklarācija par izglītību ilgtspējīgai attīstībai*. <https://www.unesco.lv/lv/media/662/download?attachment>
21. Zaļoksnis, J. (2024). *Ilgspējas zinātne*. <https://enciklopedija.lv/skirklis/6917-ilgtsp%C4%93jas-zin%C4%81tne>

IMPROVING CYPRUS FIRE SERVICE PERFORMANCE THROUGH MODERN HR MANAGEMENT PRACTICES AND JOB SATISFACTION

Nikos Mardas¹, Constantinos Charalambous²

¹ MBA, City Unity College Nicosia, Cyprus, e-mail: n.mardass@gmail.com

² Professor of Economics, Provost City Unity College Nicosia, Cyprus, e-mail: c.charalambous@cityu.ac.cy

Abstract.

Purpose and aim of the study: *This study investigates the relationship between staff job satisfaction and the transformation of the Cyprus Fire Service into a modern and flexible National Security Force. The primary aim is to analyse organizational and human resource management theories and their application to enhance the efficiency and effectiveness of fire operations.*

Design / Methodology / Approach: *The research employs a quantitative approach, utilizing a survey conducted with 110 members of the Cyprus Fire Service. The survey assesses job satisfaction and its impact on service quality. The data were collected using a structured questionnaire and analysed using statistical methods, including descriptive, frequency, and correlation analyses.*

Main Findings: *The findings reveal a strong positive correlation between employee satisfaction and service quality. Satisfaction influences service quality both directly and indirectly. The study highlights that job satisfaction encompasses various factors, including salary, promotions, and management practices.*

Originality: *This research is original in its focus on transforming the Cyprus Fire Service by applying modern management principles. It provides insights into how job satisfaction can be leveraged to improve organizational performance in public safety services.*

Implications: *The study suggests that enhancing job satisfaction can lead to improved service quality, which is crucial for the Fire Service's role in ensuring public safety. It proposes alternative strategies for personnel management by comparing successful systems from other EU Member Countries.*

Keywords: *employee satisfaction, fire service transformation, human resource management, job satisfaction, National Security Force, service quality, workforce management.*

Received: 13 November 2024 **Revised:** 20 November 2024 **Accepted:** 6 December 2024

Published: 16 December 2024

Introduction

The Cyprus Fire Service has been an integral part of the country's public safety framework for over 60 years. Initially, it operated as part of the Cyprus Police. However, as society has evolved, the traditional methods and systems used by the Fire Service have become outdated and are not adequate for today's needs.

Recognising this, the Cyprus Fire Service, after many years of efforts, has managed to gain autonomy and independence from October 2021, allowing it to modernise and improve its operations. This research will explore how the Fire Service can be transformed into a more adaptable and efficient organisation. By implementing a new modern and comprehensive personnel management system, the aim is to enhance its capabilities, making it better equipped, more flexible and stronger to handle both current responsibilities and future challenges more effectively and efficiently in an ever-changing environment.

In today's fast-paced world, organizations in various sectors are recognizing the importance of job satisfaction as a key driver of performance and service quality (Barger & Grandey, 2006). Theoretical perspectives suggest that when employees are satisfied with their jobs, they are more motivated, productive and committed to their roles. This is not only the case for the Cyprus Fire Service but is applicable to any organisation that seeks to enhance its efficiency and effectiveness (Rahman & Simonson, 2020). Theories of organisational behaviour and human resource management posit that job satisfaction can result in superior teamwork and an enhanced public service experience.

The aim of this research is to examine the opportunities for improving Cyprus Fire Service performance through modern HR management practices and job satisfaction.

The current research aims to:

- To assess the current levels of job satisfaction among members of the Cyprus Fire Service and identify the key factors influencing it.
- To evaluate the impact of job satisfaction on service quality and operational performance within the Cyprus Fire Service, providing recommendations for enhancing HR practices.

The work is organized as follows. First, the study begins with a literature review that examines existing theories and research on job satisfaction and organizational transformation. Next, the methodology section outlines the research design, including the survey conducted with members of the Cyprus Fire Service, and the statistical methods used for data analysis. Following this, the results section presents the key findings of the study. The discussion section then interprets these findings in the context of the Cyprus Fire Service's transformation, offering insights and implications for practice. Finally, the conclusion summarizes the main points of the research.

Understanding job satisfaction: influences and implications for organizational performance

Job satisfaction is a topic that has garnered significant attention from researchers interested in human behaviour and organizational performance. It is widely recognized that how people perceive their work can greatly influence their efficiency, productivity, and relationships at work (Bitner, 1990). This perception affects not only their attendance and commitment but also their overall attitude towards their jobs (Saari & Judge, 2004). Maslow's hierarchy of needs proves that while many view work as a means to meet basic needs like food and shelter, it also fulfils emotional and psychological needs, contributing to overall well-being.

The global economic crisis has had a profound impact on labour relations, leading to increased frustration and stress among employees. This has resulted in a more negative outlook towards work, colleagues, and supervisors, with many feelings less committed and more pessimistic (Bakker et al., 2004). Job satisfaction is inherently subjective, varying from person to person based on individual feelings and expectations. It is not just about material benefits or salary; personal expectations and the degree to which they are met play a crucial role (Barger & Grandey, 2006).

Job satisfaction is a multifaceted concept, encompassing various aspects of work such as rewards, opportunities for promotion, communication, safety, and relationships with supervisors and colleagues. It is influenced by both work-related factors, like the nature of the job and working conditions, and personal factors, such as personality and individual needs (Furnham et al., 2009; Barling et al., 2003). These factors can be grouped into three main categories: the work environment, specific job dimensions, and individual characteristics.

Another important contributor is supervisors who play a critical role in enhancing job satisfaction. When management actively addresses employee concerns and provides support, it boosts satisfaction levels. Assigning responsibilities and offering opportunities for growth and promotion can positively impact satisfaction, whereas limited prospects for personal development can hinder it (Kraimer et al., 2011).

Organizational culture also significantly affects job satisfaction. When employees embrace and identify with the culture, they tend to feel more satisfied. Conversely, a lack of alignment can lead to poor performance and conflicts (Kraimer et al., 2011). Job security is another important factor; part-time jobs often lack this security, offering limited opportunities for personal growth and advancement (Armstrong & Taylor, 2023).

Balancing multiple roles at work and in personal life can lead to dissatisfaction and stress. However, achieving harmony between these

roles can enhance both job and life satisfaction, as they are closely linked. A dynamic balance between work and family life is essential, as conflicts between the two can reduce job satisfaction (Aruldoss et al., 2022).

Cultural values and interpersonal relationships within a society also play a significant role in influencing job satisfaction. Factors such as age, gender, salary, and educational level can all impact how individuals perceive their work environment and their level of satisfaction (Ghafoor, 2012). Understanding these dynamics is crucial for organizations aiming to improve employee satisfaction and, consequently, organizational performance.

Method of data collection

For the needs of collecting the necessary data, a specialized questionnaire was created, which was circulated in all the provinces of Cyprus.

The target population was defined, and a total of 150 questionnaires were circulated throughout the Cyprus Fire Service. The target population included fire-fighters, while at the same time it was foreseen in the target population that there would be workers in administrative services and office positions in order to investigate the research questions of the total of 640 firefighters who made up the entire Cyprus Fire Service force.

A total of 110 fully and correctly answered questionnaires were returned. The 110 people who answered the questionnaire were also the sample of this research.

The first section includes questions concerning the individual demographics in order to collect information about the person (number, age, marital status, educational level, service, rank, years of service, nature of work, hours).

The second section includes questions about job satisfaction. For the needs of this study, the Job Satisfaction Survey (JSS) questionnaire was used, which assesses nine dimensions of job satisfaction related to overall satisfaction, one of the most used methods in the literature. 14 representative questions were selected using the 5-point Likert scale, from "1. Strongly disagree" to "5. I totally agree »

The third section includes questions about job satisfaction. For the needs of this study, the questionnaire was used, which included questions especially about the quality of the services offered to the public by Cyprus Fire Service.

From the set of questions of the original questionnaire, which were collected, representative questions were selected using a 5-point Likert scale, from "1 - Strongly disagree" to "5 - Strongly agree".

The PSPP statistical data analysis program was used for data analysis and empirical investigation. Descriptive, frequency analysis, correlation analysis, factor analysis through crossovers and factor analysis were used in the empirical investigation.

Research results

The demographic profile of the respondents in this study reveals a diverse group of individuals within the Cyprus Fire Service. The majority of respondents are male (71.8%), with females making up 28.2% of the sample. Age distribution shows a balanced representation across different age groups, with the largest segment being those aged 36-45 years (34.5%). In terms of marital status, nearly half of the respondents are married with children (49.1%), while others are single, married, or divorced/widowed. Educationally, most respondents have attained tertiary education (47.3%), followed by those with secondary education (23.6%). The predominant job title among respondents is Firefighter (72.7%), with smaller numbers in other ranks such as Sergeants and Officers. Regarding work experience, a significant portion has served between 16 to 20 years (31.8%). The nature of work is primarily operational, with 72.7% working outdoors, and the majority having fixed working hours (71.8%).

The study reveals a strong commitment among firefighters to public service, with 62.7% of respondents agreeing that they should always be willing to help the public. This result underscores the dedication of the Cyprus Fire Service personnel to their roles and responsibilities. It reflects an organizational culture that prioritizes public welfare and responsiveness, which is essential for maintaining high service standards (Ostrom & Whitaker, 1974). Furthermore, the trust placed in the Fire Service by the public is mirrored by the respondents' belief in the necessity of this trust, with 95.5% agreeing that citizens should have confidence in the Service. This trust is a cornerstone of effective service delivery, as it fosters a positive relationship between the Fire Service and the community it serves.

Satisfaction with promotions, salaries, and management

The study's findings on satisfaction with promotions, salaries, and management reveal a more nuanced picture. The responses indicate a division among the participants, with some expressing satisfaction and others dissatisfaction. Specifically, when asked about promotion opportunities, the responses were spread across the spectrum, with a significant number neither agreeing nor disagreeing. This suggests that

while some employees perceive clear paths for advancement, others may feel stagnant in their roles. Similarly, perceptions of salary fairness were mixed, with a notable portion of the respondents expressing dissatisfaction. This division highlights potential areas for improvement in labour policies, particularly regarding career advancement and compensation. Addressing these concerns could enhance overall job satisfaction and, consequently, service quality.

The statistical findings of the survey demonstrate the significant correlation between work status and the belief that the salary is satisfactory. As a result, whether the employee is in office duties or works a shift system or some other fixed work schedule is related to the degree of satisfaction with the salary.

Job satisfaction of firefighters is directly linked to the management of their careers, their reward and the support they receive from the service. Maintaining a fair and transparent promotion system, ensuring satisfactory and competitive salaries, as well as investing in an effective and supportive human resource management mechanism can improve the overall satisfaction and performance of firefighters. However, the management of these parameters requires continuous review and flexibility in order to respond to the evolving needs of personnel and operational requirements.

Correlations between work status, job position, and salary satisfaction

Analysing the relationship between employment status, job positions and salary satisfaction in the fire service, we can highlight that these conditions are directly linked to the professional performance and personal well-being of employees. The balance between remuneration and the riskiness of the profession, the recognition of professional development and the stability of the employment status are important factors for increasing the satisfaction of firefighters and improving the services they offer to society.

The study has found that salary varies depending on the employment status, as working in a shift system in the Cyprus Fire Service includes a bonus, unlike office duties. In addition, the position of the employees has a direct correlation with the belief that the salary is satisfactory, since due to the position the salary varies (the higher the position, the higher the salary). The degree of satisfaction of the employee when performing his/her duties, in relation to the employment status and the job position, includes, among other things, the degree of satisfaction with the salary. In conclusion, a certain percentage of the satisfaction of the employee seems to be affected depending on his/her job position and the schedule-system where the fire-fighter works.

The fire-fighters working shifts, who receive additional allowances, are more likely to perceive their salary as satisfactory compared with those in clerical roles with no opportunity to earn extra. This finding suggests that compensation structures that account for the demands of different work schedules can positively impact salary satisfaction. The study also explored correlation between work status and perceptions of fair salary (Table 1).

Table 1. The correlation between work status on the perceptions of fair salary (Chi-Square Test) (compiled by the author)

Chi-Square Tests

	Value	df	Asymptotic Sig. (2-tailed)
Pearson Chi-Square	11.72	4	.020
Likelihood Ratio	11.06	4	.026
Linear-by-Linear Association	1.91	1	.167
N of Valid Cases	110		

A significant finding was the correlation between work status (office hours, shifts) and perceptions of fair salary, with a Pearson Chi-Square value of 11.72 and a significance level of 0.020. This shows a statistically significant association between the two variables.

Table 2 presents the correlation between position rankings and salary satisfaction.

Table 2. The correlation between position rankings and salary satisfaction (Chi-Square Test) (compiled by the author)

Chi-Square Tests

	Value	df	Asymptotic Sig. (2-tailed)
Pearson Chi-Square	5.11	4	.276
Likelihood Ratio	5.22	4	.265
Linear-by-Linear Association	.01	1	.917
N of Valid Cases	110		

Table 2 indicates that higher-ranking positions are associated with greater salary satisfaction (Pearson Chi-Square value of 5.11); however, the correlation between job positions and salary satisfaction was not significant (0.276). This result only partially allows us to draw a conclusion on the importance of aligning compensation with job responsibilities and ensuring that salary structures reflect the demands and responsibilities of different roles.

Non-significant correlations

Other correlations tested in the work between gender and promotion or education level and willingness to help, were not statistically significant. This suggests that these factors may not have a substantial impact on job satisfaction or perceptions of service quality within the Fire Service. The lack of significant correlation in these areas indicates that other factors, such as the working environment and management practices, may play a more critical role in influencing job satisfaction. This dimension includes more general opportunities for career development and job rotation. Development opportunities enable firefighters to advance their careers by acquiring new skills and responsibilities.

Discussion and implications

The study highlights the critical role of job satisfaction in influencing service quality within the Cyprus Fire Service. The findings suggest that addressing issues related to promotions, salaries, and management practices could enhance employee satisfaction and, consequently, service delivery. By implementing fair and transparent promotion and compensation practices, the Fire Service can improve job satisfaction, leading to better performance and higher service quality. Additionally, fostering a culture of trust and commitment to public service can further strengthen the relationship between the Fire Service and the community, ensuring that citizens receive the high-quality services they expect and deserve.

Conclusions

The study on job satisfaction and its impact on service quality within the Cyprus Fire Service provides several key insights and conclusions. These findings have important implications for both organizational policy and practice, highlighting areas for improvement and potential strategies for enhancing service delivery.

The research underscores the strong commitment of firefighters to public service, as evidenced by the majority's willingness to assist the public and their belief in the necessity of public trust. This commitment is a fundamental component of service quality, as it ensures that firefighters are motivated to perform their duties effectively and responsively. The high level of trust that the respondents believe citizens should have in the Fire Service further emphasizes the importance of maintaining a positive

relationship with the community. Building and sustaining this trust is crucial for the Fire Service to fulfil its mission and meet public expectations.

The study reveals a division in satisfaction levels regarding promotions, salaries, and management practices. This division suggests that while some employees feel adequately supported and compensated, others do not share this sentiment. To address these disparities, the Fire Service should consider revisiting its labour policies to ensure fair and transparent promotion and compensation practices. By aligning career advancement opportunities and salary structures with employee expectations and job responsibilities, the organization can enhance job satisfaction and, in turn, improve service quality.

The correlations identified in the study highlight the importance of aligning compensation with job demands. Employees working shifts, who receive additional allowances, are more likely to perceive their salary as fair, suggesting that compensation structures should account for the varying demands of different work schedules. Similarly, ensuring that salary structures reflect the responsibilities of different job positions can enhance satisfaction and motivation among employees, but only partially.

While some factors, such as gender and education level, did not show significant correlations with job satisfaction, this finding suggests that other elements, such as the working environment and management practices, may play a more critical role. The Fire Service should focus on these areas to further enhance job satisfaction and service quality.

To overcome the challenges, Fire Service officers must act as proactive and open-minded leaders, implementing substantive rather than merely routine formal changes. This process must be consistent with the high stakes of national existence and social order in order to yield maximum benefits.

In order to enhance employee satisfaction, it would be useful to consider proposals for better recognition of their work, increased support and training in the most dangerous positions, and improvement of their wage policy, in order to reduce inequality and dissatisfaction in the sector.

Innovative personnel management and optimization of efficiency and effectiveness in the Cyprus Fire Service require the implementation of modern strategies that combine training, technology, collaboration and restructuring of administrative structures. At the same time, an integrated approach is required that will ensure the service's ever-growing response to modern challenges. The criticism, however, lies in the fact that the implementation of such strategies requires significant investments and coordinated efforts from all the authorities involved. While technology and innovation can offer significant advantages, the proper utilization of the human factor and the creation of an environment of continuous learning

and collaboration are equally important for achieving sustainable and successful results.

The correct, adequate and modern management of human resources in the Fire Department is a fundamental factor in improving and enhancing the effectiveness of the services offered to the citizen. However, the management of human resources in such a demanding and critical sector, such as firefighting, requires a combination of strategic planning and the implementation of innovative methods in order to respond to the constantly changing needs and challenges of the social and natural environment.

The management of human resources in the Fire Department requires a multidimensional approach that primarily includes professional support, leadership, innovation and social cooperation. A strategy that focuses on strengthening the capabilities of firefighters, improving working conditions and implementing modern practices that can have a decisive impact on the effectiveness of the Fire Department and the overall quality of services to the citizen.

At the same time, in future research, it would be interesting to examine whether there is a system of evaluation and rewards and allowances in the Fire Service, such as the allowance for hazardous occupations, as well as how this can affect the quality of services provided, either directly or indirectly through the influence of intermediary factors such as job satisfaction.

References:

1. Armstrong, M., Taylor, S. (2023). *A Handbook of Human Resource Management Practice*, 16th ed., Kogan Page Publishing, London.
2. Aruldoss, A., Berube Kowalski, K., Travis, M. L., & Parayitam, S. (2022). The relationship between work-life balance and job satisfaction: Moderating role of training and development and work environment. *Journal of Advances in Management Research*, 19(2), 240-271.
3. Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management: Published in Cooperation with the School of Business Administration, The University of Michigan and in alliance with the Society of Human Resources Management*, 43(1), 83-104.
4. Barger, P. B., & Grandey, A. A. (2006). Service with a smile and encounter satisfaction: Emotional contagion and appraisal mechanisms. *Academy of Management Journal*, 49(6), 1229-1238.
5. Barling, J., Kelloway, E. K., & Iverson, R. D. (2003). Accidental outcomes: Attitudinal consequences of workplace injuries. *Journal of Occupational Health Psychology*, 8(1), 74.
6. Bitner, M. J. (1990). Evaluating service encounters: the effects of physical surroundings and employee responses. *Journal of marketing*, 54(2), 69-82.

7. Furnham, A., Eracleous, A., & Chamorro-Premuzic, T. (2009). Personality, motivation and job satisfaction: Hertzberg meets the Big Five. *Journal of managerial psychology*, 24(8), 765-779.
8. Ghafoor, M. M. (2012). Role of demographic characteristics on job satisfaction. *Far East Research Centre*, 6(1), 30-45.
9. Kraimer, M. L., Seibert, S. E., Wayne, S. J., Liden, R. C., & Bravo, J. (2011). Antecedents and outcomes of organizational support for development: the critical role of career opportunities. *Journal of applied psychology*, 96(3), 485.
10. Ostrom, E., & Whitaker, G. P. (1974). Community control and governmental responsiveness: The case of police in black neighborhoods. *Improving the Quality of Urban Management*, 10(4), 303-34.
11. Rahman, K. S., & Simonson, J. (2020). The Institutional Design of Community Control. *California Law Review*, 108(3), 679-742.
12. Saari, L. M., & Judge, T. A. (2004). Employee attitudes and job satisfaction. *Human Resource Management: Published in Cooperation with the School of Business Administration, The University of Michigan and in alliance with the Society of Human Resources Management*, 43(4), 395-407.

REASONS FOR STRESS AMONG STUDENTS STUDYING BUSINESS STUDIES IN LITHUANIAN AND LATVIAN HIGHER EDUCATION INSTITUTIONS

**Viktorija Piscalkiene¹, Simona Jankauskaite²,
Rasa Vaitkiene³, Daina Znotina⁴**

¹ PhD, associate professor, researcher, Kauno kolegija/Higher Education Institution, Kaunas, Lithuania, e-mail: viktorija.piscalkiene@go.kauko.lt

² Mg.hum. sc., lecturer, researcher, Kauno kolegija/Higher Education Institution, Kaunas, Lithuania, e-mail: simona.jankauskaite@go.kauko.lt

³ Mg.soc. sc., lecturer, researcher, Kauno kolegija/Higher Education Institution, Kaunas, Lithuania, e-mail: Rasa.Vaitkiene@go.kauko.lt

⁴ Mg.soc. sc., lecturer, researcher, Rezekne Academy of Technologies, Rezekne, Latvia, e-mail: Daina.Znotina@rta.lv

Abstract.

The purpose of the study: *To identify reasons for stress among students studying business studies in Lithuanian and Latvian higher education institutions.*

Methodology: *The study covers two culturally close countries, as students studying business programmes at two higher education institutions in two countries were included. A quantitative research approach was used. Students' stress level was assessed on 34 attributes. A 5-point Likert scale was used, with 5 being the highest level of agreement and 1 the lowest. Statistical analysis of the data was performed using SPSS 21 and Windows Microsoft Office software. Statistical methods used: descriptive statistics, Cronbach's alpha, Student's t-test, Anova test.*

Main Findings: *The study revealed that business students at Lithuanian and Latvian higher education institutions experienced the highest stress due to various academic factors. Stress among business students during their studies was a topical issue, and the expression of stress related to socio-demographic factors.*

Originality: *The survey was conducted using an authentic standardised questionnaire developed by the researchers, and the psychometric quality of the questionnaire was high.*

Implications: *The results of the study are useful for Lithuanian and Latvian higher education teachers and administrators to improve the psychosocial conditions of studies and reduce students' stress related to their studies.*

Keywords: *business students, higher education institutions, stress.*

Received: 11 November 2024 **Revised:** 21 November 2024 **Accepted:** 9 December 2024

Published: 16 December 2024

Introduction

Student stress in higher education is an area of increasing research worldwide, as it is associated with a range of negative consequences. Academic stress can affect not only the individual student but also wider sectors of society. On a personal level, stress can affect a student's motivation, self-esteem and learning outcomes, and in extreme cases can lead to dropping out of university. Some students are unable to cope with the demands due to excessive stress and choose to leave higher education without completing their programmes. The consequences of stress in higher education can also have an economic impact, as the state or family investing in a student's education expects a long-term return. If students do not complete their studies, their education is not translated into the final product - a skilled professional in the labour market. This can lead to wasted investment, reduced productivity and long-term negative impacts on both the individual and society. Academic stress can also lead to psychological problems such as anxiety, depression and exhaustion, which can further impede students' ability to succeed in their studies and socialise. It is therefore important to realise that student stress management is not only a personal problem but also a social and economic problem that requires attention and preventive measures from higher education institutions and the government.

Aim – to identify reasons for stress among students studying business studies in Lithuanian and Latvian higher education institutions.

Tasks of the research:

1. To identify reasons for stress among students studying business studies.
2. To compare reasons for stress among students studying business studies by socio-demographic groups.

Novelty. There is little research on stress among students in higher education. The study covers two culturally close countries, as students studying business programmes at two higher education institutions in two countries were included. A universal survey instrument with high psychometric quality has been developed to assess the causes and expression of stress among students studying at higher education institutions.

Hypothesis: 1. Students' stress is influenced by factors related to their studies.
2. Student stress expression varies according to socio-demographic characteristics.

Research results and discussion

Literature review

The authors Í. J. S. Ribeiro et al. (2018) conducted an analysis of 142 scientific articles and concluded that the results of the review showed a negative association between stress and quality of life in university students, as various aspects related to physical and mental health deteriorated. It also suggests that factors such as burnout, sleep disturbances and depression may increase this negative association, further impairing quality of life. It is pointed out that there are few studies that address the issues raised together (i.e. stress and quality of life in university students), and that these studies are mainly limited to medical students, and there are few studies - only one identified study - on master or doctoral students from knowledge areas.

In our stressful age, the number of people suffering from stress, anxiety and negative emotions is increasing daily. One of the groups at risk of psychosocial stress is higher education students who often experience high levels of psychosocial stress. The prevalence of stress, anxiety, and depression is high among university undergraduate students in developed and developing countries (Mofatteh, 2021). Stress is a phenomenon faced by people in various professions and by students studying in higher education. Changing from a general education school environment to a higher education environment is considered a major life challenge (Hassel et al., 2018). As Acosta et al. (2021) argue, HE is a competitive place where people have many duties and responsibilities. It has been found that 54% of higher education students experience a high 39% lower level of stress. A study by Nakie et al. (2022) showed that the prevalence of depression, anxiety, and stress was 41.4, 66.7, and 52.2% respectively. According to Tsang et al. (2021), a high academic workload, high demands placed on the assessment of students' performance, the abundance of quizzes and exams, and the large amount of study materials are the main causes of student stress. The most frequent cause of psychosocial stress in our students (79.8%) is academic stress due to a high academic workload (Baranauskas et al., 2020). Academic stress is associated with examination demands, school staff and parents (Tsang & Lian, 2021). The psychosocial learning environment is an environment that encompasses psychological and social factors that can influence students' satisfaction, health and access to learning. Psychosocial factors have a close relationship with academic achievement. The psychosocial environment can have a positive impact on students' self-esteem, self-efficacy and motivation. Conversely, an

unfavourable psychosocial learning environment, unfriendly relationships with fellow students, conflicts with lecturers, lack of support from lecturers, a high academic workload, etc. can increase stress, promote harmful coping styles and provoke health problems (Bendžiūtė & Stanisloviėnė, 2021). The social environment also has a significant impact on the level of stress of the students. According to Alkhaldeh et al. (2023), students who are living alone use the “avoidance” method more significantly and the “social support” method significantly less compared with students who are living with their families and friends. According to Kötter et al. (2017), stress has a negative impact on academic performance and can also lead to a vicious circle in which stress is continuously increasing and learning outcomes are decreasing. The data was collected through the Perceived Stress Scale (PSS) and the Academic Motivation Scale (AMS). One of the consequences of student stress is sleep disturbance. Poor sleep quality, a predictor of sleep disturbance, was found in 50% of the students in the study. Between 9.8% and 34.4% of students used unhealthy coping methods such as frequent eating, cigarette smoking, medication and alcohol use (Baranauskas et al., 2020).

Methodology

Research methods. A quantitative research approach was used. Student stress was assessed on 34 attributes. A 5-point Likert scale was used, with 5 being the highest level of agreement and 1 the lowest.

Statistical analysis of the data was performed using SPSS 21 and Windows Microsoft Office software. Statistical methods used: descriptive statistics, Cronbach's alpha, Student's t-test, Anova test.

A high Cronbach's alpha coefficient of 0,954 was found, indicating excellent internal consistency and reliability of the measurement instrument used in the study.

The survey was conducted among students of Kauno Kolegija/Higher Education Institution (N=87) and Rezekne Academy of Technologies (N=41). The participants from Kauno Kolegija/Higher Education Institution: 57 (65%) female, 27 (31%) male, and 3 (3.4%) did not want to disclose their gender. The participants from Rezekne Academy of Technologies: 26 (63,4%) female, 10 (24,4%) male, and 5 (12,2%) did not want to disclose their gender. However, due to the unequal sample, statistical calculations was performed only between male and female groups.

The participants of business studies from Kauno Kolegija/Higher Education Institution were distributed as follows:

- 1st-year students 62 (71.3%).
- 2nd-year students 14 (16.1%).
- 3rd-year students 11 (12.6%).

The participants of business studies from Rezekne Academy of Technologies:

- 1st-year students 7 (17.1%).
- 2nd-year students 12 (29.3%).
- 3rd-year students 17 (41.5%).
- 4th-year students 4 (9.8%).

The questionnaire was placed on the Kauno kolegija HEI online LimeSurvey system. The survey was carried out during 1 February - 30 March, 2024. The approval of the Kauno kolegija HEI Applied Research Ethics Compliance Review Committee was obtained for the study (Protocol No. 13-14 of 29 January 2024). It was stated that the survey is anonymous and participation is voluntary.

Research results

The business students studying at Lithuanian and Latvian higher education institutions experienced a variety of stressors. Fig. 1 shows the causes of study-related stress.

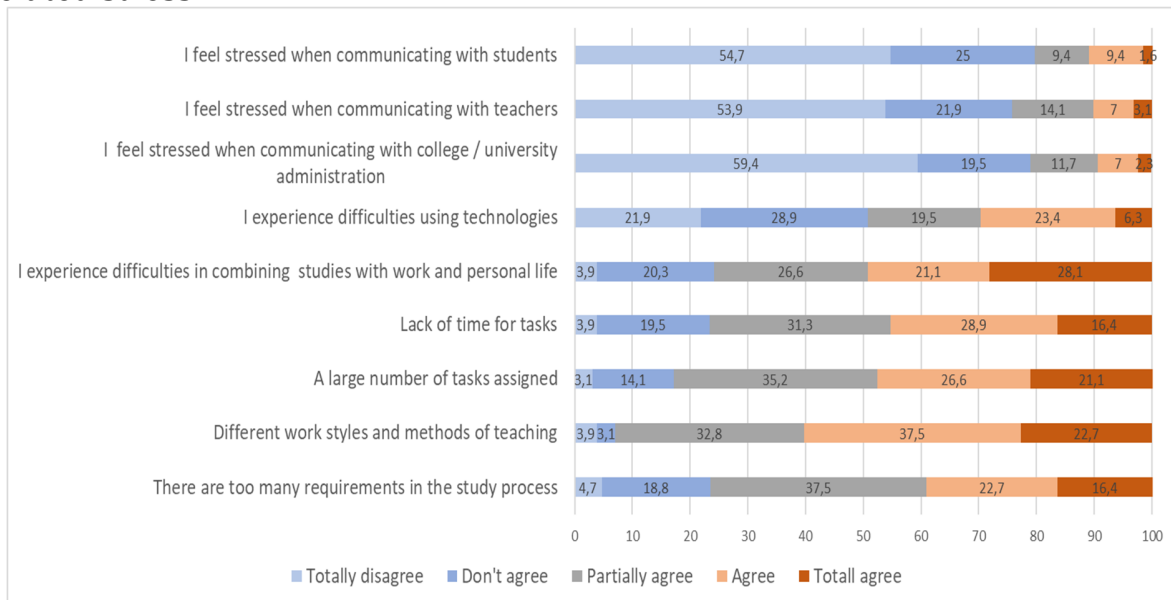


Fig.1 Reasons for stress among students studying business studies in Lithuanian and Latvian higher education institutions (N=128) (compiled by the authors)

The most stressful for students was too many requirements in the study process (partially agreed 37.5%, 22.7 agreed and 16.4 totally agreed). The students were also disturbed by different work styles of teachers and methods of teaching (partially agreed 32.8%, agreed 37.5% and totally agreed 22.7%). A very similar percentage of business students in the study believed that there was a lack of time for tasks and they experienced difficulties in combining studies with work and personal life. Half of the students in the study indicated that they found the use of technology in their studies stressful. The least stressful was communication with administration, lecturers and students. Less than one quarter of students reported this (Fig.1).

A study conducted at one of Lithuania's largest universities found that the most common cause of psychosocial stress among students was a heavy study load (79.8%). Our study shows that half as many students experienced stress for this reason. However, the students from Kauno kolegija HEI and Rezekne Academy of Business Studies who participated in the study experienced several times more stress related to difficulties in combining studies and work.

Table 1 Reasons for stress by gender (N=128) (compiled by the authors)

Causes of the stress	Gender	Mean	Std. Deviation	Statistic al sig.
There are too many requirements in the study process	Female	3.19	1.109	p≥0.05
	Male	3.39	1.103	
Different work styles and methods of teaching	Female	3.78	1.001	p≥0.05
	Male	3.58	0.967	
A large number of tasks assigned	Female	3.49	1.141	p≥0.05
	Male	3.42	0.937	
Lack of time for tasks	Female	3.4	1.115	p≥0.05
	Male	3.17	1.028	
I experience difficulties in combining studies with work and personal life	Female	3.65	1.254	p≤0.05
	Male	3.06	1.04	
I experience difficulties using technologies	Female	2.46	1.213	p≤0.05
	Male	3	1.195	
I feel stressed when communicating with the college / university administration	Female	1.59	0.988	p≤0.05
	Male	2.06	1.264	
I feel stressed when communicating with teachers	Female	1.66	0.979	p≤0.05
	Male	2.17	1.342	
I feel stressed when communicating with students	Female	1.6	0.962	p≤0.05
	Male	2.08	1.156	

The Students' t-test showed statistically significant differences, indicating that the students differed by gender in their difficulties in balancing studies, work and personal life as well as difficulties in using technology (Table 1). They also felt stressed when dealing with the administration, lecturers and students ($p \leq 0.05$). Females experienced more difficulties in combining studies with work and personal life, but males seemed to feel more stressed when using technologies and interacting with the college/university administration, lecturers and students ($p \leq 0.05$).

Studies around the world show that women are more stressed during their studies. Graves et al. (2021) report that female students are more likely to experience study-related stress. In our study, only one case confirmed that females experienced more stress when their work-study balance was assessed, but in all other cases, male students were the ones to experience more stress. Using technology during their studies and interacting with lecturers and the administration was more stressful for them than for women.

An ANOVA test was used to show that there is a significant difference between the causes of stress and years of study.

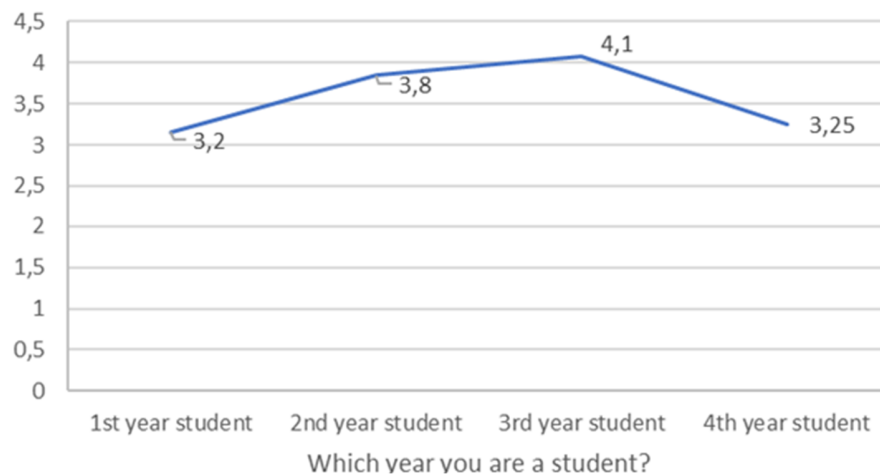


Fig.2 Students experience difficulties in combining studies with work and personal life (N=128) (compiled by the authors)

The business students in their second and third years of study experienced the most difficulties in combining studies with work and personal life (ANOVA test, $p \leq 0.05$). According to the LIKERT scale, the average score for students in the third year was 4.1, for those in the second year 3.8 and for those in the first year 3.2 (Fig. 2).

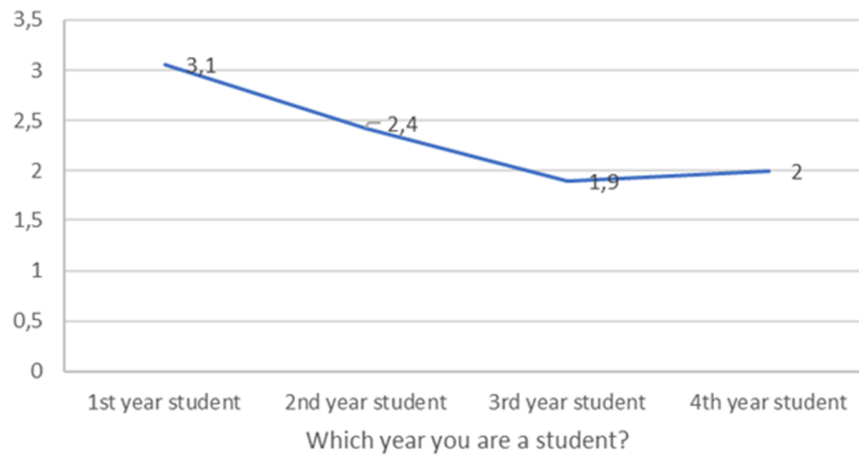


Fig.3 Students experience difficulties using technologies (N=128)
(compiled by the authors)

The business students experienced the most difficulties in using technology in their studies in the first (mean 3.1) and second (mean 2.4) years of study. These difficulties decreased as the years of study increased. In the third year, it reached 1.9, and in the fourth year similarly (ANOVA test, $p \leq 0.05$).

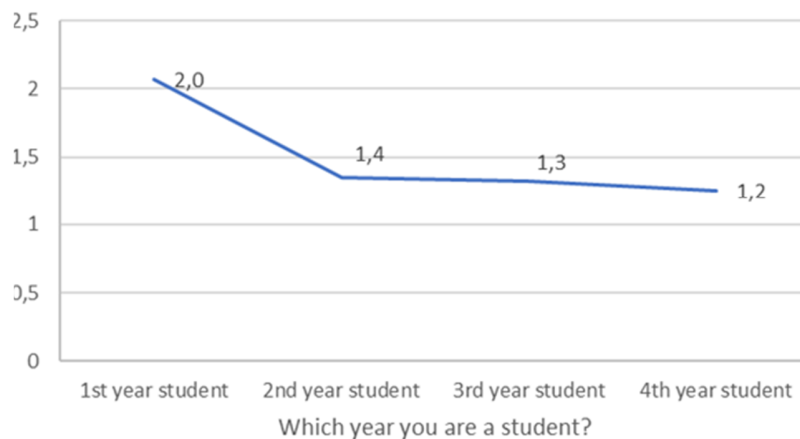


Fig.4 Students stress in communicating with the college/university administration (N=128)
(compiled by the authors)

The students participating in the research experienced most of the stress in communicating with the administration in the first (mean 2) and second

(mean 1.4) years of study. These difficulties decreased with every study year. In the third year, it reached 1.3, and in the fourth year 1.2 (ANOVA test, $p \leq 0.05$).

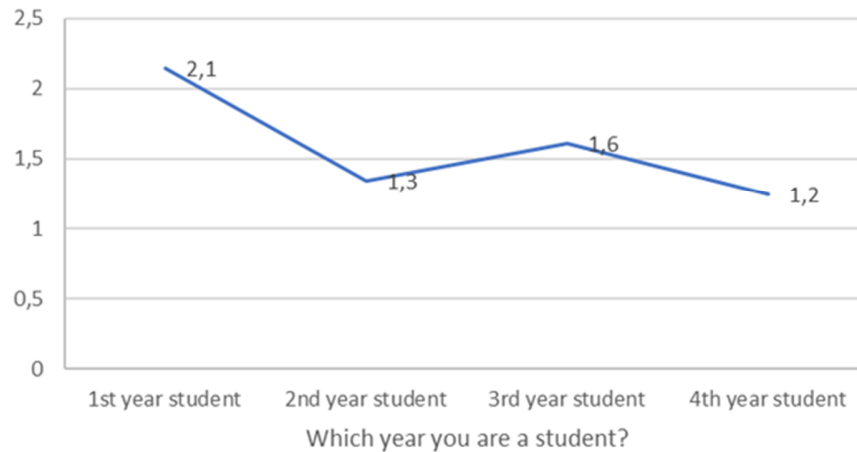


Fig.5 Students' stress in communicating with students (N=128)
(compiled by the authors)

Similarly, interacting with students was most stressful in the first year (mean 2.1) and least stressful in the fourth year (mean 1.2). This finding is statistically significant (ANOVA test, $p \leq 0.05$).

There are many reports emphasising levels of stress among students in the final years of secondary school (Wuthrich, 2020). However, little is known about university students' stress varying by study year. Therefore, it is particularly difficult to compare the results of our study with the results obtained by other researchers. In the scientific literature, there is a lack of studies that purposefully analyse the stress of students of business study programmes during their academic years.

Conclusions

1. Stress adversely impacts physical and mental health, often leading to burnout, sleep disturbances, and depression, which further impair quality of life. These issues are exacerbated by high academic workloads, assessment pressures, and competitive environments typical in higher education.
2. The study revealed that the business students at Lithuanian and Latvian higher education institutions experienced the highest stress due to various academic factors. The most prominent stressors were the high number of

requirements in the study process and the different teaching methods used by lecturers.

3. Gender differences showed that females found it more difficult to balance their studies, work and personal life, while males experienced more stress due to the use of technology and interaction with the university administration and colleagues.
4. The business students in their second and third years of study experienced the most difficulties in combining studies with work and personal life. The students experienced most of the difficulties in using technology in the first and second years of study. It was also found that the lower the course, the more stress students felt in their interactions with the university administration and lecturers.
5. To reduce stress factors among students, the authors recommend that higher education institutions offer classes on time management and study planning, especially for first-year students who face difficulties in adjusting to the demands of higher education, as well as academic mentoring programmes in which senior students help junior students with academic and personal problems.
6. It is important for higher education institutions to tailor gender-specific support, for example by developing programmes that specifically address the communication skills and technology support needs of male students. For female students, they need to provide support to manage work-life balance effectively, such as workshops or support groups.
7. It is necessary to continue the research to compare data and analyse the stress of business study programme students by study year. The university management and lecturers should consider the most frequent causes of stress discovered as a result of the research to reduce stress for students during the study process, to encourage the completion of the studies that have been started and to encourage the student to be satisfied with his/her performance.

References

1. Acosta, M. A. (2021). Exploring the acceptability of an improv-based workshop series for college student stress and anxiety. *University of Hartford*. <https://www.proquest.com/docview/2546581733?pq-origsite=gscholar&fromopenview=true&sourcetype=Dissertations%20&%20Theses>
2. Alkhaldeh, A., Omari, O., Aldawi, S. A., Hashmi, I. A., Ballad, C. A., Ibrahim, A., Sabei, S. A., Alsarairh, A., Qadire, M. A., & Bashtawy, M. A. (2023). Stress factors, stress levels, and coping mechanisms among university students. *The Scientific World Journal*, 2023, Article ID 2026971. <https://doi.org/10.1155/2023/2026971>

3. Baranauskas, M., Jablonskienė, V., Abaravičius, J. A., Arlauskas, R., & Stukas, R. (2020). Biomedicos mokslų studentų patiriamo psichosocialinio streso ypatumai ir sąsajos su miego kokybe. *Visuomenės Sveikata*, 3(90), 59–65. <https://www.lituanistika.lt/content/88381>
4. Bendžiūtė, S., & Stanislavovienė, J. (2021). Aukštųjų mokyklų psichosocialinė mokymosi aplinka. *Sveikatos Mokslai*, 31(2), 40–45. <https://doi.org/10.35988/sm-hs.2021.033>
5. Graves, B. S., Hall, M. E., Dias-Karch, C., Haischer, M. H., & Apter, C. (2021). Gender differences in perceived stress and coping among college students. *PLOS ONE*, 16(8), e0255634. <https://doi.org/10.1371/journal.pone.0255634>
6. Hassel, S., & Ridout, N. (2018). An investigation of first-year students' and lecturers' expectations of university education. *Frontiers in Psychology*, 8, 2218. <https://doi.org/10.3389/fpsyg.2017.02218>
7. Ivancic, L., Perrens, B., Fildes, J., Perry, Y., & Christensen, H. (2014). *Youth mental health report*. Mission Australia and Black Dog Institute. https://www.blackdoginstitute.org.au/wp-content/uploads/2020/04/2017-youth-mental-health-report_mission-australia-and-black-dog-institute.pdf?sfvrsn=6
8. Kötter, T., Wagner, J., Brüheim, L., & Voltmer, E. (2017). Perceived medical school stress of undergraduate medical students predicts academic performance: An observational study. *BMC Medical Education*, 17, 256. <https://doi.org/10.1186/s12909-017-1091-0>
9. Mofatteh, M. (2021). Risk factors associated with stress, anxiety, and depression among university undergraduate students. *AIMS Public Health*, 8(1), 36–46. <https://doi.org/10.3934/publichealth.2021004>
10. Nakie, G., Segon, T., Melkam, M., Desalegn, G. T., & Zeleke, T. A. (2022). Prevalence and associated factors of depression, anxiety, and stress among high school students in Northwest Ethiopia, 2021. *BMC Psychiatry*, 22(1), 739. <https://doi.org/10.1186/s12888-022-04393-1>
11. Ribeiro, I. J. S., Pereira, R., Freire, I. V., de Oliveira, B. G., Casotti, C. A., & Boery, E. N. (2018). Stress and quality of life among university students: A systematic literature review. *Health Professions Education*, 4(2), 70–77. <https://doi.org/10.1016/j.hpe.2017.03.002>
12. Tsang, K. K., & Lian, Y. (2021). Understanding the reasons for academic stress in Hong Kong via photovoice: Implications for education policies and changes. *Asia Pacific Journal of Education*, 41(2), 356–367. <https://doi.org/10.1080/02188791.2020.1772719>
13. Tus, J. (2020). Academic stress, academic motivation, and its relationship on the academic performance of senior high school students. *Asian Journal of Multidisciplinary Studies*, 8(11), 29–37. <https://doi.org/10.6084/m9.figshare.13174952.v1>
14. Wuthrich, V. M., Jagiello, T., & Azzi, V. (2020). Academic stress in the final years of school: A systematic literature review. *Child Psychiatry & Human Development*, 51(6), 986–1015. <https://doi.org/10.1007/s10578-020-00981-y>

IMPROVEMENT IN OPPORTUNITIES/METHODOLOGY FOR ENHANCING THE PHYSICAL TRAINING OF CADETS FROM THE STATE BORDER GUARD COLLEGE

Rihards Rizovs¹, Atis Litaunieks²

¹ Mg. mpa, lecturer of the Department of Military and Physical Training Subjects of the State Border Guard College, Rezekne, Latvia, e-mail: rihards.rizovs@rs.gov.lv,

² Mg. ed, assistant professor of the Department of Sports of the State Police College, Riga, Latvia, e-mail: atis.litaunieks@koledza.vp.gov.lv

Abstract.

Purpose and aim of the study: is to develop and improve effective physical training methodologies for cadets of the National Security Service, which would meet the requirements of the service and improve their endurance, strength, speed and dexterity. The goal is to identify specific training techniques and programmes that would increase the physical and psychological preparedness of cadets for their service in the SBG, thereby promoting the professional competence of cadets and the quality of their service.

Design / Methodology / Approach: a review of the literature; empirical methods; the experimental method; a method of observation and analysis.

Main Findings: One of the main conclusions is that the physical training of State Border Guard employees is essential for the efficiency of professional activities and their health. Law enforcement officers require high levels of physical and psychological skills such as endurance, strength and speed to effectively perform their duties such as apprehension, pursuit and border enforcement. High-intensity training programmes help to improve these skills and allow them to withstand the intense physical and emotional stress required in stressful situations. A scientific approach to developing methodologies and researching different interval training protocols can ensure optimal training efficiency and cardio-metabolic health.

Originality: unlike general physical training programmes, this study specifically adapts and optimizes training methodologies specifically for SBG cadets, taking into account the specifics of the service. Using modern sports science research and best practices, methodologies are developed that contribute to more effective and faster improvement in physical fitness. The research focuses on how customized programmes affect cadet motivation and achievement compared with standardized programmes

Implications: Knowledge Transfer: The findings of this study can be shared with other security and law enforcement agencies to improve their training programmes.

Long-Term Health Benefits: The emphasis on physical fitness and cardio-metabolic health can have long-term health benefits for SBG cadets, reducing their risk of developing chronic diseases and promoting overall well-being. Continuous Improvement: The study highlights the importance of ongoing research and analysis to continuously improve training methodologies and adapt them to the evolving needs of the SBG.

By investing in the physical development of its cadets, the National Security Service can cultivate a highly capable and resilient security force that is better prepared to protect national security and serve the public effectively.

Keywords: physical fitness, State Border Guard College, training plan.

Received: 2 October 2024 **Revised:** 15 November 2024 **Accepted:** 9 December 2024

Published: 16 December 2024

Introduction

Physical fitness is a very important aspect of a healthy lifestyle and good quality of life, which includes regular physical activity that strengthens the cardiovascular system, maintains a healthy body weight, improves muscle tone and promotes emotional well-being (World Health Organization, 2010).

By engaging in sports activities, officers develop both strength and endurance. On the other hand, speed and endurance are needed when searching for, chasing and arresting the offenders, as well as preventing the escape of the offender (Liepiņš, 1993). There are other physical activities that are suitable for State Border Guard (hereinafter – SBG) officers, but the mentioned types of exercise, in the opinion of the authors of the work, most help the officers to improve the qualities that are needed in their everyday life while performing their official duties.

At present, the physical fitness and health of young people are significantly deteriorating, thus the mentioned fact also applies to the physical fitness of cadets of the State Border Guard College (hereinafter the SBGC), so it is important to be aware of the real situation and improve it. Upon graduating from the National Security Service, cadets will continue to perform their daily duties, which include border guarding, border control and immigration control measures. In order for cadets to be able to fully fulfill their official duties, i.e. to search for, pursue, arrest and guard criminals, the future officer must have good physical fitness and emotional resilience. It follows from the above that good physical fitness is one of the main components of the border guard's professional training.

Cadets are being prepared for intensive work, so it is important to pay attention to improving their physical and psycho-physical training methods so that they are ready to overcome both physical and emotional challenges (Dimyati et al., 2022). The mentioned connection shows that the intense stress in the service and the various challenges faced by the border guards indicate the need for a comprehensive training programme that not only improves the physical skills of the cadets but also strengthens the psychological resilience and stress management abilities. In this context, the improvement in the physical training methodology should be aimed at improving their strength, endurance and reaction speed, which allows them to deal with difficult situations more effectively.

New and unknown sudden events and stress, as well as coping with them, is an essential aspect that border guard cadets will have to face. In the methodology of physical preparation, it would be useful to include training that promotes both physical and psychological stress tolerance, for example,

training under increased stress or combining physical exercise with mental resilience exercises. In addition, when improving physical training methodologies, the fact that cadets' self-assessment of their health and psychophysical condition directly affects their performance should be taken into account. Therefore, the training methodology should promote not only the development of physical strength but also the cadets' self-confidence in their ability to cope with work challenges (Greco & Fischetti, 2018).

Physical training of law enforcement officers is the most important part of health improvement, and it is possible to increase the efficiency of their professional activity only if it is done regularly (Okhrimenko et al., 2023). In professional activities that require quick reaction, strength, endurance and psychological stability, regular physical activity is indispensable. Only with the help of consistent and systematic training, it is possible to maintain and improve the necessary physical shape, which also contributes to the quality and safety of performing professional tasks.

The SBGC prepares new border guards, both physically and emotionally, because the protection and control of the external border takes place in physically difficult conditions. A new exercise plan for improving physical fitness with proposed effective and safe training programmes can help to improve and increase the level of physical fitness of applicants and helps to maintain physical condition for monthly tests while studying for the CEC.

The author of the scientific problem report on the topic "Possibilities for Improving the Physical Training of Cadets of the SBGC/Improving the Methodology" notes which methodologies or training approaches are the most effective for improving the physical training of cadets of the SBGC, so that they meet the specific requirements of the service and the professional needs of the cadets?

In this context, the main scientific problem is the lack of understanding of how to effectively improve the physical fitness of cadets using optimal and scientifically based training methodologies that meet the physical and psychological requirements of the SBG service. In order to solve the investigated problem, it is necessary to give the answers to several questions:

- Which components of physical fitness (endurance, strength, speed, dexterity) are the most important in the work of border guards, and to what extent do they need to be improved?
- What scientifically based training techniques or methodologies would be most appropriate to effectively improve physical characteristics?
- How to adapt and improve the current physical training programmes so that they correspond to the real working conditions of the cadets and the specifics of the work tasks?

Solving the raised scientific problem would promote both the physical and mental preparation of cadets, which is necessary to successfully fulfill the duties of the SBG service, and the overall effectiveness of training would be improved.

Quality, speed and endurance are essential for the daily duties of border guards, as these physical skills are necessary for quick reaction, change of direction and acceleration in critical situations (Saravanan & Pushpa, 2021). Therefore, high-intensity interval training, which improves speed, leg strength and flexibility, is extremely useful for border guards, helping to prepare their bodies for intense tasks and improving overall work efficiency and endurance in situations that require quick physical reactions. However, despite the promising evidence supporting the positive effects of high-intensity interval training on the metabolic profile in adults, various limitations exist in young adults. Given the increasing burden of chronic diseases, it is important to implement strategies to improve cardio-metabolic health in young adults, as this is a key stage in the development of healthy lifestyle behaviours. Methodological inconsistencies limit the ability to draw conclusions, however, there is significant evidence supporting high-intensity interval training as a potentially effective form of exercise for use in youth populations (Logan et al., 2014). Future studies should examine the effects of different high-intensity interval training protocols to determine the optimal strategy for cardiometabolic health benefits.

Although achieving maximal levels of all components of physical fitness may be ideal, there are challenges associated with improving different performance outcomes with competing training stimuli. Identifying the specific components of physical fitness associated with occupational tasks would provide law enforcement professionals with valuable information about the most appropriate physical fitness assessments.

The purpose of the research: is to develop and improve effective physical training methodologies for cadets of the SBGC, which would meet the requirements of the service and improve their endurance, strength, speed and dexterity. Likewise, it is necessary to identify specific training techniques and programmes that would increase the physical and psychological preparedness of cadets for their service in the SBG, thus promoting the professional competence of cadets and their quality of service.

Research tasks:

- To determine how different elements of the training plan (cardio, strength exercises, interval training) affect cadets' speed, strength and endurance;
- To investigate what equipment is most effective in developing specific physical skills;
- To identify whether the use of equipment affects the quality of lessons and the achievement of learning outcomes;

- To evaluate the impact of working conditions on training results;
- To determine the optimal duration and content of the preparation period, which ensures the best results;
- To analyze the effectiveness of circuit and interval training methods.

The novelty of the study - unlike general physical training programmes, this study specifically adapts and optimizes training methodologies specifically for SBG cadets, taking into account the specifics of the service. Using modern sports science research and best practices, methodologies are developed that contribute to more effective and faster improvement in physical fitness. The research focuses on how customized programmes affect cadet motivation and achievement compared with standardized programmes.

Research methods:

- Review of the literature - various scientific studies and best practices in physical training, which are applicable to the structures of the SBG, are analyzed and compared;
- Empirical methods provide for the fact that cadets are involved in various physical training programmes where new training techniques and methodologies are tested;
- The experimental method implements a specific training programme to evaluate its effect on physical fitness;
- A method of observation and analysis, which includes a description of exercises, dosage and methodical instructions aimed at observing and analyzing the effects of exercises on the body.

Research hypothesis - the developed and adapted physical training methodologies, based on the specific requirements of the SBG service, significantly improve the physical and psychological fitness performance of SBGC cadets, compared with general training programmes. It has been proved.

Research results

Introduction to the practical part of the study

Physical fitness is one of the essential components of professional training for cadets at the SBGC, directly influencing their ability to effectively perform their duties. The aim of the practical part of the study is to develop a detailed training plan and methodology based on scientific principles and adapted to the specific requirements of the border guard service. This part covers the structure of the training programme, the organization of classes, methodological guidelines and equipment used, as well as includes an analysis of various components of physical fitness and improvement strategies.

The following will describe the guidelines of the training plan, including the importance of physical fitness elements (speed, strength, endurance), exercise dosage and the methodological approach, which help cadets to improve both physical abilities and stress tolerance. This section serves as a guide for practical activities, providing a structured approach that promotes cadets' professional competence and physical fitness.

Training plan

A component of physical fitness is health and increased performance, which includes the performance of the cardiovascular and respiratory systems and the strength and endurance of the muscular system, as well as flexibility and composition (Rozenštoha, 2022). Aerobic endurance, subsequently also lipid metabolism, is developed with the help of running, as well as with intensive circuit training (Grāvītis, n.d.). At the initial stage, steady running dominates, but as the work capacity of the applicants increases, medium-intensity interval training is integrated, which increases aerobic work capacity more effectively. Taking into account the number of trainings per week, the generally developing medium-intensity circuit training dominates, later intensive circuit training is also integrated into the training process.

The technical preparation of cadets is carried out before the exercise. Based on the athlete's dexterity and experience, as well as the specifics of the physical exercise, the whole and divided method of teaching movement actions is used to learn the technique.

Workout equipment

Workout equipment plays a vital role in training efficiency and safety. Properly selected and high-quality equipment allows you to perform various exercises, target specific muscle groups and adjust the load according to individual needs and fitness level. In the lessons, various sports equipment is used, such as cardio machines and strength machines, free weights (dumbbells, bars, balls), balls, resistance bands, balance surfaces, exercise wall, etc., a computer is used in planning the training programme and preparing informative materials, as well as to play music tracks.

Working conditions

The workout most often takes place indoors, in a specially equipped gym, as well as on the sports field (outside the gym).

The preparatory period is designed to provide a gradual and comprehensive approach to improving the physical fitness of cadets at the

SBGC. It includes structured training sessions focused on the components of general physical fitness - strength, endurance, and agility. The plan is designed to provide a varied load, the intensity of which gradually increases, promoting the body's adaptability and maximum performance.

Each workout includes specific tasks, ranging from general developmental circuit training and cardiovascular endurance improvement to intense strength training. By using a variety of methods and training forms, the programme promotes cadets' physical and mental preparedness so that they can effectively perform their duties in the specific conditions of the service. The intensity and volume of each session are tailored to individual needs and training goals, creating a balanced approach between workload and recovery (see Table 1).

Table 1. Programme for the preparatory period
(compiled by the authors)

Day of the week	Main tasks of training	Volume (total score)	Intensity (degree of difficulty)
Monday	All-round circuit training (alternation exercises between the largest and smallest muscle groups, isolated exercises)	10-12 exercises, 3 sets, the number of repetitions of each exercise 12-15 times	Medium
Wednesday	A 20-25-minute run with an intensity of 60% of the maximum heart rate, a circuit with abdominal press exercises	20-25 minutes 3 sets, 25-30 repetitions, 4 exercises	Medium
Friday	Intensive strength training	13 exercises, execution time - 45 seconds, a pause between exercises 10-15 seconds with 1-3 minutes of the rest between rounds.	High

Table 1 analysis:

Well-Rounded: The plan addresses key components of fitness: strength, endurance, and core stability. **Progressive Overload:** While the overall intensity is moderate, the volume and exercise selection allow for gradual increases in the training load over time. **Recovery:** The plan includes built-in rest days, crucial for adaptation and preventing overtraining.

Recommendations: Individualization: This is a good template, but it should be adjusted based on the individual's fitness level, goals, and sport.

Warm-up and Cool-down: Always include a proper warm-up before each session and cool-down afterward to prepare the body and aid in

recovery. Nutrition and Sleep: Adequate nutrition and sleep are essential for supporting the training programme and maximizing results.

Monitoring: Pay attention to how your body responds to the training. Adjust the volume or intensity if needed to avoid overtraining.

Outline of the lesson

This is a 90-minute workout plan designed for developing full-body strength, anaerobic endurance, and muscle mass. The workout will utilize circuit and interval training methods and require a treadmill, an exercise mat, a weight bench, and barbell.

The session begins with a 10-minute warm-up, followed by a 70-minute main section consisting of various strength and cardio exercises. It concludes with a 10-minute cool-down involving stretching and relaxation exercises (Židens, 2008).

This plan is just a sample and can be adjusted to individual needs and fitness levels. It is important to warm up properly before starting the workout and to listen to your body to avoid injuries.

Training durations – 90 minutes.

Tasks of the main part: development of whole body strength, anaerobic endurance, muscle development.

Methods: the circle method, the interval method.

Necessary equipment: a treadmill, an exercise mat, a exercise bench, a weight bar.

Intense full body workout, the programme and instructions

This intensive full-body workout is designed to improve key aspects of physical fitness for border guard cadets: strength, endurance, speed, and flexibility. The programme incorporates a variety of strength and cardio exercises aimed at muscle development, increasing aerobic and anaerobic endurance, and enhancing body stability and flexibility.

The workout structure is based on circuit and interval training methods, which allow for maintaining high intensity while ensuring effective recovery between exercises. This approach will help cadets not only improve their physical fitness but also develop the necessary stamina and reaction speed crucial for performing their duties.

A comprehensive warm-up is an essential part of the training, preparing the body for physical exertion, improving blood circulation, and increasing joint mobility while reducing the risk of injury. It forms the foundation for a successful and safe workout.

During the warm-up, special attention is paid to body mobilization and muscle activation, ensuring a smooth transition from rest to physical activity. The warm-up begins with a slow jog or brisk walk lasting about 10 minutes. This is complemented by rotational exercises for the joints (ankles, knees, hips, shoulders, and neck) and light stretching exercises. This combination helps to increase the heart rate, improve oxygen flow to the muscles, and prepare the nervous system for precise movement coordination during the main part of the workout. The goal of the warm-up is to create optimal body readiness for the subsequent physical load, ensuring both physical and mental mobilization for effective and safe exercise execution (see Table 2).

Table 2. Programme for the expanded warm-up part
(compiled by the authors)

№	Training/lesson content	Dosage (how much?)	Methodological instructions (how to perform?)
1.	Expanded warm-up section (preparation for the main section)	5 minutes	Get the blood flowing with some light cardio, like jogging in place, jumping jacks, or high knees.
2.	Slow running or walking.	10 minutes	Before starting to run or walk fast, warm up for 5-10 minutes. The warm-up should include light walking, ankle and knee rotation, hip movements and stretching exercises.

Table 2 analysis:

- **Comprehensive Warm-up:** The two-phase approach ensures a thorough warm-up that addresses both general and specific preparation.
- **Gradual Progression:** Starting with light cardio and gradually increasing intensity with slow running/walking and dynamic stretching is a safe and effective way to prepare for exercise.
- **Focus on Dynamic Stretching:** Incorporating dynamic stretching during the warm-up helps to improve mobility and the range of motion, reducing the risk of injury.

Recommendations:

- **Specificity:** Tailoring the warm-up to the specific activity that will follow. For example, if the main activity involves running, it is necessary to include more running-specific dynamic stretches like leg swings and butt kicks.
- **Individualization:** Adjusting the duration and intensity of the warm-up based on individual needs and environmental conditions.
- **Progression:** As fitness improves, the intensity and complexity of the warm-up can be increased.

- Variety: Incorporating a variety of dynamic stretches to target different muscle groups and keep the warm-up engaging (Židens, 2008).

Preparation for the main part of the training. The warm-up lasts for 10 minutes and includes light, body-mobilizing exercises, such as slow jogging or walking, as well as stretching and joint rotation exercises. The goal is to gradually prepare the body for physical exertion, improve blood circulation and increase the range of motion of the joints in order to prevent the risk of injury during the main part of the training.

The main part includes basic body strength and flexibility exercises performed with a certain intensity and precise methodical instructions. Exercises such as push-ups, presses, squats and stretches are chosen to develop full-body strength, stability and flexibility of movement. Each exercise is clearly structured with an emphasis on a proper technique for efficiency and injury avoidance, paying particular attention to posture and fluidity (see Table 3).

Table 3. Programme of the main part of a lesson
(compiled by the authors)

№	Main part of a lesson	Dosage (how much?)	Methodological instructions (how to perform?)
1.	Push-ups	15 times in 2 runs	Place your hands slightly wider than shoulder width, fingers pointing forward. The palms rest on the floor and are tightly compressed to stabilize the movement.
2.	Press	15 times in 2 rounds	Raise the whole body up to a sitting position or raise the legs from a lying position.
3.	Squats with straight arms in front	10 times	Feet shoulder-width apart, keeping the weight in the range, do not allow the knees to go over the toenails or inwards
3.	Stretching	20-30 seconds	<ol style="list-style-type: none"> 1. Starting position - sit on the floor with straight legs in front. Slowly bend the body forward and try to reach the feet or ankles. Keep your back straight and don't arch it while trying to bend over. 2. Starting position crouched down on all fours, hands under shoulders and knees under hips. Cat pose - exhale, arch your back up, pulling your belly to your spine and tilt your head down.

Table 3 analysis:

Beginner-friendly: The exercise selection and dosage are appropriate for beginners or as a warm-up for more experienced individuals. Balanced:

The circuit includes exercises for the upper body, core, and lower body, promoting overall fitness.

Focus on the form: The instructions emphasize a proper technique, crucial for preventing injury and maximizing effectiveness. Recommendations:

Progression: As fitness improves, the dosage can be increased (more repetitions, sets, or exercises) to provide a greater challenge.

Variety: Adding more exercises or variations can make the circuit more engaging and target different muscle groups.

Dynamic Stretching: Incorporating dynamic stretches before the workout can further improve mobility and prepare the body for activity.

Cool-down: Including a cool-down with light cardio and static stretches after the circuit can aid in recovery.

Circuit training is designed to develop endurance and strength throughout the body, with special attention to the back, abdomen, arms and legs. The workout includes both strength exercises, such as lunges and deadlifts, as well as cardio elements, such as jogging on the spot with high knees, which help to improve cardiovascular function and muscle damage (Beck, 2015). Exercises are performed in stations with breaks that allow the athletes to recover a little before the next exercise, ensuring a balance of intensity and rest. Therefore, the hypothesis has been proved completely, demonstrating the effectiveness of customized physical training programmes in enhancing the performance and motivation of SBG cadets.

Cardio-strength circuit training is an intense full-body workout method that combines cardio and strength exercises to develop endurance, strength, and muscle tone. In this workout, exercises are performed in stations, with each station focusing on a specific muscle group or movement. The goal of the training is to provide comprehensive physical fitness, improve cardiovascular function, and promote the development of overall physical abilities.

The table provides information on the training elements, their dosage, and precise methodological instructions. To ensure safety and maximum effectiveness, the execution of each exercise is carefully structured, observing proper technique and controlled intensity (see Table 4).

Table 4 analysis:

Well-Rounded: The circuit effectively combines cardio and strength training, promoting overall fitness and calorie burning.

- Structured Approach: The use of stations, timed intervals, and rest periods ensures an organized and efficient workout.
- Progression: The dosage and intensity can be adjusted over time by increasing repetitions, sets, or exercise duration.

Table 4. Programme for cardio-strength circuit training
(compiled by the authors)

1.	Circuit training with cardio and strength exercises (Fizisko īpašību attīstīšana..., 2017)	Dosage (the length)	Methodological instructions (short manual)
2.	<ul style="list-style-type: none"> - 3.1. Run on the spot, raise your knees high - 3.2. Lunge squats - 3.3. Lifting the bar - 3.4. Plank - 3.5. Press 	<ul style="list-style-type: none"> - 30 seconds - 20 times - 10 times - 60 seconds - 15 times 	<ul style="list-style-type: none"> - Arles training is intended for developing the muscles of the back, abdomen, arms and legs; - There are six stations in Arli's training, the locations of the stations are marked with cones in the hall. Each station has one exercise; - Exercises are performed for a certain time with a certain break during the transfer to the next station; - The coach or a specially designated amateur with a buzzer signals the beginning of the exercise and the beginning of the rest period; - Amateurs perform several rounds, each round is followed by a longer pause (Razgailis, 2012). - Performing deep squats, back straight - Squats deep, back straight - The lifting of the weight bar is done slowly and its correctness is controlled - Palms and fingertips rest on the floor. Keep your body and arms straight. - Starting position: lying down, - The starting position is lying down, hands behind the head, the upper body is raised at an angle of 90 degrees.

Recommendations:

- **Specificity:** Clearly define the "lifting the bar" exercise (e.g., deadlift, squat, overhead press) and provide detailed instructions on proper form. **Warm-up and Cool-down:** Include a warm-up before the circuit and a cool-down afterwards to prepare the body and enhance recovery.
- **Modifications:** Offer exercise modifications or variations to cater to different fitness levels and individual needs.

- **Supervision:** Especially for beginners or when performing complex exercises like weightlifting, provide adequate supervision to ensure safety and correct technique.

The cool-down consists of a slow recovery jog and stretching exercises that help to gradually calm the body after an intense workout. Cooling down with slow, controlled stretching movements helps to reduce muscle tension and provides better blood circulation, which promotes recovery processes. Rhythmic breathing with deep inhalations and exhalations helps to relax and maintain a stable breathing rhythm during stretching, thus allowing the muscles to relax naturally.

A comprehensive cool-down is an essential stage of training, helping the body gradually transition from a state of intense physical activity to a resting mode. The main goal of this part is to promote muscle relaxation, improve blood circulation, and reduce post-workout muscle tension (Rižovs, 2023). The cool-down includes light recovery exercises and stretching, which help to decrease heart rate and breathing intensity. The table provides information on the main cool-down exercises, their dosage, and methodological instructions to ensure a safe and effective recovery process after training (see Table 5).

Table 5. Extended final section of the training
(compiled by the authors)

Nº	Extended final section	Dosage (how much?)	Methodological instructions (how to perform?)
1.	A slow warm-up run.	10 minutes	Slowly lean your body forward and try to touch the floor with your hands. Take a deep breath while raising your arms up and a deep breath while relaxing them.
2.	Stretching with hands on the shins, pushing yourself closer to the knees	20 seconds	Once the stretch position is reached, focus on deep, rhythmic breathing. Inhale slowly and deeply through the nose and exhale through the mouth. Use each exhalation to release the muscles and allow the body to bend a little deeper.

Table 5 analysis:

Effective Cool-down: The combination of light cardio and static stretching is a good way to promote recovery after exercise. **Focus on Flexibility:** The hamstring stretch targets a muscle group commonly tight after exercise, improving flexibility and reducing the risk of injury. **Relaxation:** The emphasis on deep breathing enhances relaxation and reduces stress, further aiding in recovery.

Recommendations: Variety: Incorporating other stretches targeting major muscle groups (quadriceps, hip flexors, calves) can further enhance flexibility and recovery. Individualization: The duration and intensity of the cool-down should be adjusted based on the individual's needs and the intensity of the preceding workout. Hydration: Encourage drinking water or an electrolyte beverage after the cool-down to replenish fluids lost during exercise.

Conclusions and suggestions

Improving the opportunities and methodologies for improving the physical training of cadets from the SBGC is very important because the work of a border guard requires not only specific technical and tactical skills but also high physical endurance and readiness. Therefore, the hypothesis has been proved completely, demonstrating the effectiveness of customized physical training programmes in enhancing the performance and motivation of SBG cadets. Therefore, improving physical fitness is important because the work of border guards includes patrols, tracking violators, rescue operations, conflict resolution and combat situations that require the ability to react quickly and physically perform in different conditions (Beck, 2015). Border guards often work in difficult and dangerous areas where both endurance and strength are important.

Better physical fitness not only improves the efficiency of border guards at work but also reduces the possibility of injuries. Physical fitness most directly affects the mental ability to manage stressful situations. A strong and trained body helps to maintain calmness and the ability to act, which is very important in crisis situations.

For amateurs, there are two main principles of strength training: sets and repetitions. A set is a series of repetitions of one exercise (set) or a single continuous series of repetitions of an exercise (Rižovs, 2023).

By engaging in sports activities, amateurs develop both strength and endurance. On the other hand, speed and endurance are needed when searching for, chasing and arresting offenders, as well as preventing the escape of the offender. There are also other physical activities that are suitable for SBG officials, but the mentioned types of exercise, in the opinion of the author of the work, most help the amateurs to improve the abilities that are needed in their everyday lives while performing their official duties.

Physical fitness is essential to the work of border guards, as it provides them with the ability to effectively perform various physical tasks, be ready to react quickly to unforeseen situations and maintain endurance for a long time. All this allows border guards to perform their tasks safely and professionally.

References

1. Beck, A. Q., Clasey, J. L., Yates, J.W., Koebke, N.C., Palmer, T. G., Abel, M.G. (2015). Relationship of Physical Fitness Measures vs. Occupational Physical Ability in Campus Law Enforcement Officers. *Journal of Strength and Conditioning Research*, 29(8), 2340-50. DOI: [10.1519/JSC.0000000000000863](https://doi.org/10.1519/JSC.0000000000000863) PMID: 26203741
2. Dimiyati, A., Setiawan, E., Dewi, R. K., Meirizal, Y., Gani, R. A., Saputro, Y. D., Satrianingsih, B., Winarno, M. E., & Németh, Z. (2022). The Effect of Movement Games on the Level of Physical Fitness and Mental Health of Students with Disabilities: Mixed Method. *Physical Education Theory and Methodology*, 22(4), 466–472. <https://doi.org/10.17309/tmfv.2022.4.02>
3. *Fizisko īpašību attīstīšana ar apla treniņu* (2017). https://www.rdmv.lv/upload_files/AMETODISKIE_MATERIALI2017/M_lidzeklis_Fiziska_sagatavotba_2017.pdf
4. World Health Organization (2010). *World Health Organization. Global recommendations on physical activity for health.* <https://www.who.int/publications/i/item/9789241599979>
5. Liepiņš, I. (red.) (1993). *Fiziskās kultūras teorija*. Rīga: Zvaigzne.
6. Grāvītis, U. (n.d.) *Treneru ABC.* <https://www.treneruabc.lv/index.php/home/profesora-ulda-gravisa-blogs/136-izturibas-trenins>
7. Greco, G., & Fischetti, F. (2018). Physical, technical and tactical training and stress management in law enforcement. *Journal of Physical Education and Sport*, 18(2), Art 80, 555-560. <https://ricerca.uniba.it/retrieve/dd9e0c65-4299-1e9c-e053-3a05fe0a45ef/Art%2080%20Greco%20Fischetti%20JPES%20%202018.pdf>
8. Logan, G.R.M., Harris, N., Duncan, S., & Schofield, G. (2014). A Review of Adolescent High-Intensity Interval Training. *Sports Medicine*, 44, 1071–1085. <https://doi.org/10.1007/s40279-014-0187-5>
9. Okhrimenko, I.M., Ponomarenko, Y.S., Shvets, D.V., Ostapovich, V.P., Kutsenko, D.V., Torlo, O.I., & Hnatyuk, S. (2023). The effect of physical training on health and psycho-emotional state of managers of law enforcement agencies. *Wiadomości Lekarskie Medical Advances*, LXXVI (2), 285-291. DOI: [10.36740/WLek202302106](https://doi.org/10.36740/WLek202302106)
10. Razgailis, J. (2012). *Rokasgrāmata skolu sporta skolotājiem*. Rīga: Nike Rīga Run”.
11. Rižovs, R. (2023). *Izstrādātais vingrinājumu komplekss*.
12. Rozenštoha, S. (2022) *Fiziskās slodzes tolerances atbilstība sportistu veselības stāvoklim*. Rīgas Stradiņa universitāte, Promocijas darbs. https://doi.org/10.25143/prom-rsu_2022-08_pd
13. Saravanan, R., & Pushpa, P.M. (2021). *A high intensity interval training profile for performance variables of collegiate volleyball players*. *International Journal of Physical Education, Sports and Health*, 8(3), 464-467. <https://www.kheljournal.com/archives/2021/vol8issue3/PartG/8-4-51-723.pdf>
14. Židens, J., Grasis, N., Grāvītis, U., & Kaspars, D. (2008). *Bērnu un pusaudžu treneru rokasgrāmata*. Latvijas Treneru tālākizglītības centrs.

MORTGAGE LOAN MARKET IN LATVIA

Elvijs Stepens¹, Inta Kotane²

¹ Bc. soc.sc., Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: elvijsstepens@gmail.com

² Ph.D., assistant professor, leading researcher, Rezekne Academy of Technologies,
Rezekne, Latvia, e-mail: inta.kotane@rta.lv

Abstract.

Purpose and aim of the study: to examine the mortgage loan market in Latvia.

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 mortgage loans in Latvia. The graphic method was applied to better represent and compare the research results.

Main Findings: It was concluded that the property, housing and mortgage markets were interlinked, with developments in one market affecting developments in the other. Tax policies, government support measures and macro-prudential supervision measures form part of the regulatory framework for the mortgage market, which, together with the creditworthiness and financial literacy of borrowers, can promote or restrict the availability and development of mortgage loans.

Originality: The research examined the concept of mortgage loans and factors in the mortgage credit market, as well as mortgage loan market trends in Latvia.

Implications: The research provides a basis for further research on the development of the mortgage market in Latvia.

Keywords: interest rates, mortgage loan, property and housing market.

Received: 2 November 2024 **Revised:** 13 November 2024 **Accepted:** 19 November 2024

Published: 16 December 2024

Introduction

Mortgage lending is one of the most important kinds of credit in the economy. People can get finance to buy or build a home, which is often the largest investment of their lifetime. At the same time, mortgage lending is one of the most profitable banking services. The mortgage market acts as a powerful transmission tool for monetary policies. Since the global financial crisis, the mortgage market in Latvia has undergone many changes. At the end of 2023 in Latvia, total mortgage lending as a share of GDP was only 12%, which was three times lower than the euro area average of 36% (Vilerts & Nīkitins, 2024). In addition, in recent years the world has experienced new global challenges: pandemics, international conflicts, energy crises, high inflation etc., which have affected mortgage markets both in Latvia and globally.

The research aims to examine the mortgage loan market in Latvia.

<https://doi.org/10.17770/jresd2024vol16.8293>

This is an open access article under the Creative Commons Attribution 4.0 International License

To achieve the aim, the following specific research tasks were set:

- 1) To examine the theoretical aspects of mortgage lending;
- 2) To analyse the mortgage loan market in Latvia and the factors therein;
- 3) To draw conclusions and make proposal.

The research employed qualitative and quantitative methods. The monographic and logical construction methods were used to summarise the theoretical aspects of the research problem, analyse them and develop a scientific discussion. Statistical analysis was employed to process and analyse secondary data on trends in mortgage loans in Latvia. The graphic method was applied to better represent and compare the research results.

Research results and discussion

1. The concept and characteristic elements of a mortgage loan

Lending is one of the personal financial planning and global economy tools used by households and firms to raise external finance (Ciemleja & Lāce, 2022; LB, 2023a), the supply of funds, goods, services on credit to be paid by instalments (Tēzaurus.lv, 2023), a compensatory transaction in which a credit institution transfers, on the basis of a written contract, money or other items to a customer into ownership and which imposes on the customer the obligation to return the money or other items to the credit institution within a specified period of time and under specific procedures (Credit Institution Law, 1995).

Doling et al. (2013) point out that a house or an apartment is often the most expensive asset an individual acquires and might require a mortgage loan to buy it. A mortgage loan is a kind of loan granted to households for the purchase, construction or reconstruction of a house, apartment or land, including mortgages and home improvement loans that improve the economic performance of the house or apartment (LB, 2023b). A mortgage loan is based on an economic and legal relationship between the borrower and the lender on the transfer of the value of borrowed funds and is secured by real estate collateral (Volkova & Khamula, 2020). Mortgage lending is viewed as a factor in economic growth (Bazilinska & Panchenko, 2020) and is important for housing affordability, population wealth, the real estate market, the financial industry and the economy (Doling et al., 2013).

The authors believe that mortgage lending provides borrowers with access to finance and involvement in the housing market, lenders with the ability to lend and earn a fair return for the risk they take, and the economy with an effect on growth. The authors considered the main characteristics of mortgage lending to be the purpose, amount, maturity, interest rate, repayment method, collateral and cost (Figure 1).

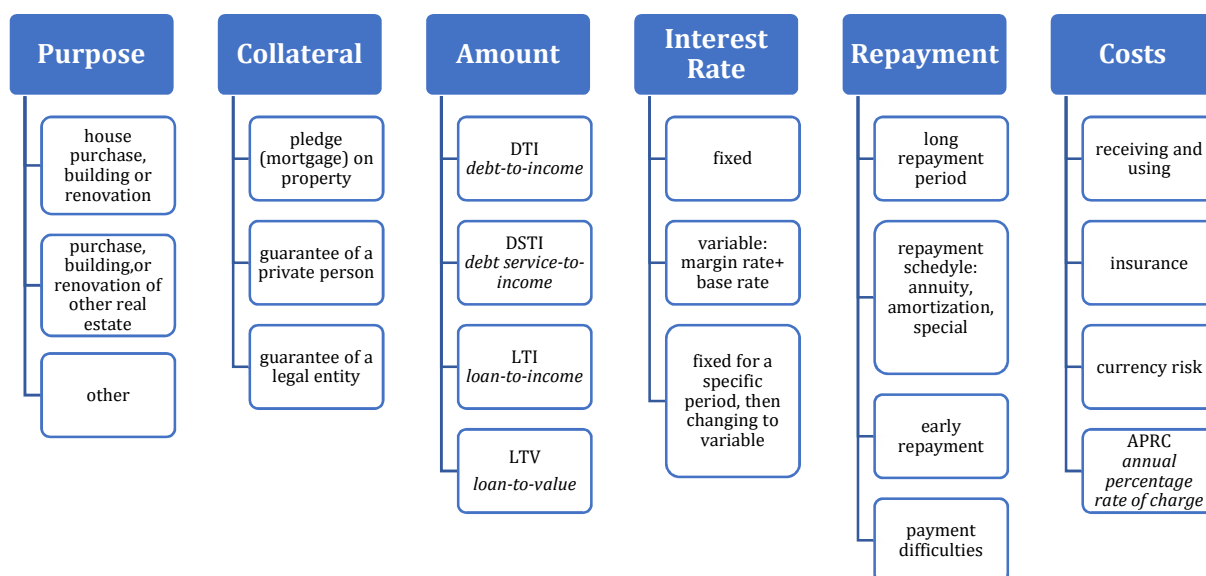


Fig. 1 Mortgage loan elements and main features
(authors' construction)

The authors believe that the mortgage lending characteristics summarised in Figure 1 are interlinked and affect each other. For example, the amount of a mortgage loan might depend not only on the borrower's income and the size of current liabilities but also on the purpose of the loan, the market value of collateral, the interest rate charged and the maturity.

2. Factors in the mortgage loan market

The mortgage market is closely linked to the property and housing markets. Trinh (2022) points out that various actors in the property market influence its development, demand, supply, prices and market values: government tax policies and lending regulations mitigate property market risks; brokers and agents ensure a quick buying and selling process, helping buyers to find the right property; loans provide access to property: as the demand for loans increases, the supply of property decreases, prices and market values tend to increase. Kaušškale (2018) has concluded that the most important factors in the real estate market and property values, prices, demand and values are social, economic, legal and political. There are reciprocal effects between the property market, government policies and macroeconomic developments, while Asadov & Masih (2016) have pointed out that housing prices are the leading factor in the property market in the short term, while interest rates contribute to house price changes in both the short and long term.

The authors summarise the factors in the mortgage market in Figure 2.

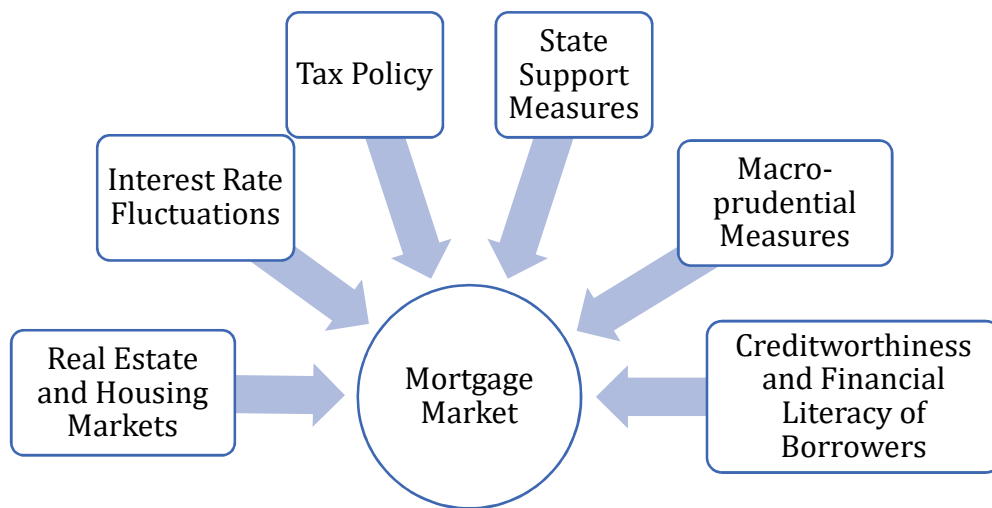


Fig.2 Factors in the mortgage market (authors' construction)

The government plays an important role in the mortgage market and in regulating the economy, with the aim of contributing to financial wellbeing and economic development. Appropriate public policies can improve the housing lending system and facilitate access to housing loans for particular categories of the population. It is closely linked to the rate of employment, stable incomes and the willingness of credit institutions to provide financing (Sidełska, 2014). Housing-related policy measures can be divided into monetary, fiscal and macro-prudential supervision (Zhao & Liu, 2023). In the context of monetary policy, the mortgage market is significantly affected by interest rate fluctuations: as rates rise, the availability of mortgages decreases and potential borrowers find it more difficult to get a loan (Ghazi, 2022). The European Commission (EC) points out that housing-related tax policies and taxes can influence the choice between renting and buying. For example, subsidising mortgage loans through interest deductions might encourage borrowing and home ownership, but might also increase house prices, and such support tends to favour wealthier households. Low property taxes also encourage home ownership, while transaction taxes are linked to the market value of real estate and reduce price speculations (EC, 2017).

Government support measures are an important factor in access to housing and finance, which contributes to the development of the mortgage market. In various countries, housing policy support measures for home ownership and current homeowners are divided into:

- *housing grants* - in the form of direct subsidies and one-off financial support granted to households for the purchase or construction of a home, covering part or all of the cost, which does not have to be repaid by the beneficiary;

- *mortgage subsidies and guarantees*, comprising loans granted by the government for the purchase of housing, support to mortgage borrowers to cover co-financing (including grants) or mortgage guarantees;
- *support for mortgage borrowers having payment difficulties*, comprising subsidies for mortgage payments and arrears, deferment of payments, refinancing liabilities, transfer of current property to another owner and renting out (mortgage-to-rent) (OECD, 2023).

Macroprudential policies are implemented to ensure financial stability. Macroprudential supervision in the European Union (EU) is the responsibility of the European Central Bank (ECB), the European Systemic Risk Board and national designated authorities (usually central banks or financial market supervisors) in the Member States (ECB, 2017). Macroprudential measures can target both banks and borrowers. National authorities incorporate them in the relevant legislation. Measures for banks typically relate to adequate capital and capital buffer requirements, which can help to address systemic risks in the economy. Other measures might aim to align the risk profiles of certain positions on bank balance sheets, e.g. mortgages (EC, 2017). Borrower-focused instruments are also applied, e.g. mortgage lending requirements might limit the amount that homebuyers can borrow relative to the cost of housing or their incomes (ECB, 2017).

Since borrower-focused measures affect loan amount and credit risk, the authors conclude that such measures are part of the process of assessing the creditworthiness of borrowers and believe that borrowers' creditworthiness also affects the mortgage market. Avery et al. (1996) point out that lenders carefully assess the risks to the likelihood that a borrower will not be able to make the expected repayments. In the case of a mortgage, the assessment is based on information about the borrower's financial situation and credit history, the kind and market value of the real estate (collateral), and the lenders' experience in granting loans.

The authors conclude that borrowers with low creditworthiness are less likely to get a loan, with an impact on the mortgage market in terms of loan sizes granted and the total amount of loans granted, while macroprudential measures protect lenders and borrowers from excessive commitments and potential risks during the repayment period.

Borrower creditworthiness is closely linked to financial literacy. An individual's knowledge and attitudes towards mortgage lending have a significant impact on borrowing rates across economies (Nakiwala et al., 2022). The education level and access to employment are among the key determinants of housing affordability. This particularly affects young people with lower levels of education, who are at higher risk of being excluded from the housing market (Sekace & Viesturs, 2021).

The property, housing and mortgage markets are interlinked, as developments in one market affect developments in the other. Interest rate volatility is a key factor in borrowers' ability to obtain and repay mortgages in different economic conditions. Tax policies, government support measures and macro-prudential measures form part of the regulatory framework for the mortgage market, which, together with other factors, can facilitate or restrict the availability of mortgage loans and the development of the market.

3. Assessment of factors in the mortgage market

In Latvia, mortgage loans are granted by credit institutions, non-banks and credit unions. In 2023 in Latvia, according to the Finance Latvia Association (FLA), there were around 124.4 thousand mortgage borrowers, with the outstanding amount of mortgage loans amounting to around EUR 4.6 billion (FNA, 2023). Lending in Latvia is affected by a number of interrelated factors: the general economic situation, the shadow economy, lender lending policies, the financial situation of borrowers and the legal framework (MoF, 2023a). The development of housing lending in Latvia is linked to the faster development of the real estate market, driven by rising demand, higher household solvency, rising savings and government support programmes (LB, 2022a). However, in recent years, both the economic situation and the financial sector have been significantly affected by a number of challenges: the COVID-19 pandemic, the Russian invasion of Ukraine, the subsequent energy crisis, and increases in costs, inflation and interest rates (LB, 2023c). The impact of the events could also be seen in lending activity. Available data on new mortgage origination to households are summarised in Figure 3.

Figure 3 shows that the period 2019-2024 was generally positive, with housing lending volumes increasing year on year. However, there were several periods when lending activity temporarily declined, with the first half of 2020 seeing the lowest monthly lending volume in May (EUR 23.47 million), in early 2021 when Latvia was hit by the second wave of the COVID-19 pandemic marked by high morbidity, emergency and tight restrictions, in early 2022 (Russia invaded Ukraine in February) and in the second half of the year, after the ECB raised interest rates.

In 2020-2022, the mortgage market in European countries was affected by high mortgage interest rates and tighter lending conditions. Rising inflation and energy and construction costs contributed to house price inflation and decreased lending growth. The impact of the COVID-19 pandemic and the shadow economy, as well as the consequences of the

Russian invasion of Ukraine could be viewed negatively (Riashchenko et al., 2023).

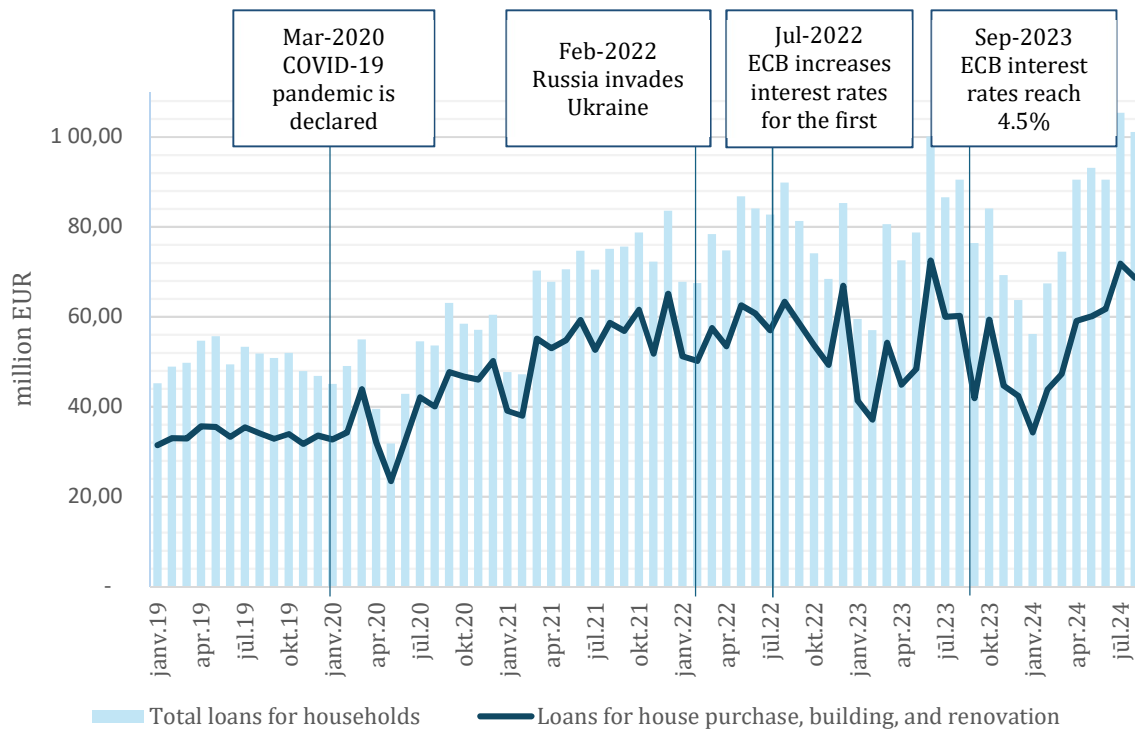


Fig. 3 New loans granted to households in Latvia in 2019-2024, millions EUR (LB, 2024) (authors' construction)

In 2023, the ECB continued to raise its key interest rates to fight inflation, which led to a significant increase in payments by Latvian mortgage borrowers. The population's ability and willingness to buy a new home decreased. Given the increase in EURIBOR rates and their impact on financial industry profits and mortgage borrowers, new policy initiatives have been introduced in Latvia since 2024 to impose advance payments on profits to the financial industry, to provide additional finance institution ALTUM guarantees to socially vulnerable borrowers and to introduce a mortgage protection levy (Fiscal Discipline Council, 2023). The macro-prudential measures targeting borrowers to promote energy-efficient housing changed in 2024 (LB, 2023d).

ECB interest rates were raised in July 2022 (Figure 4). Figure 4 shows that the interest rates on housing loans in Latvia were persistently higher than in the euro area. The interest rates rose in mid-2020, with some decrease observed by the end of 2021. The fast rise in lending rates started in 2022 when the ECB (reacting to inflation above the 2% target) raised its key interest rates for the first time in several years – from 0.5% in July to 2.5% in December – and continued the following year, reaching 4.5% in December 2023. With inflation rates easing in the euro area, the key ECB interest rates

were cut from 4.5% to 4.25% in June 2024, to 3.65% in September and to 3.5% in October. The interest rate cuts have had a positive impact on the total amount of new loans.

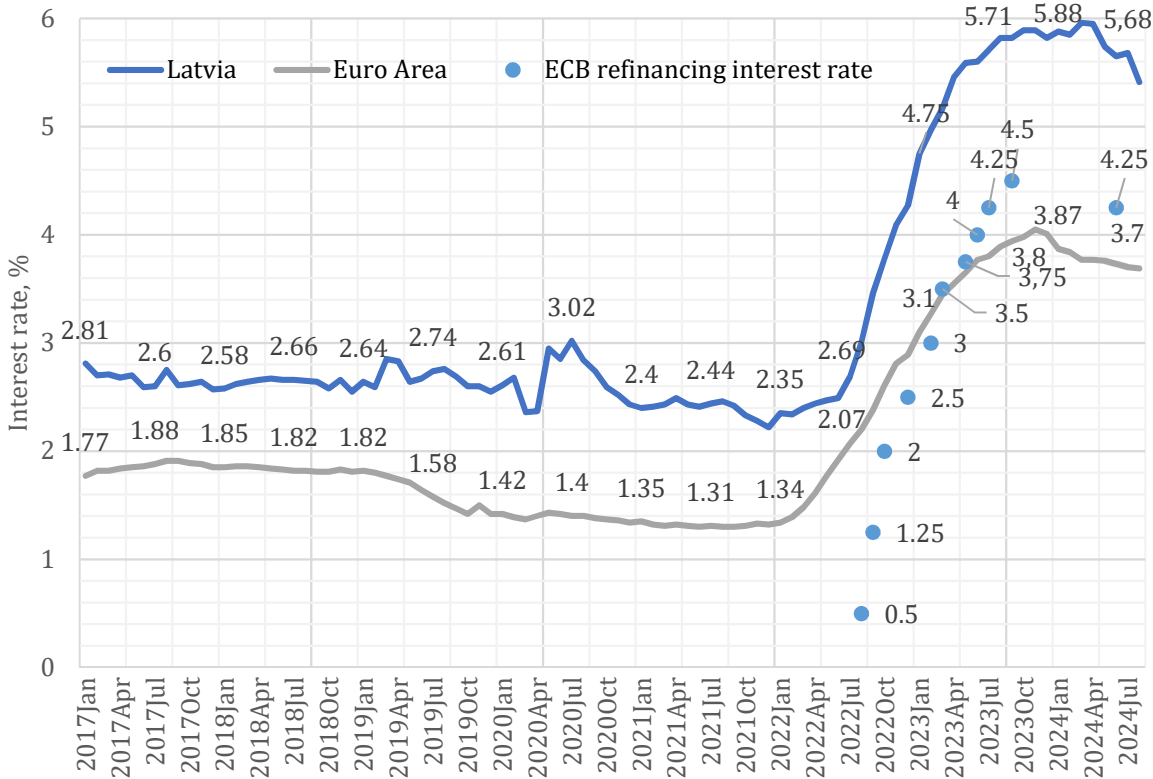


Fig. 4 Interest rates for new loans to households for house purchase in Latvia and the Euro Area (ECB Data Portal, 2024; Euriborrates.eu, 2024) (authors’ construction)

Housing is a basic human need, and its affordability affects household well-being. Despite household incomes rising year on year, the EC has stated that only the wealthiest households are able to make significant savings to buy, rent or improve adequate housing (Par Mājokļu pieejamības..., 2023). In 2023, 82.8% of households in Latvia lived in their own home and 13.9% had a mortgage or other kind of home loan (Eurostat, 2023). The mortgage burden on the after-tax income of a two-person household where both earners earn the average wage in Latvia increased from 14% in 2021 to 32% in 2024 (Latio, 2024).

Income levels and money savings are important factors in the ability of households to purchase a home with a mortgage. The availability of housing and mortgage loans is facilitated by the State Housing Support Programme, which has been administered and launched by ALTUM since 2015.

Under the programme, borrowers with at least one minor child (or a family expecting a child) and dependent, and borrowers up to 35 years of age

with secondary vocational or higher education, are granted a guarantee for a mortgage loan for the purchase or construction of a home if the transaction amount does not exceed EUR 300000. The guarantee allows them to borrow more than in the standard case (up to 95% of the property price or market value (LB, 2022b) and significantly reduces the down payment. Since 2023, the guarantee has also been available to members of the National Armed Forces (NAF), while since April 2024, the amount of the state guarantee for families with children for the purchase or construction of a home in rural regions has been increased, allowing them to receive a guarantee of up to 50% of the loan amount (LV portal, 2024). The guarantee lasts up to 10 years. The guarantee can be renewed if the previous guarantee has expired.

An additional advantage is that for families with children and NAF servicemen, the state fee for registering ownership to immovable property in the Land Register is set at 0.5% of the immovable property value (if it does not exceed EUR 100 000) or EUR 500 + 1.5% of the immovable property value exceeding EUR 100 000 (Regulations Regarding..., 2018). This significantly reduces the overall processing costs associated with the purchase of real estate.

The total cost is higher for young professionals who have to pay an extra 4.8% per year on the guarantee. It is positive that ALTUM and the Ministry of Economics of the Republic of Latvia made an amendment in December 2023, reducing the guarantee fee from 4.8% to 2.4% for one year. The guarantee fee will be reviewed again after 12 months (ALTUM, 2023a).

The ALTUM support programme covered 40% of new housing loans and 32% of the total housing loan balance in 2022 and 44% of new loans in 2021 (LB, 2023c). It could be established that ALTUM guarantees represent significant support for mortgage borrowers and have a significant impact on the mortgage market.

By the end of 2023, ALTUM guarantees for house purchases amounting to EUR 268 million have been granted to more than 27107 families with children and 5688 young professionals who have obtained mortgage loans of more than EUR 2.3 billion from banks (ALTUM, 2024).

In November 2020, under the Housing Guarantee Programme, an additional subsidy Pillar was launched for large families. As the programme expands, the subsidy is also extended to families with a disabled child. The subsidy is a one-off support payment to reduce the down payment on a bank loan for the purchase or construction of a home (ALTUM, 2023b).

The Ministry of Finance of the Republic of Latvia has stated that the ALTUM support programme targets a wide range of beneficiaries and affects overall market trends by contributing to housing affordability. At the same time, however, the broad coverage of the programme contributes to rising house prices and reduces housing affordability (MoF, 2022).

The authors conclude that by taking out a mortgage with an ALTUM guarantee, borrowers are effectively “borrowing” for the down payment, as the guarantee is part of the mortgage loan; however, at the same time, it provides significant support, allowing them to save time for saving the down payment. The additional 5% guarantee stimulates demand for energy-efficient housing, while the subsidy reduces the co-financing required to buy or build a home with a mortgage. At the same time, it should be stressed that borrowers must have a sufficiently high income to be able to borrow a larger loan with public support than in the standard case; therefore, the authors consider that the support is less accessible to borrowers with lower incomes.

Decisions taken by the government of Latvia in 2023 will have an impact on the future development of the mortgage market. On 06/12/2023, the Saeima adopted in final reading amendments to the Consumer Rights Protection Law, which provide for the introduction of a one-year mortgage borrower protection levy from 01/01/2024, and borrowers are reimbursed 30% of the interest payments on mortgage loan contracts. The amendments are proposed to reduce the burden on borrower payments because of inflation and high EURIBOR rates. A mortgage protection levy of 0.5% of the lender’s total outstanding mortgage loans as at 31/10/2023, payable quarterly, is imposed on lenders. However, mortgagees who have signed a contract before 31/10/2023 and whose loan balance does not exceed EUR 250 000 receive compensation for each quarter of 2024 equal to 30% of the interest payments on the mortgage contract, up to a maximum of 2 percentage points of the interest rate set for the period. The amount of compensation for each contract is calculated by mortgage lenders and paid by the State Revenue Service. The compensation does not apply to contracts with a fixed interest rate for the entire repayment period (Saeima Press Service, 2023; Dārziņa, 2023).

To facilitate the mortgage refinancing process and lift the ban on mortgage advertising, several amendments to the Credit Institution Law, the Insurance Contract Law, the Notariate Law, the Consumer Rights Protection Law and Cabinet Regulation No 691 Regulations regarding Consumer Lending have been approved and entered into force. The amendments should promote competition in the mortgage lending market, have an impact on the development of mortgage lending services and are expected to reduce mortgage interest rates (Baķis, 2023).

The authors consider that, due to the planned compensation payments to mortgage borrowers introduced in 2024, there will not be a strong interest from borrowers to switch to another bank in 2024, while a marked increase in interest could be observed in 2025 when it is unlikely that the compensation payments are stopped due to an increase in EURIBOR.

As of 1 January 2024, amendments to the Enterprise Income Tax Law entered into force, which obliges credit institutions and consumer credit service providers to pay a tax surcharge of 20% in the tax year (irrespective of the amount of profits), calculated based on pre-tax financial data and taking into account the profits distributed in the tax year and the amount of tax paid on them, while providing that the tax surcharge paid is considered in calculating the tax payable on the distribution of profits in dividends (MoF, 2023b).

The 2023 government decisions introduced many changes in the mortgage market that were beneficial for borrowers: mortgage compensation payments, easier refinancing and extended ALTUM guarantee programmes.

Conclusions and suggestions

Mortgage lending is a long-term financial instrument that provides borrowers with access to finance and involvement in the housing market in return for collateral, lenders with the ability to lend and earn a fair return for the risk they take, and the economy with an effect on growth. The main characteristics of mortgage lending are the purpose, collateral, amount, interest rate, repayment options and total cost. They are interlinked, affecting each other by their characteristics, and set the overall preconditions of mortgage lending. The real estate, housing and mortgage markets are interlinked. Interest rate fluctuations are a significant factor in borrowers' ability to obtain and repay a mortgage. Tax policies, government support measures and macro-prudential measures form part of the regulatory framework for the mortgage market, which, together with the creditworthiness and financial literacy of borrowers, can facilitate or restrict the availability and development of mortgage lending.

In Latvia, the 2019-2024 period had an overall positive trend, with housing lending volumes increasing year on year; however, there have been several periods of temporary decreases in lending activity, mainly due to the COVID-19 pandemic, the Russian invasion of Ukraine and ECB interest rate hikes.

Housing is one of the basic human needs, and its affordability affects the level of household wellbeing. In 2023, 82.8% of households in Latvia lived in their own home and 13.9% had a mortgage or other kind of housing loan. The mortgage burden on the after-tax income of a two-person household where both earners earn the average wage in Latvia increased from 14% in 2021 to 32% in 2024. Income levels and money savings are important factors in the ability of households to purchase a home with a mortgage. The availability of housing and mortgage loans is facilitated by the State Housing Support

Programme, which has been administered and launched by ALTUM since 2015. The ALTUM support programme targets a wide range of beneficiaries and affects overall market trends by contributing to housing affordability. At the same time, however, the broad coverage of the programme contributes to rising house prices and reduces housing affordability. The ALTUM support programme covered 40% of new housing loans and 32% of the total housing loan balance in 2022 and 44% of new loans in 2021. It could be established that ALTUM guarantees represent significant support for mortgage borrowers and have a significant impact on the mortgage market.

The 2023 government decisions introduced many changes in the mortgage market that were beneficial for borrowers: mortgage compensation payments, easier refinancing and extended ALTUM guarantee programmes.

Proposals:

The Ministry of Economics of the Republic of Latvia needs to: (1) expand the current ALTUM guarantee programmes by setting a larger guarantee based on income or property characteristics; 2) completely abolish the annual ALTUM guarantee fee and reduce fees for young professionals who currently pay the most to obtain and use the guarantee. This would ease the overall payment burden, especially during a period of rising mortgage interest rates; Credit institutions and non-bank lenders in the Republic of Latvia need to: make special offers to consumers with more favourable requirements (lower application fee and interest rate) for home loans intended for renovation, reconstruction or conversion, while at the same time increasing the energy efficiency of the home.

References

1. ALTUM (2023a). *Palielināts atbalsts mājokļa iegādei jaunažiem speciālistiem un ģimenēm, kurās aug bērns ar invaliditāti*. <https://www.altum.lv/palielinats-valsts-atbalsts-majokla-iegadei-jaunajiem-specialistiem-un-gimenem-kuras-aug-berns-ar-invaliditati/>
2. ALTUM (2023b). *Balsts subsīdija*. <https://www.altum.lv/pakalpojumi/iedzivotajiem/majoklu-atbalsts-gimenem-ar-berniem/balsts-subsidija>
3. ALTUM (2024). *2024. gadā ALTUM turpinās aktivitātes kredīšanas veicināšanai*. <https://www.altum.lv/2024-gada-altum-turpinas-aktivitates-kreditesanas-veicinasai/>
4. Asadov, A., & Masih, M. (2016). Home Financing Loans and Their Relationship to Real Estate Bubble: an Analysis of the U.S. Mortgage Market. *MPRA Paper*, 69771. <https://mpra.ub.uni-muenchen.de/id/eprint/69771>.
5. Avery, R.B., Bostic, R.W., Calem, P.S., & Canner, G.B. (1996). Credit risk, credit scoring, and the performance of home mortgages. *Federal Reserve Bulletin*, 82(7), 621-648. DOI: 10.17016/bulletin.1996.82-7

6. Baķis, P.P. (2023). *Likumdošanas jaunumu apskats un tiesu prakse 07.11.-21.11.* <https://www.sorainen.com/lv/publikacijas/likumdosanas-jaunumu-apskats-un-tiesu-prakse-07-11-21-11/>
7. Bazilinska, O., & Panchenko, O. (2020). Mortgage Lending as a Component of Economic Growth. *Scientific Papers NaUKMA. Economics*, 5(1), 3-9. DOI: 10.18523/2519-4739.20205.1.3-9
8. Ciemleja, G., & Lāce, N. (2022). *Personīgo finanšu pārvaldība*. 4. pārstr. un papild. izd. Rīga: RTU izdevniecība, 127 lpp. <https://doi.org/10.7250/9789934227189>
9. Dārziņa, L. (2023). *Hipotekārā kredītaņēmējiem kompensēs procentu maksājumus 30% apmērā.* <https://lvportals.lv/skaidrojumi/358069-hipotekara-kredita-nemejiem-kompenses-procentu-maksajumus-30-apmera-2023>
10. Doling, J. Vandenberg, P., & Tolentino, J. (2013). Housing and Housing Finance – A Review of the Links to Economic Development and Poverty Reduction. *ADB Economics Working Paper, No. 362*. Manila: Asian Development Bank, 8-27. <https://www.adb.org/sites/default/files/publication/30348/ewp-362.pdf>.
11. ECB (2017). *Īss ieskats makroprudenciālās uzraudzības politikas darbībā.* <https://www.ecb.europa.eu/ecb/educational/explainers/tell-me-more/html/macprudentialpolicies.lv.html>
12. ECB Data Portal (2024). *Bank Interest Rates - Loans to Households for House Purchase (New Business) – Euro Area.* <https://data.ecb.europa.eu/data/datasets/MIR/MIR.M.U2.B.A2C.A.R.A.2250.EUR.N>.
13. EC (2017). *Eiropas pusgada tematiskā faktu lapa. Mājokļu tirgus attīstības tendences.* https://commission.europa.eu/system/files/2021-01/european-semester-thematic-factsheet-housing-market-developments_lv.pdf
14. Euriborrates.eu (2024). *ECB Refinancing or Minimum Bid Rate.* <https://www.euribor-rates.eu/en/ecb-refinancing-rate/>.
15. Eurostat (2023). *Distribution of Population by Tenure Status, Type of Household and Income Group - EU-SILC Survey.* <https://ec.europa.eu/eurostat/databrowser/view/ILC LVH002 custom 3553007/bookmark/table?lang=en&bookmarkId=2457e44e-df35-4995-aacc-e79684402691>
16. Fiscal Discipline Council (2023). *Surveillance report on the MTBF 2024-2026 and the Budget for 2024.* <https://www.fdp.gov.lv/en/publikacijas-un-parskati/zinojumi/2023/01-11>
17. MoF (2022). *Kreditēšanas attīstības tendences un kreditēšanu kavējošie faktori Latvijā.* <https://www.fm.gov.lv/lv/media/9967/download>
18. MoF (2023a). *Kreditēšanas attīstības tendences un kreditēšanu kavējošie faktori Latvijā.* <https://www.fm.gov.lv/lv/media/14220/download?attachment>
19. MoF (2023b). *Izmaiņas nodokļu jomā, sākot ar 2024. gadu.* <https://www.fm.gov.lv/lv/izmainas-nodoklu-joma-sakot-ar-2024gadu>
20. FNA (2023). *Hipotekāro kredītu procentu maksājumu samazināšanas kumulatīvais efekts attiecībā uz ietekmi uz kapitālu un likviditāti gan esošajā kreditēšanas ciklā, gan arī turpmākajos.* <https://www.financelatvia.eu/news/material/hipotekaro-kreditu-procentu-maksajumu-samazinanas-kumulativais-efekts-attieciba-uz-ietekmi-uz-kapitalu-un-likviditati-gan-esosaja-kreditesanas-cikla-gan-ari-turpmakajos/>
21. Ghazi, R. (2022). *The Impact Of Interest Rate Increases On The Mortgage Market.* <https://www.forbes.com/sites/forbesfinancecouncil/2022/12/07/the-impact-of-interest-rate-increases-on-the-mortgage-market>.

22. Kauškāle, L. (2018). *Nekustamā īpašuma tirgus ilgtspējīgas attīstības novērtēšana: Latvijas situācija*. Promocijas darba kopsavilkums. Rīga: RTU Izdevniecība. <https://ortus.rtu.lv/science/lv/publications/28170/attachments/4412>
23. *Credit Institution Law* (1995). Law of the Republic of Latvia. <https://likumi.lv/ta/en/en/id/37426>
24. LB (2024). *Kredītu reģistra statistika*. <https://www.bank.lv/statistika/dati-statistika/kr-statistika#kreditiestazu-jauno-kreditu-statistika>
25. Latio (2024). Mājokļu pircēju pārliecības indekss. Maijs 2024. <https://latio.lv/lv/majoklu-indekss-maijs-2024#>
26. LB (2022a). *Finanšu Stabilitātes Pārskats. 2022*. https://datnes.latvijasbanka.lv/fsp/FSP_2022_lv.pdf
27. LB (2022b). *Uz aizņēmējiem vērstie pasākumi*. <https://www.bank.lv/darbibas-jomas/finansu-stabilitate/latvija-ieviestie-makrouzraudzibas-pasakumi/uz-aiznemejiem-verstie-pasakumi>
28. LB (2023a). *Finanšu Pieejamības Pārskats. 2023. gada oktobris, Nr. 1*. https://datnes.latvijasbanka.lv/fpp/FPP_2023_LV.pdf
29. LB (2023b). *GPL mājokļa eiro kredītiem rezidentu mājāsaiņniecībām*. <https://www.bank.lv/statistika/skaitlis/gpl-majokla-eiro-kreditu-rem-identu-majsaimniecibam>
30. LB (2023c). *Finanšu Stabilitātes Pārskats. 2023*. https://datnes.latvijasbanka.lv/fsp/FSP_2023_LV.pdf
31. LB (2023d). *Latvijas Banka pārskata kredītriska pārvaldīšanas noteikums*. <https://www.bank.lv/aktualitates-banklv/zinas-un-raksti/jaunumi/16755-latvijas-banka-parskata-kreditrisku-parvaldisanas-noteikumus>
32. LV portal (2024). *Palielina valsts garantiju mājokļa iegādei vai būvniecībai ģimenēm Latvijas reģionos*. <https://lvportals.lv/skaidrojumi/362161-palielina-valsts-garantiju-majokla-iegadei-vai-buvniecibai-gimenem-latvijas-regionos-2024>
33. Nakiwala, M., Mukiibi, S., & Tmale, A. (2022). Mortgage Financing: Access, Knowledge, Attitudes and Challenges Experienced by Urban Housing developers. *International Journal of Finance and Accounting*, 1(1), 47-56. <https://doi.org/10.37284/ijfa.1.1.1030>
34. *Regulations Regarding the State Assistance in Purchase or Construction of Residential Space* (2018). Republic of Latvia Cabinet Regulation No. 95. <https://likumi.lv/doc.php?id=297289>
35. OECD (2023). *PH2.1. Public Spending on Financial Support to Homebuyers and Homeowners*. <https://www.oecd.org/els/family/PH2-1-Public-spending-support-to-home-buyers.pdf>
36. *Par Mājokļu pieejamības pamatnostādņēm 2023.-2027. gadam*. (2023). MK rīkojums Nr. 739. <https://likumi.lv/ta/id/347211-par-majoklu-pieejamibas-pamatnostadnem-2023-2027-gadam>
37. Riashchenko, V., Gottmann, W., & Mandzyk, P. (2023). Mortgage Lending Market in Europe: Dynamics and Features. *Baltic Journal of Economic Studies*, 9(3), 77-85. <https://doi.org/10.30525/2256-0742/2023-9-3-77-85>
38. Saeima Press Service (2023). *Hipotekāro kredītuņēmējiem kompensēs 30% no kopējiem procentu maksājumiem*. <https://www.saeima.lv/lv/aktualitates/saeimas-zinas/32926-hipotekaro-kreditu-nemejiem-kompenses-30-no-kopejiem-procentu-maksajumiem>

39. Sekace E., & Viesturs J. (2021). Affordable Housing for Young Adults in Latvia. *Baltic Journal of Real Estate Economics and Construction Management*, 9 (1), 42-52.
<https://doi.org/10.2478/bjreecm-2021-0004>
40. Sidelska, A. (2014). *Dzīvojamais fonds kā reģionu sociāli ekonomiskās attīstības elements*. LLU [https://llufb.llu.lv/dissertation-summary/regional-economics/A Sidelska prom darba kopsavilkums 2014 LLU.pdf](https://llufb.llu.lv/dissertation-summary/regional-economics/A%20Sidelska%20prom%20darba%20kopsavilkums%202014%20LLU.pdf)
41. Tēzauris.lv (2023). *Kredīts*. <https://tezaurs.lv/kredits:1>
42. Trinh, T.H. (2022). Theroetical Foundations of Real Estate Market Behavior. *Cogent Business & Management*, 9(1). <https://doi.org/10.1080/23311975.2022.2132590>
43. Vilerts, K., & Ņikitins, A.J. (2024). *Hipotekārā kreditēšana reģionos vāja. Kāpēc tā un ko darīt?* <https://www.makroekonomika.lv/raksti/hipotekara-kreditesana-regionos-vaja-kapec-ta-un-ko-darit>
44. Volkova, N., & Khamula, K. (2020). Mortgage Loan: Assesment of the Current Situation and Impact of the Solution of Housing Problems. *Economics and Region*, 3(78), 78-79.
<https://r.donnu.edu.ua/xmlui/handle/123456789/2655>
45. Zhao, Ch., Liu, F. (2023). Impact of Housing Policies on the Real Estate Market - Systematic Literature Review. *Heliyon*, 9(10).
<https://doi.org/10.1016/j.heliyon.2023.e20704>

ENHANCING THE PAYMENT SYSTEM IN UZBEKISTAN

Jakhongir Valiyev¹, Inta Kotane²

¹ Mg. soc.sc., Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: jahongirvaliyev18@gmail.com

² Ph.D., assistant professor, leading researcher, Rezekne Academy of
Technologies, Rezekne, Latvia, e-mail: inta.kotane@rta.lv

Abstract.

Purpose and aim of the study: To explore Uzbekistan's payment system and make suggestions for improving the payment system of Uzbekistan.

Design / Methodology / Approach: The research employed the following methods: descriptive and logical construction were used for reviewing and analyzing research papers and other information sources, as well as for scientific discussion. The graphic method was applied to better represent and compare the research results.

Main Findings: Modern payment systems are an important part of the global economy. The payment system in Uzbekistan is changing as a result of legislative changes and the growing use of digital payments. To reduce fraud and boost security in Uzbekistan's payment system, it is essential to use cutting-edge technology and strong legal frameworks. The integration of artificial intelligence in Uzbekistan's payment systems offers immense potential for improving fraud detection, transaction efficiency, and customer experience. Reducing cash circulation and promoting digital payments are critical for modernizing Uzbekistan's economy.

Originality: The research makes strategic recommendations that should increase customer trust in Uzbekistan's financial services industry and promote economic development. By putting these policies in place, the financial services industry can become stronger and more inclusive, which will improve the economy's stability and vibrancy.

Implications: The research provides a basis for further research on possibilities of improvement of payment systems.

Keywords: artificial intelligence, cash, Fintech, payment system, Uzbekistan,

Received: 31 October 2024 **Revised:** 10 November 2024 **Accepted:** 20 November 2024

Published: 16 December 2024

Introduction

In the digital age, the role of a robust payment system is pivotal for national economies, impacting everything from individual consumer behavior to international trade dynamics. As the global economy increasingly moves towards digitalization, Uzbekistan faces challenges that hinder its financial inclusivity and efficiency. Saini & Saha (2024) consider that "Fintech companies and financial institutions must prioritize responsible innovation, considering the potential social impact of their products and services. They should also be held accountable for any adverse

consequences resulting from their digital finance initiatives, taking proactive measures to mitigate risks and address any unintended consequences".

Beyond simply changing the way people conduct transactions, the evolution of payment systems from traditional banking procedures to advanced electronic methods has also greatly improved the efficiency and security of international trade and economic growth. Fintech, artificial intelligence (AI) and blockchain are just a few examples of technological advances that are constantly being integrated into payment systems. Modern payment systems are evolving due to the Internet and electronic innovations that increase the transparency and efficiency of financial transactions.

Aim of the Paper: To explore Uzbekistan's payment system and make suggestions for improving the payment system of Uzbekistan.

Tasks of the Research:

- explore the theoretical foundations of payment systems;
- describe the payment system of Uzbekistan;
- develop solutions and recommendations for the payment system of Uzbekistan;

The research employed qualitative and quantitative *methods*. The monographic method and logical construction were used to summarize the theoretical aspects of the research problem, analyze them and conduct a scientific discussion. The graphical method was used to represent and compare the results.

Research results and discussion

Theoretical foundations of the payment system

Payment networks that support trade, investment and economic growth are the backbone of the global economy. Big data, artificial intelligence (AI), and the Internet of Things (IoT) have recently caused significant changes in many industries (Papathomas & Konteos, 2023; Siddiqui & Goyal, 2023). Emerging technologies play a pivotal role in driving the transformation of the financial industry through FinTech. These technologies, including blockchain, AI, machine learning (ML), big data analytics, and cloud computing, are enabling unprecedented levels of innovation and efficiency in financial services. Ignoring the development and application of new technologies will lead to delays in the payment infrastructure itself and in the entire economy of the country (Kayode, 2023; Miah et al., 2023; Ganiev, 2023). Noul (2024) concludes that "AI-driven solutions hold immense potential for streamlining transaction processing and enhancing customer experiences. By analyzing customer behavior and preferences, financial

institutions can tailor their services and offerings to meet the evolving needs of their clients”.

Payment instruments are the means by which money is exchanged during a transaction. Digital alternatives such as debit and credit cards, electronic payment transfers and digital wallets are gradually replacing more traditional financial instruments such as cash and checks. Each tool has a specific use case, which is determined by variables such as transaction volume, ease of use, and availability of physical infrastructure. Khando et al. (2022) conclude that "Card payments are one of the digital payment technology services made available by banks and other financial institutions to their customers. It is a more conventional form of payment compared to other categories, such as e-payments, mobile payments, and cryptocurrencies".

With the advancement of time and technology, the number of individuals using e-payment platforms have increased, but people still today do not feel safe to provide information to the e-payment service provider because of the trust issues. To increase the participation of individuals in the e-payment platform, the service provider needs to assure the security and privacy gaining trust (Poudel et al., 2023). Rahmad et al. (2024) hold an opinion that “Mobile devices are susceptible to theft or misplacement, leading to financial fraud or identity theft in the event of loss or theft. Engaging in transactions on a mobile device entails the risks commonly linked to mobile usage”. In order to effectively detect fraud, in addition to the information available in the databases of the bank or payment organization, it is necessary to add to the data external information (for example, a posteriori assessment of various risks associated with the transaction) (Kolodiziev et al., 2020). Anderson et al. (2013) indicate that “The misallocation of resources associated with cybercrime results mostly from economic and political factors rather than from behavioral ones. Globalization means that for much online crime, the perpetrators and victims are in different jurisdictions”.

The global payments system, a complex network of financial transactions, protocols, and institutions, is the backbone of global business and personal finance. However, this system faces various obstacles that weaken its effectiveness, safety, and accessibility. As technology changes, so does the technology of fraudsters, and therefore the way they carry out fraudulent activities. Figure 1 shows the main concerns with international payment systems, such as high transaction prices, infrastructural gaps, currency volatility, regulatory hurdles, financial inclusion, security threats, technology constraints, consumer trust, and economic inequities. Resolving these problems is critical to building more equitable, effective, and safe payment systems globally.

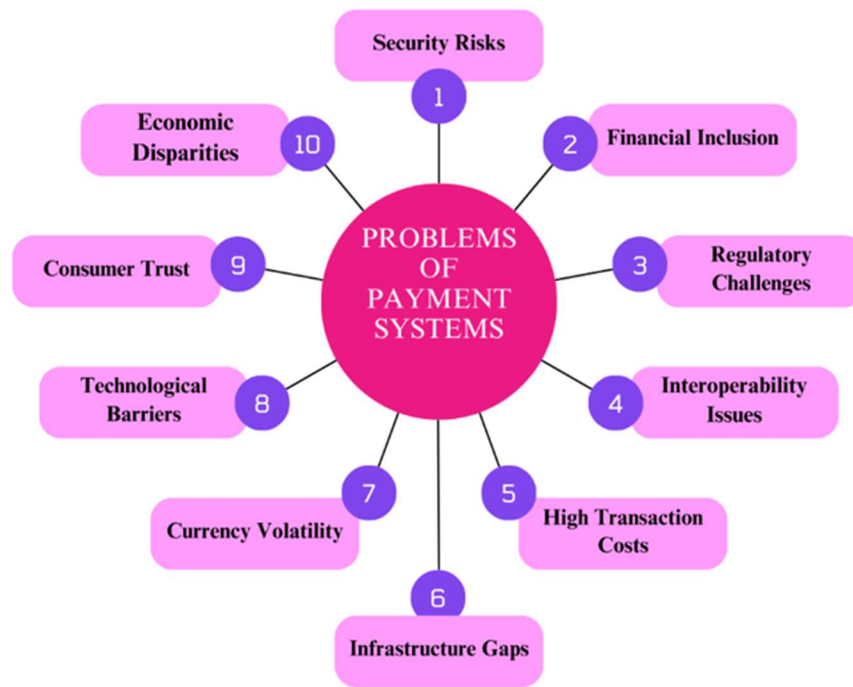


Fig.1 Problems of the payment system from a global perspective
(authors' own compilation based on Rehman et al., 2012; Pay10.com, 2023)

Understanding these challenges is critical for stakeholders at all levels, from policymakers and financial institutions to businesses and consumers, to limit risks and build a safer, more efficient, and inclusive global financial system. Addressing these challenges is critical to the stability and reliability of global payment networks, which in turn promotes economic development and inclusion, manifesting itself in many forms such as identity theft, phishing schemes, and card fraud.

Problems in global payment networks have a significant impact on the global economy, affecting both macroeconomic stability and microeconomic activity. The future of payment security depends on innovations such as blockchain technology for secure decentralized transactions and biometric authentication, which includes facial and fingerprint recognition. These innovations can create more secure, efficient, and transparent payment systems.

As customer behavior and technology change at a rapid pace, payment systems must constantly be innovative. This includes the creation of entirely new payment methods such as cryptocurrency and mobile payments, as well as the integration of advanced technologies such as AI in fraud detection and customer support. Modernization of payment infrastructure, such as the introduction of Faster Payment Systems in various countries, helps to reduce inefficiencies. These technologies enable fast transactions 24/7, significantly reducing the time and costs associated with payments.

To ensure that payment systems are fair, transparent and do not pose a threat to the larger financial system, they are subject to a complex regulatory structure. This involves complying with regulations and laws regarding data privacy, consumer protection, counter-terrorism financing and anti-money laundering (AML). At the regulatory level, efforts are being made to standardize systems and create a more favorable environment for efficient and secure payment systems, and regulatory sandboxes have also emerged as a tool to stimulate innovation in the financial industry.

The dynamic nature of payment systems, driven by rapid technological improvements and changing customer expectations, poses a complex regulatory challenge. By using tactics such as regulatory sandboxes, tiered regulation, and international cooperation, regulators can create an environment that promotes innovation while protecting consumers and maintaining financial stability. Zetzsche et al. (2017) indicate that "In finance, a regulatory sandbox refers to a regulatory "safe space" for experimentation with new approaches involving the application of technology to finance. At the most basic level, the sandbox creates an environment for businesses to test products with less risk of being "punished" by the regulator".

The future of payment systems has enormous potential, based on constant innovation in technology and financial services. However, this future also requires attention and efficiency from both the government and business. As payment systems continue to change, so will the regulatory framework that controls them, influenced by the lessons of the past and the challenges of the future. Regulation and supervision are critical to the integrity and efficiency of payment systems around the world. By continuing to adapt, evolve and collaborate, regulators, financial institutions and technology providers can ensure that payment systems remain secure, efficient, and inclusive. Ongoing dialogue between these stakeholders, based on the principles of consumer protection, innovation, and stability, will determine the trajectory of payment systems in the digital age.

Description of the payment system of Uzbekistan

Uzbekistan, as a country with a developing economy, is actively working to modernize its payment systems and strives to integrate into global financial networks. The history of the payment system of Uzbekistan began in 1991 when Uzbekistan became independent. The evolution of Uzbekistan's payment system: the introduction of electronic payments (1995–2003), enhancements (2003–2010), notable adjustments (2015–2019), and the creation of a data processing center (2019–present) (CBRU, 2020).

In the period from 2015 to 2019, significant changes occurred in the development of the national payment system in Uzbekistan. The Decree of the President of the Republic of Uzbekistan dated September 19, 2018, PP-3945 marked the beginning of the development of the National Interbank Processing Center. This was an important step towards modernizing the payment infrastructure in the country. In 2019, preparations began for the construction of the Data Processing Center at the Central Bank of the Republic of Uzbekistan (CBRU), which will allow payments to be made 24/7. These efforts were aimed at promoting 24-hour activity, which is especially important for the country's business sector. In addition, a new installment system has been developed, allowing businesses and individuals who are clients of commercial banks to make payments at any time. The system was deployed in the first quarter of 2020, and all commercial banks in the country were connected to it. In addition to improving the technological infrastructure, initiatives have also been taken to improve the regulatory framework. On November 1, 2019, the Law of the Republic of Uzbekistan "On Payments and Payment Systems" was adopted (Allahrakha, 2024), which became the basis for regulation of the payment market by the CBRU, the functioning of payment systems, operators and payment service providers, as well as activities in the field of electronic money. The law is based on international experience and is aimed at ensuring the proper operation of payment systems in the country (CBRU, 2020).

The fintech industry in Uzbekistan has witnessed remarkable growth and transformation in recent years. According to the CBRU, this is facilitated by favorable conditions for market participants. As of January 1, 2023, there were 47 licensed payment organizations in Uzbekistan, according to the CBRU (Boboev, 2023).

The CBRU plays an important role in regulating and managing the country's payment systems. It has taken various measures aimed at increasing financial inclusion, enhancing security and encouraging the use of digital payment alternatives. The CBRU has taken steps to reduce reliance on cash transactions, including incentives for businesses and consumers to use electronic payments and the creation of a national payment gateway to support secure online transactions. Boboev (2023) considers that in 2022, payment organizations carried out transactions worth 116 trillion sum, which was 2.1 times more than in 2021, the most popular purpose of transactions in payment services was payment for mobile communications, the number of quick response (QR) codes installed in businesses by the information system increased by only 8 thousand and amounted to 99 thousand units. In 2022, the volume of transactions using near-field communication (NFC) technology increased 2.1 times compared to 2021 and reached 25.5 trillion, in-store payments and payments for transport services

more than doubled, 11.6 million transactions were carried out through electronic money systems (e-wallets).

Over the past decade, the banking industry in Uzbekistan has undergone significant growth with a noticeable step towards digitalization. However, the current digital banking infrastructure still has limitations that prevent it from functioning optimally. Many financial institutions in the country depend on outdated core banking systems that are ill-suited to manage the volume and complexity of ongoing financial transactions. These legacy systems often lack the scalability and flexibility needed to accommodate new technologies that are vital to competing in today's fast-paced financial market. Additionally, the connectivity between multiple financial services and platforms is not seamless, resulting in inefficiencies and a less-than-satisfying user experience. While there have been initiatives to create online banking services, the overall level of adoption and functionality provided through these platforms has room for improvement, especially when compared to global norms. To improve digital transformation in the financial industry in Uzbekistan, the following major obstacles need to be considered and overcome.

- *Technical obsolescence.* Many banks operate with outdated software and technology, affecting transaction processing, service delivery, and security.
- *Cybersecurity vulnerabilities.* Increased digital transactions have exposed banks to new cyber threats. Existing measures are often insufficient to counter sophisticated attacks.
- *Regulatory Compliance.* The regulatory environment needs simplified rules to enable digital innovation while protecting privacy and data security.
- *Skills gaps.* A significant shortage of trained IT and cybersecurity professionals impacts the development and implementation of innovative solutions.
- *Customer trust and acceptance.* Building customer trust in digital banking products is vital. Concerns about digital security and unfamiliarity with new technologies lead to a preference for traditional methods (authors compiled based on Neverova, 2023)

Barbu et al. (2021) indicated that “Fintechs usually implement their solutions around customer needs and leverage on emerging technologies to produce a comprehensive and enhanced customer experience by gathering different services into one platform”.

In Uzbekistan, the payment sector is less congested, with large banks holding the lion's share of the financial services market. Lack of competition stifles innovation and limits customer options. Introducing new companies,

especially from the financial technology industry, can promote competition and lead to improved services and solutions.

Due to a lack of public trust and knowledge of digital solutions, cash continues to be the primary form of payment in Uzbekistan, despite increased interest in digital ones. Uzbekistan's cybersecurity landscape is reaching a crucial turning point. The danger of cyberattacks rises in tandem with the financial industry's increasing digital presence. In Uzbekistan, a large number of financial institutions now have basic cybersecurity safeguards in place. But as the stakes on digital money climb, they usually are not enough to fend against sophisticated cyberattacks, which become more frequent and sophisticated.

Solutions and recommendations for the payment system of Uzbekistan

The financial environment in Uzbekistan, like much of the world, is rapidly evolving, driven by technological breakthroughs, changing consumer expectations and demand for faster and more secure transactions. Modernizing the payment system is not just about introducing new technologies; it is about having a stable framework that supports economic development, stimulates innovation and increases accessibility. As Uzbekistan continues to integrate into the international economy, modernizing its payment system becomes vital.

The idea of modernizing digital infrastructure in Uzbekistan, especially in the banking sector, includes a dual approach: modernization of fundamental financial systems and large-scale investments in cybersecurity. The rapid pace of technological change internationally requires a strong infrastructure that can manage more digital transactions, provide better security and improve the user experience. For Uzbekistan, strengthening the digital infrastructure within financial institutions is vital to achieving these goals. This will not only improve the efficiency and reliability of financial services but will also integrate the country more fully into the global financial system. It will also build trust among customers and investors, which is an important component in the digital age.

To properly adapt and grow digital payment systems in Uzbekistan, it is necessary to carry out both short-term initiatives and long-term changes. It was essential to develop a comprehensive strategy covering technical modernization, legislative changes and infrastructure development.

Thus, an integrated approach to the introduction of new payment technologies, taking into account both technical aspects and the needs of end users, will create a reliable, secure and efficient payment system in Uzbekistan. To effectively adapt European Union (EU) technologies such as

fast payment systems, NFC and digital wallets to Uzbekistan, it is vital to take into account the uniqueness of local infrastructure, cultural characteristics and consumer behavior. It is also vital to create a legal framework to ensure compliance with international standards and local conditions. The authors' proposals in these areas are presented below.

Table 1 Chronology of actions in the payment system of Uzbekistan
(authors' own compilation)

Step	Months	Actions	Description of actions
Step 1: Preliminary preparation	0-3	Assessment of the current state	Analysis of infrastructure, the legislative framework and technical readiness.
		Defining requirements	Formulation of goals for digitalization of payments and selection of development directions.
Step 2: Develop a strategy	4-6	Technology selection	Identification of key technologies (blockchain, mobile payments, NFC) for a digital payment system.
		Integration planning	Connection of new systems with existing financial structures.
Step 3: Regulatory adaptation	7-12	Development of legislative proposals	Creation of proposals for adapting laws to new technologies.
		Public consultations	Collecting feedback and legal approval of changes.
Step 4: Implementation and testing	13-24	Development and implementation	Deployment of technology solutions with the help of partners.
		Pilot projects	Testing in critical sectors to assess effectiveness.
Step 5: Scaling and optimization	25-36	Evaluation of results	Analyzing the results of pilot projects and identifying improvements.
		Growth and optimization	Expanding the system based on feedback and adaptations.

The payment system digitalization in Uzbekistan spans three years. In the first three months, the current state is assessed and requirements are defined. The next three months involve developing a strategy and selecting technologies. Over the next six months, legislative proposals are developed and public consultations are held. The following 12 months are for implementation and testing through pilot projects. The final year focuses on scaling, optimizing, and improving based on pilot project evaluations.

The path ahead also involves significant public consultation and stakeholder engagement to ensure these reforms are transparent and well-

perceived. By educating the public about the benefits of the revised payment system and persistently demanding participation, Uzbekistan can help to develop a sense of ownership and acceptance among its residents. The targeted implementation of payment technologies and EU regulations provides Uzbekistan with enormous potential to develop its financial infrastructure. This will not only make it more efficient, secure and user-friendly but will also make Uzbekistan a regional leader in financial innovation. Adopting these changes will pave the way for a healthy economic future marked by improved global connectivity and economic sustainability.

AI plays a key role in the evolution of the banking sector in Uzbekistan, adapting to the rapidly changing financial services market. Investing in AI-based analytics allows Uzbek banks and financial institutions to more effectively identify and manage potential risks. These tools not only provide real-time information but also improve the overall responsiveness of the financial system to emerging threats, providing consumers with a safer transaction environment. Despite the opportunities offered by AI, there are significant barriers to its further adoption. In particular, problems related to compliance with data confidentiality rules and information security. Data leaks and insufficient information security measures can undermine customer trust in banking institutions. In addition, the implementation of AI requires significant investments in equipment and the professional development of specialists. Uzbekistan is faced with the need to train personnel capable of working with big data, ML and software development.

AI is becoming a catalyst for transformation in the banking sector of Uzbekistan, ensuring the introduction of advanced technologies into traditional banking processes. This transformation plays a crucial role in adapting to new challenges and market needs, especially in the context of the rapid development of the region's digital economy. The main areas of application of AI in the banking sector of Uzbekistan in the authors' opinion are as follows;

- Improving customer service, AI allows banks to offer a more personalized approach to customer service through communication automation (chatbots and voice assistants). This improves the customer experience by reducing wait times and increasing service efficiency.
- Automate internal processes, using AI to automate routine and time-consuming tasks such as data entry, loan application processing, and transaction analysis helps to reduce operating costs and increase productivity.
- Credit scoring and risk management, AI is helping to develop more accurate models for assessing customer creditworthiness, allowing banks to minimize risk and offer loans based on objective data.

- Security and biometric technologies, using AI to enhance security measures, including biometric identification and behavioral pattern analysis, help to prevent fraud and protect customer data.
- Integration with national payment systems - AI enables smoother integration with national payment systems, facilitating transactions and increasing financial inclusion across the country.

Such an integrated approach will not only overcome existing obstacles but also maximize the potential of AI for the further development and modernization of the banking system of Uzbekistan. Below you can see a picture in which the authors made a road map. The authors outline a comprehensive plan for integrating AI into Uzbekistan's payment systems from 2025 to 2030. (see figure 2).

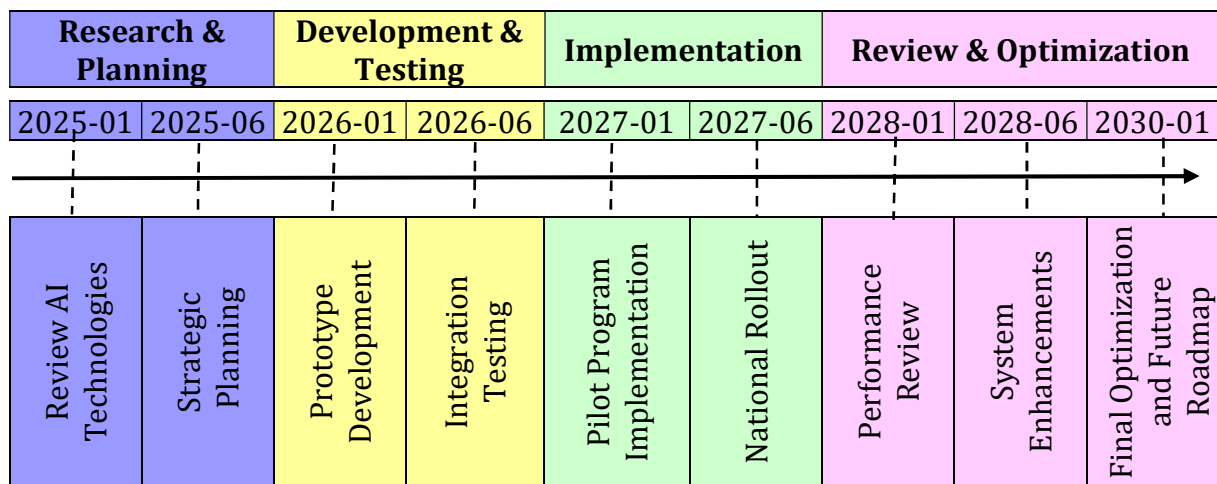


Fig.2 AI integration into Uzbekistan’s payment systems (2023-2030),
(authors’ own compilation)

This timeline picture depicts the incorporation of AI into Uzbekistan's payment systems from 2025 to 2030. The process begins with research and planning, which includes an evaluation of AI technology and strategic planning for 2025. Development and testing begin in 2026, with an emphasis on prototype development and integration testing. Implementation will begin in 2027 with pilot initiatives and a nationwide rollout. The fourth phase, running from 2028 to 2030, entails analyzing performance, implementing system improvements, and concluding optimization to assure long-term success and flexibility.

The authors believe AI will allow Uzbekistan's banks to deliver more tailored services, hence enhancing customer experience and service efficiency. The application of AI in credit scoring and biometrics allows for more accurate risk assessment and customization of financial services, which is critical for Uzbekistan's digital economy growth.

Reducing cash circulation and transitioning to a digital economy in Uzbekistan requires strategic planning and coordination at all levels of the economy. This process includes several key actions that will help to ease the transition and accelerate the adaptation of societies and economies to digital payments.

In the authors' opinion, to successfully transition to a digital economy and reduce dependence on cash, a set of measures is needed to change this situation:

- *Strengthening trust in banking institutions.* This can be achieved through increasing the transparency of banking operations, improving the quality of service and protecting consumer rights. It is also important to actively inform the population about deposit guarantees and measures to ensure the security of accounts and transactions.
- *Development of infrastructure for digital payments.* It is necessary to ensure widespread access to the Internet and mobile communications, as well as expand the network of payment terminals and ATMs, especially in remote and rural areas.
- *Promoting the benefits of non-cash payments.* Through educational programs and marketing campaigns, public awareness can be raised about the benefits and convenience of using cashless payments, such as security, speed and control over one's own finances.
- *Legislative regulation.* Adopting and adapting laws that regulate digital payments and protect digital consumer rights can help to build trust in electronic payment methods.
- *Pilot projects and incentives.* Introducing pilot projects to test new technologies in specific regions or among specific populations can help to evaluate effectiveness and fine-tune approaches before large-scale implementation. Additionally, incentives for businesses to use cashless payments, such as tax breaks or subsidies, can speed up the process.

The authors think in Uzbekistan, the large percentage of cash turnover and the comparatively low level of public confidence in banks, as compared to European nations, provide substantial impediments to the digital economy. Companies and small enterprises often deposit cash, and the general public utilizes large sums of cash on a daily basis, showing a long-standing practice of cash usage. A successful transition to the digital economy requires a fundamental shift in public attitudes about financial services and digital payments, including enhanced openness of banking operations, better service quality, and active public knowledge of the advantages of cashless payments. Latvia's experience demonstrates that the effective application of digital financial technology requires technological preparedness and a high degree of financial knowledge among the populace. Conducting training

programs and awareness campaigns is critical for overcoming preconceptions and increasing trust in digital financial transactions.

Conclusions and suggestions

Modern payment systems are an important part of the global economy, and their transition from traditional banking services to digital and networked ecosystems is characterized by their critical importance and evolutionary trajectory. Technological breakthroughs, updated regulations and changes in consumer behavior have all contributed to this transition, resulting in an environment where affordability, efficiency and safety are critical. The constant innovation and adaptability of these systems underscores how important they are to the smooth, secure and fast execution of financial transactions around the world. Ensuring user trust and the smooth functioning of international financial transactions depends on the security and integrity of payment systems. The adoption of digital transformation by payment systems has led to the crucial adoption of advanced technologies such as blockchain, AI and biometrics, which have improved security protocols against fraudulent activities and cyber threats.

Global payment systems confront several difficulties, such as pervasive fraud, inefficiency, and problems with accessibility. Resolving these issues is crucial to preserving both consumer confidence and financial stability. Innovations in technological integration, regulatory compliance, and fraud detection are essential for risk reduction and maintaining the effectiveness and inclusivity of global payment systems. Payment systems need regulation and oversight to be stable, secure, and effective. Efficient regulatory frameworks maintain the integrity of the financial system by striking a balance between consumer protection and the requirement for innovation.

Although the financial system in Uzbekistan has advanced significantly, it still confronts difficulties because of antiquated laws and regulations. It is admirable that the nation is focusing on financial inclusion and digitalization. The payment system in Uzbekistan is changing as a result of legislative changes and the growing use of digital payments. The CBRU's initiatives to promote financial inclusion and update the payment system are vital strides in the right direction. To fully realize the payment system's potential, it will be necessary to tackle the remaining technological and regulatory issues.

Digitalization is helping Uzbekistan's economy, which has seen notable advancements in e-commerce and financial inclusion. This change is being driven by the government's push for digital payments and the implementation of rules that facilitate them. A continued emphasis on innovation and digital infrastructure development will be necessary for economic growth and development. To reduce fraud and boost security in

Uzbekistan's payment system, it is essential to use cutting-edge technology and strong legal frameworks. The integration of AI into Uzbekistan's payment systems offers immense potential for improving fraud detection, transaction efficiency, and customer experience. Reducing cash circulation and promoting digital payments are critical for modernizing Uzbekistan's economy. Transitioning to a digital economy enhances financial inclusion, reduces transaction costs, and improves overall economic efficiency. Strategic initiatives to encourage digital payments and improve digital infrastructure are vital for achieving these goals.

Suggestions to the CEO of the CBRU: (1) launch extensive informative efforts to enlighten the public about the features and advantages of contemporary payment options; (2) create thorough guidelines for all forms of payment, including mobile, debit, and credit cards. By ensuring security, efficiency, and interoperability, these standards should provide a cohesive and safe payment infrastructure; (3) encourage commercial banks to broaden their online and mobile banking offerings, with a focus on underprivileged communities residing in rural regions. Banks have the potential to empower marginalized populations and advance financial inclusion by providing access to fundamental banking services via digital platforms. By ensuring that everyone has access to the financial system, this expansion will promote economic development and lessen inequality; (4) promote the modification of laws to conform to global norms for countering money laundering and funding of terrorism. The CBU can improve its reputation internationally and guarantee adherence to global best practices by fortifying the integrity and security of Uzbekistan's financial system, which will promote a safe and open financial environment.

References

1. Allahrakha, N. (2024). Legal analysis of the law of the Republic of Uzbekistan "On Payments and Payment Systems", *TSUL legal report*, 5(1), 38-55. <https://dx.doi.org/10.51788/tsul.lr.5.1./WAJR6426>
2. Anderson, R., Barton, C., Böhme, R., & Clayton, R. (2013). Measuring the Cost of Cybercrime. *Conference: Proceedings of the 11th Workshop on the Economics of Information Security (WEIS)*. https://doi.org/10.1007/978-3-642-39498-0_12
3. Barbu, C. M., Florea, D. L., Dabija, D. C., & Barbu, M. C. R. (2021). Customer experience in Fintech. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(5), 1415–1433. <https://doi.org/10.3390/jtaer1605008>
4. Boboev, S. (2023). *Deep Dive: Payments in Uzbekistan*. <https://samboboev.medium.com/deep-dive-payments-in-uzbekistan-f07981902911>
5. CBRU (2020). *History of the development of the payment system and computerization in the banking sector*. <https://cbu.uz/en/payment-systems/history/>

6. Ganiev, E. J. (2023). The concept and features of the payment system. *Web of Scientist: International Scientific Research Journal*, 4(10), 29-39. <https://wos.academiascience.org/index.php/wos/article/view/4375>
7. Kayode, S. O. (2023). *Revolutionizing Financial Landscapes: The Role of Emerging Technologies in Fintech Transformation*.
8. Khando, M., Islam, S., & Gao, Sh. (2022). The Emerging Technologies of Digital Payments and Associated Challenges: A Systematic Literature Review. *Future Internet*, 15, 21. <https://doi.org/10.3390/fi15010021>
9. Kolodiziev, O., Mints, A., Sidelov, P., Pleskun, I., & Lozynska, O. (2020). Automatic machine learning algorithms for fraud detection in digital payment systems. *Eastern-European Journal of Enterprise Technologies*, 5(9 (107)), 14–26. <https://doi.org/10.15587/1729-4061.2020.212830>
10. Miah, A., Rahouti M., Jagatheesaperumal S. K., Ayyash M., Xiong K., Fernandez F., & Lekena M. (2023). Blockchain in Financial Services: Current Status, Adoption Challenges, and Future Vision. *International Journal of Innovation and Technology Management*, 20(08). <https://doi.org/10.1142/S0219877023300045>
11. Neverova, S. D. (2023). Problems and prospects of digitalization of the banking sector of the Uzbekistan economy. *novateur publications Journal NX- A Multidisciplinary Peer Reviewed Journal*. 9(4), 449-455. <https://repo.journalnx.com/index.php/nx/article/download/4785/4555/9240>
12. Noul, D. (2024). FinTech Evolution: AI-Driven Solutions for Payment Optimization and Supply Chain Dynamics. DOI:10.13140/RG.2.2.16036.69762
13. Papatomas A., & Konteos G. (2023). Financial institutions digital transformation: The stages of the journey and business metrics to follow. *Journal of Financial Services Marketing*. Advance online publication. <https://doi.org/10.1057/s41264-023-00223-x>
14. Pay10.com (2023). *Common Challenges of Online Payment Processing and Solutions to Tackle Them*. <https://www.pay10.com/blog-Common-Challenges-of-Online-Payment-Processing.php>
15. Poudel, O., Acharya, P., & Simkhada, D. (2023). Customers' Trust in E-payment: The Influence of Security and Privacy. *BMC Journal of Scientific Research*. 97-112. <https://doi.org/10.3126/bmcjsr.v6i1.60958>
16. Rahmad, N. N., Zullzaidi, N. S. M., Azmi, N.D.F., & Khairudin, N.M. (2024). Mobile Payment Security: A Critical Analysis of Vulnerabilities & Emerging Threats. *TechRxiv*. DOI:10.36227/techrxiv.170620372.22051414/mobile payv1
17. Rehman, Sh., Coughlan, J., & Halim, Z. (2012). Usability based reliable and cashless payment system (RCPS). 8(4), 2747–2759. <http://www.ijicic.org/ijicic-10-10073.pdf>
18. Saini, A., & Saha, S. (2024). Digital Finance-Fintech and its Impact on Financial Inclusion in India. *International Journal of Innovative Science and Research Technology*, 9(4), 2048–2057. <https://doi.org/10.38124/ijisrt/ijisrt24apr2261>
19. Siddiqui, M. K., & Goyal K. K. (2023). A Study the Use of E-Payment Systems Based on Artificial Intelligence. *Artificial Intelligence and Communication Technologies*, 1063-1076. <https://doi.org/10.52458/978-81-955020-5-9-101>
20. Zetzsche, D., Buckley, R., Barberis, J. N., & Arner, D. W. (2017). Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation. *Fordham Journal of Corporate & Financial Law*. <https://ir.lawnet.fordham.edu/jcfl/vol23/iss1/2/>

EXTERNAL FACTORS DRIVING AND LIMITING START-UPS IN LATVIA

Aija Vonoga

Mg.soc.sc., scientific assistant, Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: aija.vonoga@rta.lv

Abstract.

Purpose and aim of the study: *The purpose of the research is to conduct a review of the literature on start-ups in order to identify the driving and limiting factors in the development of start-ups in Latvia.*

Design / Methodology / Approach: *Methods used in the research – the monographic method, the survey method, and the force field analysis method. The main tasks of the study are: to study the main aspects of the activity in the start-up sector in Latvia; identify the driving and limiting factors in start-up activities using the force field analysis approach; and identify appropriate courses of action to promote drivers and reduce constraining forces.*

Main Findings: *The research concluded that the most important element driving development for start-ups in Latvia is the development of technology in the market, and communication with the customer is also a very important factor. The factors that are disturbing the development of start-ups are the intensity of competitors, increase in costs and political instability in the world.*

Originality: *The study provides an insight into the aspects of driving and inhibiting factors for start-ups, and the author created recommendations on development opportunities for start-ups on the Latvian scale.*

Implications: *The results of the research are important for both working start-ups and new entrepreneurs who plan to start their own businesses in the future.*

Keywords: entrepreneurship, factors, force field analysis, start-up.

Received: 17 November 2024 **Revised:** 28 November 2024 **Accepted:** 3 December 2024

Published: 16 December 2024

Introduction

Entrepreneurship has become an extremely relevant tool for promoting sustainable economic development. It helps in reducing unemployment, creates job opportunities for people and helps the government to increase economic growth. Its financial contribution contributes to social and human well-being, which creates value in society (Mala et al., 2019). A start-up is a new type of business or organization created with a specific purpose, facing high uncertainty with very limited resource support and high growth characteristics, and is short-lived. Many factors affect start-up performance at the macro, organizational, and individual levels (Triono et al., 2021). It is necessary to encourage people to become entrepreneurs, but most business start-ups fail due to incomplete initiatives. The main causes of failure are

poor planning, complex legal procedures, a lack of financial resources and an inadequate economic sphere (Zahra, 2011).

Latvian start-up ecosystems have the potential to become part of the country's main economic engines. With easy access to Europe, availability of qualified IT talent, a multilingual population and an affordable cost of living, the potential of Latvia's start-up ecosystem is clear. However, it is also clear that Latvia's public sector has not yet caught up with its successful Baltic neighbours. Recently, the government has implemented various policies and initiatives to improve local start-up ecosystems, although the pace has been slow. One example is the innovation vouchers offered by the Investment Development Agency of Latvia as well as reforms to create a regulatory system favourable to start-ups (Startup Blink, 2024). The main tasks set for the research and development system by the Latvian government and society primarily result from the goals, development priorities and objectives set in the National Development Plan 2027 (Likumi.lv, 2020). One of the main objectives set for the research and development system is to develop new technologies for the creation of innovative products and services, promoting resource efficiency of companies, technological transformation and inclusion in value chains of various scales (Izglītības un zinātnes ministrija, 2020). In recent years, Latvian government organizations have focused on the implementation of support measures for new companies. For example, the Investment and Development Agency of Latvia (LIAA) provides many measures in order to help start-ups.

Besides, the country has launched a start-up visa programme aimed at attracting foreign entrepreneurs. More resource allocation will be needed to enable Latvian public sector developers to achieve real change. There are also several private sector organizations in the Latvian ecosystem that contribute to the development of their ecosystem. As a result of these concerted investment and support efforts, Latvia is witnessing the growth of significant start-ups. A critical challenge for Latvia is intellectual labour emigration, especially qualified workers in the ICT sector, emigrating to other EU Member States; the public sector could do more to demonstrate the benefits of staying in Latvia. The government should also continue to cooperate with the private sector in the development of new strategies, such as the stock option policies that were amended in 2020. This type of cooperation could allow Latvian start-up ecosystems to reduce the gap with their more successful Baltic neighbours (Startup Blink, 2024).

The purpose of the research is to conduct a review of the literature on start-ups in order to identify the driving and limiting factors in the development of start-ups in Latvia. Methods used in the research: the monographic method, the survey method, and the force field analysis method. The main tasks of the study are: to study the main aspects of the

activity in the start-up sector in Latvia; identify the driving and limiting factors of start-up activities using the force field analysis approach; and identify appropriate courses of action to promote drivers and reduce constraining forces.

Methods

Globalization and the ever-changing business environment force organizations to adopt technological innovations to gain competitive advantage. Today's companies are turning to new technologies to transform and improve their business processes. Technological innovation is recognized as an essential factor for survival in the ever-changing business world with increasing globalization. Therefore, modern companies tend to use new technologies in their business processes (Kişi & Özer, 2024).

According to Capatina, driving forces in human capital are defined by the rapid integration of newcomers, the ability of developers to translate customer needs into software architecture, many opportunities for developers to attend team building activities, as well as project management training programmes, the increasing number of certified technical architects and the desire of employees to learn and work on the job. The driving forces in relational capital are defined by: customer-oriented culture; the responsiveness of the company to the changing needs of the customer, the tendency of customers to regularly improve the solutions offered by the company, the desire of customers to test the solutions before the final delivery in most cases, creating a positive image in the media (Capatina et al., 2017). There is also a tendency to generalize findings across different types of start-ups and industries, potentially obscuring important contextual differences. Moreover, the interplay between internal organizational factors such as leadership, culture and team dynamics and external influences on innovation is often understudied (Kartika, 2024).

Analysing the available literature, technological development, innovations, trends, communication with the customer, competitive advantages in the market, human resource management and cooperation with the customer - reviews, etc. can be put forward as driving factors.

These challenges are compounded by the inherent risks associated with new ventures, where the potential for failure is high and the margin for error is small. One of the main barriers to innovation in start-ups is limited financial resources. Start-ups typically operate with tight budgets and limited access to capital, which can severely limit their ability to invest in research and development. Lack of adequate funding makes it difficult for start-ups to explore new ideas, develop prototypes and bring innovative products to market. This financial constraint often forces start-ups to

prioritize short-term survival over long-term innovation, as immediate operating expenses outweigh strategic investment in innovation. High levels of uncertainty also pose a significant challenge to innovation in start-ups. The start-up environment is inherently volatile, with unpredictable market conditions, rapidly changing customer preferences, and changing technological landscapes. This uncertainty can make it difficult for start-ups to commit resources to innovative projects that may not yield immediate returns (Kartika, 2024).

Despite the recognized importance of innovation, start-ups often face significant challenges and barriers that hinder their innovation efforts. Limited financial resources, high levels of uncertainty, and the need for rapid market entry can limit a start-up's ability to invest in and sustain innovation (Freeman & Engel, 2007). Political instability refers to a situation where the governing structures of a country are in a state of turmoil or unpredictability, often characterized by frequent leadership collapses, changes in government, major policy changes, or widespread civil unrest. This instability can arise from a variety of factors, including political violence, corruption, weak governance, and external interference. The presence of political instability undermines the functioning of state institutions, erodes public trust, and creates an unstable environment that hinders effective governance and policy implementation (Alesina & Perotti, 2012). Innovation is widely recognized as a critical driver of success in today's business environment, especially for start-ups. In an era characterized by rapid technological development and fierce market competition, start-ups must continuously innovate to differentiate themselves, capture market share, and achieve sustainable growth. Despite its recognized importance, the specific mechanisms by which innovation affects start-up success remain understudied. This lack of understanding creates both practical and theoretical challenges, as entrepreneurs and researchers seek to identify the factors that contribute to the effective implementation and management of innovation in emerging firms (Kartika, 2024).

People who are self-motivated and supported by their families, peers, and institutions have characteristic personality traits (entrepreneurial skills, risk-taking, and innovativeness) that can take advantage of future opportunities and become successful entrepreneurs (Raza et al., 2020). The need for rapid market entry further complicates the innovation landscape for start-ups. In highly competitive markets, opportunities to introduce new products or services are often limited. Start-ups need to move quickly to capture market share and establish their presence before competitors can react. This urgency can lead to a focus on speed and execution at the expense of thorough innovation processes. The pressure to achieve results quickly

can lead to shortcuts and compromises in the innovation process, which can compromise the quality and sustainability of innovative solutions (Kartika, 2024).

Analysing the available literature, the following factors can be put forward as limiting factors: cost growth, business risks, psychological factors, economic cyclicalities, political instability in the world and competitors' prices.

Force field analysis was introduced by Kurt Lewin (Lewin, 1951), based on his earlier advances in field theory, as a framework for studying the forces that affect individuals and their situations. Lewin described the "field" as an individual's construct that contains their motives, values, needs, goals, concerns, and ideals. He theorized that an individual's interaction (experience) with an external stimulus is important in their development or regression. Lewin used these principles to analyse the behaviour of groups in society in several areas to determine whether there would be a movement forward or a retreat from progress (Walker, 2023).

Thomas explained that while force field analysis was used in a variety of contexts, it was rarely used for strategy; but he suggested that the method could provide new insights into the evaluation and implementation of change. Force field analysis is applicable to a variety of fields, including organizational development, strategic management, environmental strategy adoption, and intellectual capital management (Thomas, 1985).

Shurville and Owens (Shurville & Owens, 2002) applied force field analysis to flexible learning in higher education and emphasized the ongoing commitment to change and innovation management. Toves (Toves et al., 2016) addresses effective technology change management through force field analysis and uncovers the importance of communication issues, training misconceptions, and false assumptions about computer literacy.

Capatina (Capatina et al., 2017) introduces a conceptual framework based on force field analysis for the management of intellectual capital assets in software development companies. Maslen and Platts (Maslen & Platts, 1994) introduced a direct application of force field analysis to manufacturing strategy and organizational change. Today, force field analysis is widely used to inform decision-making, especially when managing and planning change in organizations. Force field analysis is a powerful method for gaining a comprehensive view of the various forces acting on a potential change problem and for assessing the source and strength of these influential influences. Force field analysis can now also be performed by entering quantitative and qualitative data into computer software.

Results

The start-up survey was conducted in September 2023 and repeated in September 2024 by sending questionnaires to start-ups registered in the Latvian Start-Up Register, a total of 51 valid responses were obtained, for details see Figure 1.

Force field analysis is primarily a qualitative tool, it is possible to obtain quantitative results by assigning stakeholders numerical scores, interests, and influence powers for each planned activity or initiative (Pavloudakis et al., 2023). The research was carried out as follows: the factors leading to and limiting change were identified, a survey was conducted, where the start-up companies evaluated the proposed factors on a scale from 1 to 5, the obtained results were summarized and conclusions were drawn.

In the questionnaire, it was asked to note the factors leading to change in the operation of start-ups: technological development, innovation, trends, communication with the customer, competitive advantages in the market, human resource management and customer feedback. In addition, the survey questionnaire asked to note the limiting/disturbing factors in the operation of start-ups: cost increase, business risks, psychological factors, the economic cycle, political instability in the world, competitors' prices.

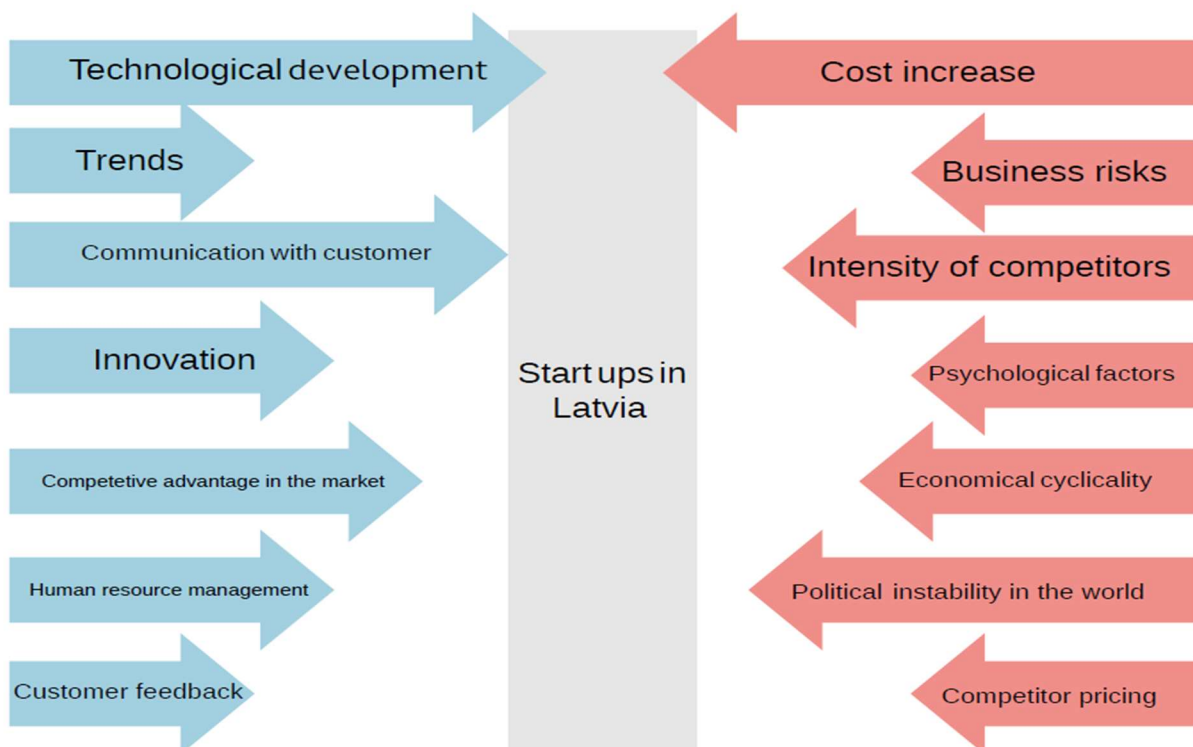


Fig. 1 Force field analysis of start-ups in Latvia (created by the author based on survey results)

An analysis of the data obtained by the survey revealed the following driving factors (percentage): technology development -22%, innovations - 12%, trends - 11%, communication with the customer - 20%, competitive advantages in the market - 12%, human resource management - 12% and cooperation with the customer, reviews -9%. The analysis revealed the following limiting factors: cost increase -18%, business risks - 14%, psychological factors - 7%, economic cyclicalities - 12%, political instability in the world -18% and competitors' prices - 6%.

Conclusions and proposals

The survey conducted in the research concluded that for start-ups, the most important element driving their growth was the development of technology in the market, while the second most important factor was communication with the customer. The factors that were the most disturbing ones for the development of start-ups were the intensity of competitors and the increase in costs.

The author of the study recommends founders of new companies, as well as already existing start-ups to evaluate the support tools provided by LIAA. LIAA provides a wide range of support activities for idea development, business start-ups, market research and expansion, as well as implements training, seminars and supports the organization of various activities and networking events. The mentioned support programmes provide support for the reduction of financial constraints and development of start-ups in general.

The author suggests that start-ups choose the most suitable directions of activity in order to promote their driving forces - to evaluate the existing technological possibilities and to plan the development and integration of technologies in daily work, with the aim of reducing expenses and speeding up business processes. In addition, the author suggests that start-ups choose appropriate directions of action in order to reduce the limiting forces - to evaluate the competitors' offers and marketing measures in order to be able to effectively develop an action plan in the future. Besides, start-ups would be advised to evaluate the financial aspects to avoid unnecessary expenses and cost increases, which is one of the main reasons for reorganizing business operations.

References

1. Alesina, A., & Perotti, R. (2012). Income distribution, political instability, and investment. *European Economic Review*, 40(6), 1203-1228. [https://doi.org/10.1016/0014-2921\(95\)00030-5](https://doi.org/10.1016/0014-2921(95)00030-5)

2. Capatina, A., Bleoju, G., Matos, F., & Vairinhos, V. (2017). Leveraging intellectual capital through Lewin's Force Field Analysis: The case of software development companies. *Journal of Innovation & Knowledge*, 2(3). <https://doi.org/10.1016/j.jik.2016.07.001>
3. Ekonomikas ministrija (2022). *Jaunuzņēmumu ekosistēmas attīstības stratēģija 2022.-2025.gadam*. <https://www.em.gov.lv/lv/media/15203/download>
4. Freeman, J., & Engel, J. S. (2007). Models of innovation: Startups and mature corporations. *California Management Review*, 50(1), 94-119. <https://doi.org/10.2307/4116641>
5. Hustedde, R., & Score, M. (1995). *Force-Field Analysis: Incorporating Critical Thinking in Goal Setting*. Community Development Society: Columbia, MO, USA.
6. Izglītības un zinātnes ministrija (2020). *Zinātnes, tehnoloģijas attīstības un inovācijas pamatnostādnes 2021. – 2027.gadam*. <https://www.izm.gov.lv/lv/media/11501/download?attachment>
7. Kartika, F. (2024). The Role of Innovation in Startup Success: A Comprehensive Review *Advances Journal Ekonomi & Bisnis*, 2(1). DOI: [10.60079/ajeb.v2i1.240](https://doi.org/10.60079/ajeb.v2i1.240)
8. Kişi, N., & Özer, M. A. (2024). İnsan kaynakları yönetiminde yapay zekâ teknolojisinin benimsenmesi üzerine güç alanı analizi. *KOCATEPEİİBFD*, 26 (Özel Sayı), 35- 52. <https://doi.org/10.33707/akuiibfd.1406096>
9. Lewin, K. (1951). *Field theory in social science*. Harper and Row.
10. Likumi.lv (2020) Latvijas Nacionālais attīstības plans 2021.-2027.gadam. <https://likumi.lv/ta/id/315879-par-latvijas-nacionalo-attistibas-planu-20212027-gadam-nap2027>
11. Mala, I.K., Pratikto, H., & Winarno, A. (2019). The effect of family environment, entrepreneurship education and self-efficacy on entrepreneurial intention in Pondok Pesantren at throughout Malang, Indonesia. *International Journal of Business, Economics and Law*, 20(5), 112–119. https://ijbel.com/wp-content/uploads/2020/01/IJBEL20_225.pdf
12. Maslen, R., & Platts, K. W. (1994). Force field analysis: A technique to help SMEs realize their intended manufacturing strategy. In *Proceedings of Operations Strategy and Performance, first European Operations Management Association Conference*, 587–588.
13. Pavloudakis, F., Spanidis, P.P.M., & Roumpos, C. (2023). Using Force Field Analysis for Examining and Managing Stakeholders' Perceptions of Mining Projects. *Materials Proceedings*, 15, 5. <https://doi.org/10.3390/materproc2023015005>
14. Raza, A., Saeed, A., Iqbal, M.K., Saeed, U., Sadiq, I., & Faraz, N.A. (2020). Linking corporate social responsibility to customer loyalty through co-creation and customer company identification: Exploring sequential mediation mechanism. *Sustainability*, 12, 2525. <https://doi.org/10.3390/su12062525>
15. Shurville, S., & Owens, A. (2002). Always coming home: Engaging colleagues in flexible learning with force field analysis. *The University of the Fraser Valley Research Review*, 2(3), 1–14.
16. Startup Blink (2024). *Startup Ecosystem Report 2024*. https://www.startupblink.com/startupecosystemreport?mc_cid=cc6b1cabe5&mc_eid=82bfe22a47
17. Thomas, J. (1985). Force Field Analysis: A New Way to Evaluate Your Strategy. *Long Range Planning*, 18(6), 54–59. [https://doi.org/10.1016/0024-6301\(85\)90064-0](https://doi.org/10.1016/0024-6301(85)90064-0)
18. Toves, P.R., Graff, L., & Gould, D.A. (2016). Innovative use of force field analysis: Factors influencing technology-enabled change. *Journal of Behavioral and Applied*

- Management, 17 (2), 85–102. <https://jbam.scholasticahq.com/article/1183-innovative-use-of-force-field-analysis-factors-influencing-technology-enabled-change>
19. Triono P. H. S., Rahayu A., Wibowo L. A., Alamsyah, A. (2021). Factors Affecting Start-up Performance: A Literature Review. *Conference: 6th Global Conference on Business, Management, and Entrepreneurship (GCBME 2021)* DOI:10.2991/aebmr.k.220701.097
 20. Walker, K.D. (2023). Force-Field Analysis. In: Okoko, J.M., Tunison, S., Walker, K.D. (eds). *Varieties of Qualitative Research Methods*. Springer Texts in Education. Springer, Cham. https://doi.org/10.1007/978-3-031-04394-9_32
 21. Zahra, A. (2011). Anempirical study on the causes of business failure in Iranian context. *Afr. J. Bus. Manag.* 2011, 5, 7488–7498.

EFFECTIVENESS ASSESSMENT OF THE INTERNAL CONTROL SYSTEM AT NATIONAL INSTITUTIONS IN THE AREA OF CONFLICT OF INTEREST AND CORRUPTION IN LATVIA

Ervins Ziemelis¹, Anda Zvaigzne², Linda Silina³

¹ Mg.soc.sc., Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: ervinsziemelis@inbox.lv

² Dr.oec., associated professor, Rezekne Academy of Technologies, Rezekne, Latvia,
e-mail: anda.zvaigzne@rta.lv

³ Dr.oec., lecturer, Latvia University of Life Sciences and Technologies, Jelgava, Latvia,
e-mail: linda.silina@lbtu.lv

Abstract.

Purpose and aim of the study: *to assess the effectiveness of conflict of interest and corruption risk management at national public administration institutions and develop proposals for the improvement therein.*

Design / Methodology / Approach: *The research employed logical construction and deduction, the graphical and monographic methods, as well as SWOT analysis and pairwise comparison.*

Main Findings: *In 2017, a Cabinet Regulation of the Republic of Latvia regarding the implementation of internal control systems (ICS) to prevent conflict of interest and corruption risks became effective. However, some research studies found that the systems were practically formal and did not lead to effective risk management. Comprehensive ICS policies were found to be implemented by national institutions with the policies being designed by their risk management departments, and effective risk management was achieved by implementing three lines of protection as well as regularly reviewing and enhancing the risk management policies.*

Originality: *The novelty of the present research: no shortcomings were found in the legal framework for internal control systems or in the binding guidelines, yet there was a problem with meeting the requirements set by the formal legal framework, which were not aligned with the specifics of institutions and the respective field.*

Implications: *The research found that the application of risk management tools beyond the relevant legal framework for internal control systems by national institutions needed to be improved to increase the effectiveness of the system applied in practice and enhance risk management processes.*

Keywords: *conflict of interest, control, internal control system, organization, risk management.*

Received: 8 October 2024 **Revised:** 16 October 2024 **Accepted:** 5 November 2024

Published: 16 December 2024

Introduction

Risk management is the key to the effective performance of companies or institutions because identifying potential risks and developing a risk

response plan can ensure that an organization is fit for purpose and transparent and builds public trust. It is the internal control system (hereafter ICS) that is the tool whereby the above can be achieved; therefore, it is important to comprehend the role and basic elements of internal control and identify the preconditions that might make the establishment, development and maintenance of an ICS ineffective in practice. Risk is often referred to as an indicator of the difference between an opportunity and the probability of undesirable consequences. A definition of risk specifies that risk represents the outcome of probability and the cause. Risk is also considered a factor that negatively affects the goals of an individual (Šotić& Rajić, 2015). Risk management represents systematic activities to reduce threats or uncertainties that might affect an organization, which involves performing an analysis of risk probability and impacts, designing strategies to reduce the harm and monitoring the effectiveness of the measures (Gibson, 2023). The relevant theory also distinguishes between crisis risk management, which is an essential tool for preventing crises and building up the capacity to respond to future crises (Eriksson, 2023). Effective institutional risk management contributes to achieving goals, facilitates strategic management, prioritizes activities, contributes to the implementation of processes, functions and service delivery as well as increases the institution's capability to respond flexibly to the risks identified and changes made (Deloitte, 2015).

The present research aims to assess the effectiveness of conflict of interest and corruption risk management at national public administration institutions and develop proposals for the improvement therein. The following specific research tasks were set: to assess the conflict of interest and corruption risk management policies made by national institutions in Latvia and their effectiveness and to draw conclusions and develop proposals for increasing the effectiveness of risk management at the national institutions. The research employed the logical construction, deduction, graphical and monographic methods, as well as SWOT (strengths, weaknesses, opportunities and threats) analysis and pairwise comparison. The following research hypothesis was put forward: the performance of internal control systems of national institutions in Latvia aimed at preventing conflicts of interest and corruption risks is poor due to the shortcomings of the relevant legal framework.

Research results and discussion

When identifying the key aspects of risk management at a national institution, it is important to understand the tools used to ensure that risks are managed according to the goal set. Internal control is the process of an

organization to control its activities to effectively and efficiently achieve its mission and objectives (What is..., 2020). There are several key elements of an ICS, for example, the internal control environment consists of management's stance and setting with respect to specific risks, taking into account the culture of the institution and the ethical standards applicable to it; information and communication is an essential prerequisite for the implementation of risk management, which involves communication and information to appropriate audiences about different risks, their levels, trends, potential consequences; monitoring is the review and effectiveness of the elements of an ICS (Risk Management..., 2023).

Many institutions apply an internal control framework developed by COSO ERM (Committee of Sponsoring Organizations Enterprise Risk Management) to create an ICS. The framework is not mandatory, yet it is considered to be the most effective way for identifying and assessing risks objectively (Committee of...).

In fact, the internal control framework developed by COSO ERM does not represent guidance, as it is a compendium of skills, approaches, competencies, tools, cultures and many other aspects that work together to achieve effective risk management (Anderson, 2017).

Regarding the introduction of an ICS as a mandatory requirement for national institutions in Latvia, attention should be paid to the fifth part of Section 1 of the Internal Audit Law, which states that an ICS is a set of risk management, control and management measures aimed at achieving the goals of a ministry or an institution, the effective operation thereof, the protection of its assets, the reliability of its reports, the compliance of its activities with the relevant legislation, with the state secretary of the ministry or the head of the institution being responsible for designing and implementing the ICS (Internal Audit..., 2012).

A public institution acts on behalf of a public entity, having competence in public administration and in managing financial resources to perform its activities as well as its personnel. A derived public entity is a municipality or other public body founded by law. It is granted autonomous competence by law, which also includes budgeting. In the Republic of Latvia, direct administration involves institutions as well as officials as the initial public entity, while indirect administration involves those of derived public entities (State Administration..., 2002).

The authors point out that situations of conflict of interest and corruption can manifest themselves in any institution or company, yet the greatest risk of the violations might be present in the activities of officials whose responsibilities related to financial transactions, financial administration and the use of European Union funding. To draw conclusions on the effectiveness of an ICS, it is important to examine the

risk management policies of a number of sectoral institutions in relation to conflict of interest and corruption prevention. Next, the research analyses the conflict of interest and corruption risk management policies of transport, telecommunications, health and local government institutions and compares the ICS measures, see the SWOT analyses and the pairwise comparison matrix.

The state limited liability company Road Transport Administration (hereinafter the Road Transport Administration) has been delegated the responsibilities of state administration – to implement and maintain, in accordance with the national as well as international and European Union laws, a system of high-quality and legally sound services in the field of passenger and freight road transport to have fair and equal competition between the carriers, as well as to do public transport planning, financial analyses and audits to shape a uniform, continuous and accessible public transport system working in the interests of the state, society and carriers (Statutes of..., 2024). The website of the Road Transport Administration contains information on its structure in 2024, which shows that it is headed by the chairman of the Executive Board and two executive board members. The Customer Service Centre, the Licensing Department, the International Road Transport Coordination Department and the Board Secretariat are under the authority of the chairman. An executive board member is responsible for the Public Transport Planning, Analysis and Control Department, which in turn coordinates the Public Transport Planning Department, the Rail Services Department, the Public Transport Audit Department and the Public Transport Financial Analysis Department. The Legal Department, the Finance and Accounting Department and the IT and Economic Support Department are under the supervision of the other member (Statutes of..., 2024). It follows from the above that the institution has a separate risk management department with the goal of introducing, developing and maintaining the ICS.

On 21 June 2021, internal rules of the Road Transport Administration No 2.20/3 Policy on Preventing Corruption and Conflict of Interest Risks entered into force, which stipulates that the goal is to design uniform guidelines for preventing conflicts of interest and implementing an ICS to prevent corruption risks, as well as to contribute to the functioning and development of the internal control environment of the institution (Internal rules, 2021). Next, the rules give definitions for the following terms: official, conflict of interest, corrupt practices, risk of corruption and relatives. The authors believe that the risk management process is aimed at not only managing individual risk situations in a preventive way and developing a mechanism to deal with them but also, first of all, to comprehend the nature

of each risk identified. Accordingly, it is important that all the terms are defined clearly and accurately in the institution's risk management policy.

While it is generally positive that the policy is "binding on all personnel of the institution, irrespective of their positions", the ICS might not achieve its goal practically if it comprises general statements that apply to "all personnel", without specifying their positions, risks and risk prevention measures that are binding to prevent conflict of interest and corruption risks for particular personnel and positions.

In the authors' opinion, the ICS of the Road Transport Administration might achieve one of the key objectives by requesting the Road Transport Administration to publish on its website information about the annual measures taken to prevent corruption and conflicts of interest to achieve openness and transparency. Besides, it is important to note that the institution's risk management policy highlights the transparent and easily accessible internal whistle-blowing system, thereby enabling the personnel to safely report potential violations within the institution, with appropriate protection, to promote legal, fair and open activities at the Road Transport Administration (Internal rules, 2021).

An analysis of the structure of the Road Transport Administration does not reveal any indications that the institution has a separate department for risk management, including the establishment and maintenance of an ICS. At the same time, its internal rules state that the Executive Board shall designate a person responsible for the establishment of an ICS. The responsibilities of only one employee include the identification of risks, the development of an action plan to deal with the risks and the responsibility to inform the personnel – this does not indicate a sustainable and effective ICS–, as the risk management team is crucial to ensure quality risk management, and in a situation where an institution has a large number of personnel, it is unlikely that one responsible employee can ensure effective risk control. It should be noted that the Road Transport Administration's anti-corruption plan is drawn up for three years and the effectiveness of the ICS and the measures to prevent corruption risks are reviewed and assessed annually (Internal rules, 2021).

It is positive that overall the strategy provides for specific timeframes for the management of conflict of interest and corruption risks, as it could be agreed that the effectiveness of the ICS should be assessed annually because one year might be an appropriate review period for assessing the quality of the risk prevention mechanism. In the authors' opinion, however, the risk management policy, including the ICS, should be complemented by a requirement that the list of risks should be reviewed, updated and enhanced quarterly.

The analysis of the internal control systems of the Road Transport Administration revealed that there were no identifiable measures indicating the involvement of the Executive Board in risk management. The risk management policy of the institution referred to the involvement of the Executive Board only in the approval of the anti-corruption action plan and an assessment of reports once a year, but it was not evident that the Executive Board being one of the links in the flow of information on the risks identified was actively involved in risk management and made subsequent decisions on the integration of risks into the ICS and on the mechanisms to deal with them.

The factors in the performance of the ICS of the Road Transport Administration are summarised in the SWOT matrix (Table 1).

Table 1 SWOT analysis of the operational performance of the ICS of the Road Transport Administration (authors' own compilation)

<p>Strengths:</p> <ul style="list-style-type: none"> • clear definitions of the terms; • transparency of activities in the public domain; • detailed whistleblowing procedure. 	<p>Weaknesses:</p> <ul style="list-style-type: none"> • incomplete list of managerial functions; • unclear (broad) risk management policy; • guidelines of the Corruption Prevention and Combating Bureau (KNAB) adopted and not adapted to the specifics of the institution.
<p>Opportunities:</p> <ul style="list-style-type: none"> • increasing public confidence; • raising public awareness (publicly available information); • promptly identifying conflict of interest situations through clear whistleblowing/reporting procedures. 	<p>Threats:</p> <ul style="list-style-type: none"> • personnel's insufficient understanding of the ICS undermines risk management; • personnel lack motivation to comply with and understand the ICS, which could lead to poor implementation of the ICS; • formal adoption of the KNAB guidelines and ineffective functioning of the ICS pose a threat to the institution's ability to deal with corruption and conflict of interest risks.

The website of the Road Transport Administration includes a section "Measures taken by the Road Transport Directorate to prevent corruption risks in 2023". This summary contains the measures to prevent conflict of interest and corruption risks. The summary clearly reveals the circumstances why the implementation of internal control systems and the management of the risks by institutions tended to be formal in practice.

The authors point out that most of the measures stemmed from requirements set by the legal framework (e.g. the obligation of a contracting institution to publish procurement outcomes on the website of the Procurement Monitoring Bureau is set by the Public Procurement Law), while restrictions for employees to access systems are subject to the requirements of the General Data Protection Regulation) or is a common practice at institutions (e.g. posting vacancies on the website of an institution or the website of the State Employment Agency), and thus cannot be considered to be sufficiently effective to prevent conflict of interest and corruption risks.

Next, the research analysed the risk management policy of the joint stock company Passenger Train (*Pasažieru vilciens*) (hereinafter JSC Passenger Train). The company is the sole provider of domestic public transport services for passengers by rail throughout Latvia (About us. JSC...). The company has been delegated functions under Section 88 of the State Administration Structure Law, Part 2 of Paragraph 1, which states that a public entity may found a capital company for performing its functions efficiently if this leads to the production of goods or services that are strategically important for an administrative territory of Latvia or a municipality or for national security (State Administration..., 2002). Therefore, the company should be considered to be a derived public entity the purpose of which involves supplying sustainable, accessible and uninterrupted passenger transport services that meet the needs of efficient mobility, contribute to the accessibility of the country's regions and promotes public confidence in public rail transport, thereby making it an informed and rational choice due to the convenience and quality of the services, as well as develop competitive and economically justified mobility services in the Baltic region (State Administration..., 2002).

The general rules of internal policy provide that the creation of an ICS at a company is the responsibility of its executive board, with the effectiveness monitored by its supervisory board. In contrast to the example of the Road Transport Administration described above, the strategy of the JSC Passenger Train for internal control prescribes an important requirement that can contribute to effective risk management – a strict goal and obligation for senior officers to create an ICS and monitor its effectiveness. This requirement has been complemented by the need to achieve the company's strategic objectives through implementing a risk management system after the approval of a risk management policy based on a decision of the Supervisory Board and the approval of risk management rules based on a decision of the Executive Board, with the Executive Board discussing a report on the risk management measures

taken and the risk management policy implemented twice a year (Internal control...).

The above allows us to conclude that managing the ICS involves three lines of protection: first-line functions include management controls, internal controls and risk management; second-line functions comprise financial control, risk management and process management, thereby ensuring that the risks and controls set at the first line are managed; and third-line functions involve assuring the effectiveness of first- and second-line functions (Internal Control...). The three lines of protection are controlled by department heads, the executive board and the supervisory board through applying the classical management approach that views management as a process of planning, leading, managing and controlling personnel to achieve goals, i.e. management is a process that involves strategic planning, goal setting and resource management (Kumar, 2017). In the opinion of the authors, defining clear competencies for the mentioned management levels is a prerequisite for a quality ICS that directly prevents conflicts of interest and corruption, as clear roles are set for the manager at each level.

In the opinion of the authors and as mentioned above, a significant advantage of a company, which distinguishes it from other institutions in connection to risk management, is the fact that it involves stronger involvement of the executive board not only in identifying risks but also in controlling them. At the same time, the aspects of the risk management policy that provide for specific elements of risk management without giving definitions and explanations for the implementation make an impression that such an approach might not be fully applied in practice.

The weaknesses include no risk management programme, no training obligation and no approved procedure for the flow of information on the risks identified. The opportunities identified: sustainability of the ICS, quality risk management and control, as well as clear managerial expectations for personnel.

The principles of internal control in the transport industry have been analysed above, but it is also worth examining the risk management policies of institutions in the telecommunications industry, specifically in the area of conflict of interest and corruption. The Latvian State Radio and Television Centre (LVRTC) is a capital company owned by the government, and its mission is to ensure that every resident has an opportunity to receive and broadcast information in a safe way and quickly. The key mission of LVRTC is to supply and develop information and communication technology infrastructures and services of high availability, integrity and security, thereby contributing to effective governance and security in the country and the growth of the economy (About us. Latvia...).

According to the LVRTC website, risk management at LVRTC involves a set of measures that allows the company to identify and analyse risks and take adequate measures regularly to mitigate the probability of risks occurring or impacting the effective achievement of the company's goals and objectives and the performance of its functions (Risk Management). To achieve the operational objectives set by LVRTC, the LVRTC Risk and Quality Management Department has developed an internal control policy. The above-mentioned fact shows that the institution has a separate department mandated to design rules for introducing an ICS. In the authors' opinion, the internal control policy of LVRTC has been made comprehensible and clear to everyone by giving all the relevant terms and abbreviations at the beginning of a chapter, in addition to a general description of its internal control. The internal control policy clearly specifies the level of responsibility for those involved in internal control by stating that the introduction of an ICS is a goal for the management, while the effective implementation thereof is the responsibility of any LVRTC personnel (Internal Control Policy...).

The above finding, in the authors' opinion, might show a significant cornerstone in the functioning of internal control systems, as the effective implementation of risk management (including the identification and prevention of conflicts of interest and corruption) depends on the responsibility of the institution's personnel (including their knowledge and perception of the need to prevent such risks).

An assessment of the general requirements for the introduction of an ICS set by LVRTC indicates that the ICS should provide a reasonable balance between the risks and the costs of mitigation measures. The research has already extensively analysed measures to prevent conflict of interest and corruption risks: every official is responsible for preventing conflict of interest and corruption in his/her activities, and to ensure this, it is necessary to be aware of the nature and manifestations of the risks in practice. In addition, every official should also carefully consider his/her involvement in decision-making on a case-by-case basis and responsibly combine positions and exercise the powers granted to the position. It is not clearly understood why the internal control policy of LVRTC emphasizes the need to adapt to risks and balance them with mitigation measures, as this approach raises legitimate concerns about quality control of risk management. The risk monitoring procedure established could be viewed positively, as it prescribes regular control of activities, continuous monitoring elements are integrated into the information system and LVRTC performance reports or indicators are analysed to identify internal control weaknesses and the ways to eliminate them.

The analysis of the ICS policy of LVRTC ends with a section of the rules that envisage the development of the ICS. As mentioned above, it is important that the risk prevention plan and risk coordination are “viable” in practice, enhanced and adjusted in line with the latest approach and risk management standards. The chapter clearly states that planning the development of the ICS is expected to result in a consistent, continuous and integrated ICS (Internal control policy...). However, despite the plans to develop the ICS, the ICS policy of LVRTC is reviewed only every three years, which, in the authors’ opinion, is too long a period for risk management to be considered effective at the institution.

The health industry is one in which risk management is crucial to the functioning of the institution, as this activity is directly linked to patient safety, which in turn is interpreted as reducing the risk of unnecessary healthcare-related harm to an acceptable minimum (Pelčeja, 2016). Public perceptions of conflict of interest and corruption in a health institution are much more negative than those in other industries, as it should be taken into account that the main goal of medical personnel is to provide care to patients, and financial benefits should only be a secondary consideration (Conflicts of Interest...).

The National Health Service (hereinafter the NHS) is an institution controlled by the Ministry of Health, and its purpose is to implement national policies related to healthcare services and administer government budget funding allocated for healthcare, thereby contributing to rational and efficient use of public funding for the supply of healthcare services, as well as implementing national e-health policies (About us. National...). To objectively assess the aspects of internal control systems and risk management at national institutions, it is worth examining the health industry’s private sector ICS policies affected by the NHS. The NHS has designed guidelines for private outpatient medical institutions on basic requirements for an ICS to prevent corruption and conflict of interest risks (Guidelines on...). The NHS guidelines include some content of the KNAB guidelines, while giving some clarifications and explanations. For example, concerning the procedure for combining positions, it is additionally pointed out that the employer’s awareness of whether an employee is an employee or employer in another institution(s), how the working hours are planned and other important information might help to prevent potential conflicts of interest, find solutions thereto, i.e. in situations where complaints are independently received about the quality of services supplied by a particular employee etc. The risk communication procedure has been supplemented by a note that the information about potential violations could be used for the identification, analysis and prevention of corruption and conflicts of interest (Guidelines on...).

After analysing the above, it could be concluded that the NHS has not applied a specific individual approach to the health industry for risk management at a health institution, e.g. it is not clear how poor-quality services provided by a medical practitioner could give rise to indications of a conflict of interest risk, nor is it self-evident that information on violations identified contributes to further risk identification and analysis. In view of the above, it is clear that formal adoption of the KNAB guidelines cannot ensure effective risk management at an institution. The authors have analysed the information contained in the KNAB guidelines and generally concluded that they contain many useful tools for managing conflict of interest and corruption risks, yet it is important to be aware that the requirements for institutional practice need to be aligned with the specifics of and subordinated to the operational functions of a particular institution, as successfully implemented by institutions such as the JSC passenger Train and LVRTC.

As regards the prevention of conflict of interest and corruption risks in municipalities, the authors examined basic requirements for an ICS set by the local governments of Ropazi municipality and Rezekne municipality. Initially, attention should be paid to the terminology used in the regulations – the local government of Rezekne municipality defines corruption terms and includes a definition of a “corruption risk area”, which has not been found in other policy documents on risk management to date. Ropazi municipality focuses on broader risk management terms such as institution, head of institution, risk analysis and risk management (Regulation regarding..., 2022). Ropazi municipality has emphasized the role of a manager in managing the risks, stating that the manager approves ethical principles and assigns responsibilities and powers to personnel and decision-making procedures (Regulation regarding..., 2022).

The approach differs from the usual practice of assigning risk management responsibilities by the manager, as this does not require the manager to implement, control and monitor risk management. It is important to note that the manager is obliged to approve ethical principles for employees. However, in the authors’ opinion, this approach is superficial and does not fully ensure the manager’s involvement in risk management, which significantly affects the quality – in this case, the regulations adopted by Rezekne municipality are more effective because the head of the institution sets the procedure for identifying potential corruption risks and job positions exposed to corruption risks (About Corruption..., 2023). Particularly noteworthy is the information included in the risk management policy of Rezekne municipality on updating the institution’s anti-corruption plans in cases the institution has undergone reorganization, an operational mandate is given, a corruption or conflict of

interest situation has occurred, potential violations at the institution have been reported and an anti-corruption measure set by the anti-corruption action plan has been taken (About Corruption..., 2023). It should be mentioned that once the risk management procedure has been designed and if it is actively and practically applied at an institution, the level of risk management maturity increases naturally, leading to an enhanced risk management system (Risk Management). In view of the above and as repeatedly pointed out in the research, one of the quality indicators of an ICS is the review and enhancement of the risk management policy. In the opinion of the authors, it is the risk management regulations of Rezekne municipality that provide detailed and effective indicators to be taken into account when making changes to an ICS (e.g. the need to update the anti-corruption plan is strictly defined in cases a specific corruption or conflict of interest situation has occurred).

Although the above-mentioned advantage is significant for managing conflict of interest and corruption risks in Rezekne municipality, the requirements for an ICS are short and contain only a description of the role of the manager and the anti-corruption plan, whereas a description of an ICS established in Ropaži municipality is more detailed and includes a procedure for identifying, analysing and assessing corruption risks, as well as an assessment of positions exposed to corruption risks and measures to prevent the corruption risks (Regulation regarding..., 2022). In this case, similar to the guidelines developed by the NHS, the KNAB guidelines have been transposed exactly and not aligned with the specifics of the institution. In addition, employing the pairwise comparison method for prioritization, the authors analysed the key elements of the internal control systems of the above institutions (Table 2) and gave a score of 1 point to the risk prevention measure that was more important than the one being compared with.

The above analysis revealed that a combination of positions was one of the most important elements of the ICS compared with others. It should be noted that before the entry into force of Cabinet Regulation No 630 in 2017 and the implementation of the KNAB guidelines in 2018, a combination of positions was practically the only tool to prevent potential conflicts of interest at national institutions. Naturally, the risk management policies of all the institutions analysed above predominantly provided for position combinations. This was due to the possibility of identifying potential conflicts of interest that might arise in the most preventive way.

Table 2 Pairwise comparison of the key elements of the internal control systems of the institutions (authors' own compilation)

	Clear definitions	Management involvement	Communication procedure	Procedure for updating the risk policy	Obligation to observe ethical principles	Employee training	Combination of positions	Total:
Clear definitions		0	0	0	1	0	0	1
Management involvement	1		1	0	1	0	0	3
Communication procedure	1	0		0	1	0	0	2
Procedure for updating the risk policy	1	1	1		1	1	0	5
Obligation to observe ethical principles	0	0	0	0		0	0	0
Employee training	1	1	1	0	1		0	4
Combination of positions	1	1	1	1	1	1		6

The second most important factor involved updating risk management policies (including internal legal documents and a risk register). The SWOT analysis revealed that a threat caused by a risk management policy that was not regularly enhanced and updated was the ineffective functioning thereof in practice. The fact that risk registers were not updated with new, previously unidentified risks and the impact was not adequately assessed made an impression of a formal ICS being prepared but not implemented in practice. Regular personnel training on conflict of interest and anti-corruption was ranked third highest, while a cross-comparison of ICS measures showed that management involvement in ICS implementation and development was ranked only fourth. Although the theory stresses the role of management involvement in risk management, a comparison with other measures revealed that combining positions, training personnel and updating risk management policy documentation were more important measures for effective risk management. In the authors' opinion, this was due to the fact that the manager's role in introducing and monitoring an ICS represented mostly a control function, whereas the above measures related to real actions to prevent potential conflict of interest and corruption risks.

The lowest scores were given to the communication procedure and the availability of clear definitions in the ICS documentation. However, the introduction of ethical standards in the ICS did not get any points. An analysis of risk management at national institutions in other European countries found that implementing the ethical guidelines in practice could prevent conflict of interest and corruption risks. At the same time, compliance with the ethical standards by officials in the Republic of Latvia

was referred to in several legal acts. Incorporating the ethical standards in the ICS documentation actually serves as a reminder to officials to perform their responsibilities in good faith, but it is not a crucial aspect for preventing conflict of interest and corruption risks.

Conclusions and suggestions

A complete and risk-management-compliant ICS policy was implemented by national institutions in which it was designed by a separate risk management department – this was confirmed by the example of LVRTC and its knowledge-based risk management approach, as well as the opinion of the officials interviewed about the need to establish a separate risk management department as a crucial factor in effective risk management.

Following the example of the risk management policy of the JSC Passenger Train, an effective risk management process could be established by integrating three lines of protection into an institution's operations, with risk management control being delegated to three management levels, thereby ensuring full involvement of the institution's management in risk management.

The high performance of an ICS could be achieved by establishing a detailed procedure for reviewing and enhancing the risk management policy – the regulations regarding the ICS in Rezekne municipality clearly and explicitly stipulated the obligation to review the content of the risk management policy after specific risks had occurred in the activities of the institutions.

To achieve the full implementation of an ICS in the area of conflict of interest and corruption, sectoral representatives together with KNAB need to introduce specific regulations for each industry, depending on the kind of activity; e.g. in the healthcare industry, measures should be taken to prevent the risks of medical institution employees using their official position to create better conditions for patients (their relatives) at a particular institution.

To raise awareness of the need for an ICS among personnel in institutions, it is essential to ensure that risk management policy documentation, including ICS binding documents, includes definitions of terms and the purpose of introducing an ICS at an institution – these aspects should be included by KNAB and the Cabinet in Cabinet Regulation No 630.

To ensure transparency of institutional activities as well as to achieve strategic goals, the institutions need to comply not only with the obligation set by the KNAB guidelines to publish the measures taken in the previous

year to prevent conflict of interest and corruption but also to publish the above-mentioned risk management policy documentation (excluding classified information), which would raise public awareness of the control of activities of officials at a particular institution.

References

1. *About corruption risk assessment and anti-corruption measures plans in the municipality of Rēzekne.* (2023). Local government of Rezekne municipality. https://rezeknesnovads.lv/wp-content/uploads/2023/04/13_paragrafts_Noteikumi_Nr_9_korupc_risk_anal_un_pasa_k_plan_izstr_kart_RNP_2023.pdf
2. *About us.* JSC Pasažieru vilciens (Passenger Train). <https://www.pv.lv/lv/par-mums/>
3. *About us.* Latvia State Radio and Television Center. <https://www.lvrta.lv/par-lvrta/par-mums/>
4. *About us.* National Health Service. <https://www.vmnvd.gov.lv/lv/par-mums>
5. Anderson, D. (2017). COSO ERM: Getting risk management right: Strategy and organizational performance are the heart of the updated framework. *Internal Auditor*, 74(5), 38-43.
6. Committee of Sponsoring Organizations of the Treadway Commission. *COSO's enterprise risk management framework.* <https://www.accaglobal.com/gb/en/student/exam-support-resources/professional-exams-study-resources/strategic-business-leader/technical-articles/coso-enterprise-risk-management-framework.html#COSO>
7. Conflicts of Interest in Patient Care. *AMA Code of Medical Ethics.* <https://code-medical-ethics.ama-assn.org/ethics-opinions/conflicts-interest-patient-care>
8. Deloitte, L. L. P. (2015). Enterprise Risk Management: A 'risk intelligent' approach. <https://www.deloitte.com/content/dam/assets-zone2/uk/en/docs/services/risk-advisory/2023/deloitte-uk-erm-a-risk-intelligent-approach.pdf>
9. Eriksson, K. (2023). Organisational learning without fire? Risk analyses as a basis for developing crisis management capabilities. *Safety science*, 163, 106144. <https://doi.org/10.1016/j.ssci.2023.106144>. <https://www.sciencedirect.com/science/article/pii/S0925753523000863>
10. Gibson, K. (2023). What is risk management & why is it important. *Harvard Business School.* <https://online.hbs.edu/blog/post/risk-management>
11. *Guidelines on the Basic Requirements for an Internal Control System Prevent the Risks of Corruption and Conflict of Interest in Private Outpatient Medical Institutions.* National Health Service. <https://www.vmnvd.gov.lv/lv/search?q=pretkorupcijas>
12. *Internal Audit Law.* (2012). Latvijas Vēstnesis, 203 (4806). <https://likumi.lv/ta/id/253680>
13. *Internal control policy.* Latvia State Radio and Television Center. https://www.lvrta.lv/par-lvrta/kvalitates_vadiba/ieksejas-kontroles-politika/
14. *Internal control system policy.* JSC Pasažieru vilciens (Passenger Train). <https://www.pv.lv/lv/par-mums/ieksejas-kontroles-sistemas-politika/>
15. *Internal rules.* (2021). Road Transport Administration LTD. No 2.20/3.
16. Kumar, P. (2017). Analysis the impact of classical management approaches on the management practices. *Asian Journal of Management*, 8(3), 841-853. <https://ajmjournal.com/HTMLPaper.aspx?Journal=Asian%20Journal%20of%20Management;PID=2017-8-3-76>

17. Pelčeja, E. (2016). Risk Management in the Clinical Field – Safe Implementation of Clinical Practices. *Cito!*, 3(66), 1-5.
<https://www.zva.gov.lv/archive/doc upl/Cito 2016-3.pdf>
18. *Regulation regarding Setting Basic Requirements for an Internal Control System to Prevent the Risks of Corruption and Conflict of Interest.* (2022). Local government of Ropazi municipality. <https://www.ropazi.lv/lv/ieksejie-noteikumi#ieksejas-kontroles-sistemas-pamatprasibu-korupcijas-un-interesu-konflikta-riska-noversanai-noteiksanas-noteikumi>
19. *Risk Management Implementation Handbook.* (2023). Ministry of Finance. <https://www.fm.gov.lv/lv/media/15267/download?attachment>
20. *Risk management.* Latvia State Radio and Television Center. <https://www.lvrta.lv/par-lvrta/kvalitates vadiba/risku parvaldiba/>
21. Šotić, A. & Rajić, R. (2015). The Review of the Definition of Risk. *Online Journal of Applied Knowledge Management*, 3(3), 17-26.
<https://www.iiakm.org/ojakm/articles/2015/volume3 3/OJAKM Volume3 3pp17-26.pdf>
22. *State Administration Structure Law.* (2002). Latvijas Vēstnesis, 94.
<https://likumi.lv/ta/id/63545>
23. *Statutes of the state limited liability company Road Transport Administration.* (2024). Road Transport Administration LTD.
<https://www.atd.lv/sites/default/files/ATDStat 19042024 jauna%20redakcija.pdf>
24. *What is the internal control system and why is it necessary?* (2020).
<https://www.plz.lv/kas-ir-ieksejas-kontroles-sistema-un-kapec-ta-ir-nepieciejsama/>