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Foreword

The 9th International Scientific Conference Changes in Social and Business Environment – CISABE’2022 was organized as an integral part of the 4rd Forum on Innovative Technologies and Management for Sustainability (ITMS’2022) that hosted two conferences: 9th International Scientific Conference Changes in Social and Business Environment – CISABE’2022 and 14th International Scientific Conference Intelligent Technologies in Logistics and Mechatronics Systems – ITELMS’2022.

The aim of this 4rd Forum on Innovative Technologies and Management for Sustainability is to provide a worldwide Forum, where the international participants can share their research knowledge and ideas on the latest research findings and map out the directions for future researchers and collaborations.

The main idea of this joint event was to stimulate interdisciplinary approach on sustainability issues since the most advanced, innovative solutions are created by close cooperation between social and technological sciences.

The importance of sustainable development is undeniable, but its implementation into corporate activities is often faced with the problems. Everybody strives for better quality of life and innovations. Innovations do not emerge out of nothing or nowhere, new ideas and the latest inventions result from old and living truths, so the main engine of innovation is knowledge that must be constantly updated, newly interpreted, and sometimes non-traditionally applied in practice.

The focus of the Forum is on various aspects of contemporary economic, social and technological environments for international business practice(s) and their target market(s). This Forum emerged as the result of collective efforts and here, we take the opportunity to express our recognition of all the people who have made ITMS’2022 possible, who have done the hard work in preparation and organization. This event is significant and exceptional because:

- We are proud to point out that Kaunas University of Technology, Panevėžys Faculty of Technologies and Business celebrated 60 years anniversary last year.
- The forum is organized in the spirit of the anniversary of the University of Lithuania. This year we celebrate our centenary.
- The forum is responsive to the global situation. This year we did not receive researchers from Russia and did not have their presentations as well as the researchers from the Ukraine because of the well-known war conflict situation. This situation confirms how unstable world is as well as how important the sustainability is.

Through these lines of welcome, we would like to especially pay tribute to the Scientific Committee which has assured the quality of the pool of accepted papers, and to the

members of the Organizing Committee for their strong motivation and volunteer work, and eventually, to all the people who have directly or indirectly influenced the smooth progress towards the Forum. We are very thankful and express our gratitude to all the authors for contributing their papers to this volume.

Daiva ŽOSTAUTIENĖ

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International Scientific Conference Changes in Social and Business Environment –
CISABE'2022, 15th September, 2022, Panevėžys, Lithuania

Building an Assessment Algorithm for Measuring Young Employees' Gender Based Discrimination, Sexual Harassment and Sexual Assault: Literature Overview

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Abstract

A number of algorithms for evaluation of risks of discrimination, sexual harassment and assault have been created. However, the respondents expressed the opinion that very often they feel to be discriminated by an algorithm. The research aims at analyzing scientific literature in order to provide the literature overview aimed at building a user friendly assessment algorithm for measuring young employees' gender based discrimination, sexual harassment and sexual assault. The present exploratory research implies the implementation of theoretical methods such as analysis of scientific literature, theoretical modelling, systematization, synthesis, comparison, and generalization.

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Keywords: Young employees; Gender based discrimination; Sexual harassment; Sexual assault; Assessment algorithm; Literature overview.

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1. Introduction

Successful engagement of young people in the labour market and society is crucial not only for their own personal economic prospects and well-being, but also for overall economic growth and social cohesion [1]. The economic crisis as a result of the COVID-19 pandemic highlights the urgency to give all young people the support they need and reinforce their confidence in their future prospects [1].

Youth employment is closely connected with youth inclusion and diversity, the priority of the EU Youth strategy for 2019–2027 [2]. Youth inclusion and diversity ensure equal opportunities for young people in all the life domains. Employment and social inclusion of disadvantaged youth is paid a particular attention by the European Union [3].

Inclusion and diversity of young employees are also considered in the light of gender based discrimination, sexual harassment and sexual assault. The fact that 12 million posts on *Facebook* in the first 24 hours referred to #MeToo movement [4] and other 1.7 million messages on *Tweeter* from 85 different countries relied on the same topic [5] proves that, the *Hollywood* phenomenon is very closely connected with what a large number of persons are facing on the daily basis at workplace. Nevertheless, in 2020, Equal Employment Opportunity Commission [6] in the USA received only 11.437 sex based harassment allegations. After #MeToo movement across USA and Europe, the topic of gender based discrimination, sexual harassment and sexual assault attracted a lot of attention not only from the public, but also from ordinary people around the world. In 2015, European Institute for Gender Equality (EIGE) [7] showed the prevalence of unwanted sexual attention among working population in Europe as illustrated in Table 1.

Table 1. Unwanted sexual attention among working population in Europe [7]

Country	Women, %	Men, %
Romania	1.8	0.6
Czech Republic	3.6	1.2
Lithuania	1.9	0.1
Turkey	1	0.9
Italy	2.9	0.9
Germany	3.1	0.7

The numbers do not change significantly from year to year since then. The lower numbers reported in the statistics prove that this issue remains a sensitive, if not a taboo topic. This can be explained by the fact that victims often feel shame, guilt, or fear of retributions. The low incidence of repercussions for abusers discourages the victims to report these cases. It also shows a lack of knowledge and awareness among employers and victims on how they can prevent the phenomenon, change the attitude, and reduce its costs of all levels: individual, organizational, societal.

A number of algorithms for evaluation of risks of discrimination, sexual harassment and assault [8] have been created. However, the respondents expressed the opinion that very often they feel to be discriminated by an algorithm [9]. An explanation here can be that in many cases the algorithms focus on:

- describing the victim characteristics, *e.g.* race, disability, etc. [8, 10];
- psychological aspects and impacts of gender based discrimination, sexual harassment and assault [11].

The research aims at analysing scientific literature in order to provide the literature overview aimed at building a user friendly assessment algorithm for measuring young employees' gender based discrimination, sexual harassment and sexual assault. This work will underpin the formulation a new research question: What algorithm is targeted at youth workers, trainers, counsellors, mentors and volunteers who work with young people and help prevent and react towards gender based discrimination, sexual harassment and sexual assault, assist young people in dealing with the phenomenon and ensure a safe environment where they can discuss this sensitive topic?

2. Research methodology

The implemented work described in this contribution was exploratory. The exploratory study was aimed at generating new research questions [12]. The exploratory study intended to gain understanding [13] of gender based discrimination, sexual harassment and sexual assault. The study process moved from a general theory to an understanding in specific [13]. The study focused on evaluation and analysis of data, not on creating new designs or models [13]. The emphasis was on perspective and relative importance [13].

The methodology of the research is built on the process of moving:

- from the conceptualization phase in Phase 1;
- through the phase of literature overview in Phase 2;
- to the research question development phase in Phase 3.

The conceptualization phase is aimed at defining the key concepts, theories, and gaps in the research area. This research conceptualization intends to give an overview of models applied to the research area of gender based discrimination, sexual harassment and sexual assault. Model means a pattern of individual's or individuals' interpretation of a phenomenon [14]. As a model consists of elements, the models' elements include [15]:

- definitions;
- criteria;
- indicators;
- constructs;
- features;
- methodological background;
- theories;
- levels;
- methodological approaches.

The conceptualisation phase will serve to confirm the methodology and details of the research process [16], too. The phase of literature overview will focus on the identification of the characteristics of gender based discrimination, sexual harassment and sexual assault. The literature overview will select and present different models used for investigation of gender based discrimination, sexual harassment and sexual assault. The literature overview will be based on the models' elements defined in the conceptualisation phase. The literature overview stops as soon as the found information is repeated in scientific literature. This work will not provide a repeated information found in different literature sources.

The research question development phase will be based on the process of synthesis for the creation of a new research question to be investigated in future work.

The present research implies the implementation of theoretical methods such as analysis of scientific literature, theoretical modelling, systematisation, synthesis, comparison, and generalization [12].

The data are collected from the published scientific papers found via the google search. The google search was based on the use of the key words such gender based discrimination, sexual harassment and sexual assault.

The exploratory research refers to the qualitative research considered within the interpretative paradigm. The interpretation is conventionally done by the researcher(s) who carry out the research [14]. The interpretation is formulated and provided in accordance with the research competence of the researcher(s). The researchers have the right to present their interpretation as well as to choose a research method without being imposed by the research readers.

For the analysis of the qualitative data, parallel procedures [17] are used. Parallel procedures include the use of different inductive and/or deductive content-analytical procedures simultaneously [17]. The inductive category formation means finding concrete factors or similar, and the deductive category assignment comprises level of self-evaluation parallel in the same passage through the text material [17]. And several other procedures could be combined

in one session [17]. This is the big advantage of content analysis to work through big data amounts very economically [17].

3. Research results

3.1. Definitions of gender based discrimination, sexual harassment and sexual assault

Table 2 presents the results of the literature overview on definitions of gender based discrimination, sexual harassment and sexual assault.

Table 2. Definitions

Gender based discrimination	Sexual harassment	Sexual assault
Gender discrimination to date has mostly involved discrimination against females [18].	Sexual harassment has been described as the way patriarchy works: men continuing to assert their power over women [20].	Sexual assault focuses on assaults that involve completed or attempted physical contacts against an adult (age 18 or older) or child sexual abuse or other sexual acts (e.g., exhibitionism, sexting, sexual harassment, touching, or forced touching or fondling in public, i.e., frotteurism) [22].
“Any distinction, exclusion, or restriction made on the basis of socially constructed gender roles and norms that prevent a person from enjoying full rights” [19].	Sexual harassment: “(Un)welcome sexual advances, requests for sexual favours, and other verbal and physical conduct of a sexual nature constitute sexual harassment when: 1) Submission is made either implicitly or explicitly a term or condition of an individual’s employment, 2) Submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting the individual, or 3) The conduct has the purpose or effect of unreasonably interfering with an individual’s work performance or creating an intimidating, hostile, or offensive working environment” [21].	

3.2. Criteria and indicators of gender based discrimination, sexual harassment and sexual assault

Table 3 gives an overview of criteria of gender based discrimination, sexual harassment and sexual assault

Table 3. Criteria

Criteria	Indicators	Constructs
	Labour market	Wages, skills, segregation, and its origins, women of colour and women of age [18].
Gender based discrimination	Employment	Unfair or unequal access to professional development resources, unfair or unequal access to opportunities due to a member’s gender; Unpleasant assignments given because of gender; Threatened to block promotion unless agreed to sex; Offered promotion in exchange for sex; Threatened to block favourable, transfer unless agreed to sex; Promotion, favourable assignment, or transfer prevented because sex refused; Offered favourable assignments in exchange for sex [23].

Criteria	Indicators	Constructs
Sexual harassment	Verbal sexual harassment	Verbal comments: terms such as bitch, baby, chick, and fucking broad [24], a “sissy” or a “tomboy” [20]; Sexually suggestive, offensive, comments or jokes [25]; Sexual comments about body (co-workers); Sexual comments about body (supervisor); Intrusive, offensive comments about a woman’s physical appearance [25]; Demeaning comments (co-workers); Discourse by sexually objectifying female peers and discussing sexual acts they would like to engage in or have already engaged in [26, 27, 24, 28, 29]; Catcalls or sexual remarks; Praising body shapes; Throwing personal questions (regarding personal organs); Intrusive, offensive questions about private life [25]. Unwelcome verbal: teasing and jokes: “harmless” jokes [20] and jokes that are offensive, sexual jokes [30]; Male teachers might “ <i>laugh along with the guys</i> ” [24]; or Male teachers support the comments; and Male teachers even blame the victim [20]; Discussions of sexual advances; Sexual propositions; or Unwanted sexual discussions from co-workers or supervisors; Unwanted requests for dates (co-workers) or inappropriate invitations to go out on dates [25]; Unwanted requests for dates (supervisor) [31]; Repeatedly told sexual stories [30].
	Nonverbal sexual harassment	Gestures (body language): leers (body language) including sexual leering, inappropriate, intimidating staring or leering [25]; Somebody indecently exposing themselves [25]; Being made to watch or look at pornographic material against one’s wishes [25].
	Visual sexual harassment	Provocative posters displayed; Acknowledging making the victim’s body a sexual image [32]; Receiving or being shown offensive, sexually explicit pictures, photos or gifts [25].
	Physical sexual harassment	Touching including unwelcome and uncomfortable touching; Hugging, grabbing, kissing, rubbing, and violent assault such as rape [20]; Creating a space or a hostile climate where women are targeted and objectified with no outlet for response or complaint of tangible harm [33, 34]; Crude / offensive behaviour [30]; Unwanted sexual attention (e.g., unwanted attempts to establish a romantic sexual relationship despite efforts to discourage it) [30]; Sexual coercion (e.g., treated badly for refusing to have sex) [30].
	Cyber sexual harassment	Comments to photos on <i>Instagram, WhatsApp, Facebook, Twitter, Snapchat</i> [35]; Sending photos, links or porn videos; Asking victims to send naked photos or videos [32]; Receiving unwanted, offensive, sexually explicit emails or SMS messages [25]; Inappropriate, offensive advances on social networking websites or in internet chat rooms [25].
Sexual assault	Unwanted Sexual Contact (completed or attempted) (no penetration)	Touching; Grabbing or fondling of the breasts, buttocks, or genitals, either under or over clothes; Kissing, licking or sucking; Some other form of unwanted sexual contact [36].
	Rape (completed or attempted) (with penetration)	Solicitation of sexual relations; Attempted to have sex without consent (co-workers); Attempted to have sex without consent (supervisor); Exposed themselves (co-workers / supervisor) [30]; Forced to have sex without consent; Threats of rape; Unwanted penetration (vaginal, oral, or anal) by force or the threat of force [30].

3.3. Levels of gender based discrimination, sexual harassment and sexual assault

Table 4 shows the levels and their indicators of gender based discrimination, sexual harassment and sexual assault.

Table 4. Levels

Levels	Level indicators	Level constructs
A very low level	Looking for attention, different perceptions of photo content or captions [35]	To seek attention from account owners and the possibility of wanting to get many followers; Tempting comments [35].
Low level	Domination and humiliation [20], gender based discrimination	Sexual jokes; Sexual leering; Provocative posters displayed; Catcalls or sexual remarks; Unwanted requests for dates (co-workers); Demeaning comments (co-workers); Sexual comments about body (co-workers); Unwanted requests for dates (supervisor); Sexual comments about body (supervisor); Offered favourable assignments in exchange for sex [30].
Average level	Hostile environment [30]	Unpleasant assignments given because of gender; Uncomfortable touching; Offered promotion in exchange for sex; Threatened to block favourable transfer unless agreed to sex; Threatened to block promotion unless agreed to sex (co-workers / supervisor) exposed themselves; Promotion, favourable assignment, or transfer prevented because sex refused [30].
High level	Sexual harassment	Attempted to have sex without consent (co-workers); Attempted to have sex without consent (supervisor) [30].
Very high	Sexual assault	Sexual abuse or other sexual acts (e.g., exhibitionism, sexting, sexual harassment, touching, or forced touching or fondling in public, i.e., frotteurism) [22]; Forced to have sex without consent [30].

3.4. Risks of gender based discrimination, sexual harassment and sexual assault

Table 5 reveals risks of gender based discrimination, sexual harassment and sexual assault.

Table 5. Risks

Levels	Level indicators	Level constructs
A very low level	Emotional disorder	Physical weakness, timidity, anxiety, sensitivity and shyness [37], panic attacks, loss of self-confidence, feeling vulnerable, difficulty in sleeping, concentration difficulties, difficulties in relationships [25].
Low level	Physical health problems	Drug abuse and alcohol abuse [11, 38, 39]; Physical inactivity, overweight and obesity, tobacco abuse, substance abuse, injury and violence, bruises, scratches, wounds, sprains, burns; Fractures, broken bones, broken teeth; Concussion or other brain injury, internal injuries, miscarriage [25].
Average level	Mental health problems	Mental health problems: depression, dissociation and dissociative disorders, eating disorders, obsessive compulsive disorder, paranoia, reduced opportunities for on-the-job learning and advancement, forced job change, unemployment, and abandonment of well-paying careers [40].
High level	Career interruptions and lower earnings	Lower academic performance, absenteeism, leaving school or workplace [41]; Working for tips, working in an isolated context, lacking legal immigration status or having only a temporary work visa, working in a male-dominated job, working in a setting with significant power differentials and “rainmakers” [40].
Very high	Social exclusion	Suicidal behaviours [11, 38, 39].

3.5. Assessment algorithm for measuring gender based discrimination, sexual harassment and sexual assault

Table 6 describes the assessment algorithm for measuring gender based discrimination, sexual harassment and sexual assault.

Table 6. Algorithm

Algorithm step	Algorithm step description	Levels	Level indicators	Level constructs
1. No young people action.	No intervention from authorities / administration due to the use of language only [20].	A very low level	Looking for attention, different perceptions of photo content or captions [35]	To seek attention from account owners and the possibility of wanting to get many followers, tempting comments [35].
2. Young people inform the local community / administration, social services, women's shelter.	Intervention from authorities of the local community / administration due to the emotional violence (verbal and psychological in nature) [20].	Low level	Domination and humiliation, gender based discrimination [20]	Sexual jokes, sexual leering, provocative posters displayed, catcalls or sexual remarks, unwanted requests for dates (co-workers), demeaning comments (co-workers), sexual comments about body (co-workers), unwanted requests for dates (supervisor), sexual comments about body (supervisor), offered favourable assignments in exchange for sex [30].
3. Young people inform the employment organisation, doctor, health centre.	Organisation's authorities response to employment discrimination [40], information about security / crime prevention, practical help, help with insurance / compensation claim, protection from further victimisation / harassment [40].	Average level	Hostile environment [30]	Unpleasant assignments given because of gender, uncomfortable touching, offered promotion in exchange for sex, threatened to block favourable transfer unless agreed to sex, threatened to block promotion unless agreed to sex, co-workers / supervisor) exposed themselves, promotion, favourable assignment, or transfer prevented because sex refused [30].
4. Young people inform hospital, police, local government authorities.	Local government authorities response to physical violence and intrusive acts regardless of motive or context [20], information about security / crime prevention, practical help, help with insurance / compensation claim, protection from further victimisation / harassment [20].	High level	Sexual harassment	Attempted to have sex without consent (co-workers), attempted to have sex without consent (supervisor) [30].
5. Young people inform hospital, healthcare institutions, police, state authorities, legal service / lawyer, victim support organisation, church / faith-based organisations.	State authorities' response to criminal offense [40], information from the police, someone to talk to / moral support, help with insurance / compensation claim, protection from further victimisation / harassment, help in reporting the incident / dealing with the police, medical help, financial support.	Very high level	Sexual assault	Sexual abuse or other sexual acts (e.g., exhibitionism, sexting, sexual harassment, touching, or forced touching or fondling in public, <i>i.e.</i> , frotteurism) [41]; Forced to have sex without consent [30].

4. Research findings

The literature review allows identifying a range of definitions, criteria and indicators, levels and risks of gender based discrimination, sexual harassment and sexual assault. Based on these, the elements of the assessment algorithm for measuring gender based discrimination, sexual harassment and sexual assault were found.

5. Discussion

The implemented literature review allows finding that the previously done research in the field of gender based discrimination, sexual harassment and sexual assault focused on the psychological perspective of the phenomenon. The psychological perspective on gender based discrimination, sexual harassment and sexual assault brings the persons, who experienced gender based discrimination, sexual harassment and sexual assault, back to their negative experiences. The negative emotions related to the unpleasant memories about gender based discrimination, sexual harassment and sexual assault do not allow the person who experienced gender based discrimination, sexual harassment and sexual assault, to construct their better future. Their negative emotions serve as the basis of their non-constructive attitude to their own future. Thus, the psychological view on gender based discrimination, sexual harassment and sexual assault has to be accompanied by a perspective with positive emotions that lead to the constructive attitude.

In the analysed scientific literature, the educational view on the gender based discrimination, sexual harassment and sexual assault is ignored while the preparatory role of education is widely recognized. The preparatory role of education refers to the constructive dimension of solving and finding a solution in different complex situations. In wide terms, education allows learners' scaffolding for modelling, simulating, building and repairing a variety of future situations. It should be pointed that, in education, scaffolding means a temporary support that allows learners to become autonomous. Consequently, education can help react to diverse life and work situations including gender based discrimination, sexual harassment and sexual assault in an appropriate way. Hence, education in the field of gender based discrimination, sexual harassment and sexual assault is expected to change the attitude of persons, who experienced gender based discrimination, sexual harassment and sexual assault, from non-constructive to constructive one.

It should be noted that emotions and attitude are inter-related, although emotions refer to psychology, and attitude – to pedagogy [42]. Therein, psychological processes provide the basis for pedagogical developments [42]. The change of attitude and emotions proceeds [42]:

- from the negative emotions and / or attitude in Phase 1;
- through the neutral emotions and / or attitude in Phase 2;
- to the positive emotions and / or attitude in Phase 3.

It is worth noting that expression of attitude and emotions is dependent on learned convictions or rules and, to the extent that cultures differ in the way they talk about and conceptualize emotions, how they are experienced and expressed will differ in different cultures as well [43].

6. Conclusions

The theoretical finding here is that gender based discrimination, sexual harassment and sexual assault has to be viewed not from only the psychological perspective but from the synthesis of two perspectives, namely psychological and educational. The psychological view of gender based discrimination, sexual harassment and sexual assault will allow the person to recognize his / her negative emotions while the educational perspective will support his / her positive attitude to the construction of his / her own future. This will allow changing the attitude of the person, who experienced gender based discrimination, sexual harassment and sexual assault, from the negative to the constructive one.

The present research has some limitations. The limitation is that the assessment algorithm reflects the inter-relationships between gender based discrimination, sexual harassment and sexual assault. Another limitation is that only literature overview was implemented. If empirical studies would be carried out, other results could be obtained.

Further research in the field of inter-connections between emotions and attitude is needed. Cultural differences when expressing emotions and / or attitude to gender based discrimination, sexual harassment and sexual assault will be analysed. Future work will be devoted to the empirical analysis of the phenomena of gender based discrimination, sexual harassment and sexual assault for the construction of the assessment algorithm. The empirical studies will address young employees, employers, and youth workers, trainers, counsellors, mentors and volunteers who work with young people. The data collection has to be based on the use of qualitative and quantitative methods for collected data verification. The collected data will be analysed on the basis of the synthesis of two perspectives, namely psychological and educational. The synthesis of theoretical analysis, based on literature review, and empirical studies will allow the construction of the assessment algorithm for educational purposes. Results of the empirical studies will serve as the basis for the design of a training course for young employees.

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Analysis of Inter Relationship between the Culture of the Organisation and Job Satisfaction in a Foreign Capital Company

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Abstract

Nowadays not only business relations but also the processes of communication are developed or emerging between different groups in society, countries or regions. They are dynamically transforming the role of organizational culture as one of the more perfect components of organizational management becomes more important. The employees bring their understanding of values, attitudes and beliefs, which have an impact on formation, development of organizational culture and job satisfaction. The coherence of the mentioned concepts is very significant for an organization, and, therefore, becomes relevant to find out what is the impact of organisational culture as a multidimensional phenomenon on job satisfaction. The aim of this paper is to analyse and to identify the relationship between organizational culture as a multidimensional phenomenon and job satisfaction. This analysis helped to determine the research concepts and their characteristics. It can be stated that the multidimensionality of the organizational culture and the its manifestations in the foreign capital company under investigation forms the identity of the environment of the employees of the company. It is appropriate to assign fostered values, attitude towards work, traditions and behavioural norms, which helps to form relationships with the external environment, as the essential dimensions of this phenomenon. The research also revealed that job satisfaction is often determined by professional and personal prosperity, which is understood and interpreted through the individual experience and perception of every employee.

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1. Introduction

Organisational culture began to be studied in the field of research in our country around the 1980s. Researchers have been looking for the manifestations of this phenomenon in the contexts of quality and organisational management, while at the same time seeking to identify the links between the manifestations of the distinctive nature of an organisation's culture and the behaviours that it shapes [1]. In the context of the formation of an organisation's long-term strategic objectives, in the interests of maintaining the stability of its business direction, in the context of discussing the prospects for vision, or in the interests of enhancing the success of the competitive conditions that the marketplace is creating, the development of a business plan or a set of strategy guidelines will not guarantee the successful performance. This is where employees become important, as they bring with them to the organisation their own understanding of values and beliefs shaped by norms in their personal lives, which have an impact on the organisation's culture, development and job satisfaction. The sustainable relationship between these concepts is of great importance for an organisation, and it is therefore relevant to examine the impact of organisational culture, as a multidimensional phenomenon, has on job satisfaction.

According to Cameron and Quinn [2], organisational culture should be an integral element of change in order to increase the effectiveness of an organisation by linking the culture to an internal value system, ways of thinking, leadership styles and a shared approach to problem solving. As business development and organisational behaviour change, an increasing number of companies are turning to HR-based business development, where job satisfaction is becoming an important aspect. A considerable amount of research and scholarly insights and recommendations have been devoted to the successful analysis of the aspects of business management. Some of these complement each other, thus providing a clearer understanding of the factors that determine the success of an organisation, bringing the team together for a common purpose, while others, on the contrary, form different opinions, encouraging contradictions and a process of endless, flawed debate. In addition to high profit margins, and in recognition of employees' aspirations to feel needed and valued, organisations are increasingly adopting carefully designed and responsibly maintained value systems that help identify their needs, thereby influencing employee behaviour and expectations. However, good practice is far from being developed and applied by all organisations.

Both organisational culture and job satisfaction become important for the organisation and for the employees themselves, as the impact of these phenomena has important implications for their performance, productivity and market position and reputation. The theoretical aspects of organisational culture and job satisfaction have been widely discussed and analysed both in the Lithuanian scientific literature and in the works of foreign scientists. The concept, assessment and development of these phenomena have been studied by Bukarkienė [1], Shein [3], Cameron and Quinn [2], Denison [4], Ozeraitienė and Gaigalaitė [5], Dambrauskienė [6] and many others. Jucevicienė [7] has paid much attention to the study of organisational culture, discussing the importance of values in its formation. Meanwhile, Šimanskienė and Seilius [8] linked the development of this phenomenon to the employee's attachment to the organisation and the identity it develops. Viningienė and Ramanauskas [9] suggested that job satisfaction in their work should be assessed at a certain level and by internal personality factors. Valiūnas and Drejeris [10] presented and described internal and external factors of job satisfaction. Vaidelytė and Sodaitytė [11] also supported this categorisation, arguing that job satisfaction is only partially influenced by individual factors. Based on the facts presented, this paper addresses the research problem by formulating a problem question: what are the interrelationships between organisational culture and job satisfaction?

2. Theoretical framework

2.1. *The concept of the culture of the organisation*

The development of shared sets of values, goals and practices that characterise an institution or organisation, or a corporate culture, contributes to the formation of human beliefs and patterns of behaviour, which depend on the ability to learn and pass on knowledge to other generations. One of the first to put forward the concept of organisational culture was the researcher Shein [3]. His definition of organisational culture presented in 1985 linked it to the interpretation of personal growth, development, complemented by extensive training and shaped as a reason for motivating people. Emphasising the importance of the values developed within the organisation, he linked its

phenomenon to the behaviour of the members of the organisation, the way they act, and their sense of their personal initiative and responsibility. In his work, the author treated organisational culture as a kind of defence mechanism to avoid the uncertainty of internal actions. In his view, in order for an organisation to function effectively, the strengths and weaknesses of its culture must be assessed, thus creating the possibility of modifying cultural assumptions. Organisational culture is understood differently by many authors and has been interpreted and explained in a wide range of ways, making it difficult to define its unambiguous content and relevance to an organisation. This is influenced by personal perceptions, the choice of the organisation as the focus of the phenomenon under study and the manifestations examined. It is like the air that a team breathes, it belongs to everyone and together to no one [12].

Brooks [13] compared organisational culture to an integrating force that often portrays the subjective and meaningful nature of the organisation itself. The author explains organisational culture as the intangible “social glue” or “normative glue” that holds the members of the organisation together. This can be attitude to work or the aforementioned ways of communicating. Ideally, instrumental values can be created in order to create some kind of final value, the purpose of which will be to help define or identify the culture of the organisation. Most researchers associate the manifestations of organisational culture with a specific, identity-based value system, which is shaped and developed differently in each organisation, and which influences the formation of brand image and identity [14]. Based on the above concepts, it can be said that the formation of organisational culture is influenced not only by employees’ personal experience and internal beliefs, which can be related to upbringing or certain experiences, but also by the company’s history, rituals, traditions, and collaborative links. At the same time, the authors acknowledge that the functionality and formation of an organisation’s culture is also influenced by external factors.

Koschmann, McDonald [15] argue that an organisation’s culture is the set of beliefs, behaviours, characteristics and ways of thinking that are characteristic of a particular group of people. The manifestation of organisational culture takes place through shared memories of past events, stories, symbols and, most importantly, through rituals. Rituals, according to the researchers, are used to stimulate innovation, to form identity, to respond to environmental change, to convey rationality, to challenge dominant values and to reduce uncertainty. For their part, Jahanian and Salehi [16] note that organisational culture consists of two main levels. The first level (values and beliefs) provides tangible symbols such as employee clothing, manners, ceremonies, myths and legends, while the second level is the foundation of the organisation’s culture: norms, traditions, rituals, assumptions and beliefs. This layer reveals the authentic culture of each organisation. Sulkowski [17] gives a detailed account of the content of organisational culture and its components. The author argues that by consolidating some of the differences found in the academic literature and clarifying the impact of organisational culture on business practices, a “canon” of organisational culture components could be defined, including the elements presented in Figure 1.

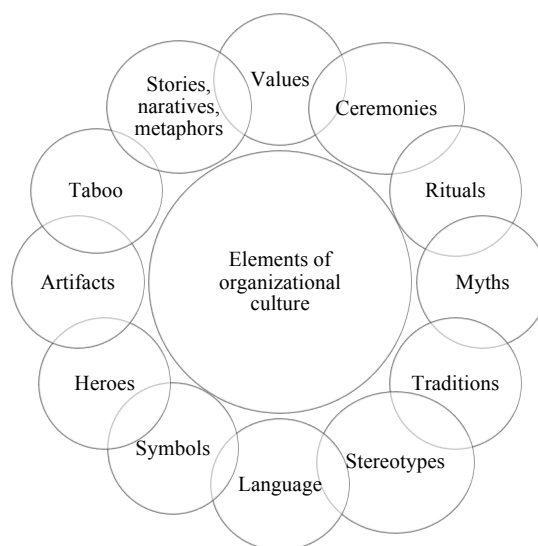


Fig. 1. The elements of organizational culture according to Sulkowski [17]

In summary, each of the above elements can provide potentially useful information about the culture of an organisation. At the same time, it can be noted that, in the context of the analysis of the main dimensions and elements of organisational culture, a set of values that guide the manifestation of employees' beliefs and ways of thinking in the organisation is still recognised as being of particular importance by many scholars. Organisational culture, as a phenomenon of principles, often also becomes a "moral centre" that helps people to understand what is right and wrong in terms of personal behaviour [18].

2.2. *The concept of job satisfaction*

As local and global competitiveness rates increase, team-building strategies become a key objective for many organisations. In order to maintain steady growth and generate profitable performance, companies strive to provide continuous incentives to their employees, thus contributing to their job satisfaction. Employees are understood to be a vital resource, associated with a significant investment in job search, recruitment and training, not to mention salary, health care plans and bonuses. Job satisfaction can be conditioned and sustained by a highly individual set of factors, which can vary according to the values and attitudes of the organisation's culture and attitudes, together with the employee's specific needs and motives.

Job satisfaction is becoming an increasingly common object of study for practitioners and researchers in the field of organisational culture and human resource management [19]. This phenomenon can often be understood, defined and measured in relation to a wide range of factors. It can also be related to having a certain attitude towards the tasks performed or be expressed on the basis of emotions, in terms of evaluating and considering the physical and social conditions of the workplace. Researchers have focused on the links between job satisfaction and motivation. Locke [20] proposed a concept that job satisfaction is a pleasant or optimistic emotional state as a result of job appreciation or experience. Tatar [21] links job satisfaction to a sense of hopefulness arising from an understanding of a person's work and relates this phenomenon to a greater sense of need and self-actualisation. This means that people with a high need for work are simply satisfied with available work that can meet their needs. Mwamwenda [22] establishes a relationship between job satisfaction and productivity, loyalty, activity and hours worked, while Badrianto and Ekhsan [23] suggested that job satisfaction is a set of feelings, beliefs and thoughts about how someone responds to the work an employee does.

In the concept of organisational culture, job satisfaction is one of the most researched variables related to organisational factors such as leadership and work design. In a general sense, it is the level of job satisfaction of an employee. This feeling is often based on an individual's subjective perception of satisfaction. Over time, on practical rather than theoretical grounds, job satisfaction has become the chosen object of study for many contemporary researchers wishing to investigate the relationship between employee attitudes and performance. On the other hand, without knowing the origins of the concept and the nature of the concepts, it is not possible to adequately identify and assess employee job satisfaction in today's highly complex working conditions. The authors of this paper consider organizational culture as a multidimensional phenomenon which encompasses the domains of leadership and work organisation, careers and recognition, job satisfaction and professional relationships, and is associated with public and consensual meanings that are important to employees.

3. **Research methodology**

3.1. *Research aim and participants*

In order to investigate the relationship between organisational culture and job satisfaction, a multinational standardised manufacturing company was selected as the research objective, which is a global manufacturer of components and systems for industrial customers with high demands. The system includes the manufacture of electrical distribution equipment and the components include foundry technology, induction components and sheet metal fabrication. The survey was completed by 91 administrative and 100 employees in manufacturing, representing 75 % of the calculated sample. At the time of the survey, the total number of employees in the organisation was 637. The involvement of manufacturing workers in the survey was 52.4 %, while that of management was 47.6 % of the total workforce. The analysis of the age of the respondents showed that the majority of respondents were women

(56 %). The percentage of males was 25 %, while the rest of the employees chose the answer “other” (10 %). The majority of respondents were aged between 25 and 45 years (47 %). This suggested that the people working in the organisation are quite young, although the proportion of employees under 25 years of age was only 5 per cent. The over 55 age group accounted for 6 %. Interestingly, 49 respondents refused to specify their age. This can be attributed to a personal fear of possible identification, the need for confidentiality, and the need to be seen in a positive light, assuming that the opinion was expressed in a more honest and sincere way. 44 % of respondents have a university degree. In terms of seniority, 44 % of the administrative staff have been with the organisation for an average of between 1 and 5 years, while the manufacturing staff are more loyal to the organisation. There are 11 % more respondents who have worked in manufacturing departments for more than 10 years than those in administration.

Given that the average length of time that employees work for the organisation is relatively short, it was assumed that the organisation has a high turnover of employees. It is also important to mention that employees over 55 years of age make up a very small percentage of the workforce. The causes of this and what makes it happen are not analysed in the study.

3.2. Data collection methods

In order to establish the links between organisational culture and job satisfaction, a quantitative written survey using closed-ended questionnaires was chosen to collect data.

A questionnaire survey instrument was developed for organisational culture. The intensity of the attitudes was chosen to be linear, *i.e.* from “strongly disagree” to “strongly agree”. The questionnaire consisted of 54 statements covering 9 dimensions identifying organisational culture with change, the value system, relations with the manager, colleagues, the external environment, behavioural norms, hierarchical relations, problem-solving aspects and the elements of a successful organisation.

The Job Satisfaction Survey [24] developed by Spector in 1994 and translated into Lithuanian by the authors, was used to measure job satisfaction. The questionnaire consists of 39 items divided into 9 subscales, each of which consists of four items. Job satisfaction was measured in terms of pay, promotion opportunities, leadership, benefits, recognition, organisation of work, relationship with co-workers, nature of work and work relationships. Respondents rated their attitudes towards job satisfaction in the questionnaire in the format of the above-mentioned Likert scale, with six choices for each item, ranging from “strongly disagree” to “strongly agree”, with a numerical score ranging from 1 to 6.

3.3. Data analysis methods

The data were processed using SPSS for *Windows* 28.0.0. Quantitative statistical descriptive analysis and multivariate factor analysis methods were used in conjunction, looking for correlations and considering the theoretical factor model. Factor analysis was used to identify the main variables supporting the pattern of correlations in the set of observed variables. The Kruskal-Wallis test was used to calculate the means of the scales, and exploratory principal component factor and factor correlation analyses were used to determine the relationships, using the Spearman's correlation coefficient (r_s). The mean (M) and its standard deviation (SN) were calculated to describe the quantitative variables. The distributions of two independent samples that did not satisfy the normality assumption were compared using the Mann-Whitney U test.

4. Research results

4.1. Statistical indicators for the organisational culture and job satisfaction scales

The exploratory factor analysis on the manifestation of organizational culture identified 10 factors. The data obtained, together with the validity of scales, are presented in the Table 1.

The Kaiser-Meyer-Olkin sampling adequacy (KMO) measure was used to assess the adequacy of the data matrix for factor analysis. The coefficient value of 0.91 was found, which confirmed the suitability of the matrix for the

analysis. The correlation coefficients of the factors were found to range from 0.40 to 0.84, so that the scale can be considered methodologically homogeneous with a sufficient level of internal consistency of the constructs.

Table 1. Variables and statistical validity indicators for organisational culture factors

Factors	Number of statements	Factor weight (<i>L</i>)	Cronbach α	KMO
Positive manifestation of organizational culture and influence on successful organizational development	7	0.47–0.75	0.874	0.91
Preconditions for creating employee well-being and the possibilities for realising ideas in the organisation	6	0.40–0.70	0.868	
Trends and future perspectives in expressing the relationship with the manager	5	0.48–0.79	0.859	
Coherence between the structural units of the organisation	6	0.52–0.79	0.812	
The role of teamwork and collaboration in organisational decision-making processes	5	0.63–0.84	0.818	
Trends in the manifestation of traditions and customs in an organisation in relation to the external environment	3	0.55–0.66	0.791	
Commitment and affection for the organisation	3	0.43–0.71	0.724	
Stereotyping in relation to the organisation's values, goals and vision	4	0.52–0.70	0.817	
Trends in internal communication and communication culture	4	0.52–0.70	0.793	
The relationship between the psychological climate and the declaration of personal position in an organisation	3	0.42–0.89	0.618	

The Cronbach alpha (α) index, which measures the reliability of the scale, ranges from 0.618 to 0.874, indicating the reliability of the scale.

The Cronbach alpha (α) coefficient chosen to measure the reliability of the job satisfaction questionnaire and the internal consistency of the scale is 0.77. This confirms that there is sufficient internal consistency between the statements of the scale, indicating the integrity of the research instrument and a fairly high correlation between the individual items that make up the questionnaire.

The job satisfaction assessment in the foreign invested company, after recoding the negative statements according to the instructions of the questionnaire used for the study, showed that the overall job satisfaction of all employees in the organisation (with the sum of the possible scores ranging from 36 to 216) is 130. The lowest score was 60. Below is a notional breakdown of the employees into groups according to the sum of the job satisfaction scores obtained (see Table 2).

The results showed (see Table 2) that only 1 % of respondents had low job satisfaction. 43.46 % of employees rate their job satisfaction as average, while more than half of the employees (52.36 %) show high job satisfaction.

Table 2. The overall job satisfaction

Job satisfaction level	Indicator of score sum	Number of study participants	The overall job satisfaction (%)
Low job satisfaction	36–80	2	1.05
Average job satisfaction	81–125	83	43.46
High job satisfaction	126–170	100	52.36
Very high job satisfaction	171–216	6	3.14

It can be assumed that the organisation has a relatively high level of overall employee job satisfaction, which may lead to a positive internal microclimate of the organisation, high job performance, positive employee relations and attachment to the organisation.

4.2. *The relationship between organisational culture and job satisfaction*

In order to determine the relationship between organisational culture and job satisfaction, the Spearman's rank correlation coefficient (r_s) was chosen to measure the relationship between the ranked scale variables.

In the analysis of the relationship between organisational culture and job satisfaction, a relationship was found between the subscales of positive manifestation of organisational culture and influence on successful organizational development and the subscales of employee promotion opportunities. It was identified that the positive culture and microclimate of the organisation, a favourable attitude towards non-traditional solutions, was directly related ($r_s = 0.433$) to the promotion opportunities for employees. Employees who are proud of their organisation, perform their tasks well and promote loyalty and pride, have a positive view of their opportunities and prospects for promotion and believe that people in their organisation achieve as much as those in other organisations.

The links that emerged are seen as weak, but this is also in line with previous research findings that linking organisational culture to a sense of identity and commitment to the organisation provides the basis for an organisational process management approach. The latter provides an opportunity to recognise and assess the value created by the employee, which promotes close and sincere cooperation and job satisfaction. The insights show that an employee's job satisfaction is determined not only by his or her personal qualities, but also by the totality of the internal and external factors shaped by the organisation, which, in this case, includes the factor of the expression of a positive organisational culture, which also influences the success of the organisation's development, including its human capital.

The results also revealed that as the prerequisites for employee well-being and the opportunities for ideas to be realised increase, so do the probability of recognition ($r_s = 0.422$), promotion ($r_s = 0.568$) and satisfaction with the overall nature of the work ($r_s = 0.493$). It was found that the organisation seeks to find out and respond to the needs of employees, while at the same time providing opportunities for self-development. Tatar [21] highlighted the opportunities for self-expression and the expression of creative potential in the context of job satisfaction, and it is therefore worth accepting that if an employee is able to successfully manifest his or her creative potential, he or she is not only likely to be appreciated or recognised, but also likely to be promoted, which is reflected in the medium-strength correlation value.

The relationships between the rank variables indicate that good relationship with supervisor is correlated with promotion opportunities ($r_s = 0.492$) and recognition subscale ($r_s = 0.352$). It can be accepted that the significance of this correlation can be considered as medium. Shein [3] highlighted the strengths of the leader, such as simplicity, sincerity, acceptance of mistakes and acceptance of criticism, and researchers have confirmed that they have a strong

influence on the formation of organisational culture. In a team where the willingness of people to share their knowledge and the leader's ability to manage it are dominant, there is usually a harmonious atmosphere and friendly relations between employees, which is also characterised by a weak correlation with the nature of job factor ($r_s = 0.463$). In this case, it can be assumed that each employee may have a different perception of his / her job satisfaction.

This only confirms that job satisfaction is related to people's own attitudes towards aspects that are important to them, such as their relationship with their supervisor, which have a significant impact on their personal, social and working life and their behaviour at work. It can be argued that without feeling stressed an employee will experience a sense of being needed and enjoy his / her work.

Other significant relationships between organisational culture and the job satisfaction subscales are presented below (see Table 3).

Other significant relationships between organisational culture and the job satisfaction subscales are presented below (see Table 3). In order to make sure that the obtained correlation is not a coincidence, the p -value was calculated. The p value indicates whether the correlation is statistically significant. A correlation is statistically significant if the p -value calculated by SPSS is less than 0.05.

The results of the correlation analysis suggest that as the coherence of the structural units of the organisation increases, so do the opportunities for promotion ($r_s = 0.327$; $p = 0.000$). Although the correlation between these factors is weak, employees agree that those who do their job well, *i.e.* who are knowledgeable and familiar with the procedures and norms of the activities they carry out, and who understand their responsibilities, have a chance of being promoted. traditions and customs within the organisation in relation to the external environment ($r_s = 0.325$; $p = 0.000$) and stereotyping in relation to the organisation's goals and vision ($r_s = 0.330$; $p = 0.000$) also correlate weakly, but with a high level of statistical significance, with the possibilities of promotion. The relationship between the constructs can support the opinions of the researchers mentioned in the paper that the values and customs of the organisation influence people's behaviour.

Table 3. The relationship between organizational culture and job satisfaction

Factors	Job satisfaction		
		Promotion opportunities	Nature of job
Organizational culture			
Coherence between the structural units of the organisation	Spearman correlation coefficient value	0.327	-
	p value	0.000	-
The role of teamwork and collaboration in organisational decision-making processes	Spearman correlation coefficient value	-	0.334
	p value	-	0.000
Trends in the manifestation of traditions and customs in organisation in relation to the external environment	Spearman correlation coefficient value	0.325	0.471
	p value	0.000	0.000
Stereotyping in relation to the organisation's values, goals and vision	Spearman correlation coefficient value	0.330	0.332
	p value	0.000	0.000
Trends in internal communication and communication culture	Spearman correlation coefficient value	-	0.313
	p value	-	0.000

The Table 3 shows that traditions and customs within the weak correlation range have the best relationship with the nature of work ($r_s = 0.471$; $p = 0.000$). It can be assumed that being kept informed of the organisation's achievements and performance results makes employees more involved in the organisation's development processes. This shapes not only their inherent customs, based on their practices or opinions, but also their personal job satisfaction, which is expressed in terms of enjoyment and pride in their work, as reflected in the concept of job

satisfaction developed by Locke [20]. A weaker relationship with the nature of work is seen in the correlation between the development of internal communication and culture of communication ($r_s = 0.471$; $p = 0.000$).

To summarise the empirical findings, the statistically significant correlations found between the four job satisfaction subscales and the eight organisational culture factors confirm the relationship between the constructs examined in this paper. There is no doubt that employees come to an organisation with a worldview that is already embedded in the values that underpin their expectations and become part of their identity. The professional and conscious management of employees becomes important when considering an organisation as a place of cultural diversity. Their support can contribute to a better understanding of customer challenges and a willingness to overcome them. Ongoing attention, support from leaders and process improvement also lead to a strong organisational culture, which can undoubtedly be a multiplier for success.

5. Conclusions

A sustainable organisational culture becomes standards of behaviour based on ethical values, allowing employees to develop a professional identity and a positive attitude towards the processes they work in. The analysis of the characteristics of an organisation's culture, which encompasses the domains of leadership and work organisation, careers and recognition, job satisfaction and professional relationship, allows the identification of areas for improvement, thus leading to more effective performance. This is also influenced by indicators of management evaluation, monitoring of employee behaviour and interpretation of values.

The dimensions of job satisfaction have been found to determine employees' attitudes towards their work and the quality of their work. Reflecting a complex of psychological and organisational environmental conditions, this phenomenon is supported by external and internal factors such as subjective perception of processes, motivation, emotional state, self-fulfilment, planning, financial reward, working conditions, schedule, experience, communication. These factors contribute to the employee's subjective assessment of the job and its environment, often based on experience and personal beliefs. Statistically significant correlations were found between the four job satisfaction subscales and the eight sub-scales of organisational culture, which confirms the relationship between the phenomena studied in the paper.

It was found that the positive manifestation of the organisational culture and its influence on the successful development of the organisation, preconditions for creating employee well-being and the possibilities for realising ideas in the organisation, trends and future perspectives in expressing the relationship with the manager, coherence of the structural units of the organisation, role of teamwork and cooperation in the decision-making processes of the organisation, trends in the manifestation of traditions and customs in the organisation in relation to the external environment, stereotyping in relation to the organisation's values, goals and vision, and trends in the development of the internal communication and communication culture correlate with job satisfaction in terms of promotion opportunities, recognition, nature of work and relationships at work.

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Links between Gossip and Employee Demographic Characteristics in Organization: Case of Employee Attitude

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Abstract

The research presents the concept of gossiping inside organizations and substantiates some demographic characteristics' impact on gossiping. The research focuses on statistical data of research participants' age, gender, educational background and tenure. The research methods used for data collection were analysis of scientific literature; written survey using a closed-ended questionnaire. The authors used such data analysis methods as descriptive statistics, comparative analysis. The research data were analysed using statistical methods: Student's *t*-test or ANOVA (respectively when there are 2 samples Student's *t*-test when there are 3 or more samples – ANOVA); Kruskal-Wallis (analogue to ANOVA test). The main results showed that revealed that gossip perception, prevalence, and lack of information are overall similar between men and women and do not differ by gender; however, the difference is noticed while comparing data by age and tenure.

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1. Introduction

Gossips are an integral and inevitable part of many organizations; however, they are poorly understood or perceived, difficult to notice, and even more irregularly researched, in many Lithuanian organizations. The impact of gossips and the ways to manage them are still irrelevant in organizational environment contexts. Ellwardta, et al. [1] argue that gossips are one of the main mechanisms used by employees to strengthen informal relationships inside organizations. The authors prove that gossips become a common feature of social relationships and life inside an organization, they have a strong impact on the change of employees' social perceptions, attitudes, and behaviour, often provoking hostility, manifestations and often helps to cope with the unknown. This is an important socio-psychological phenomenon that is encountered in many situations, so it is not surprising that gossip research has an exceptional history in the field of organizational behaviour and organizational psychology [1].

Analysing the gossiping phenomenon inside organizations, scientists usually address demographic characteristics of the research participants as important variables to make the analysis more comprehensive and of full-scale. Menon and Priyadarshini [2] argue that emotional exhaustion has a negative impact on employee engagement resulting in the decrease of employee engagement and an increase in emotional exhaustion. The authors in their research prove that emotional exhaustion becomes a mediator between the negativity factors (abusive supervision and negative gossips) and employee engagement. Menon and Priyadarshini [2] focused on the research participants' gender, stating that females usually experience a greater effect of abusive supervision and negative gossips on their exhaustion and job engagement.

The research aimed at determining the existing links between the expression of gossips and the demographic characteristics of employees in the organization.

2. The concept of gossips in an organization

According to Himmetoglu, et al. [3] informal communication plays an essential role in an organization and is a major part of organizational communication that has many functions, such as ensuring harmony and collaboration within the organization, enhancing the identity of the organization. In addition, the authors indicate that informal communication helps to disseminate information about the organization more rapidly, as it makes the information more comprehensive to the recipient, thus making tasks and responsibilities easier to perceive and creating a positive work environment. This helps to complete tasks in the organization faster, as well as to solve problems efficiently when formal communication in the organization is insufficient. In addition, to all these functions, informal communication can have some negative consequences, such as means of sabotage of organizational decisions and their implementation, encouraging others to resist organizational change, which reduces the level of adaptation of employees to the environment inside the organization. It is important for managers to recognize and support informal channels to avoid these negative consequences in order to increase the efficiency and effectiveness of the organizational activities [3].

Himmetoglu, et al. [3] argue that formal communication describes an organizational type of communication between participants, and this type is based on rules and orders. However, informal communication is communication between organizational members that is outside the organization's hierarchical structure and chain of command. It is a predetermined type of communication that arises from the social relationships that employees develop with each other and that develops naturally rather than based on rules. Such communication usually takes place in the situations when there is a lack of information during making necessary decisions in the organization. Often employees turn to other colleagues, who may know better about a certain situation, rather than managers. Sometimes employees make decisions based on their experience, they try to advise colleagues on how to solve problems, although it is not obvious that information would really help. The main functions of informal communication focus on socially satisfying needs, resisting monotony, information that cannot be obtained through official channels, reaching and influencing the behaviour of others and establishing and maintaining social relationships; therefore, informal communication and informal relationships can reduce the power of the organization and cause chaos and confusion [3]. This may cause gossiping inside the organization.

According to Rivero [4], gossips that appear in informal communication inside the organization are a mechanism used from a humanistic point of view for employees to understand ambiguity and make sense of what is true. In

addition, gossips push the employees of the organization to the outer limits. The management of the organization initiating changes sometimes does not share the most accurate information with the employees, and this may cause misunderstanding and curiosity among employees, fostering a flood of organizational gossips, since employees lacking additional information in the organization tend to fill it with insufficiently confirmed knowledge obtained from other individuals [4].

O'Connor, et al. [5] state that gossips are mostly of evaluative social language often of a negative nature about individuals. Gossips, on the other hand, can be the transmission of unverified information usually through a weak social network. Generally, gossiping takes place within the group and it usually depends on the rules and procedures inside the group. Gossips, in contrast, exist within groups and spread between them, through weak social channels. Gossiping is usually a great way to spread secrets; it is more effective at spreading scandals or disasters because gossips influence more harmful consequences. The main functions of gossips are to model and create meaning in the context of uncertainty and a lack of accurate information. It is proved by scientific research that mediated by gossips, such situations have a strong influence on prosocial behaviour [5].

The analysis shows that gossiping is like a mechanism that helps the employees of the organization to create informal relationships, and this way of communication affects other employees and the organization itself. Therefore, according to the elements of the content of gossips, the phenomena and consequences related to gossiping are distinguished. The table presents the elements of the content of gossiping in relation to other phenomena and its consequences (see Table 1).

Table 1. Elements of the content of gossiping in relation to other phenomena and its consequences / pathologies

Elements of gossip contents	Description	Related phenomena	Description	Pathologies of gossips	Description
Information	Passing on unverified information to others	Eavesdropping / overhearing	A person's desire to hear what is related to him and his environment	Shame	Moral feeling arising from the moral wrongdoing of a person himself or those close to him
Influence / exposure	Effect of authority on others	Sound	Fluctuation depending on the effectiveness of spreading gossips	Bullying and harassment	Intentional and repeated actions with the aim of offending and hurting others caused by a person with psychological or physical superiority
Social relation	Interdependence	Fake news	Inauthentic information	Mobbing	Targeted and systematic long-term repeated behaviour; most common goal is to humiliate, make fun of a member, reduce his/her value, distance or even separate a member from colleagues
Social control	Adherence to social norms and values	Hearsay / stories	Unverified information	Splitting / fragmentation / group disintegration	Division of people into groups or communities
Social comparison	How people compare themselves with others	Reputation	Public opinion about someone's characteristics	Malice / spitefulness / malevolence	Secretly enjoying another person's misfortune
Stereotypes	Functioning image in the public mind, often based on false knowledge, but supported by traditions and not changed	Myth and legend	Collective creation of the imagination	Concealment / destruction	Desire to destroy another person
Entertainment	Form of entertainment designed to keep the attention of other participants	Morality and ethics	Authoritative norms of human behaviour	Sabotage	Deliberate failure to fulfil certain obligations or secret resistance to implement some decision inside organizations
Culture	Social system that guarantees the creation of values, use and transfer	Social contagion	Uncontrolled gossips spreading like a disease	Scandal	Outrage that goes outside the organization

Defence	Desire to defend oneself against various accusations	Theory of mind	Necessary to understand others, but it would be understood that it is not necessary to do what others do	Uncontrolled exposure to social media	Negative reputation of the organization was created
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Source: O'Connor, et al. [5]

These features of gossip functions and contents and related phenomena can turn into highly important consequences not only for a single person, but for any organization as well. Scientists prove that gossiping usually emerge because of job dissatisfaction with a purpose to destroy another person, and this can lead to various consequences inside the organization such as fragmentation, harassment, mobbing, malice, *etc.* [5]. This may create an environment for scandals, sabotages that may affect organizations' reputation and usually ends with shame.

Difonzo and Bordia [6] state that the spread of gossips inside organizations is an extremely dynamic process. A key element of gossip management according to the authors is a prompt intervention and agility to manage gossips. In social environments, information can be communicated in any way and the role of informal communication especially the role of gossips is an important part of this. Interestingly, gossips are derivative in a sense because information is obtained from the third parties. The authors argue that sometimes we raise the question if there is the importance of the source itself or the importance of what kind of information we receive. In many cases, the source or origin of the message is not easily found or identified. As a result, expectably gossips can be understood as an excerpt or fragment of some organizational change and usually the main message or main theme / situation remains largely intact or unaffected as the information is communicated [6].

Angraeni and Michael [7] pay attention to the idea that spreading gossips in organizations may be related to personal traits as willingness to influence other people to behave according to what the manipulator desires. The authors in their research emphasize that usually *“individuals with psychopathic tendencies often exhibit characteristics such as being manipulative, impulsive, shows no signs of empathy and behave in an anti-social manner”*. According to Angraeni and Michael [7] such individuals with an expressed need for drama tends to be manipulative in nature; naturally, they have a greater intention to spread gossips inside organizations.

The accepted public understanding in society is that gossips are unsupported by authority or evidence, and beyond the question of authenticity or truth. This shows that gossips are hypotheses (unconfirmed suggestions) through which the message is transmitted in such a way that the recipient does not really know whether to believe the information provided or not. This is often considered as hearsays, popularly said *“idle talk or nothing”*. Although gossips are based on unsubstantiated information, they can also be as an unknown fact. It is also conceivable that the initiation of a gossip may be based on some elements of truth, however vague or indirectly proved. Fact or truth is hard to be determined, you never know if something is a *“white lie”* or a *“half-truth”* because gossiping is based on unauthenticated information; therefore, this can be positive or negative in the content of the message and thus have an impact on those who hear it [5].

According to the research findings of Difonzo and Bordia [6] on gossips in the organization, a hypothetical model of the emergence of gossips was drawn (see Fig. 1).

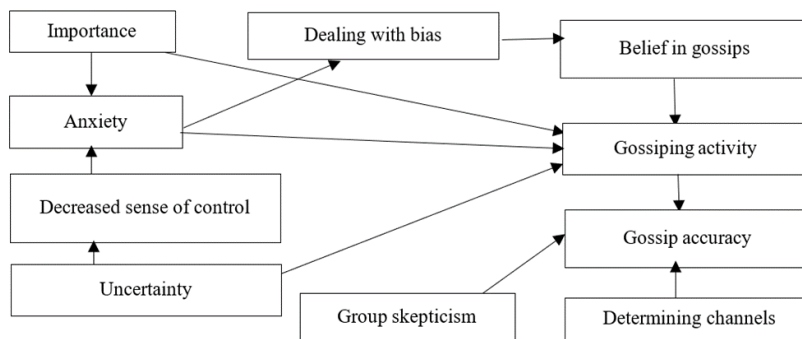


Fig. 1. Hypothetical model of the emergence of gossips [6]

The hypothetical model of gossip emergence consists of ten elements of gossips, such as: importance (*e.g.*, an important event in the organization), anxiety (the listener's psychological state), agreement with bias (the listener's agreement with the group's bias), belief in gossips (factors corresponding to the listener's prejudice), gossiping activity (spread of gossips), accuracy of gossips (periodicity that determines the accuracy of gossips), decreased sense of control (favourable situation for the emergence of gossips), uncertainty (experienced feeling of uncertainty), group scepticism (distrust and doubt of groups), determining channels (use of established communication channels).

In addition, Sudhir [8] defines gossips as unverified and instrumentally meaningful informational statements that emerge in a context of ambiguity, danger, or potential threat to help people understand and manage risk. The author states that such gossips may be accepted as a frequent result in an uncertain situation, when there is a lack of available information, because if employees do not find necessary information or receives incomplete information, they will always look for sources where they can find more about the event or situation that interests them. Often to appear more competent or smarter than others in an organization, a person presents facts that are often unverified and may be misleading. It is obvious that any form of unconfirmed information can cause challenges for the personnel (human resource) manager. The second table provides a list of potential challenges human resource managers' face when dealing with gossips (see Table 2).

Table 2. Challenges human resource managers face when dealing with gossips inside the organization

Characteristics	Description
Collective sense	Gossips are sources of collective sense among employees in uncertain situations. This sense-making can often undermine management's goals for managing certain situations, especially in the context of organizational change.
Distrust and panic	Gossips often lead to mistrust and anxiety among employees. Gossips related to layoffs, acquisitions, job security, <i>etc.</i> often create an environment of mistrust. Such situations often lead to fear, uncertainty, panic, and a general decrease in employee motivation.
Promoting group biases	Gossips often occur in contexts that justify group bias and group culture. The scientific literature proves that such gossips often highlight the biases and subcultures of the employee group. Gossips cause inconvenience to other groups, as well as threaten the main organizational activities; however, reinforce some shared beliefs in the company.
Organizational citizenship	Organizational citizenship is voluntary citizenship expressed by employees towards the company. Gossips often destroy such civil behaviour because gossiping directly affects employees' trust in the organization.
Fantasy and dreams	Many gossips are the result of people's fantasies and dreams. Often in highly uncertain, ambiguous, or anxious situations, people dream and create situations and stories they believe to be real. Such beliefs are spread as gossips, which become a major problem area for human resource managers who have to deal with these stories.

Source: Sudhir [8]

All the above signs are consequences of spreading gossips in organizations and these consequences must be addressed by human resource managers. Most gossips in organizations are relatively harmless and ends naturally over time, but some are potentially harmful. Gossips that arise and spread in the context of organizational change, ambiguous environmental situations, or crises are the most significant because may cause significant damage to an organization. Such cases show that human resource managers should be prepared to manage such miscommunications.

In general, many scientific sources highlight various characteristics of gossips inside organizations; they focus on the characteristics, reasons of emergence, and even consequences that may be vital for the organizational existence. Therefore, it is right to assume that gossips are like a mechanism that helps employees to create informal relationships; however, this way of communication affects other employees, their groups, and the organization itself.

3. Research methodology

The research data was collected using such methods as analysis of scientific literature and written survey using a closed-ended questionnaire. The data was analysed using such data analysis methods as descriptive statistics, comparative analysis. The data were analysed using statistical methods: student's *t*-test or ANOVA (respectively when there are 2 samples Student's *t*-test when there are 3 or more samples – ANOVA); Kruskal-Wallis *chi*-squared test (analogue to ANOVA test). The Shapiro-Wilk test was used to check the normality of the scales; since the analysed data sample is not large ($n < 200$ questionnaires) (see Table 3).

The results of the normality test showed that the gossip function scale satisfies the assumption of normality, as $p = 0.071 > 0.05$. Meanwhile, all other scale data do not satisfy the assumptions of normality, as $p < 0.05$. This verifies that parametric statistical criteria will be used when comparing the expression of gossip functions between demographic groups. In cases where the averages of gossip function scale will be compared in two independent groups, the Student's t -test is applied. Meanwhile, in cases where the means of gossip function scale will be compared in more than two independent groups, the ANOVA criterion (F value in one way ANOVA) will be applied in order to show if the variance between the means of two populations is significantly different. The non-parametric Mann-Whitney (W) (when comparing 2 grades) and Kruskal-Wallis chi -squared ($KW\ chi^2$) (when comparing more than 2 grades) tests will be used to compare the means of all other scales between groups.

Table 3. Results of data normality of the research scales

Unit	Scales	Shapiro-Wilk criterion value	p -value
Gossip expression in organization	Concept of gossips	0.10	0.012
	Reasons of lack of information	0.13	0.000
	Functions of gossips	0.08	0.071
	Elements of gossip expression	0.09	0.030

The data was grouped into scales (concept of gossips, reasons of lack of information, functions of gossips, and elements of gossip expression) and analysed comparing the research results according to such demographic characteristics as gender, age, educational background, and work experience.

102 research participants were engaged in the study. The research sample were divided by gender: 63.7 % of women and 36.3 % of men (see Table 4).

Table 4. Distribution of research participants in demographic groups

Characteristics	Rate	Percent, %
Gender	Men	37
	Women	65
Age	18–25 years	12
	26–33 years	32
	34–41 years	35
	42–49 years	17
	50 ≤ years	6
Education	Secondary	5
	Vocational	10
	Higher education (college)	24
	Higher education (university)	62
Work experience	Other (specify)	1
	1–10 years	42
	10–20 years	40
	20–30 ≤ years	20

Analysing the research sample by age, the majority of the research sample were people of 34–41 years old (33.7 %) and people of 26–33 years old (31.4 %). Analysing the distribution of the research sample according to the education, most of the research participants have obtained a higher university education (60.8 %). Comparing the distribution of the research sample according to work experience, most research participants have obtained 1–10 years of work experience (41.2 %) (see Table 3). Considering the fact that “other” education was indicated by only 1 subject, the data of this participant was removed from the research sample. This was done due to the proportionality of the analysed demographic groups.

4. Analysis and interpretation of research results

The study aims to determine what trends in the expression of gossips are and how strong the expression of gossips is prevalent among different demographic groups of employees. This data determines whether the relationships between the expression of gossips and employee demographic characteristics exist. Also, the analysis of whether different groups of employees are affected by different factors promoting the emergence of gossips. For that purpose, the estimates of the scales measuring the expression of gossips were compared in groups of men and women, employees of different ages and work experience, and the statistical reliability of the average of the scales was assessed. Also, the average of the scales of the gossip expression factors were calculated in different groups of employees and the statistical significance of the differences in the averages was assessed.

First, the research data revealed whether the concept and expression of gossips in the organization is sensed and perceived differently between men and women (see Table 5).

Table 5. Comparison of gossip expression in organization between men and women

Scale	Gender	Average \pm SN	Statistical test
Concept of gossips	Women	3.63 \pm 0.5	$W = 1\ 363; p = 0.103 > 0.05$
	Men	3.41 \pm 0.6	
Functions of gossips	Women	3.21 \pm 0.7	$t = -1.1; p = 0.258 > 0.05$
	Men	3.37 \pm 0.7	
Elements of gossip expression	Women	3.47 \pm 0.5	$W = 1\ 171.5; p = 0.808 > 0.05$
	Men	3.46 \pm 0.6	
Reasons for lack of information	Women	3.28 \pm 0.8	$W = 1\ 237; p = 0.473 > 0.05$
	Men	3.24 \pm 0.6	

The data in the female group shows the average of the scales of concept of gossips (3.63 points), expression of gossips (3.47 points) and lack of information (3.28 points) are higher than in the male group (respectively, 3.41 points, 3.46 points and 3.24 points). Meanwhile, the average of the gossip function scale is higher in the male group (3.37 points) than in the female group (3.21 points). To determine whether, indeed, women perceive gossips better than men, whether women are more likely than men to use gossips in their social environment to achieve a goal, whether the emergence of gossips due to lack of information is more typical for women than for men, the statistical significance of the average of the scales was tested. Based on the results of the statistical tests, we can state that the expression of gossips is not related to the gender of the research participants (all scales $p > 0.05$, see Table 4). This means that men and women perceive gossips in a similar way, for similar reasons and use gossips in their environment with similar frequency.

Further, the research data (see Table 6) revealed whether the expression of gossips in the organization is perceived differently among the employees of different age. The focus was to determine whether there is a greater use of gossips among younger employees than among older ones. Also, there was an intention to compare whether younger employees use gossips more often due to limited information than older employees.

The data in the table 6 shows that 26–33-year-olds perceive gossips best (3.62), while 42–49-year-old employees perceive worst (3.29). The applied Kruskal-Wallis χ^2 criterion determined that the level of perception of gossips is not statistically significantly related to the age of employees, as $p = 0.125 > 0.05$. This means that employees of different age have an equally aware of what a gossip is.

The data revealed that, for some reasons gossips are mostly used by the youngest employees (18–25 years old, 3.56), while older employees have the lowest expression of the functions of gossips (42–49 years old, 3.09). In this case, the applied ANOVA criterion determined that the level of gossip functions is not statistically significantly related to the age of employees, as $p = 0.175 > 0.05$. This means that employees of different age use gossips for similar purposes.

In addition, analysis of the expression of gossips among employees of different age, showed that gossips are most often observed, namely, among the youngest (18–25 years old, 3.59) employees, and the least among older employees (26–33 years old, 3.43 and 34–41 years old, 3.43).

The Kruskal-Wallis F test was applied to determine whether the expression of gossips is indeed higher among younger employees. Based on the results, the level of expression of gossips is not statistically significantly related to the age of employees, as $p = 0.899 > 0.05$. This means that employees of different age tend to spread gossips in similar frequency.

Meanwhile, analysing the expressiveness of the lack of information spread by gossips among employees of different age, the data shows that the average of the scale differ statistically significantly, because of the Kruskal-Wallis chi^2 criterion, $p = 0.04 < 0.05$.

Based on the average of the scale, the analysis revealed that the spreading of gossips, due to the lack of information, is mostly spread by the oldest employees ($50 \leq$ years old, 3.79), and the least likely to spread gossips, due to lack of information, are younger employees (26–33 years old, 3.13 and 34–41 years old, 3.13) (see Table 6).

Table 6. Comparison of gossip expression in organization among different age research participants

Scales	Age	Average \pm SN	Statistical test
Concept of gossips	18–25 years	3.54 \pm 0.4	$KW\ chi^2 = 7.2; p = 0.125 > 0.05$
	26–33 years	3.62 \pm 0.5	
	34–41 years	3.6 \pm 0.6	
	42–49 years	3.29 \pm 0.5	
	50 \leq years	3.75 \pm 0.5	
Functions of gossips	18–25 years	3.56 \pm 0.4	$F = 1.7; p = 0.175 > 0.05$
	26–33 years	3.22 \pm 0.8	
	34–41 years	3.29 \pm 0.7	
	42–49 years	3.09 \pm 0.6	
	50 \leq years	3.32 \pm 0.3	
Elements of gossip expression	18–25 years	3.59 \pm 0.5	$KW\ chi^2 = 1.1; p = 0.899 > 0.05$
	26–33 years	3.43 \pm 0.6	
	34–41 years	3.47 \pm 0.5	
	42–49 years	3.47 \pm 0.5	
	50 \leq years	3.54 \pm 0.3	
Reasons for lack of information	18–25 years	3.7 \pm 0.5	$KW\ chi^2 = 10; p = 0.04 < 0.05$
	26–33 years	3.13 \pm 0.8	
	34–41 years	3.13 \pm 0.7	
	42–49 years	3.28 \pm 0.8	
	50 \leq years	3.79 \pm 0.3	

The research data revealed whether the expression of gossips is unevenly spread among the employees of the organization with different education. The focus was to determine whether the employees with lower education are more inclined to spread gossips, better understand gossips and more often use gossips to achieve their goals in comparison to employees with higher education (see Table 7).

The research data show (see Table 7) that employees with higher education (college) have the best perception of gossips (3.66), while employees with a university education have the worst perception of gossips (3.51). The applied Kruskal-Wallis chi^2 criterion demonstrate that the differences in the average of scales are not statistically significant, as $p = 0.76 > 0.05$.

This shows that there is no reason to believe that the understanding of gossips is related to the education of employees, and it can be stated that gossips are generally perceived in a similar way among employees with different educational background.

When evaluating the estimates of the scale of the functions of gossips, the data indicates that the estimates of the scale differ statistically significantly in the groups of employees with different educational background because of the ANOVA criterion, $p = 0.004 < 0.05$. This explains that the intention to spread gossips, due to different incentives, is related to employees' education. It proves that employees with secondary education are the most likely to spread gossips due to their incentives (3.71). Meanwhile, it is the least relevant for employees with higher university education (3.09).

Table 7. Comparison of gossip expression in organization among research participants with different educational background

Scale	Education	Average \pm SN	Statistical test
Concept of gossips	Higher education (college)	3.66 \pm 0.4	$KW \chi^2 = 1.2; p = 0.76 > 0.05$
	Higher education (university)	3.51 \pm 0.6	
	Vocational education	3.56 \pm 0.4	
	Secondary education	3.57 \pm 0.3	
Functions of gossips	Higher education (college)	3.52 \pm 0.7	$F = 6.5; p = 0.004 < 0.05$
	Higher education (university)	3.09 \pm 0.7	
	Vocational education	3.54 \pm 0.5	
	Secondary education	3.71 \pm 0.3	
Elements of gossip expression	Higher education (college)	3.61 \pm 0.5	$KW \chi^2 = 5.8; p = 0.124 > 0.05$
	Higher education (university)	3.36 \pm 0.6	
	Vocational education	3.65 \pm 0.3	
	Secondary education	3.67 \pm 0.4	
Reasons for lack of information	Higher education (college)	3.53 \pm 0.7	$KW \chi^2 = 6; p = 0.112 > 0.05$
	Higher education (university)	3.13 \pm 0.8	
	Vocational education	3.49 \pm 0.4	
	Secondary education	3.29 \pm 0.2	

Analysing the expression of gossip elements among employees with different educational backgrounds, a similar situation is observed as when analysing the intention to spread gossips, due to different incentives. The average of the scale of expression of gossips is the highest in the group of employees with secondary education (3.67), and the lowest result is in the group of employees with higher university education (3.36 points). Nevertheless, there is no reason to believe that the desire to spread gossips for the purpose of personal expression is significantly related to the employee's education. The applied Kruksal-Wallis χ^2 criterion showed that the differences in the average of the scales are not statistically significant ($p = 0.124 > 0.05$). It can be argued that self-realization or self-expression through gossip-dissemination is similarly prevalent among workers with different backgrounds.

Analysing the expressiveness of the lack of information and rumours among employees with different educations, the data shows that the differences in the average of the scale are not statistically significant, as the Kruskal-Wallis χ^2 criterion, $p = 0.12 > 0.05$ (see Table 6). This means that similar reasons of lack of information is experienced in all research groups and there is no reason to believe that employees with higher education receive less information, so they are more likely to spread gossips than employees with lower education.

The research data revealed that the expression of gossips and their concept is related to work experience of the employees. The focus was to determine whether employees with different working experience have different understanding of gossip concept, and if they spread gossips differently due to lack of self-expression and information. Table 8 shows that all the averages of the scales are the highest among the employees with the shortest tenure and the lowest is among the employees with the longest tenure.

The data analysis shows that the average of the scale of the concept of gossips is the highest in the group with 1–10 years of work experience (3.65), and the lowest average is in the group with 21–30 years of experience (3.42). The

applied Kruksal-Wallis chi^2 criterion prove that the differences in the averages of the scales are not statistically significant, as $p = 0.214 > 0.05$. This suggests that there is no reason to believe that gossip awareness is related to employee tenure. This means that gossips are perceived similarly among employees with different years of work experience.

Table 8. Comparison of gossip expression in organization among research participants with different work experience

Scale	Work experience	Average \pm SN	Statistical test
Concept of gossips	1–10 years	3.65 \pm 0.4	$KW\ chi^2 = 3.1; p = 0.214 > 0.05$
	11–20 years	3.53 \pm 0.6	
	21–30 \leq years	3.42 \pm 0.5	
Functions of gossips	1–10 years	3.51 \pm 0.6	$F = 9.3; p = 0 < 0.05$
	11–20 years	3.23 \pm 0.7	
	21–30 \leq years	2.86 \pm 0.5	
Elements of gossip expression	1–10 years	3.62 \pm 0.6	$KW\ chi^2 = 10.3; p = 0.006 < 0.05$
	11–20 years	3.42 \pm 0.5	
	21–30 \leq years	3.23 \pm 0.4	
Reasons for lack of information	1–10 years	3.41 \pm 0.7	$KW\ chi^2 = 2.7; p = 0.26 > 0.05$
	11–20 years	3.19 \pm 0.7	
	21–30 \leq years	3.13 \pm 0.8	

The comparison of the average of the scale of the functions of gossips shows that the results differ statistically significantly among employees with different work experience, as of the ANOVA criterion, $p = 0.001 < 0.05$. This suggests that the intention to spread gossips is related to employees' tenure due to different incentives. The data prove that the average of the scale of the functions of rumours is the highest among the employees with the shortest time of work experience (3.51), and the lowest is among the employees with the longest time of work experience (2.86). Explicitly, the employees with the shortest time of work experience are the most likely to spread gossips because of their incentives. Meanwhile, the employees with the longest time of work experience (21–30 \leq years) do not have strong intentions for gossip spreading.

Analysing the expression of gossip among employees with different work experience shows that the results differ statistically significantly, as Kruksal-Wallis chi^2 , $p = 0.006 < 0.05$. Obviously, the willingness to spread gossips for the purpose of personal expression or actualization is significantly related to the employee's length of work experience. Employees with the shortest tenure (1–10 years) tend to express themselves the most when spreading gossips (3.62), and this is least important for employees with the longest work experience (21–30 years, 3.23). Certainly, the more experienced an employee is, the lower his desire to spread gossips, due to self-actualization or self-expression, and vice versa, less experienced employees are characterized by a greater desire to spread gossips, due to self-actualization or self-expression.

Comparing the reasons of the lack of information and gossiping among employees with different work experience, the research data shows the differences in the scale and the averages are not statistically significant, as the Kruskal-Wallis chi^2 criterion, $p = 0.26 > 0.05$ (see Table 8). This means that similar reasons of lack of information, in the context of gossip spreading, is indicated in all study groups, regardless of the employee's work experience.

In general, the perception, prevalence, expression, and lack of information aspect of gossip-spreading and dissemination are of very similar manner between men and women. There is no reason to believe that women working in organizations are more likely to spread gossips than men. Meanwhile, the data showed that there is a significant relationship between the reasons of lack of information and the age of the employees. The most lack of information is experienced by the youngest and oldest employees. These assumptions in these groups create the conditions for gossips. The study also revealed that the intention to spread gossips, due to different incentives, is significantly related to the employees' education. Naturally, the employees with a secondary education are most likely to spread gossips

due to their incentives, while this is least relevant for the employees with a higher education (university). Evaluating the impact of work experience length on gossip spreading, the data showed that more intensive gossips dissemination and expression are more common among employees with the shortest tenure, while the least intensive gossips are among the employees with the longest work experience.

The further stage of the research focused on the analysis of the negative impact of gossips on the employees indicating:

1. Whether women have a greater negative effect of gossips than men.
2. Whether younger employees are less negatively affected by gossips spreading than older employees.
3. Whether the length of work experience and negative gossips impact are significantly related.

For that purpose, the average of scale indicating impact and consequences of gossips in the organization were calculated in different demographic groups and the statistical significance of the differences in the averages was tested (see Table 9).

Table 9. Expressiveness of impact and consequences of gossips in organization in different demographic groups

Characteristics	Group	Average \pm SN	Statistical test	
Impact and consequences of gossips	Gender	Women	3.42 \pm 0.6	$t = 0.4; p = 0.687 > 0.05$
		Men	3.36 \pm 0.7	
	Age	18–25 years	3.46 \pm 0.6	$F = 0.4; p = 0.781 > 0.05$
		26–33 years	3.3 \pm 0.7	
		34–41 years	3.5 \pm 0.6	
		42–49 years	3.36 \pm 0.5	
		50 \leq years	3.37 \pm 0.7	
	Education	Higher education (college)	3.44 \pm 0.6	$F = 0.9; p = 0.452 > 0.05$
		Higher education (university)	3.38 \pm 0.6	
		Vocational education	3.2 \pm 0.6	
		Secondary education	3.74 \pm 0.6	
	Work experience	1–10 years	3.45 \pm 0.7	$F = 0.2; p = 0.813 > 0.05$
11–20 years		3.36 \pm 0.6		
20–30 \leq years		3.38 \pm 0.5		

Based on the averages of the scales, the data in the female group showed that the impact and consequences of gossips is higher (3.42) than in the male group (3.36). Nevertheless, the applied Student's *t*-criterion revealed that the negative consequences of gossips and their level in the organization do not differ statistically significantly between men and women. This means that both men and women experience similar negative consequences and effects from gossiping.

Analysing the expressiveness of the impact and consequences of gossips among employees of different age groups, the data showed that 34–41-year-old employees have the highest negative estimate of the gossip impact scale (3.5), while the lowest average is recorded for 26–33-year-old employees (3.3). The application of the ANOVA criterion the data revealed that the negative consequences of gossips and their level in the organization among employees of different age groups differ insignificantly ($p = 0.781 > 0.05$). It proves that the negative impact of gossips are similarly prevalent among employees of different ages.

Analysing the expressiveness of the impact and consequences of gossips among employees with different educational background, the data showed that the lowest negative consequences of gossips are experienced by employees with the lowest (professional) education (3.2), and the highest negative impact of gossips is experienced among employees with secondary education (3.74). However, the statistical significance of the differences in the scale average, using the ANOVA criterion, showed that the negative consequences of gossips and their expressiveness among employees with different educational backgrounds are similar ($p = 0.452 > 0.05$).

Examining the effect of the length of work experience factor on the negative impact of gossips, the data showed that employees with the shortest time of work experience usually experience the greatest negative impact of gossips and its consequences (3.45). Meanwhile, the lowest negative impact of gossips is recorded among employees with

11–20 years of work experience (3.36). The statistical significance of the differences in the scale average, using the ANOVA criterion, proved that work experience does not have a significant impact on the greater negative consequences of gossips ($p = 0.813 > 0.05$) (see Table 9). This means that employees with different tenures generally experience similar negative consequences and effects from gossip dissemination.

5. Conclusions

1. The scientific literature analysis indicated that gossips in organizations are characterized as an informal form of communication between colleagues, it uses social language (evaluative) about individuals and is usually of a negative nature, which reduces trust and loyalty of employees in organizations. Gossips are revealed as the transmission of unverified information that creates ambiguity, influences employee perceptions, and affects employee attitudes and behaviour. The content of gossips consists of a lack of certain information, which employees seek to fill by associating it with important events, the desire to have impact, thereby creating their own advantage, creating social relationships, and matching the group's culture and biases. The main elements of gossip expression are coping with the unknown, lack of control, social exchange, opposition to the organization, striving for power, and competition.
2. The research results revealed that gossip perception, prevalence, and lack of information are overall similar between men and women. Gossip expression does not differ by gender. The lack of information is mostly a characteristic of the oldest and youngest employees, who usually lack additional information in the organization, and they are most inclined to fill in the missing information with insufficiently confirmed information received from other persons and gossips. Self-actualization and the tendency to spread gossips about personal motivations are common among employees who have obtained a secondary education, and this is least relevant among employees who have obtained a higher university education. Employees with the shortest tenure are most likely to spread gossips, due to their own incentives, it can be argued that the desire to spread gossips for self-expression is significantly related to the employee's length of work experience.

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The Challenges of Industry 4.0 Revolution for Employees of Different Generations

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Abstract

The article examines the Industry 4.0 Revolution period not only as a challenge for modern industry, but also for the labour market. In the recent period, the lack of skills and qualifications of employees has become a problematic aspect for organizations, and for employees, the problem is coping with constant challenges, stress and anxiety. It should be noted that in the age of digital technologies, special attention is paid to the ability of employees to solve problems and make rational decisions, act creatively, analytical abilities, critical and logical thinking, the ability to collaborate and work in a team, technical and digital skills. How employees are prepared to respond to these demands often depends on which generation of humanity is represented according to the era. The article analyses two generations – X and Y, considering the fact that they occupy the majority of employees in the modern market. Quantitative research and the questionnaire survey method were chosen for the empirical research, and the factor analysis method was used for the analysis of research data.

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Keywords: Industry 4.0 Revolution; Industry 4.0 requirements for the labour market; Employees of different generations (X and Y).

1. Introduction

The huge changes are taking place in the world now. They are caused by the 4th and the emerging 5th Industrial Revolutions. Based on the scale and speed of industries, geographies, labour markets, mobility, data and knowledge sharing, and technological progress, these revolutions themselves become a unique and exponential phenomenon

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affecting every organization. Recently, organizations have been changing their business strategies in response to the challenges posed by digitization, growing international competition, a changing labour force and an increasingly complex work environment. However, we have to admit that it is becoming more and more difficult for employees to survive these changes. Organizations are constantly placing greater demands on employees. It does not matter whether the change initiative is in the form of restructuring, reduction of financial resources, introduction of new technology, merging or acquisition. According to Parent, Lovelace [1], in such a permanent state, employees have a considerable burden – to adapt to the changing environment, to meet the increasingly complex requirements of the labour market, in order to succeed in the professional field.

Study of the topic and problematic. In order to adapt to the computerization and digitization innovations developing at an exponential speed in organizations, such skills of employees as management of unforeseen situations, critical and logical thinking, interpersonal relationships, the ability to act creatively, cooperate and work in a team become significant. The acceptance of these challenges is individual for each person – some look at them with optimism and value it as a new experience, while others – face uncontrollable stress and look at changes with scepticism. How a person is ready to accept the challenges of the Industry 4.0 Revolution often depends on which generation of humanity he represents according to the era. In the scientific literature, both foreign and Lithuanian researchers examine the challenges facing representatives of the labour market that arise during the Industry 4.0 Revolution [2, 3, 4, 5, 6]. According to Oh, Reeves [7], generational differences are also widely discussed in the popular press, books, academic conferences or publications, workplaces, etc., because most successful organizations striving for a productive workforce, financial viability, competitiveness and organizational sustainability have already realized that employee diversity is the best way to take advantage of the benefits of different generations of employees. However, in this context, there is a lack of more detailed research that would identify trends and / or problems in the ability of employees of different generations to respond to the challenges posed by the Industry 4.0 Revolution. This presupposes the problematic question raised in this article: what challenges does the Industry 4.0 Revolution pose to the labour market and how can employees of different generations meet the demands?

In order to identify the challenges of the Industry 4.0 Revolution posed to the participants of the labour market and to assess the ability of employees of different generations to respond to them, the methods of scientific literature analysis, questionnaire survey and factor analysis were used.

2. Conceptual background

2.1. The challenges of the Industry 4.0 Revolution and the demands placed on employees

One of the most extensive describers of the 4th Industrial Revolution was Klaus Schwab, the founder of the World Economic Forum. In his book “The Fourth Industrial Revolution”, he stated that the term “Industry 4.0” is intended to define and analyse the impact of emerging technologies on almost the entire spectrum of human development at the beginning of the 21st century, from changing social norms and national political attitudes to economic development and international relationship. The concept of the Fourth Industrial Revolution confirms that technological changes are the engine of transformation relevant for all industries and groups of society [8]. According to Brettel, Friederichsen, Keller and Rosenberg [9] the term “Industry 4.0” is generally appropriate to name as a technological revolution that will affect the behaviour and lifestyle of all mankind.

According to Nunes, Pereira, Alves [3], the implementation of the concept of “Industry 4.0” includes various technological challenges that have a significant impact on the manufacturing industry and is a difficult mission that will take ten years or more to complete. For organizations, the most challenging aspect is the lack of skills and qualifications of employees, and for employees, coping with constant challenges, stress and anxiety. In order to make the changes of the Industry 4.0 Revolution not a threat, but an opportunity for employees, it is important to understand the requirements of this period for the participants of the labour market. The scientific literature [3, 5, 10] presents the demands placed on employees, which become significant not only for employees but also for organizations during the Fourth Revolution.

The first group of requirements includes personal qualities of employees, such as inquisitiveness, flexibility, responsibility. According to the researchers [5, 6, 11, 12], in the future these listed qualities will become especially important for everyone who wants to stay in the labour market. Inquisitiveness, or curiosity as scientists call it, has

long been mentioned as an important cognitive aspect, motivational state, or personality trait. The results of a study conducted by Aalto University show that inquisitiveness will become one of the most necessary personal qualities in the “Industry 4.0” period. During the survey, the respondents described this characteristic as the ability to “step out of the comfort zone” that facilitates communication in a real, multidisciplinary work environment. Curious individuals who are interested in many fields are able to develop systematic thinking skills that help them see the big picture. Flexibility in the context of Industry 4.0 emerges as the ability to mix and match ideas, systems, processes, materials and data to create new products and ideas. The analytical feature provides the opportunity to simultaneously process several concepts from different fields, which is especially useful in this period, when it is no longer enough to be interested in only one discipline. Interdisciplinary skills are now seen as valuable because they allow employees to apply holistic and interdisciplinary knowledge to a specific work area. Scientist Egcasa [13] claims that this feature could be named as an ability to adapt to the period of Industry 4.0. Nedzinskas, Bankauskienė [14], defines responsibility as one of the right traits and associates this concept with such as “conscience”, “diligence”, “dignity”. Responsible employees with the increasing influence of digital technologies are able to take responsibility not only for their personal actions, but also for encouraging bold, decisive actions, setting aggressive goals and redeploying resources quickly.

Another group of challenges posed by the Industry 4.0 Revolution to workers is related to their ability to solve problems and make rational decisions [15, 16, 17]. Problem solving involves higher-order thinking skills such as visualizing, relating, abstracting, understanding, reasoning, analysing, synthesizing, summarizing, each of which requires “control” and “coordination”. In order for this process to be effective and the problem to be solved, it is important to make rational decisions that are based on reason and logic [18]. The importance of these abilities in the future is also noted by the authors Lan, Chen [19], who claim that in the Fourth Industrial Revolution, robots will eventually replace human work using smart technologies. However, neither robots nor software can solve problems, so human problem-solving and rational decision-making skills become necessary.

The researchers representing the third group [11, 12, 20, 21] identify the ability of employees to act creatively as one of the necessary abilities in the Fourth Industrial Revolution. The ability to act creatively refers to “thinking out of the box” or coming up with unique ways to create new outcomes [13]. When adopting new technologies, employees need to be creative in order to take advantage of the changes. Robots can increase the efficiency and ease of work, but they still cannot be as creative as humans. According to Grzybowska, Łupicka [20], this ability is becoming the main requirement of 21st century employers.

Researchers [6, 15, 17, 22] highlight the analytical abilities, critical and logical thinking of employees. Critical thinking is very important in solving problems because it enables individuals to reason effectively, ask clear and targeted questions, categorize and evaluate alternative perspectives, and critically reflect on choices. Meanwhile, analytical thinking skills help to gather information, formulate, visualize and solve complex problems in the rapidly changing information age. Individuals with logical thinking easily make rational decisions, solve problems, provide rational ideas and nurture values in future companies [19].

The fifth group of requirements for employees in the “Industry 4.0” period is based on the scientific works of the authors [21, 23], which highlight the ability of employees to cooperate and work in a team. Nowadays, teamwork is almost one of the main factors determining the success of a company, and research shows that collaboration is the most significant core of Industry 4.0 challenges, thanks to which productivity is increased [24]. The benefits of teamwork are noted by Chowdhury, Murzi [25], who claim that the decline in physical, manual and basic cognitive skills increases the demand for technological and social skills in industry. With the increasing variety of digital devices, individuals with this ability are able to communicate effectively in different work environments and successfully establish relationships with colleagues, directing their actions towards achieving a common goal.

According to researchers [6, 16, 26], the last group of requirements for employees of the Industry 4.0 Revolution consists of technical and digital skills of employees. The wave of digital transformation is rapidly changing industrial production processes. The Internet of Things, cloud computing and other innovations are making it easier to manage software, so digital and technical skills are becoming an integral part of these processes. The latter capabilities include state-of-the-art knowledge, technical, media and coding skills, process understanding, and IT security awareness [17], and these skills enable employees to know, trust, maintain, and manage automated devices used in production [26].

2.2. Characteristics of employees of different generations (X and Y)

In recent decades, academics, business leaders, and human resource professionals have focused much attention on gender and racial diversity in the workforce, but today's challenge comes from the diverse needs, expectations, and ages of employees. And this is normal, according to Bucuta [27], heterogeneity is one of the most important characteristics of generations. In other words, members of each generation have unique desires, experiences, expectations, values, lifestyles, as well as specific demographic characteristics that affect their entire lives. For the first time in the history of societal development, the workforce consists of four / five distinct generations working side by side, and their differences are one of the biggest challenges facing the modern organization. This paper analyses two generations – X and Y, taking into account the fact that they occupy the majority of the workforce in the modern market. The representatives of the baby boom generation and Generation Z were chosen not to be examined, because the first generation is already withdrawing from the labour market, and the second is just entering it.

Characteristics of Generation X employees. After analysing the generation theory and systematizing the data, it can be stated that in the scientific literature [28, 29, 30, 31, 32] the following characteristics of Generation X are usually singled out: openness to change, technological literacy, self-confidence, non-loyalty, individuality / autonomy / independence. In the following paper, the mentioned characteristics are examined in more detail.

The characteristic of openness to change, according to Berkup [31], is one of the greatest advantages of Generation X in the business world. Generation X employees hold the view that changes in professional life are necessary and demand the same attitude from the employer. If their expectations are not met, individuals often start looking for a new job. Therefore, in order to maintain Generation X employees and their interest, employers must initiate continuous changes.

Generation X was born into a world where technology was just beginning to be developed, but this generation has been more successful than the Traditional and Baby Boomer generations that preceded it, even though Generation X is currently less tech-savvy than the generations that followed [31]. However, Generation X employees lack experience with certain new technologies that have developed later, such as interactive or social media [33].

The pursuit of work-life balance is especially important to Generation X, and even if Generation X representatives were financially secure, it can be assumed that they would still pursue a career. However, this career would be one that could be reconciled with family values. Generation X laid the foundation for the view that work is no longer the only goal in life, as aspects such as family and leisure together with it become important. Generation X representatives are not loyal to organizations because they tend to be loyal to individuals rather than to companies, because they believe that organizations today are unable to instil a sense of security in employees that would lead to loyalty. Stanišauskienė [34] confirms this attitude of representatives of the Generation X and states that the individuals of the analysed generation are sceptical about commitment and dedication to one organization, therefore they are constantly looking for other earning opportunities by taking risks and working for themselves. This attitude was formed by the characteristic individuality of the representatives of Generation X.

Generation X is attributed to those born between 1961 and 1981, when families of representatives of this generation were characterized by parental divorce and women's desire to obtain higher education. Having spent a large amount of time alone and without parental supervision, members of this generation have found support from their peers who have had similar experiences. For this reason, individuals of the analysed generation became "independent". "Lock" children who learned to take care of themselves at an early age developed the ability to find new solutions to difficult problems. These circumstances were also determined by the fact that this generation was characterized by financial instability, which shaped their personalities as individual and independent, seeking to manage their careers, set goals or even work hours.

Characteristics of Generation Y employees. Generation Y is often referred to by scientists [31, 34, 35, 36, 37] as the "millennial" generation, which, according to scientific sources, is characterized by such characteristics as self-confidence and high self-esteem, motivation / optimism / decisiveness / drive / high expectations / achievement orientation, technological knowledge, team skills and ability to learn quickly. We will present the mentioned characteristics of Generation Y in more detail.

Like no other, the Generation Y is almost the most pampered, which led to greater self-confidence of the representatives of this generation [34]. People with high self-confidence, unlike others, know the importance of

building relationships and like to make new acquaintances in order to receive and exchange ideas. It is this quality of theirs that makes them likeable because they are always willing to participate in the conversation. Confident Generation Y representatives like to express their ideas in front of others because they are emotionally safe to take constructive criticism and reject suggestions. These individuals have the courage to stick to their decision despite many objections to their ideas if they are convinced that they are doing everything right, but they have the humility to admit their mistakes and learn from them when they fail. This objective view of both success and failure is what makes a confident person a respectable person.

Millennials' outlook on life and the future is often described as extremely optimistic. Millennials can be described as a confident and optimistic bunch who feel they can take action even when things are bad [38]. During Srinivasan's [39] research, it was found that Generation Y is characterized by such motivational factors as responsibility, independence, achievements, manager's attentiveness, shorter working hours and experience. The motivation of Generation Y representatives is highly dependent on good teamwork with colleagues. It's no wonder that Generation Y has high expectations for themselves, as their technological sophistication allows members of this generation to see the world as a smaller and more diverse environment where almost everything is at their fingertips.

Millennials stand out from past generations because they are the first generation to be born and raised with computers, using the latest technology and social media (such as *Facebook*, *Twitter*, *Blogger*, *MySpace*, etc.). Representatives of Generation Y are technologically literate and savvy, and technology has had a significant impact on their generation's behaviour, way of thinking, and learning process [40]. Technology-savvy people are able to use the available information and apply it when needed, are able to understand the systems applied in the organization, monitor them and, if necessary, adjust them. It is no exception that technology-savvy people are able to quickly learn and apply newly emerging technological innovations.

According to Bencsik, Horváth-Csikós, Juhász [41], the attitude towards teamwork differs in all generations – teamwork is seen as a natural environment (Generation X), belief in the success of joint efforts (Generation Y) or even as a virtual relationship (Generation Z). From the point of view of Generation Y, this generation is characterized by teamwork and cooperation skills, and representatives of this generation trust team members and feel motivation and personal satisfaction at work. Also, able to express thoughts clearly during group discussion and better understand the contribution of team members, spread optimism, focusing on positive results and new ideas.

Millennials are the focus of attention when analysing learning abilities. This choice is determined by the fact that, due to the changing environment and its huge interaction with technology, Generation Y, unlike others, thinks and processes information faster. The sheer volume of visual, auditory and verbal information in today's world forces Millennials to react and filter the information they receive faster. Generation Y, who grew up with fast-paced technology, do not have much patience for long and traditional teaching methods and find conventional learning methods boring, but they excel at multitasking (e.g., watching TV, talking on the phone while learning at the same time and surfing the Internet).

3. An empirical study of the ability of employees of different generations to respond to the requirements of the Industry 4.0 period

3.1. Research methodology and organization

The methodological approaches of the research are based on:

1. The concept of "Industry 4.0" [3, 5, 9, 15], which is based on the digitization of business and the creation of new business models. According to this concept, the most challenging aspect is the lack of skills and qualifications of employees, and for employees, coping with constant challenges, stress and anxiety.
2. The theory of generations [37, 40, 42, 43], which is based on the values, experiences, expectations, lifestyles, etc. of different generations, which is determined by the changes in economic, political and social events taking place in the society at that time.

In order to assess the ability of employees of different generations to respond to the challenges of the Industry 4.0 Revolution, a quantitative study was organized and a questionnaire survey method was used. Considering the fact that

the research covered two different generations of employees, the research used direct representative sampling, when the research participants were selected according to one essential criterion – age (the subjects had to belong to the X or Y generation). The research sample consisted of 200 technological companies operating in the north-eastern region of Lithuania employees, of which 89 belonged to Generation Y and 111 belonged to Generation X.

Descriptive statistics and factorial analysis methods were applied to the analysis of research data. The latter method aimed to reduce the number of primary variables of the study and thus create scales that would summarize sets of characterizing sets. During the analysis, the method of principal components and VARIMAX rotation were used, which allows to identify the interdependence of characteristics and the strength of the relationship between them. The suitability of the variables was highlighted by the KMO coefficient, the value of which is closer to one, the matrix is more suitable. When analysing the data, the descriptive dispersion of the factor was evaluated, when the interpretable factor was treated as one that explained at least 5–10 % of the dispersion. During the factor analysis, the main weights (L) of the components were used and the Cronbach α coefficient was calculated, which indicated the psychometric suitability of the research variables. The acceptable range of this indicator included $0.5 < \alpha < 1$. SPSS 23.0 (Statistical Package for Social Sciences) statistical data analysis package was used to summarize the results of the questionnaire survey.

3.2. Results and discussion

When assessing the ability of employees of different generations to respond to the challenges of the Industry 4.0 Revolution, the method of factor analysis helped to determine the number of factors and the variables included in the factors in each studied case (X and Y generations) without losing essential information. Table 1 summarizes the results of the analysis in terms of each factor (ability group) and its component variables (statements) from the point of view of different generations (X and Y).

Table 1. Assessment of the ability of employees of different generations (X and Y) to respond to the challenges of the Industry 4.0 Revolution

Decision making skills	
Generation X	Abilities: to clarify the circumstances, collect all possible information and identify the level of complexity of the problem before making a decision. Challenge: to solve problems and make decisions independently.
Generation Y	Abilities: to solve problems and make decisions independently. Challenge: to find creative and original alternatives to solving problems.
Ability to act creatively	
Generation X	Abilities: to think “outside the box”, to consider how to apply old working methods in the modern organizational environment. Challenge: to look at every situation from all sides and notice what colleagues do not notice.
Generation Y	Abilities: constantly interested and open to innovation. Challenge: to generate original and unusual ideas.
The ability to collaborate	
Generation X	Abilities: to create a sense of community by collaborating with colleagues. Challenge: to make contact with different people in different situations.
Generation Y	Abilities: to be open and tolerant to other cultures or viewpoints, to cooperate with people with different values and worldviews. Challenge: to create a sense of community by collaborating with colleagues.
Teamwork skills	
Generation X	Abilities: to create a culture of teamwork among the employees of the organization. Challenge: to motivate other team members and inspire a sense of self-confidence.
Generation Y	Abilities: to realize their professional and social needs thanks to the teamwork in the organization. Challenge: to create a culture of teamwork among the employees of the organization.
Technical and digital skills	
Generation X	Abilities: quickly adapt to newly introduced technologies in the organization. Challenge: prioritizing technologies for communicating.
Generation Y	Abilities: to use different digital devices and share information with their help. Challenge: to deepen knowledge in the field of technological literacy.

Decision making skills. The results of the factor analysis reveal that before making decisions, representatives of Generation X first seek to clarify the circumstances, collect all possible information and identify the level of complexity of the problem ($L = 0.848$). This shows that employees of this generation are more inclined to make

rational decisions than to use psychological decision-making tactics. Paradoxically, although in the scientific literature [29, 30, 44] the authors describe this generation as extremely independent individuals, the results of the study reveal the opposite situation – according to Generation X employees, they are challenged to solve problems and make decisions independently ($L = 0.538$). Meanwhile, individuals representing Generation Y boldly describe themselves as independent individuals who are able to independently solve problems and make decisions related not only to their direct work, but also in work situations or organizational issues (e.g., when and how to perform certain tasks) ($L = 0.824$). However, according to the opinions of representatives of this generation, they find it difficult to find creative and original alternatives for solving problems (for example, what they could replace exhausted resources with, how to use information technology, etc.) ($L = 0.627$).

Ability to act creatively. According to the forecasts of the World Economic Forum “Deloitte” and “McKinsey”, creativity will become one of the most valued skills in 2022 because it cannot be automated. Therefore, the demand for the ability to act creatively and solve problems will increase by approximately 14 % in Europe and 19 % in the US. Research data show that the respondents representing Generation X consider themselves to be able to think “outside the box”, so they often easily come up with how to apply old work methods in the modern organizational environment ($L = 0.836$). However, as one of the biggest challenges arising in the period of Industry 4.0, they single out the ability to look at every situation from all sides and notice something that their colleagues do not notice, which would help them offer completely new, interesting and innovative solutions ($L = 0.596$). Authors Durucan, Çiftçi, Pulat, Soysal [37], examining different generations, note that for Generation Y, innovation is like a kind of learning opportunity that helps them improve their personal and professional experience. This is also confirmed by the representatives of Generation Y who participated in the study. They say that they are constantly interested in and open to innovations (e.g., the latest scientific research, scientific achievements, discoveries, new products, etc.) ($L = 0.959$), although they often have difficulties in generating original and unusual ideas ($L = 0.679$).

The ability to collaborate. In the period of Industry 4.0, the need for collaboration emerges as one of the most necessary abilities in today’s organization, because individuals possessing this ability, with the increasing variety of digital devices, are able to communicate effectively in different work environments and successfully establish relationships with colleagues, directing their actions to achieve a common goal [25]. Generation X respondents believe that they are very good at creating a sense of community when collaborating with colleagues (e.g., sharing ideas and knowledge that could be implemented together with a team, etc.) ($L = 0.818$), but they face difficulties establishing contact with different people in various situations (e.g., new partners, suppliers, colleagues, etc.) ($L = 0.702$). Meanwhile, representatives of Generation Y describe themselves as open and tolerant of other cultures or viewpoints, who are able to cooperate with persons with different values and worldviews ($L = 0.859$), but they find it difficult to cooperate with colleagues and create a sense of community ($L = 0.667$). The results of a study conducted by “ManpowerGroup” show that even 80 % Generation Y respondents want to work with a large team of people. This allows us to assume that Generation Y employees are more interested in the process of cooperation with different personalities or their groups than in caring for the community.

Teamwork skills. The authors Bencsik, Horváth-Csikós, Juhász [41] note that employees of Generation X value teamwork as a natural working environment, so it is not surprising that the representatives of this generation identify teamwork as a successful means of joint activity, which strives to create a culture of teamwork among the employees of the organization (e.g., sharing information, exchanging opinions and knowledge, solving emerging problems together) ($L = 0.875$). It is worth mentioning that representatives of this generation are helpful and friendly personalities, but according to their opinions, a big challenge for them is to motivate other team members and inspire a sense of self-confidence, which helps to achieve the team’s goals ($L = 0.563$). Researchers Jayashree, Malarvizhi, Reza, Baskiran [45] who studied the characteristics of Generation Y say that representatives of this generation are often undeservedly named as individuals who are not ready to work in a team. The results of the factor analysis show that the representatives of this generation confirm the latter statement, as one of the challenges is the ability to create a culture of teamwork among the employees of the organization ($L = 0.603$). Representatives of Generation Y have a different perception of teamwork and its benefits, which they perfectly associate with the opportunity to realize their professional and social needs ($L = 0.906$). This confirms once again that for Generation Y employees, teamwork and cooperation is a significant tool for self-realization and professional development, rather than searching and creating fellowship within the organization.

Technical and digital skills. Generation X in the professional environment can be described as technologically competent and prone to change [28], as it was historically the first generation to use the various features of the technologies available at the time to simplify their work tasks. The latter tendency is also confirmed by the results of the study, because according to the opinion of Generation X representatives, they are able to adapt quickly to newly introduced technologies in the organization (*e.g.*, new IT programs or systems, devices, etc.) ($L = 0.819$). However, in the period of Industry 4.0, the increasingly popular communication with colleagues using technology (*e.g.*, e-mail, conference calls, cloud computing, social networks) is identified by employees of this generation as a challenge and they prefer face-to-face communication ($L = 0.713$). Generation Y entered the professional world already possessing technological skills, so the respondents of the survey identify the ability to use various digital devices (*e.g.*, computers, smartphones, tablets) and share information with their help as one of their strengths ($L = 0.862$). According to authors Howe, Strauss [40], representatives of the Millennial Generation are not only more technologically savvy, but also look at innovations much more positively than the older generation. However, according to the research data, it becomes a big challenge for representatives of Generation Y to deepen their knowledge in the field of technological literacy ($L = 0.630$). Such an attitude of the research participants can be assessed in two ways – the excessive confidence of the representatives of this generation in their abilities in the field of technology. Generation Y, on the other hand, has high expectations because their technological sophistication allows members of this generation to see the world as a smaller environment where almost everything is at their fingertips.

4. Conclusions and recommendations

The Fourth Industrial Revolution is a new technological development phase that emphasizes changes in human behaviour and lifestyle, including robotics, digitization, the Internet of Things, artificial intelligence, and more. In the age of digital technologies, special attention is paid to the ability of employees to solve problems and make rational decisions, act creatively, analytical skills, critical and logical thinking, the ability to collaborate and work in a team, technical and digital skills. In scientific sources, Generation X is described as the generation whose representatives attach great importance to changes and new processes initiated in their professional activities. Also, individuals belonging to this generation are characterized by disloyalty to the organization, openness to change, the pursuit of work-life balance, technological literacy, independence and individuality. Meanwhile, representatives of Generation Y stand out for their confidence, high self-esteem, technological knowledge and motivation.

After evaluating the ability of employees of different generations to respond to the challenges of the Industry 4.0 Revolution in the technological business companies operating in the north-eastern region of Lithuania, it can be said that Generation X employees are characterized by rational decision-making, while Generation Y is perfectly capable of solving problems and making decisions independently; The creativity of Generation X representatives is expressed in their ability to think “outside the box” and apply old work methods in the modern organizational environment, while Generation Y is constantly interested and open to innovation; Members of Generation X are not alien to the sense of commonality when cooperating with colleagues, while Generation Y employees are open and tolerant of other cultures or viewpoints, able to collaborate with persons with different values and worldviews; The goal of Generation X is to create a culture of teamwork among the employees of the organization, while representatives of the Millennium Generation realize their professional and social needs thanks to teamwork in the organization; Generation X employees are able to adapt quickly to new technologies introduced in the organization, while Generation Y, who grew up with technology, are excellent at using various digital devices and sharing information with their help.

Based on the results of the research, it is recommended for company managers to: encourage Generation X employees to use digital devices for communication instead of using face-to-face communication (*e.g.*, transfer information through digital devices, use technological equipment for conversations); initiate teamwork more often, involving as many Generation Y employees as possible, who would have the opportunity to collaborate with representatives of other generations and improve teamwork skills (*e.g.*, delegating to solve organizational problems and make team decisions).

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Microclimate Creation Competencies: Case of Senior Nurses

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Abstract

The objective of the article was to reveal the microclimate creation competencies of senior nurses. The article analyses the concepts of competencies and microclimate, highlights the competencies of creating a positive microclimate, paying special attention to the aspect of senior nurses. Finally, the article presents the results of the research on the influence of senior nurses' competencies on the microclimate of nursing workers. This analysis revealed that the positivity of the created microclimate in the organization depends on the professional and personal competence of senior nurses. During the research, it was possible to establish a statistically significant relationship between four components of professional competence of senior nurses and a good psychological atmosphere in the organization. Also the study revealed a negative correlation between the factor of positive human relations, revealing employees leaving work due to psychological disagreements with the manager and / or colleagues, and several components of professional competence of senior nurses.

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Keywords: Microclimate; Microclimate creation; Competencies; Senior nurses.

1. Introduction

The influence of the microclimate on the performance of employees has always been a relevant issue from the point of view of both the organization and the interests of its employees. The results of the activities of the organization providing medical services and the nursing staff working in them, whose direct manager is the senior nurse, are no exception. This professional, according to Gunawan, Aunguroch, Nazliansyah, and Sukarn [13], plays an important

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managerial role that can affect the success of health care facilities' service delivery. The senior nurse is an essential person of the nursing staff in developing and maintaining the entire (or separately specific nursing department) nursing staff and responsibility, ensuring the nursing mission applied in daily practice. A senior nurse is defined as a charge nurse responsible for the management of a unit(s) or area(s) of a healthcare facility.

According to recent research, work microclimate is the most influential factor with the greatest impact on nursing outcomes, quality of care and clients' perception of safety (Gea-Caballero et al. [10]).

Some researchers (Suprpto [31], Iyayi, Kadiri [17], etc.) associate the microclimate of nursing workers with job satisfaction. Job satisfaction can be identified as the accumulation of the results of the interaction that continuously takes place between the person and the work and the environment in which he works over a period. Therefore, job characteristics and organizational work microclimate are factors that are very closely related to job satisfaction and will ultimately affect work results or achievements. Lack of individual (commitment, motivation, and work ethic) and organizational (compensation, human resource development, leadership, supervision, and working conditions) factors can determine nursing outcomes (Suprpto [31]). It should be noted that the results of the study conducted by Ibrahim and Habieb [16] showed that more than half of the studied general practice nurses considered their work microclimate to be average.

Recent studies show that health care organizations with a better microclimate have lower patient mortality due to complications, higher patient satisfaction and shorter hospital stays (Suprpto [31]). Lee et al. [20] points out that in order to achieve high work results, nursing staff who are constantly working under tension and stress must feel a positive, supportive, reliable, non-judgmental and encouraging atmosphere at work. Such an atmosphere should be created by the manager, *i.e.* senior nurse. It is obvious that he must have the necessary competences for this. The question arises, what competencies should a senior nurse have, aiming to create a positive microclimate for nursing staff? It should be noted that there is a lack of research in this aspect. Most often, in their works, various researchers analyse the concept of competence of senior nurses. For example, Menegaz [22] reveals the competence structure of senior nurses in their work, Sapra [28], Akgerman and Sonmez [1] analyse the activities of senior nurses, Solbakken, Bond and Kassen [29] study the activities of managing the nursing process and organizing work in the work of a senior nurse.

Based on the presented facts, this article solves a scientific problem by formulating a problematic question: What are the microclimate creation competencies of senior nurses?

2. Theoretical framework

2.1. The concept of microclimate

According to Goliroshan et al. [12], employees' microclimate is the quality of the organization's employee safety assurance in the work environment, which determines the employee's safe psychological and physical state, effective teamwork and work results.

Suprpto [31] states that the microclimate is a psychological quality of the organization, which reflects the overall state of well-being, emotions, and states of the employees in the organization. Job characteristics and organizational microclimate are factors that are very closely related to job satisfaction and commitment. According to Iyayi and Kadiri [17], it can be said that microclimate is related to job satisfaction, which includes factors such as pay, supervision, workload, working conditions, interpersonal relationships, work schedule, achievement at work, feedback, job security, job value, taking responsibility and cooperation between the team and other departments. Microclimate in health care facilities is defined as the organizational characteristics of the workplace that facilitate or constrain professional nursing practice.

According to Figueroa, Bowling, Cummings, Laporte and Cohn [9], it is necessary to promote the autonomy, control and responsibility of each nursing staff worker so that he feels autonomous, needed and important. According to scientists, this significantly contributes to a good work microclimate. Another microclimate factor is various changes in health care institutions. According to Glette et al. [11], such changes may increase pressures and place new demands on health care facilities such as nursing homes and other health care facilities, including the need for nursing staff to perform more complex nursing tasks and face increased workloads, especially administrative workloads, so together this may affect the working microclimate. Various studies substantiate the fact that occupational stress and

emotional exhaustion, which influence employees' job satisfaction and, accordingly, the microclimate, are interrelated, and a non-toxic environment is particularly important for the personal health of nursing staff (Wang et al. [35]).

The research conducted by Iyayi and Kadiri [17] substantiates that the stress of nursing staff in the workplace is mostly caused by such factors as emotionally toxic work environment, insufficient support from management or heads of departments / departments, ambiguity of the role of employees and role conflict, poor social support at work and overwork. This means that the worse the nursing worker feels in his place, the more stress he experiences, the worse the microclimate will be.

Allah et al. [2] distinguish the influence of stress due to the lack of available personnel on the microclimate of the nursing staff – work stress, especially in the field of nursing and care, becomes the main problem of nurses in general practice, because then there is excessive pressure, workload, job insecurity is not ensured, the level of job satisfaction falls, internal conflicts and lack of autonomy develop.

Ibrahim and Habieb [16] reveal that the microclimate of the nursing staff is influenced by the possibilities of raising competencies related to patient care and care. A better nursing microclimate is observed in those nursing staff departments where senior nurses and management create a work environment that motivates staff members to improve, increases nurses' autonomy, and provides nurses with opportunities for professional development.

Other scientific studies prove that there is a strong correlation between nursing staff and their professional development – the more nursing staff increase their competences, the more often they notice not only better results in patient care, but also a decrease in employee dissatisfaction with work, burnout and staff instability, and the whole it determines the general microclimate of the nursing staff.

According to Akgerman and Sonmez [5], the microclimate of nursing workers is formed by such factors as: job satisfaction, workplace stability, internal motivation, human resource practices, supervisor satisfaction and organizational culture.

Another reason affecting the microclimate is interpersonal conflicts. Often the term has a negative connotation, as individual interests are perceived to conflict with the work environment. Workplace conflict is invariably associated with lower quality patient care, higher negative affect, higher levels of employee burnout, and higher direct or indirect costs of care, which, according to Allah et al. [2], strongly worsens the microclimate. Interpersonal conflicts in the work environment can greatly affect the quality of work and life of an employee, regardless of his age, length of service, position, nature, income, workplace, education, professional recognition, personal relationships, etc., so the support of management or department heads is very important to there would be no reason for such conflicts to arise between employees (Wang et al. [35]).

According to recent research, work microclimate is the most influential factor with the greatest impact on nursing outcomes, quality of care and clients' perception of safety (Gea-Caballero et al. [10]). Senior nurses on hospital wards face many challenges in their leadership role along with increased workload. Since senior nurses are the main person of professional communication between top management and clinical staff, their role is very important for the success of health care facilities, but they need certain competencies that also affect the microclimate of the staff they lead (Nazari et al. [23]):

- the analysis of scientific literature allows us to distinguish the following features of a positive organizational microclimate;
- good psychological atmosphere (Brousseau and Blais [6]; Gunawan et al. [19]; Allah et al. [2]; Akgerman and Sonmez [1]);
- effective internal communication (Ibrahim and Habieb [16], Allah et al. [2]);
- positive interpersonal relationships (Pedrosa, Sousa, Valentim, Antunes, [24]; Figueroa et al. [9]; Allah et al. [2]; Wang et al. [35]).

2.2. *The concept of competence and microclimate creation competencies*

Collectively, competence is the functional adequacy and ability to integrate knowledge and skills, attitudes, and values into specific contextual practice situations (Allvin et al. [3]). Competence is a measurable pattern of knowledge, skills, abilities, behaviors, motives, and other traits that a person needs to successfully perform work or professional

functions (Tikrity [32]). The main elements of competencies, according to the author – personal characteristics, attitude, value motives, etc. are less visible, but they mainly direct and control the employee, and some of these elements, such as skills, knowledge and qualifications, are easy to observe and measure.

According to Gunawan et al. [13], microclimate creation competencies of senior nurses can be defined as a combination of leadership (staff task management) and clinical focus (nursing care management). Competencies are the basic ability required to perform nursing duties based on acquired education. Competencies in the field of healthcare services are defined as the interaction of knowledge, skills, and abilities to perform the functions of an intended role in practice (Figuroa et al. [9]). In other words, it is a combination of skills, knowledge, attitudes, values, and abilities that contribute to effective results.

Vatnøy et al. [33] define senior nurse competence as the continued ability of a senior nurse to integrate and apply the knowledge, skills, judgments, and personal attributes required to perform a role safely and ethically in a given setting. It is like an interaction between the individual characteristics and behaviour of the senior nurse, *i.e.* who is a nurse and what does he do.

Professional competences are the conscious and appropriate use of technical and communication skills, knowledge, clinical reasoning, emotions, and values in the clinical environment (Goliroshan et al. [12]).

Microclimate development competencies of senior nurses are defined as the application of managerial knowledge, attitudes and skills of senior nurses in specific management functions that are designed to monitor and evaluate staff behaviour (Gunawan et al. [12]). As shown by Solbakken et al. [28] study, all senior nurses have expressed a desire and need to build relationships with their nursing staff based on trust, personal support and two-way dialogue in order to manage the managerial and nursing changes brought about by the new reforms. Hamouda and Farghaly [15] analysing the microclimate creation competencies of senior nurses, emphasize the concept of leadership. Researchers say that many leadership traits and skills have been embedded in the nursing landscape these days, forcing healthcare institutions to develop new ways of leading and managing. Senior nurses can not only lead effectively, but also create a favourable microclimate

Gunawan et al. [14] in a study involving 300 nurses identified seven most important aspects that presuppose the expression of microclimate creation competencies of head nurses:

1. Leadership.
2. Facilitation of spiritual care.
3. Training and upgrading of personnel.
4. Information technology management.
5. Personal leadership.
6. Financial management.
7. Improvement of quality care and nursing.

Ibrahim and Habieb [16] identified 5 recommendations that would help nurses create a better microclimate for nursing staff:

1. It is necessary to maintain the work environment by providing the department with the appropriate nursing staff and resources, teamwork, so that nursing care does not deteriorate.
2. It is necessary to form a clear communication and feedback system about the mistakes made by the nursing staff in order to avoid repeating them and to avoid negative reactions of patients, nursing staff and the work results of the health care institution.
3. It is necessary to achieve standards for the transfer and exchange of information in order to avoid the lack of important information that determines the safety of patients.
4. It is necessary to take care of continuous training programs for the nursing staff, to improve their work performance and the possibilities of nursing and care of patients, including the management of health care.
5. Continuously monitor and evaluate aspects of the nurses' patient care (nursing and care) culture to create a healthy and safe environment for patients.

In conclusion, it can be said that the competencies of senior nurses in creating a microclimate depend on their personal and professional abilities. Therefore, it can be concluded that microclimate creation competencies are not only focused on what senior nurses can do during work, but also on their personal traits and characteristics.

The microclimate creation competencies of senior nurses, which determine the microclimate of employees, can be internal (personal qualities and values) and external (attitude, knowledge, abilities and skills), which are revealed when organizing the work of subordinates. In this regard, the senior nurse must be a leader, usually demonstrating high self-confidence and self-esteem, feeling like a guide, which can inspire the nursing staff under his leadership to share a common vision and convince them of the possibility of achieving the set goals, which may be greater than they expect.

The findings of a study conducted by Akgerman and Sonmez [1] show that senior nurses who are confident and competent (*i.e.* share information and knowledge with their nursing staff, do not create tension in the work environment, care and support their staff) provided a positive work environment, inspired trust nursing staff and were excellent team leaders.

The microclimate of nurses is negatively affected by stress at work, which is caused by work overload, fiscal responsibility, insufficient human resources, and internal personal experiences. Although senior nurses must be leaders in their team, it is also necessary to maintain empathy in such work, which supports a good work microclimate. Reducing stress, strengthening the behaviour of nurses (*i.e.* not overly empathizing with the subordinate's situation), facilitating the making of desired decisions are the main strategies related to the creation of a favourable microclimate. And all this, according to Gunawan et al. [14], must be initiated by the manager-leader.

Sapra [28] observed during the research that empathy and compassion leads to better communication skills, warmth and friendliness among team members, which largely leads to the ability to create a good microclimate. According to Rushdy and Ahmed [27], in order to create and maintain a positive microclimate, senior nurses need to be able to help and support the people they care for and their staff as much as possible, and should also show commitment and empathy. A senior nurse with leadership qualities does better because he understands and feels how he can adapt his approach to reach and know how to approach not only the patient but also the subordinate.

In order to create a favourable microclimate, it is especially important that senior nurses are able to adequately assess themselves and their actions. This means not only knowing one's personal strengths and weaknesses, but also the capacity for internal motivation and self-control. According to Hamouda and Farghaly [15], when creating a microclimate, senior nurses should seek feedback, seek useful information about shortcomings, learn from criticism and be able to change attitudes and behaviour. Adequate self-esteem, according to Aloustani et al. [4]. By noticing and admitting his mistakes, such a manager spreads justice in the personnel environment, respect for the individual qualities of other persons, combining honesty and justice towards everyone, which, in turn, contributes to the creation of a positive microclimate.

Although the analysed scientific literature states that senior nurses prefer open and honest communication and respect when creating a favourable microclimate, according to Peng, Liu and Zeng [25] caring is also important. Researchers say that, in most cases, the manager-leader of a health care facility has the nature and desire to genuinely care for his nursing staff, which, along with open communication and mutual respect, improves the microclimate.

It is concluded that the senior nurse must be the unequivocally the leader of his team and use all his positive personal qualities that can create and maintain a good microclimate. Indeed, due to the responsibilities, the stressful work environment and the specific conditions of the hospital, a close, friendly atmosphere is necessary for the nursing staff, fully dependent on nurses, staff, doctors and patients.

Balanced work environment (non-toxic and flexible), management based on humanism, humour at work and the presence of humanistic values (caring and understanding manifested by active listening, being here and now with each other, helping colleagues in problem situations, encouraging employees and colleagues, building relationships of trust, recognition of work done, involving the manager in decisions) can have a positive influence on the microclimate and job satisfaction in the entire health care institution. Brousseau and Blais [6].

Caprio et al. [7] found a significant result that in the health care system, one of the main values to be fostered is respect in order to create a friendly working environment for nursing staff. Thus, an important value in creating a microclimate is respect.

Individual attention, which is manifested by showing personal respect to nursing staff, showing them special attention, treating them as unique individuals and recognizing the individual needs of each of them, creates a good microclimate (Krepia et al. [19]).

According to Arbabisarjou et al. [5], the formation of a positive microclimate is very important. The better communication, teamwork and leadership skills, etc. skills, the microclimate at work becomes better (Menegaz and Fontes [22]).

Communication or communication skills are needed to be able to hear and understand the interlocutor. Effective communication is considered one of the main responsibilities of a nurse and is an essential and significant component of nursing in nursing practice. The communication skills of the head nurse or any member of the nursing staff are essential not only for the successful outcome of individual care for each patient, but also for creating a positive environment with courtesy, kindness and sincerity. Good relationships among nursing staff improve the quality of knowledge exchange, they also create richer mutual interaction, which improves the microclimate of the staff (Kirca and Bademli's [18]).

In summary, it can be said that creating the microclimate of the head nurse in a health care institution include the following core competencies:

- professional competence;
- personal competence.

According to studies by various researchers (Goliroshan et al. [13]; Krepia et al. [19]; Gunawan et al. [19]; Vehko et al. [34]; Vatnøy et al. [33]; Sterner et al. [30]; Dewald and Reddy [8]) it can be said that professional competence consists of the following elements:

- ability to formulate tasks clearly, using a wide vocabulary; level of professional knowledge;
- ability to solve any professional task independently or with the help of a team;
- continuous improvement of professional skills and demanding the same from subordinates;
- constant motivation of subordinates to work as best as possible;
- the requirement of disciplined behaviour at work for all employees;
- logical thinking; management of stressful situations.

After analysing the scientific literature (Gunawan et al. [13]; Brousseau and Blais [6]; Lin et al. [21]; Zahrah et al. 2019; Riklikienė [26]; Sapra [28]; Gunawan et al. [14]; Solbakken et al. [29]; Aloustani et al. [4]) it can be said that personal competence consists of the following elements:

- ability to mediate in conflict resolution;
- altruism towards subordinates and patients;
- high level of empathy;
- interest in social situations in the team;
- ability not to delegate problem solving to others;
- initiating changes for a better result;
- ability to always communicate pleasantly with patients;
- emotional stability when communicating with subordinates;
- ability to manage oneself in stressful situations.

3. Research methodology

3.1. Research aim and participants

In order to achieve the goal of the research - to reveal the connection between the competencies of senior nurses and a positive microclimate – 265 respondents were interviewed. According to the survey data, the majority of people aged 30–49 participated in the study. (55 %) and 50–63 years old. (38 %), respondents with higher non-university education (70 %) and 6–10 years of work experience in a medical care institution (56 %).

3.2. Research methods

In order to investigate the relationship between the competencies of senior nurses and a positive microclimate, a research strategy was chosen – a quantitative study, a questionnaire survey method, using a closed-type research instrument, a questionnaire. The questionnaire consisted of two main diagnostic blocks: 1) Expression of senior nurses' microclimate creation competencies (professional and personal) and 2) Features of a positive organizational microclimate: good psychological atmosphere, effective internal communication, positive human relation. SPSS Statistics software was used for data analysis, applying descriptive statistics. Factor correlation analysis using Spearman's correlation coefficient (r) and significance level $p < 0.01$ were used to determine relationships.

4. Research results

During the study, a statistically significant relationship was established between four indicators of professional competence of senior nurses and a good psychological atmosphere in the organization. From the point of view of nursing staff, the more senior nurses, *i.e.* their managers improve their professional skills and encourage their subordinates to do the same, the better the psychological well-being of nursing workers, which depends on the relationship with the manager (Spearman correlation coefficient $r = 0.820$, significance level $p < 0.01$). The relationship between the good psychological well-being of nursing staff and the professional competence of senior nurses is also revealed through the aspect of motivation. The results of the correlational analysis suggest that the stronger the manager constantly motivates employees in various ways to work as well as possible, the better the psychological well-being of the respondents ($r = 0.961$, $p < 0.01$). The relationship between the professional competence of senior nurses and a good psychological atmosphere in the organization was identified in two more areas:

1. The correlation coefficient showed that the more senior nurses formulate tasks more clearly, using a wide vocabulary, the more satisfied nursing workers are with working in this organization ($r = 0.866$, $p < 0.01$).
2. The better senior nurses manage stressful situations, the more nursing staff are convinced that the psychological atmosphere in this organization is positive, encouraging them to work efficiently ($r = 0.958$, $p < 0.01$).

The study found a strong positive correlation between two indicators of personal competence of senior nurses. The established correlation allows us to say that the more managers control themselves in stressful situations, the more the good psychological well-being of nursing workers depends on the relationship with the manager ($r = 0.824$, $p < 0.01$) and the more positive the psychological atmosphere in the organization is, according to the respondents, which encourages more efficient work ($r = 0.793$, $p < 0.01$). A good psychological atmosphere in the organization also depends on the manager's well-being: the more energy senior nurses have that they use to perform their daily work, the more positive the psychological atmosphere in the organization is, according to the research results, encouraging more efficient work ($r = 0.754$, $p < 0.01$).

The study also found a strong negative correlation between two indicators of personal competence of senior nurses: The established correlation allows us to say that the more managers mediate in conflict resolution, the less nursing workers are burdened by work stress ($r = -0.820$, $p < 0.01$) and the more often managers express empathy towards subordinates, the less psychological harassment and mobbing situations occur in this organization, according to the respondents ($r = -0.758$, $p < 0.01$).

Based on the obtained results, it can be stated that the personal competence of senior nurses is strongly correlated with the manifestation of a good psychological atmosphere in the organization, *i.e.* the available personal competence of senior nurses allows to create a good psychological competence and, at the same time, a positive microclimate in the organization.

There is a strong positive correlation between senior nurses' personal competence and positive interpersonal relationships. It turned out that the higher the level of empathy a leader has towards subordinates, the better he communicates with subordinates, *i.e.* does not single out "favorites", communicates with all subordinates equally, *i.e.* there is a relationship between these two variables: the level of empathy determines the quality of communication ($r = 0.750$, $p < 0.01$). The more often the manager resolves conflicts without delegating problem solving to others, the

better the communication with subordinates, *i.e.* the established correlation shows that the quality of communication is determined by the manager's method of conflict resolution ($r = 0.864, p < 0.01$). In addition, the more the manager is interested in social situations in the team, the smoother the entry of new employees into the organization ($r = 0.746, p < 0.01$). The research also found a negative correlation: the better senior nurses manage themselves in stressful situations, the less often employees leave the organization due to psychological disagreements with the manager and/or colleagues ($r = 0.864, p < 0.01$).

Summarizing the data analysis results of the microclimate creation competencies of senior nurses from the point of view of nursing workers, it can be stated that there is a strong relationship between the microclimate creation competencies of senior nurses and the factors shaping the organization's microclimate perceived by nursing workers.

5. Conclusions

Microclimate is the most influential factor with the greatest impact on nursing outcomes, quality of care, and clients' perceptions of safety. Different scientists present a different number of factors affecting the formation of a good microclimate. A detailed analysis of the scientific literature made it possible to refine the main factors that influence the creation of a favourable work microclimate for nursing workers: a good psychological atmosphere, effective internal communication, positive human relations and the declared values of the organization.

The analysis of the scientific literature allows us to say that the competences of creating a microclimate include two competences – the professional one, which consists of the professional knowledge and skills of senior nurses, the way of management, the ability to manage oneself and the situation in various, non-standard conditions that regularly occur in a health care institution, and the personal one, which consists of the senior nurses' the ability to effectively communicate and collaborate with both subordinates and patients, as well as their personal qualities and skills.

The conducted research allows us to draw the following conclusions:

1. The greatest influence on the creation of a positive microclimate is the following features of microclimate creation competences possessed by head nurses: building good relations with subordinates, promoting subordinates' job satisfaction, forming a favourable psychological atmosphere, supporting informal communication in the team, promoting smooth communication between employees, evaluating the work of each employee, pride of subordinates fostering a sense of work, taking an interest in the psychological well-being of subordinates, promoting open communication and cooperation between employees, providing feedback to employees, ensuring the smooth arrival of new employees to work, taking into account the needs of employees, observing the declared values and traditions.
2. The creation of a positive microclimate is hindered by the lack of microclimate creation competencies possessed by head nurses: not initiating changes for the sake of a better result, lack of altruistic behaviour when communicating both with subordinates and patients, not using a wide vocabulary when forming work tasks, and not improving one's professional skills.

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Trends of Credit and Business Cycles: The Dynamics of Private and Public Indebtedness in Lithuania and EU

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Abstract

This research aims to analyse the interrelations between credit and business cycles in the economies of Lithuania and other EU countries. The official statistics of monetary financial institutions’ (MFIs) credit portfolio was analysed to highlight the past credit boom period. The cyclical fluctuations of aggregated loan portfolio of MFIs and business cycle (GDP) were substantiated by the gaps between actual and potential indicators. As credit booms often are caused by irresponsible borrowing, the economic consequences of this phenomenon for Lithuanian economics were revealed. The proportion of non-performing loans in Lithuania during the economic crisis of 2009 was the highest in overall EU. Many other economic indicators of Lithuania were affected by economic disbalance due to irresponsible over-indebtedness of country’s inhabitants: consumption expenditures of households, gross capital formation, inflation, immovable property prices, unemployment, and emigration. The cluster analysis allowed classify the EU countries into two main groups and showed, that inhabitants of more economically developed EU countries are more indebted, however the negative economic consequences of credit boom are more significant in countries with lower macroeconomic rates. Lithuania was one of the EU countries where the economic deterioration after the credit boom was especially significant.

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1. Introduction

The commercial banks and other non-bank financial institutions are merely financial intermediaries in their main activity gathering deposits and lending money. According to Werner [20], the banking system together creates money through the process of multiple deposit expansion under the requirements of fractional reserve. Banks and non-bank financial institutions are largely similar in that they are able to increase the supply of money in the financial system and create financial claims. The expansion of credits leads to an increase in the volume of deposits to the amount many times exceeding the initial cash because the same money is deposited with the banking system many times again [19]. As financial intermediation services of deposits and credits allow reallocate the financial resources in country's economy and have positive impact on its growth, the overconfident and irresponsible borrowing has negative effect. The study of Paškevičius and Jurgaitytė [15] has shown that in most cases the natural persons' bankruptcies in Lithuania occur due to loss of personal income, irresponsible and excess usage of credits, low overall financial understanding, when persons having overestimated their future loan return capacity are announced as insolvent. Similarly, Frydman and Camerer [8] support the opinion, that many households worldwide tend to make several distinct types of mistakes because they have low financial literacy. Often it is difficult to show that a specific financial decision was made properly because the judgment might depend on a household's attitude towards future and risk taking.

The aim of this research is to interrelate the credit and business cycles highlighting the risk of over-indebtedness and economic consequences of irresponsible borrowing. The tasks of the research are:

- to analyse the changes of aggregated loan portfolio in Lithuanian MFIs and public debt;
- to reveal the macroeconomic consequences of Lithuanian inhabitants' irresponsible borrowing;
- to implement the comparative analysis of indebtedness and macroeconomic indicators in other EU countries.

The official statistical data of Statistics Lithuania, Bank of Lithuania, EUROSTAT, and World Bank will be analysed in this research.

2. Literature review

The global crisis of 2009 reminded that financial stability of countries depends on systemic factors that should never be ignored, and the financial imbalances have severe global macroeconomic consequences [4]. According to Pronobis [17], the credit boom in Eurozone after adopting euro in 1999 appeared because of the decline of nominal interest rates and consumption expansion that in turn led to rapid increase in prices and wages. Apostoae and Percic [2] analysing 20 EU countries' data revealed, that there is strong relationship between credit expansion and economic growth in almost all of them. However, the higher interdependence is in the developing economies. These scientists found that in the majority of countries business cycle leads the credit cycle by one or two quarters. According to Nguyen, Schinckus, Su and Chong [13], the global financial crisis had strong effects on advanced and emerging market economies, although this crisis resulted from a failure of the credit markets in advanced economies. Usually, the emerging market economies have higher GDP growth rates, but credits for private sector to GDP there are much lower. The findings of Duican and Pop [5] have shown, that for sustainable economic growth should be avoided bubbles, contagion, and financial fragility. They claim that booms are followed by periods of crisis.

Cesa-Bianchi, Ferrero and Rebucci [3] characterized the consistent patterns of credit booms. When the capital inflows are expansionary, the growth of equity prices, GDP, consumption, and immovable property prices is typical. The current account balance deteriorates significantly before reverting during the last year of the expansion. Short-term real interest rates are high throughout the boom phase and increase further during the last year. During the bust phase short-term real interest rates decline, the immovable property prices fall for three years in a row. Equity prices drop very sharply for two consecutive years. GDP declines sharply and then resumes, but only at about a third of the pace exhibited during the boom years. Consumption slows down and then remains depressed. The current account deficit closes quickly and remains in a small surplus position. The research results of Nguyen, Schinckus, Su and Chong [13] have shown a significant negative effect of the inflation on the domestic credit level, meaning that a higher inflationary environment is more harmful for credit market in emerging market economies. The higher inflation leads

private sector to use lower debt. Ermisoglu, Akcelik and Oduncu [6] claim that after the financial crises, economic activity recovers without a growth in credit stock in emerging markets. This phenomenon in the literature came to be known as “credit-less recovery” or “Phoenix Miracle”.

The excessive credit growth often leads to the build-up of systemic risks to financial stability, which may materialize in the form of systemic banking crises. The unsustainable credit booms and asset price bubbles are at their roots. These bubbles can be very costly when they are financed by overmuch credits [1]. Raising credits stimulate the aggregated demand, what may trigger the adverse feedback between assets prices and the real burden of debt or drives an economy to financial crisis after exceeding the critical point [10]. Fielding and Rewilak [7] also agree that the rapid growth in bank lending could undermine the stability of the banking system, increasing the probability of a banking crisis. There is similar concern about rapid growth in foreign capital inflows in developing countries, which could fuel excessive growth in lending or generate asset price bubbles. The high capital inflows and credit booms make a crisis significantly more likely. The non-performing loans (NPLs) are considered as a major source of bank failures and can mark the beginning of a banking crisis [12]. The increasing NPLs slows the overall economic growth. The deterioration of banks’ asset quality in the balance-sheets is the most important factor of costly banking crises in emerging and advanced economies. Nikolaidou and Vogiazas [14] identified two broad sets of drivers that cause the growth of NPLs: macroeconomic and bank-specific factors. The bank-specific determinants are related to the bad loan portfolio management which is typical for the riskier banks: low efficiency, low capital, and excess lending.

The financial distress, especially during the financial crisis, can be defined as a condition to where individuals cannot or have difficulties with debt repayment. Szilagyiova [18] characterized the main drivers of households’ financial distress: marital status, age, job security, source, and level of household income. The over-indebtedness which leads to financial distress also depends on inhabitants’ financial literacy. Typically, the younger age individuals possess higher risk of over-indebtedness. The most significant role for the household’s solvency is played by the actual source of income. The behavioural economists consider towards over-indebtedness leading behaviour obviously irrational. According to Kapeliushnikov [9], most often the irrational behaviour is caused by insufficient self-control and reflects some individuals’ inability to resist temptations in the present moment, for example, using high-interest credit cards. The errors of optimism and pessimism also are typical. The error of optimism makes individuals overly self-confident in decision making. It is an underestimation of probability of undesirable events capable of inflicting serious, if not irreparable damage.

The most relevant result is that consumer debt default and household insolvency are highly cyclical. Also, economic fundamentals such as unemployment, income and credit market shocks play a significant role in explaining consumer default fluctuations. Families are affected by liquidity risk, besides unemployment and high interest rates [11].

Petersen and Wiegelmann [16] conclude if the lenders and debtors are playing Russian roulette and creating “casino capitalism”, there is only a very limited chance for the legal system to control misbehaviour and fraud. There are not enough district attorneys and expert investigators to monitor almost the entire national banking system and especially not their international connections. A constitutional democracy with all its institutions is unable to absorb the shocks of a moral breakdown within a whole economic sector.

3. Changes of aggregated loan portfolio in Lithuanian MFIs

Monetary Financial Institutions (MFIs) are defined as central banks and resident credit institutions that receive deposits and grant credits or make investments in securities. The statistics of Lithuanian MFIs in this research includes the aggregated data of country’s resident commercial banks and foreign banks’ subsidiaries, central credit union and other credit unions’ balance-sheets, excluding the central bank. The statistics of aggregated loan portfolio for country’s residents of Lithuanian MFIs during the period of April 2004 – August 2021 is shown in Figure 1. The most significant loan portfolio growth was observed after Lithuania accessed the European Union in 2004 until the end of 2008 when the total loan portfolio of Lithuanian MFIs reached 21.7 billion EURO. Since 2004 the loan portfolio for Lithuanian residents increased by 354.5 %. After this peak-point the bottom of total loans was reached in February of 2015 (16.7 billion EURO) when the loan portfolio declined by 23 %. Then the new credit growth period followed until the end of 2020 when the total loans for Lithuanian residents increased by 92.8 % to 32.2 billion EURO. The new peak-point of total loans exceeded the previous by 10.5 billion EURO, however this surpass was caused mostly by the growth of

loans for households, while the loan portfolio for business (non-MFIs) Lithuanian residents at the end of 2020 was 7.5 billion EURO compared to 10.3 billion EURO at the end of 2008.

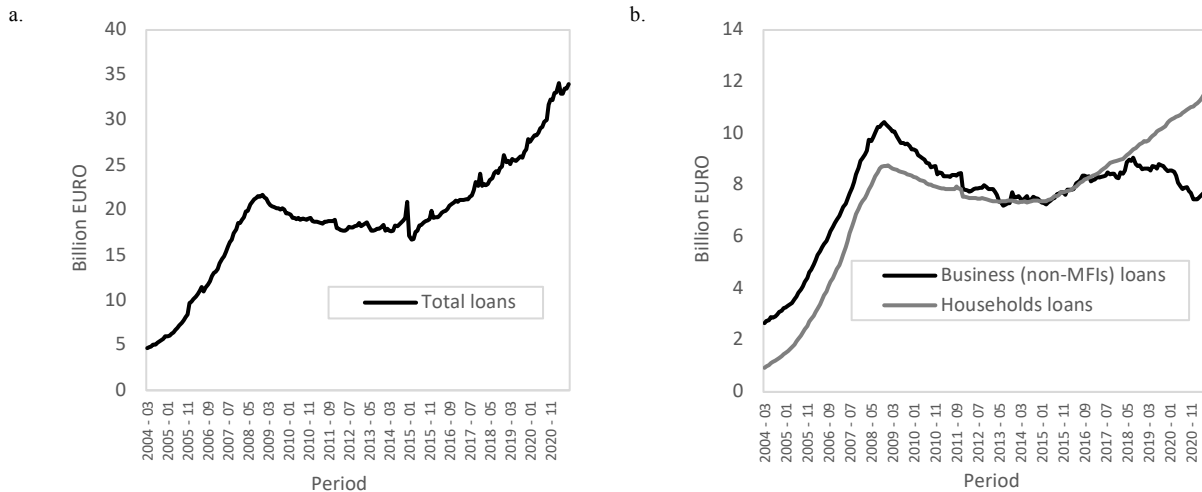


Fig. 1. Loan portfolio for country’s residents of MFIs performing in Lithuania

The evident credit boom period in Lithuania during 2004–2008 can be seen in Figure 2. During the years 2005, 2006 and 2008 the MFIs loan portfolio of Lithuanian residents grew by 3.1–3.7 billion EURO yearly while in 2007 the outstanding growth was 5.6 billion EURO (43.1 %). In period of 2009–2013 the Lithuanian credit institutions noticeably restricted lending, so the MFIs loan portfolio declined by 9.3 % in 2009 and 1.2–2.6 % in 2010–2013. During the following years the loan portfolio grew except in 2015 when the 0.98 billion EURO decline was observed. The most significant growth during the after-boom period was in 2017 and 2020 when the aggregated non-MFIs loan portfolio of credit institutions increased by 14.1 % and 15.6 %.

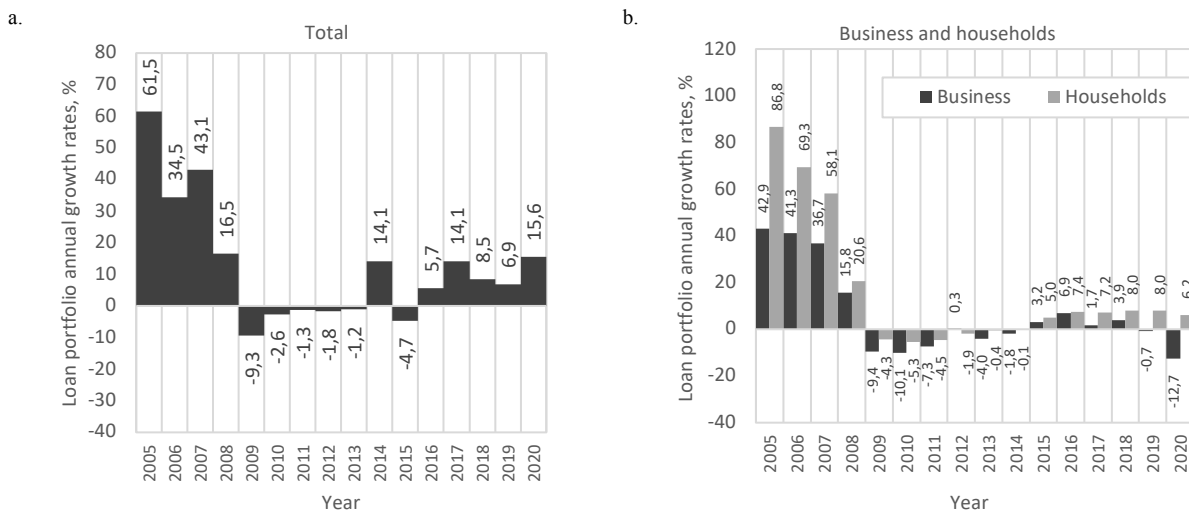


Fig. 2. Loan portfolio annual growth rates (%) for country’s residents of MFIs performing in Lithuania

Analysing the structure of main non-MFIs loan portfolio components, it can be seen (see Fig. 1), that the essential change occurred in 2014. During the credit boom period of 2004–2008 the business loans overpassed the household loans in average by 1.8 billion EURO. Since 2008, this difference started continuously decline until 2014 when the

business and household loan portfolios became equal at 7.4 billion EURO. In next six years, the Lithuanian households were more optimistic towards future because their loan portfolio grew more rapidly until it reached 11.1 billion EURO in 2020. The business loan portfolio in this year was lower by 3.59 billion EURO. Compared to the credit boom peak-point of 2008, the household loan portfolio in 2020 was higher by 2.31 billion EURO while the business loan portfolio was lower by 2.88 billion EURO. The average annual growth rate of households' loan portfolio in 2015–2020 was 7.0 %, while the business loan portfolio grew only by 0.4 % yearly. During 2020, the total business loans in Lithuanian MFIs declined by 12.7 % (see Fig. 2).

The relative loan portfolio indicators for country's residents of MFIs performing in Lithuania are shown in Figure 3. During the credit boom period in 2004–2008 the total loan portfolio of MFIs to Lithuanian GDP increased from 32.8 % to 66.3 %. The following growth of this relative indicator to 73.0 % was caused by the decline of Lithuanian GDP in 2009 (-17.6 %). The business loans per capita in 2004–2008 grew by 236.9 % from 965 to 3 251 EURO, while the household loans per capita increased by 535.4 % from 432 to 2 745 EURO. The lowest business loans per capita indicator during the after-boom period was in 2014 (2 530 EURO). The household loans per capita reached the bottom in 2012 (2 496 EURO).

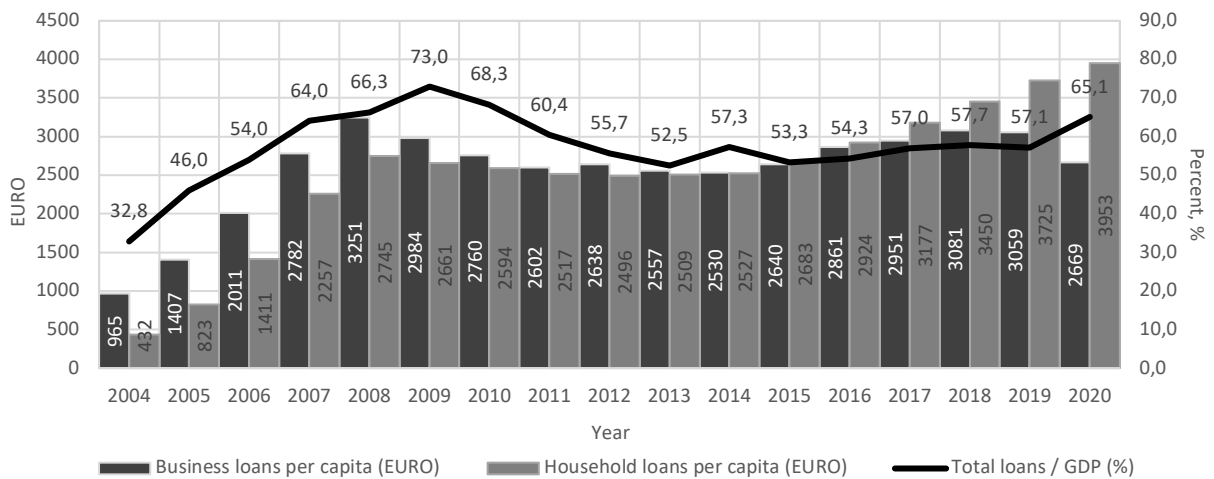


Fig. 3. Relative loan portfolio indicators of MFIs performing in Lithuania

In 2020 the statistical average indebtedness of one Lithuanian inhabitant was 2 669 EURO of business loans and the highest 3 953 EURO of household loans (6 622 EURO total). The total loan portfolio per capita in 2020 was higher by 626 EURO compared to 2008 due to the growth of household loans by 1 208 EURO and decline of business loans by 582 EURO. The relative total loans to GDP indicator reached the bottom in 2013 (52.5 %) and until 2020 it grew in average by 1.8 % yearly. For comparison, the total loans to GDP during the previous credit boom period in 2004–2008 grew in average by 8.38 % every year. So, the current 2013–2020 years cannot be considered as the second credit boom period in Lithuania and the consequences of loan portfolio growth in case of new economic crisis can be expected not such portentous.

4. Lithuanian public indebtedness

In recent years, Lithuania meets the problem of significant public debt growth. The statistical data of EUROSTAT shows that at the end of 2020 the general government debt was 23.1 billion EURO while in 2004 this debt was 3.4 billion EURO. So, in last 15 years the general government debt increased by 19.7 billion EURO or 645.2 %. Looking at this period the annual growth rate was not equal (see Fig. 4). The analysed period can be divided into 4 parts: 2004–2008, 2009–2015, 2016–2019, and 2020. The average annual Lithuanian general government debt increase rate in 2004–2008 was 9.6 % yearly. The year 2008 can be considered as break point and since 2009, the average annual debt

increase rate was 18.7 % yearly until 2015. During 2016–2019 the public debt was stabilized, but in 2020 the increase rate was 32.0 % (see Fig. 4).

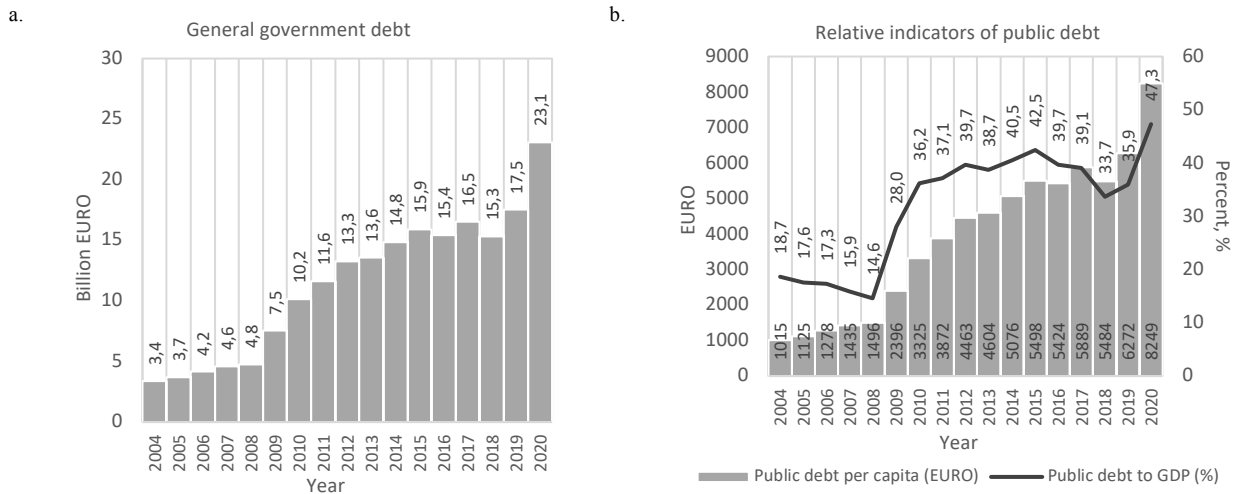


Fig. 4. Lithuanian general government consolidated gross debt

The relative indicators of Lithuanian public debt show constantly growing debt burden for the inhabitants of this country (see Fig. 4). The average public debt per capita since 2004 increased from 1 015 to 8 249 EURO. The general government consolidated gross debt to GDP became 47.3 % in 2020.

5. Statistical interrelation of credit and business cycles in Lithuania

As the MFIs lending stimulates the consumption of inhabitants and business investments, and the over-indebtedness reduces the expenditures for goods and services, the interrelation of credit and business cycles is close. The growing loan portfolio increases domestic consumption what leads to the increased manufacturing and imports of goods and services. When the significant part of country's households becomes over-indebted, the demand for goods and services in the domestic market declines because large part of households' income monthly is paid for credit institutions as principal and interest. The declining manufacturing and business activity reduce the demand for labour-force, so the unemployment in country's economy grows. The households more and more restrict their expenditures reducing the consumption. The declining GDP reduces the solvency of enterprises, households, and national budget's income. The country's economy deteriorates until the bottom-point of business cycle is reached where the bankruptcies of enterprises cause the part of business loans write off in MFIs. The high proportion of non-performing loans (NPLs) in MFIs portfolios are the main factor of restricted lending in the first after-crisis years when the aggregated loan portfolio of MFIs constantly declines. After several years, the recovered consumption growth, investments, improved financial condition of enterprises and reduced NPLs start the growth of new credit cycle which is lagging by several years compared to business cycle. The following growth of MFIs loan portfolio and GDP continues until the decline starts at the same year of both indicators.

To prove the mentioned consistent patterns the Lithuanian economic and MFIs loan portfolio indicators were analysed. The shapes of Lithuanian MFIs credit cycle and business cycle are shown in Figure 5. During the credit boom period in 2004–2008 the MFIs loan portfolio grew in average by 37.9 % and Lithuanian GDP at current prices grew in average by 15.7 % yearly. In economic crisis of year 2009, the GDP declined by 17.6 % and the aggregated loan portfolio of Lithuanian MFIs for country's residents was reduced by 9.3 %. The following years were the recovery period for Lithuanian economy when the GDP constantly grew from 26.9 billion EURO in 2009 to 49.5 billion EURO in 2020. However, the dynamics of MFIs loan portfolio was directed down until 2013 by 1.2–2.6 % yearly and in

addition the decline by 4.7 % in 2015 was observed. Only in 2016–2020 the lending in Lithuanian MFIs was disengaged significantly stimulating the business investments and consumption of households.

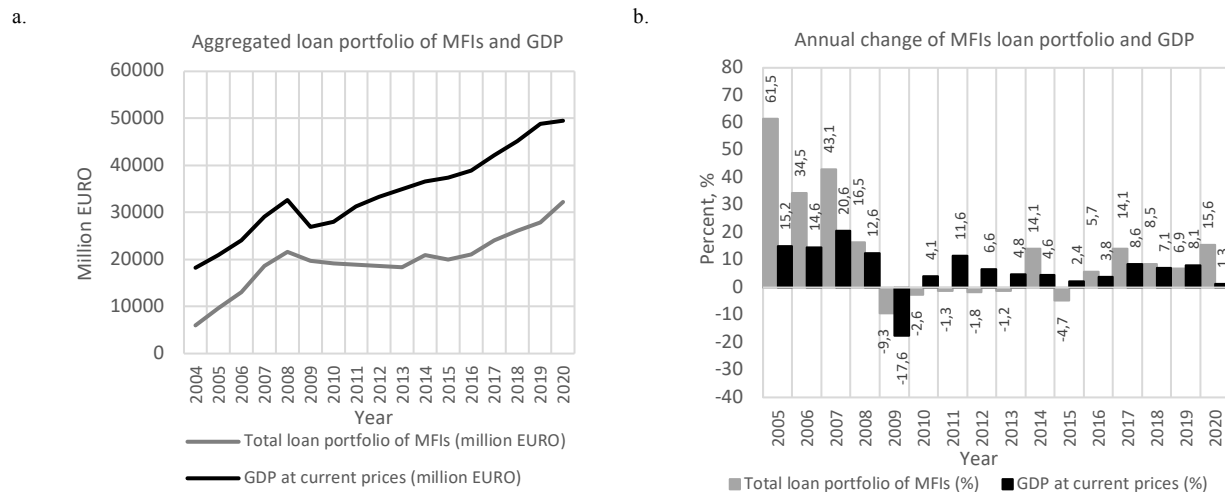


Fig. 5. Credit cycle and business cycle in Lithuania

For the visualization of economic disbalance caused by credit boom the potential loan portfolio of MFIs and potential GDP at current prices growth were considered as the linear regression models (see Fig. 6). The positive gap between actual and potential MFIs loan portfolio was in years 2007–2011 and 2019–2020 which sum is 19 817 million EURO above the potential growth line. Otherwise, in 2004–2006 and 2012–2018 the MFIs loan portfolio was below the potential growth line by 19 822 million EURO. These significant fluctuations of MFIs credits are the important factor of GDP disbalance in peak-point and bottom-point of business cycle. The positive gap between actual and potential GDP of Lithuania was observed in 2006–2008 and 2018–2020 (total 14 795 million EURO), while the negative gap was in 2004–2005 and 2009–2017 (total 14 805 million EURO).

The restrained lending of MFIs during the credit boom period should ensure the aggregated loan portfolio growth more closely to potential growth line and should increase the possibility to lend more during after-crisis period.

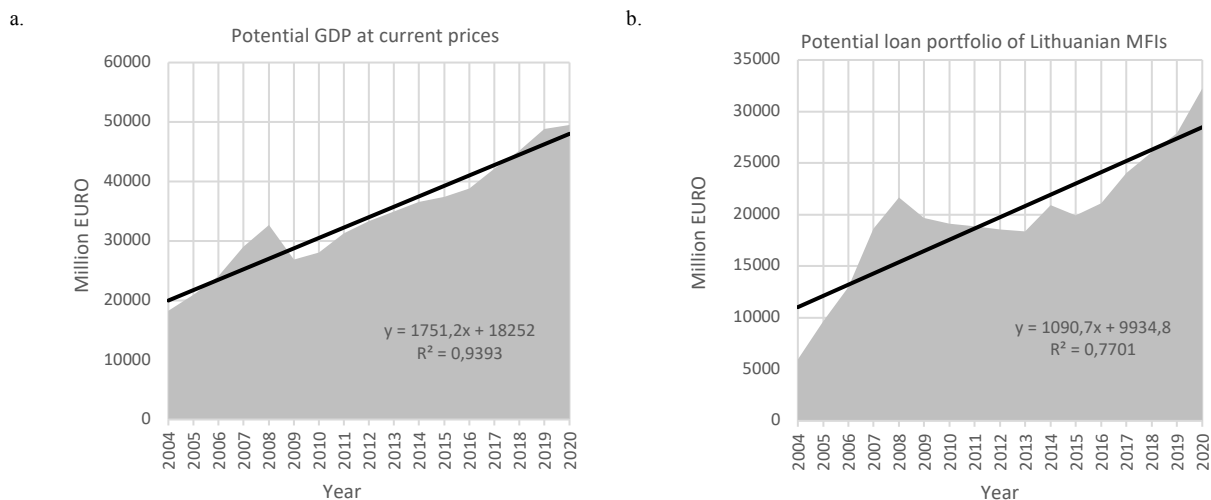


Fig. 6. MFIs potential loan portfolio and potential GDP of Lithuania (linear regression models)

That should have the positive impact on sustainable development of country's economy reducing the differences between actual and potential GDP.

The growing MFIs loan portfolio during the credit boom period of 2004–2008 significantly increased the consumption expenditures of Lithuanian households (see Fig. 7). In consequence, the high demand for goods and services in the domestic market induced the rapid growth of business investments and business loan portfolio. When the household loan portfolio constantly grew until 2008, in parallel the final consumption expenditure of households increased by 73.9 % from 12.0 to 20.9 billion EURO. The economic deterioration of following two years was related to the decline of domestic market. In 2010, the consumption expenditure (17.9 billion EURO) was lower by 14.2 % compared to business cycle peak-point of 2008. After this bottom-point until 2019 the consumption expenditure in Lithuanian domestic market grew in average by 5.63 % yearly to 29.3 billion EURO. However, the relative indebtedness of Lithuanian households in 2019 was considerably lower than 2008 year's level. If in 2008 the average indebtedness was 0.42 EURO of debts to 1 EURO of consumption expenditures, in 2019 this rate declined to 0.35 EURO what means that currently the Lithuanian households consume more using their own earnings rather than borrowed money. In 2020 the consumption expenditures of Lithuanian households declined by 1.3 %.

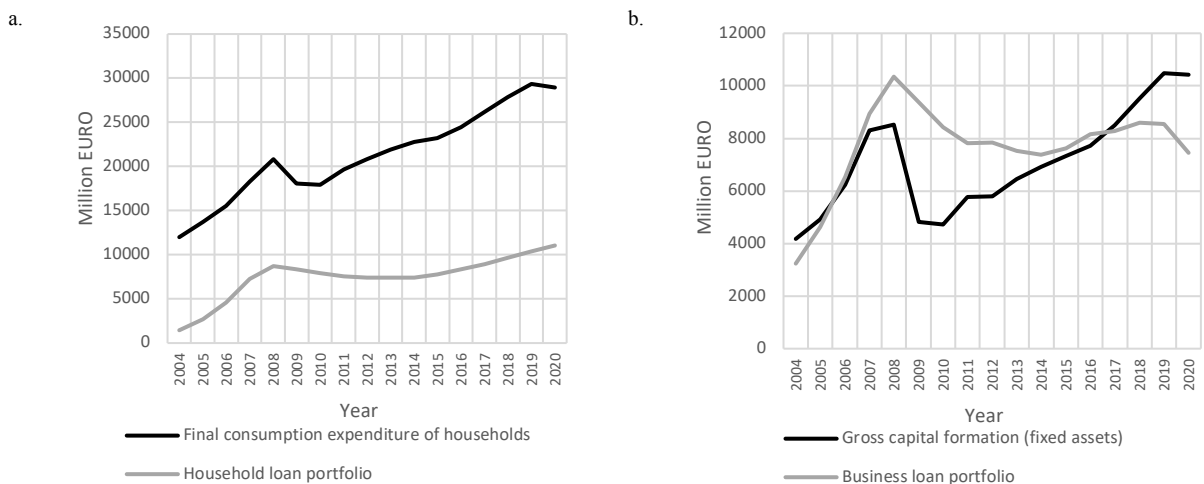


Fig. 7. Consumption expenditure, business investments, and loan portfolio of MFIs in Lithuania

The growth of enterprises' gross capital formation (investments into the fixed assets) in Lithuania was extremely high in 2004–2007 from 4.2 to 8.3 billion EURO (see Fig. 7), while during the economic crisis in 2009–2010 this indicator (4.8 and 4.7 billion EURO) almost returned to its initial point of 2004. The rapid business loan portfolio growth during the pre-crisis period was parallel to gross capital formation, but since 2010 the shapes of these curves have changed. The constant recovery of business investments started in 2011 while the Lithuanian MFIs started increase lending for businesses only in 2014. Alike the lower households' relative indebtedness, the businesses in 2019 were also less indebted compared to 2008. In 2019 the average business loans were 0.82 EURO for 1 EURO of gross capital formation, while in 2008 this rate was 1.22 EURO. During the economic lockdown in 2020 the gross capital formation of Lithuanian businesses declined by 0.56 %.

In consequence of irresponsible borrowing the proportion of non-performing loans (NPLs) in commercial banks of Lithuania sharply rose to 24.0 % in 2009 (see Fig. 8). This extremely high indicator also remained in 2010. Such situation caused the inevitable necessity for commercial banks to restrict lending what deepened the economic crisis and slowed country's economic recovery during the after-crisis period. Only since 2011 the growing economy of the country made prerequisites for the constant decline of NPLs until 2019, when the proportion of NPLs in commercial banks of Lithuania became 1.0 %. The business cycle impact on non-performing loans in Lithuanian commercial banks is evident. The peak-points of business cycle were led by 1.0 % of NPLs in 2007 and 2019. The economic growth stages of 2001–2007 and 2011–2019 constantly reduced the NPLs in Lithuanian commercial banking sector.

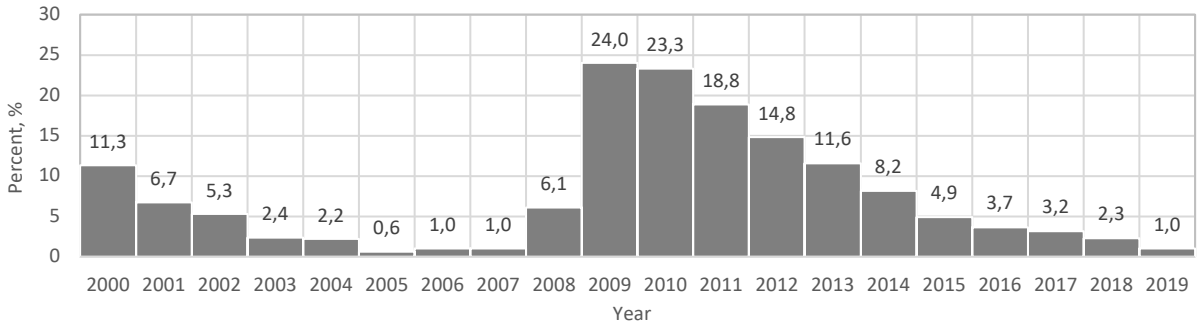


Fig. 8. Bank non-performing loans to total gross loans in Lithuania (%)

The high inflation is one of the negative economic consequences following the credit booms. The suddenly increased demand for goods and services causes the growth of prices and the decline of money’s purchasing power. In the peak-point of business cycle, the inflation rate in Lithuania was 10.9 %. Afterwards it declined until 2015, when the -0.9 % deflation was observed in Lithuanian economics. The recent growth of MFIs loan portfolio increased the inflation to 3.7 % in 2017, which in 2020 declined to 1.2 % (see Fig. 9).

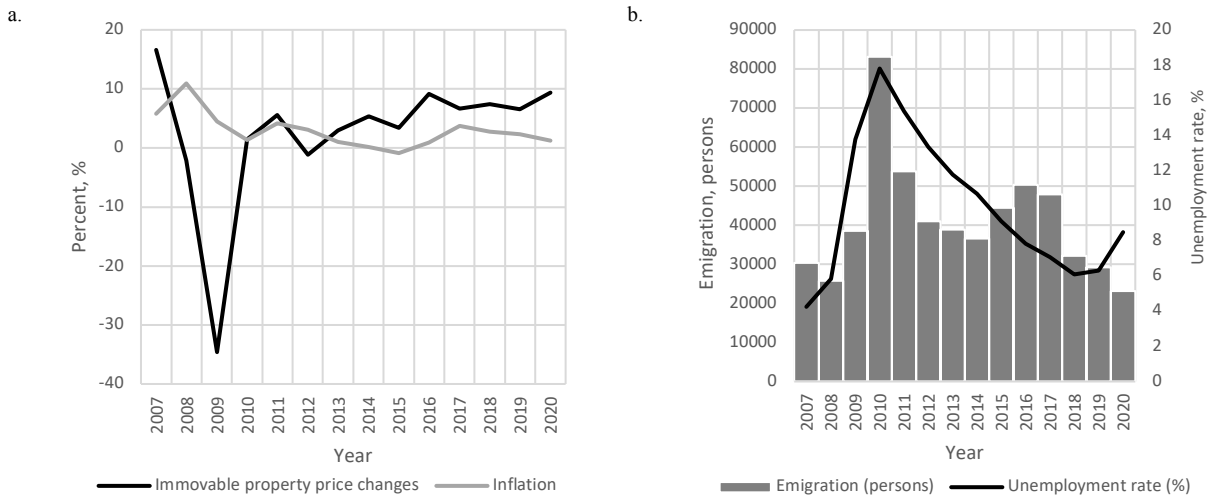


Fig. 9. Price changes, unemployment, and emigration in Lithuania

The sudden growth of immovable property prices is also the typical result of credit boom period. When the economy deteriorates these prices usually tend to drop down dramatically. As expected, during the economic crisis of 2009 the immovable property prices in average decreased by 34.6 % (see Fig. 9). In such situation the over-indebted households having the decreased or lost personal income were unable to repay credits selling the property, because it became impossible to redeem full debts using the money they got. In addition, the financial condition of Lithuanian households was exacerbated by the growth of unemployment rate from 4.3 % in 2007 to 17.8 % in 2010 (see Fig. 9). Having the problem of impossibility to increase the personal income in Lithuania, many members of over-indebted Lithuanian households made decision to emigrate. As a result of past credit boom and occurred economic crisis, the outstanding number of emigrants left Lithuania in 2010 (83 157 persons). The statistical interdependence between unemployment rate and emigration during the period of 2007–2020 was strong (correlation coefficient is 0.71). The loss of labour-force and consumers in domestic market slows the economic recovery during the after-crisis period what is also one of the consequences of credit boom and irresponsible borrowing.

6. Indebtedness and macroeconomic indicators in other EU countries

In overall European Union, similarly to Lithuania, the most rapid credit growth period was also in 2004–2008 when credits by banks increased from 88.1 % to 101.6 % of GDP (see Fig. 10). Since 2009 the constant decline of this relative indicator was observed until 2019 (84.9 % of GDP), while the stopped growth stage of business cycle in 2020 increased this rate to 92.8 %.

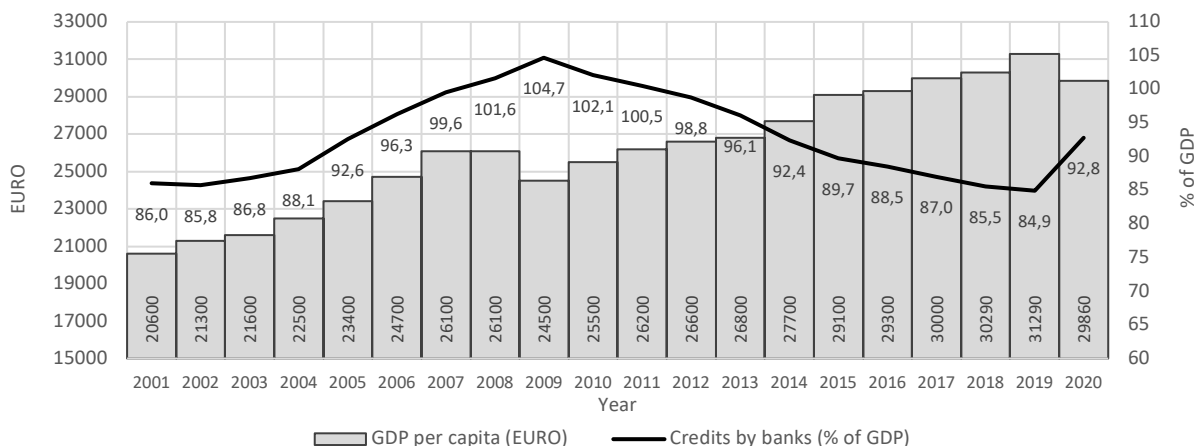


Fig. 10. Credit cycle and business cycle in European Union

Differently from Lithuania, in overall EU the average GDP per capita stopped growing in 2008 when this indicator was 26 100 EURO. In 2009 the average GDP per capita of EU declined by 6.1 % to 24 500 EURO.

Compared to Lithuania (-16.7 %) this average economic deterioration is significantly lesser. Since 2010 the GDP per capita in EU grew in average by 2.6 % yearly with slowdown in 2013 and 2016 (see Fig. 10). Under the circumstances of growing EU economics, the decline of relative credits by banks to GDP rate in 2009–2019 allows maintain that currently there was no huge second credit boom in overall EU.

The analysis results have shown that higher indebtedness of residents is typical for EU countries with higher than median GDP per capita values. Lithuanian residents have one of the least indebtedness (26th rank in the EU). The highest residents' indebtedness for banks is in Cyprus (237.5 % of GDP). The EU average of bank credit to GDP rate in 2010–2017 was 93 %.

In Figure 11 the EU-28 (until 2020) countries were sorted according to average bank credit to GDP rates of years 2010–2017. Together analysing the average GDP per capita values of the same period, it can be concluded, that higher than 80 % of GDP indebtedness for banks of residents is typical for countries having the GDP per capita higher than EU median (20 725 EURO), except Portugal, Greece, and Malta. Conversely, the inhabitants of countries having the lower GDP per capita than EU median are less indebted (up to 80 % of GDP), except Belgium which GDP is relatively high.

The classification of EU-28 (until 2020) countries into four groups according to Figure 11 data is visualized in matrix (see Table 1).

Using the cluster analysis method of *k*-means three clusters were extracted from EU countries analysing 9 economic and residents' indebtedness indicators:

- Cluster 1: BE, DK, DE, IE, FR, IT, NL, AT, FI, SE, UK (until 2020);
- Cluster 2: LU;
- Cluster 3: BG, CZ, EE, EL, ES, HR, CY, LV, LT, HU, MT, PL, PT, RO, SI, SK.

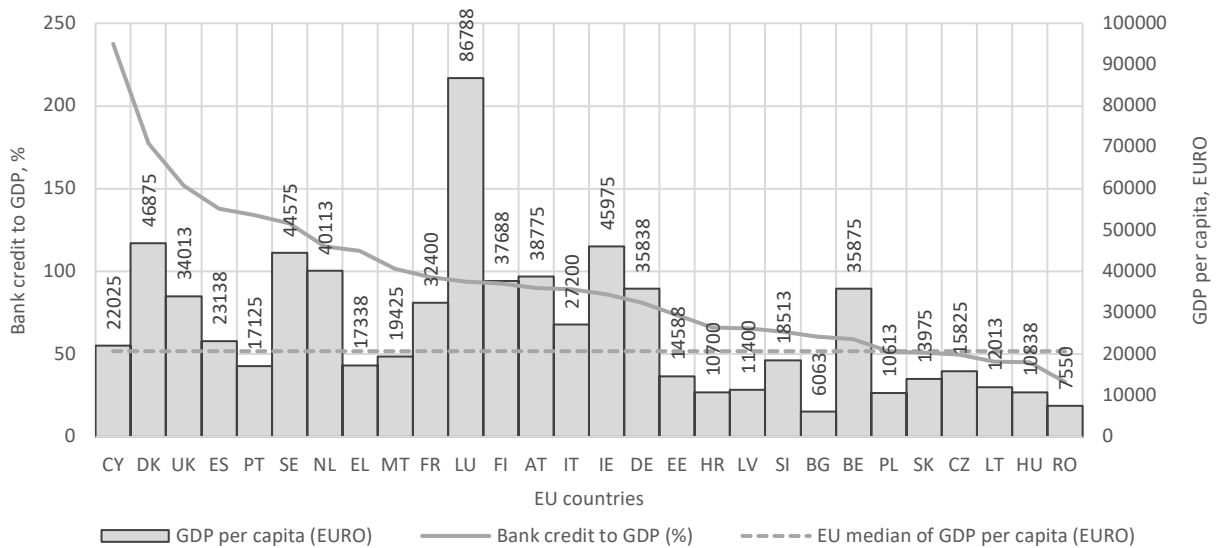


Fig. 11. Averages of EU countries' GDP per capita and bank credit to GDP in 2010–2017

Table 1. Matrix of European Union countries

Bank credit to GDP	GDP per capita at current prices	
	Higher than EU median	Lower than EU median
Higher than 80 %	CY, DK, UK, ES, SE, NL, FR, LU, FI, AT, IT, IE, DE	PT, EL, MT
Lower than 80 %	BE	EE, HR, LV, SI, BG, PL, SK, CZ, LT, HU, RO

The means of residents' indebtedness and macroeconomic indicators in each cluster are given in Table 2. Cluster 2 consists of only Luxembourg which has the outstanding GDP per capita rate, so this cluster will be excluded from further analysis.

Table 2. Means of indebtedness and macroeconomic indicators in each cluster

Economic indicator	Cluster 1	Cluster 2	Cluster 3
GDP per capita (EURO, average 2010–2017)	38 120.45	86 787.50	14 445.31
Bank credit to GDP (% , max 2010–2017)	118.64	105.93	97.21
Bank credit to GDP (% , change 2010–2017)	-10.91	16.55	-21.36
NPLs (% , max 2008–2017)	6.85	0.90	17.47
Inflation (% , max 2007–2018)	3.53	4.10	7.01
Real GDP growth rate (% , change 2008–2009)	-4.67	-4.40	-6.09
Consumption of households (% , change 2008–2009)	-3.57	0.65	-7.04
Unemployment rate (% , max 2007–2017)	9.34	6.50	14.88
Investments (% , change 2008–2009)	-12.76	-11.93	-21.96

The average GDP per capita in Cluster 3 is lower by 62.1 % compared to Cluster 1. In these less developed EU countries, the average bank credit to GDP rate is also lower by 21.43 %. However, during the bank credit to GDP decline period in overall EU (see Fig. 10), the more significant decrease of this relative rate (-21,36 %) was observed in less developed economies of Cluster 3. This means, that credit boom in countries of Cluster 3 was more outspreaded. In consequence, the average proportion of non-performing loans in commercial banks of less developed EU countries

was 2.6 times higher (17.47 % compared to 6.85 %). The inflation influenced by credit boom in countries of Cluster 3 was 2 times higher. When the economics of overall EU declined in 2009 (see Fig. 10), the real GDP decrease in Cluster 3 was 6.09 % while the countries of Cluster 1 suffered from 4.67 % of real GDP decline. The 2009 year's decrease of households' consumption in domestic markets in less developed EU countries was -7.04 % compared to -3.57 % in group of highly developed economies. The deeper economic shock in less developed EU countries of Cluster 3 after credit boom period can be seen from higher unemployment rate (14.88 % compared to 9.34 %) and more significant decrease of business investments in 2009 (-21.96 % compared to -12.76 %).

To visualize the most similar EU countries according to analysed 9 residents' indebtedness and macroeconomic indicators, the hierarchical cluster analysis was implemented excluding Luxembourg with its outstanding values. The dendrogram is shown in Figure 12. The similarities and differences between EU countries were measured by Euclidean distances:

$$d(p, q) = \sqrt{\sum_{i=1}^n (p_i - q_i)^2}; \quad (1)$$

where, p is the first object, q is the second object, i is an attribute characterizing objects, n is the number of attributes analysed.

According to dendrogram inside Cluster 3 four sub-clusters can be compounded of the most similar countries where Euclidean distances are below 2 000:

- sub-cluster 1: CY, ES;
- sub-cluster 2: LT, LV, HU, PL, HR;
- sub-cluster 3: SI, MT, PT, EL, SK, EE, CZ;
- sub-cluster 4: RO, BG.

Inside Cluster 1 of highly economically developed countries two sub-clusters of mostly similar countries can be seen in Figure 12:

- sub-cluster 1: SE, IE, DK;
- sub-cluster 2: UK (until 2020), FR, FI, AT, NL, DE, BE.

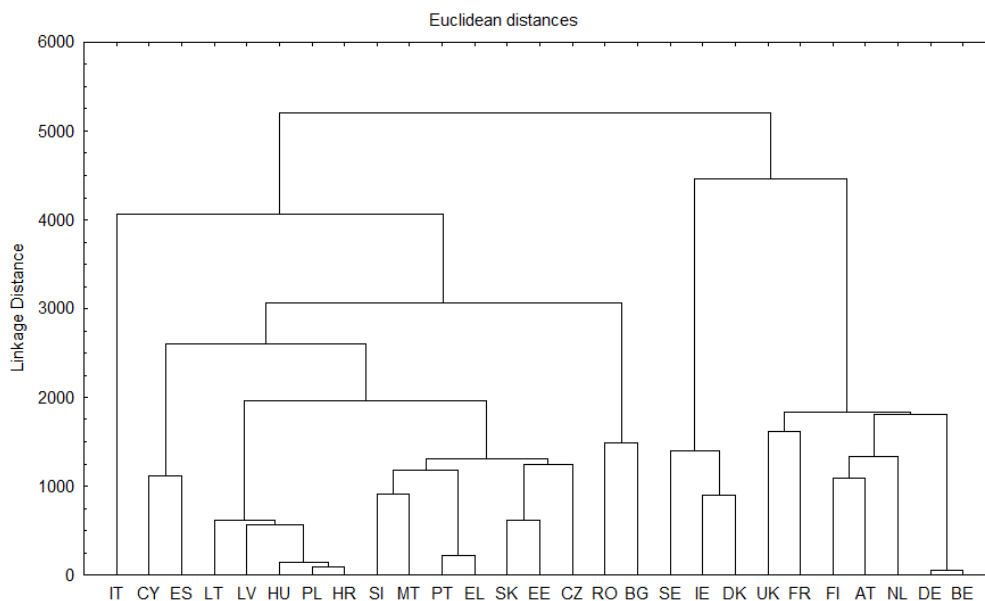


Fig. 12. Euclidean distances between EU countries

The most outstanding individual economic indicators of analysed EU countries allowed understand where the past credit boom and economic crisis had the most serious consequences. The highest inflation in 2008 exceeding 10 % was in Lithuania, Latvia, and Estonia (10.6–15.3 %). At the next year of economic crisis, the highest real GDP decline was in these same three Baltic states (from 14.4 % to 14.8 %). The consumption expenditures of households declined by more than 10 % in 7 countries: Latvia (-19.5 %), Romania (-15.6 %), Estonia (-15.4 %), Lithuania (-13.8 %), Poland (-13.7 %), Hungary (-12.8 %), United Kingdom (-12.5 %), and Ireland (-11.2 %). The gross capital formation (investments) in 2009 declined by more than 35 % in Latvia (-45.9 %), Lithuania (-43.5 %), Romania (-40.4 %), and Estonia (-37.6 %). The highest NPLs in commercial banks (year 2009) were also in Lithuania and Latvia (24 % and 14.3 % accordingly). However, the extremely high proportion of NPLs was in Cyprus (48.7 % in 2016) and Greece (45.6 % in 2017). The peak of unemployment rate was in Greece (27.5 %) and Spain (26.1 %) in 2013. The bank credit to GDP percentage rates during the period of 2010–2017 mostly declined in Ireland (-88.8 %), Spain (-65.7 %), United Kingdom (-51.8 %), and Portugal (-51.2 %).

The public debt of EU countries in 2019 and 2020 is shown in Figure 13. The most indebted countries are Greece, Italy, and Portugal where the general government consolidated gross debt in 2019 was more than 100 % of GDP. Since 2020 in addition Belgium, France, Spain, and Cyprus exceeded this limit. The least indebted countries are Estonia, Bulgaria, and Luxembourg, where the public debt did not exceed 25 % of GDP even in 2020.

The global economic lockdown in 2020 with restricted economic activities of many countries in all over the world caused the GDP decline in all EU countries except Ireland (see Fig. 14).

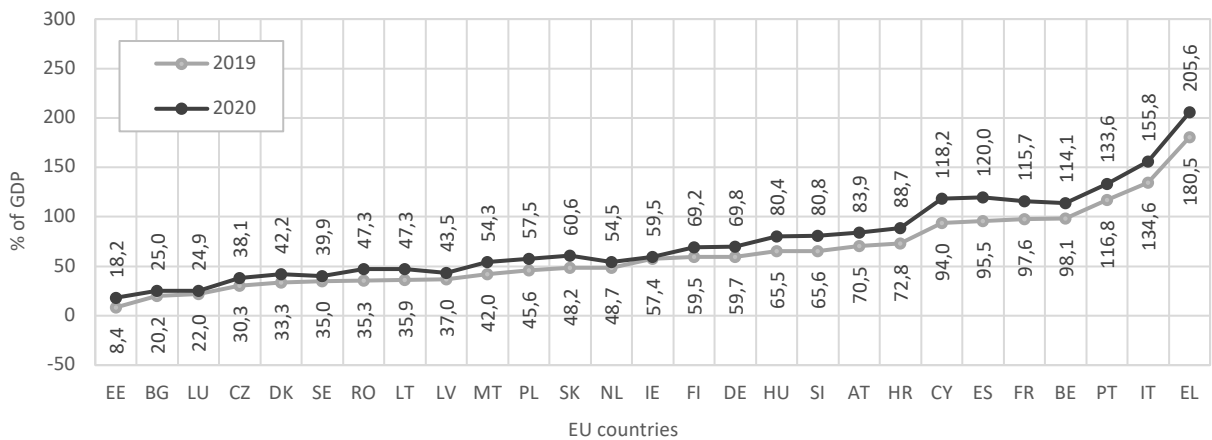


Fig. 13. General government consolidated gross debt of EU countries in 2019 and 2020

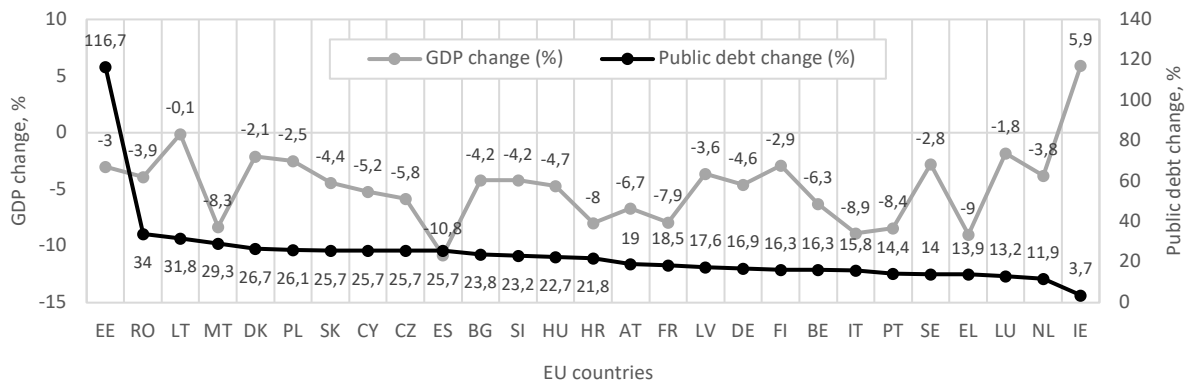


Fig. 14. General government consolidated gross debt and GDP changes of EU countries in 2019–2020

Estonia has increased the public debt in 2020 by 116.7 %, however the indebtedness of this country is the least in whole EU (18.2 % of GDP), so it cannot be considered as having the debt growth problem. The other 9 EU countries (Romania, Lithuania, Malta, Denmark, Poland, Slovakia, Cyprus, Czech, and Spain) increased their public debt more than 25 % in 1 year to lessen the GDP decline.

7. Conclusions

The years 2004–2008 can be considered as the credit boom period in Lithuania when the total loan portfolio of Lithuanian MFIs increased by 354.5 % and reached 21.7 billion EURO. Since 2009 the Lithuanian MFIs restricted lending and the bottom of total loan portfolio was reached in 2015 (16.7 billion EURO). Then the new credit growth period followed until the end of 2018 when the total loans for Lithuanian residents increased to 26.1 billion EURO. In this new period of credit growth, the Lithuanian households were more optimistic towards future because their loans grew more rapidly than business loan portfolio which in 2018 did not reach the 2008 year's level. The analysis of relative total loans to GDP indicator has shown, that this rate in 2013–2018 grew significantly slowly, so the current period of credit growth cannot be considered as the second huge credit boom in Lithuania.

The consequences for Lithuanian economy of credit boom were very unfavourable when the economic crisis occurred in 2009. The decline of macroeconomic business cycle indicators was significantly higher compared to most EU countries. The change of business cycle stage was related to the change of credit cycle direction: the Lithuanian GDP at current prices declined by 17.6 % and the MFIs started to reduce the aggregated loan portfolio for country's residents. During the credit cycle of years 2004–2020, the aggregated positive and negative gaps between actual and potential MFIs loan portfolio was 19.8 billion EURO above and below the potential growth line. These significant fluctuations of MFIs credits were the important factors of GDP disbalance in peak-point and bottom-point of business cycle. The economic deterioration of following years was related to the decline of domestic market, consumption expenditures of households, and business investments. In consequence of irresponsible borrowing the proportion of non-performing loans in commercial banks sharply rose and was the highest in overall EU, so banks had to implement the restricted lending policy what deepened the economic crisis and slowed country's economic recovery. The high inflation, sudden decline of immovable property prices, unemployment shock and new wave of emigration were also consequences of credit boom and irresponsible borrowing.

In overall European Union, similarly to Lithuania, the most rapid credit growth period was also in 2004–2008. Since 2009 the constant decline of this relative indicator can be seen in the official statistics. Differently from Lithuanian business cycle, in overall EU the average GDP per capita stopped growing in 2008 and the decline was in 2009. The research results allowed conclude, that higher than 80 % of GDP indebtedness for banks of residents is typical for countries having the GDP per capita higher than EU median. Conversely, the inhabitants of countries having the lower GDP per capita than EU median are less indebted. However, the cluster analysis has shown that the economic consequences of credit boom in less developed countries are more dramatic. Under the circumstances of growing EU economics, the decline of relative credits by banks to GDP rate since 2009 up to the beginning of global economic lockdown allows maintain that currently there was no second banking credit boom in overall EU.

However, the global economic lockdown in 2020 caused the public debt growth boom in many EU countries. Lithuania increased its public debt during this year by 31.8 %. The 1 year's public debt growth rate in 10 EU countries exceeded 25 %. The other EU countries increased their public debt from 3.7 % to 23.8 %. These borrowing measures reducing the GDP decline will cause the significant inflationary processes in the economies, necessity to increase the tax burden for the ability to service the public debt, and the increase of interest rates. The growth of energy prices in 2021 was the second factor of inflation. The aggregate consumption in the economies will be pressured to decline with higher energy, debt servicing and tax expenses.

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Demand of Technological Specialists in the Context of Lithuanian Industry, Construction and ICT Services Development

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Abstract

This research aims to analyse the dynamics of Lithuanian industry, construction, and information and communication technologies (ICT) sectors' economic indicators evaluating the demand of employees in these enterprises. As the technological universities are the main suppliers of highly qualified technological specialists for these sectors, the development of industrial, construction, and ICT businesses highly depends on the ability of technological higher education institutions to ensure the sufficient quantity and quality of new specialists entering the labour market. The research and development (R&D) activities are also very important industry development factors. Under the circumstances of massive Lithuanian depopulation, the supply of highly qualified workforce continuously declines. Only the least depopulating Lithuanian counties are able attract significant investments and create the highest value added, so the forecasts of future country's depopulation and further decline of higher educational institutions' graduates warn about the risk of possible highly qualified specialist deficit in Lithuanian labour market. The productivity of Lithuanian manufacturing enterprises is below the first quartile of European Union (EU) countries. That indicates the possible lack of highly qualified technological and management professionals in Lithuanian industry, inability to ensure the technological development, and attract the extensive investments. The specialized technological universities in Lithuania are responsible for the education of highly qualified technological specialists and implementation of industrial R&D projects, so these universities should direct their study programs and scientific activities only towards the real demands of industry and knowledge-intensive sectors.

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1. Introduction

The demand of technological specialists tends to grow in highly developed countries, as the technologies and highly qualified technological specialists are the main progressive industry promotion factors. The real sector of an economy plays the crucial role in industrial countries supplying the production and consumer products to the local and global markets. However, the deindustrialization is common phenomenon in many countries, when the production declines due to the inability to develop technologies, attract investments, and produce the competitive products. The technological knowledge allows for manufacturing enterprises to produce the marketable products at the competitive prices. The production resources are also very important factors, such as raw materials, energy, and human resource. The latter is crucial because the technological development in industrial enterprises is possible only having the highly skilled technological personnel. The responsibility of specialized technological universities is to educate the highly qualified specialists for industry, construction, ICT, and other knowledge-intensive sectors. The technological R&D activities are also under the responsibility of technological universities creating the basis of country's technological and economic development.

The aim of this research is to analyse the economic indicators of Lithuanian industry, construction, and ICT sectors development interrelating them with the supply and demand of technological specialists. The structure of the research is following: firstly, the economic indicators of Lithuanian industry, construction, and ICT sectors will be analysed to highlight current trends of business expansion, investments, employees, and value creation; secondly, the comparative analysis of Lithuania and other EU countries will be implemented positioning Lithuania in this context according to capital investments, employment, value creation, and productivity; finally, the future challenges related to human resource for Lithuanian industry, construction, and ICT services sectors will be analysed, presenting the current trends of specialists employed, Lithuanian depopulation, technological graduates of higher educational institutions, and making the statistical forecasts. The methods applied in this research consist of structural and dynamical statistical analysis, economic rankings, calculation of median and quartiles, polynomial regression analysis with confidence intervals and distribution curves, statistical mapping, Spearman's rho and Kendall's Tau B statistical dependency analysis, and power regression forecasting. The official statistical data from Statistics Lithuania and EUROSTAT was used in this research.

2. Industry, construction, and ICT sectors development factors

According to Mengistu and Mahesh [11], the availability of 5 types of resources mainly determines the capacity, competitiveness, and development of industry. These resources were classified into technological, human, financial, organizational, and physical. In addition, the physical infrastructure and information resources were mentioned. The competitiveness of industrial enterprises especially depends on management skill, technical knowledge, and the availability of highly qualified manpower. Hsiao, Chang, Chen, and Huang [6] explored the importance of national system of innovations which includes 6 main elements: technological levels within enterprises, skilled human resources, accumulated R&D talents, capital investments, government policy, and bridging institutions. Technological capabilities of enterprises are resources needed to generate and manage technological change, which include knowledge, skills, and experience together with the institutional support and linkages. Therefore, it is necessary to include the abilities to create business strategies, high technology infrastructure, inter-firm coordination and networks, and integration into global value chains [7]. Chou [2] analysed the necessities of innovative business models, that are considered as the sets of guidelines for innovative production of new products, applying new methods by which it becomes possible to get the competitive advantage through difference. According to Lei, Xin-Ya, and Fei [9] the high-tech industry development measurements are necessary to evaluate the technological, R&D, intermediate output, and final output efficiency, as well as the productivity of manufacturing lines and total factor productivity. These researchers also concluded that expenditures on technology, institutional factors, and scale factors have positive impact on high technology R&D efficiency. The expansion of innovative enterprise also requires developing the proper brand management system, which includes brand orientation, internal branding, and strategic brand management. The industrial companies must integrate brand building, brand identification, and relationship marketing raising the customers' perceived value and loyalty [19].

As an important factor of industry development in scientific literature the energy security of a country is mentioned, including the energy availability (steady production and supply), affordability, and efficiency [17]. Marais, Wlokas, de Groot, Dube, and Scheba [10] affirmed that large industries often are facing the social risks, emerging as potential impacts on a project that may result from its interaction with communities and stakeholders, so the enterprises must be able to manage them promoting good community relations and avoiding the significant costs for a company. Poor management of social risks also can emerge in productivity decline and wasting the personnel time when communities protest, most often due to the environment protection.

Fox and Skitmore [3] composed a set of eight key construction sector's development factors: financial resources and investor confidence, human skills and culture of transparency, industry-led better practice and culture, self-reliant construction culture, government policies and strategies supporting construction business, research and development for construction, institutional support, and supportive attitudes from aid agencies. Mengistu and Mahesh [12] from the list mentioned above highlighted the importance of effective manpower development for construction industry as result of collaborative efforts between construction enterprises, educational institutions, and government. Enterprises should understand the strategic role of human resource in their businesses and apply proper human resource management practices. Academic institutions should educate specialists having the required knowledge and skills. The government needs to play a central role in setting policies that integrate the initiatives of academicians and businessmen.

According to Wang, Wu, and Liu [18] the most critical factors affecting the modern service industry development are informatization, industrialization, marketization, and urbanization led by country's education and economic development. Under the growing international competitiveness and globalization, the development of information and communication technologies (ICT) and the growing role of innovations, central and local governments usually have broad expectations of R&D and innovation infrastructures, forming the innovative and scientific policies and aiming to ensure country's economic growth in long-term perspective. The importance of academics knowledge support for ICT business development and innovation activities has been identified at governmental level, so the collaborative partnership in R&D and innovation activities have been promoted, and public resources are being directed towards various national and regional funding mechanisms for universities and business interaction to generate innovative and competitive economy [15].

Pham, Nguyen, and Johnston [13] accented the importance of country's development policy including trade liberalization, market deregulation, macroeconomic stability, and foreign direct investment. Scott [16] explained the ability to supply cheap labour as a reason why countries on the world periphery have become important producers and exporters of low-technology and labour-intensive outputs. Gorynia, Nowak, and Wolniak [4] characterized the pattern of foreign direct investment (FDI) development path in such countries, when firstly inflows of FDI are directed towards the primary product sectors and labour-intensive manufacturing. Later, the flow of FDI is oriented to natural resource intensive sectors. Then the growth of domestic wages stimulates FDI flows to technology-intensive manufacturing producing the capital-intensive products.

However, today many economists and engineers argue, that in the context of manufacturing the world has stepped into 4th industrial revolution [20]. Greef and Schroeder [5] characterized the "Industry 4.0" strategy as close interlinkage of the economic, technical, educational, and labor market-oriented policies, together with state, trade unions, business, and academic cooperation. Primi and Toselli [14] argue, that digitalization enables new forms of industrialization, characterized by lower environmental impact, higher energy efficiency, and increased safety at work. While some economists during the 1990s warned about the "end of manufacturing era" and the transition to the services economies, the current digital technologies started a "manufacturing renaissance". Germany, USA, China, and other countries the interaction of manufacturing and digital technologies identified as their new competitiveness factor. Jolly and Hansen [8] suggest that "Industry 4.0" path development processes require multiple resources, in particular knowledge and financial investments. The future business failure cases generally will be caused by deficiencies in human resource competencies and skills. Abanteriba [1] accentuates the importance for new engineering graduates to be equipped with attributes that will enable them to meet the inevitable challenges of changes in technological environment. So, the technological universities worldwide deal with the question today: how these higher education institutions can adequately prepare their graduates to participate in the economy of rapid technological development?

3. Lithuanian industry, construction, and ICT services development indicators

The period of 2011–2020 in Lithuania can be considered as industry, construction, and information and communication technology (ICT) services rapid development decade. The number of industrial enterprises (mining, manufacturing, energetics, and water supply) during this period increased by 59.7 % from 14 464 to 23 101 units. The number of ICT enterprises in 10 years increased by 325.4 % from 2 412 to 10 260. The growth of business companies in construction sector continued until 2019, when the maximal number (33 036 enterprises) was reached. In 2020 economic lockdown the number of construction enterprises in Lithuania decreased by 0.3 %, however, compared to the year 2011 the number of this sector's enterprises was higher by 93.8 %. The most significant growth of employees was in ICT sector, where in 2020 were employed 36.7 % more persons than in 2011. The construction companies increased their personnel during the past decade by 22.9 %, and in the industry the number of employees grew by 15.0 % (see Fig. 1). In the overall Lithuanian business structure, the industrial, construction, and ITC companies in 2020 compounded 23.8 % of performing enterprises and 37.8 % of total Lithuanian employees.

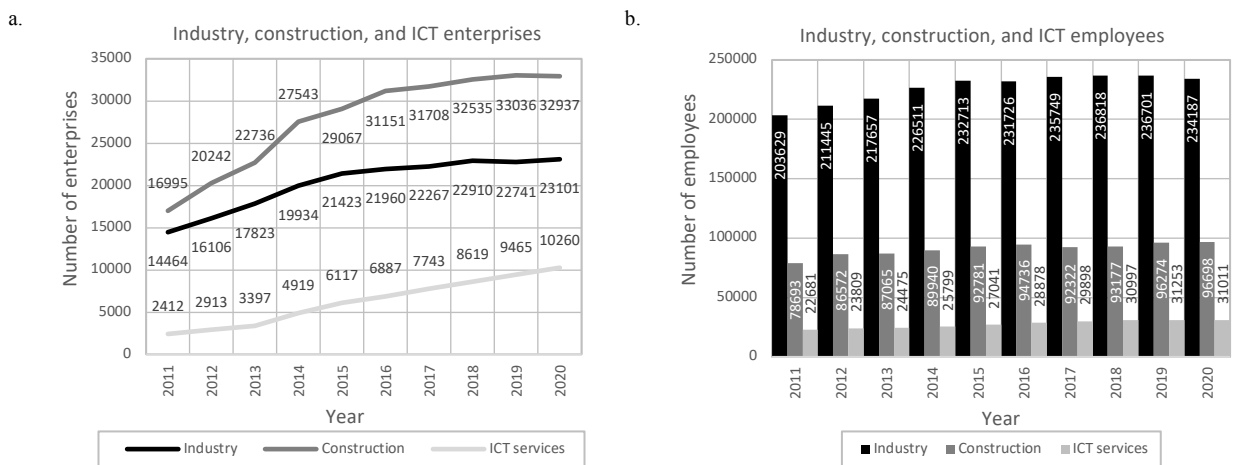


Fig. 1. Lithuanian industry, construction, and ICT (a) enterprises; (b) employees in 2011–2020

Lithuanian industry in 2020 created 25.5 billion EURO of the production value, while the construction companies 6.5 billion EURO, and ICT services 3.4 billion EURO. The most significant growth of production value creation was observed in ICT sector, where this indicator during the period of 2011–2020 increased by 135.0 %. Construction sector increased the production value by 86.0 %, and industrial businesses by 17.5%. However, the past decade was not of the continuous production value growth (excluding the economic lockdown of 2020). The created value of Lithuanian industry also declined by 8.9 % in 2014–2016, and construction sector by 2.2 % in 2016. Additionally, the value added at factor cost did not decline in whole 10 years period. The Lithuanian industry increased the aggregated value added by 31.1 % to 9.1 billion EURO, construction by 76.7 % to 3.2 billion EURO, and ICT sector even by 111.2 % to 1.8 billion EURO (see Fig. 2). The contribution of industry, construction, and ICT services to Lithuanian economy is very significant, because these sectors in 2020 created 40.6 % of total production value and 31.7 % of value added.

The structural indicators (see Table 1) show that Lithuanian industry in 2020 involved 19.8 % of capital investments, together with construction and ICT sectors the overall proportion is 25.8 %.

In this year Lithuania had 4 255 enterprises with foreign direct investments (FDI) of which 24.5 % were attracted into 3 analysed sectors. The aggregated FDI in Lithuanian enterprises were 23.9 billion EURO and 15.4 % (3.7 billion EURO) of this amount were directed into the industry. Construction and ICT services together add 9.1 % to this number. The average gross value added per hour worked by employees in Lithuania was 18.0 EURO, while the industrial activities generated 19.6 EURO (108.9 %) and ICT services 25.2 EURO (140.0 %). The 5.6 % lesser value

(17.0 EURO) was in construction sector. The average gross value added per employee in Lithuania (year 2020) was 32.5 thousand EURO.

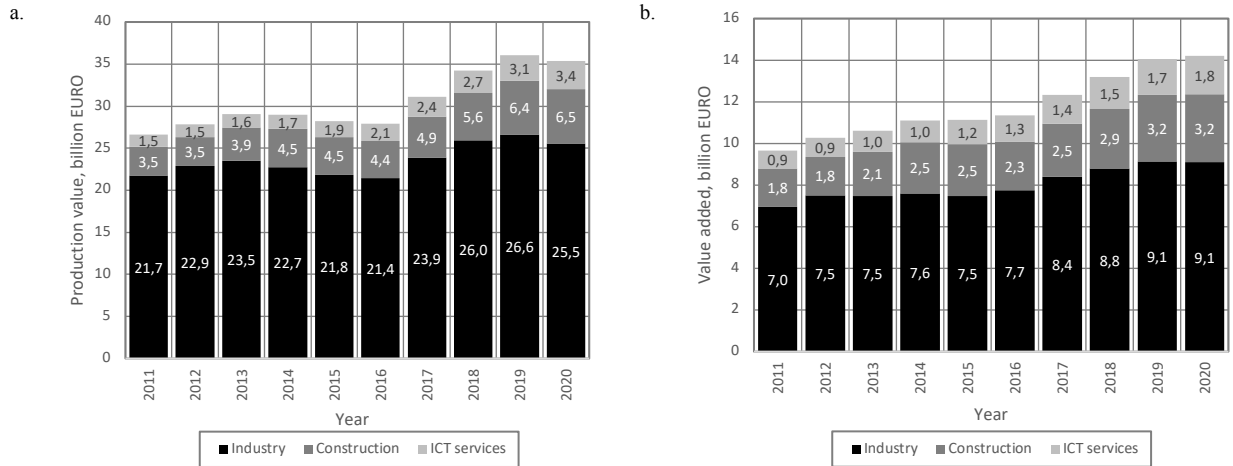


Fig. 2. Lithuanian industry, construction, and ICT sectors’ (a) production value; (b) value added in 2011–2020

Table 1. Structural indicators of Lithuanian industry, construction, and ICT services in 2020

Structural indicator (%)	Industry	Construction	ICT services	All sectors
Capital investments	19.8	4.3	1.7	100.0
FDI enterprises	13.3	4.0	7.2	100.0
FDI	15.4	2.0	7.1	100.0
Gross value added per hour worked by employees	108.9	94.4	140.0	100.0
Gross value added per employee	113.2	98.5	144.6	100.0

The industrial and ICT companies exceeded this value by 13.2 % and 44.6 % (36.8 and 47.0 thousand EURO). Only construction businesses were below average by 1.5 % (32.0 thousand EURO).

4. Comparative analysis of Lithuania and other EU countries

Analysing industrial indicators, the Lithuanian manufacturing sector was compared to other EU countries, because this sector is the most important in the whole industry, in 2020 including 92.3 % of enterprises, 88.1 % of employees, 89.5 % of production value, and 85.3 % of value added. Lithuanian manufacturing indicators in the context of EU-27 structural averages (minimal value, 1st quartile (Q1), 2nd quartile (median (Q2)), 3rd quartile (Q3), and maximal value) of year 2019 are given in Table 2.

Lithuanian manufacturing production value per capita was 8 173.2 EURO (20th rank in EU-27). This indicator was below EU-27 median by 40.9 %. The lower values than Lithuanian had 7 EU countries: Cyprus, Romania, Latvia, Croatia, Bulgaria, Greece, and Malta. According to manufacturing value added per capita (1 980 EURO) Lithuania was also in 20th place having the same 7 countries behind it. Under the rapid changes in technological business environment the development and progress of manufacturing enterprises highly depends on gross investments in machinery and equipment (GIME). This indicator’s Lithuanian rank was also 20th compared to 26 EU countries (the statistics of France was not available). Lithuania belongs to the group of EU countries with the least manufacturing sector’s investments into machinery and equipment. Together with Lithuania below 1st quartile (less than 219.8 EURO per capita) were another 6 EU countries: Ireland, Greece, Cyprus, Croatia, Latvia, and Bulgaria. The highest investment values had Luxembourg (954.9 EURO), Belgium (783.8 EURO), and Germany (760.7 EURO). The investments per person employed (IPE) in Lithuania were even worse (22nd rank) surpassing only Croatia, Greece,

Bulgaria, Cyprus, and Latvia. However, the Lithuanian manufacturing relative investment rate (investment / value added at factor cost) was quite optimistic (8th rank). This rate indicates that Lithuanian manufacturing enterprises invest in average 22.6 % of their value added.

Table 2. Lithuanian manufacturing indicators in the context of EU-27 structural averages (2019)

Manufacturing indicator	Value (LT)	Rank (LT)	Min (EU)	Q1 (EU)	Q2 (EU)	Q3 (EU)	Max (EU)
Production value (EURO per capita)	8 173.2	20	4 186.9	6 913.1	13 839.1	18 964.0	46 278.1
Value added (EURO per capita)	1 980.0	20	1 114.4	1 919.6	2 684.2	5 096.5	22 542.0
GIME (EURO per capita)	215.3	20	51.1	219.8	412.2	665.0	954.9
IPE (thousand EURO)	5.6	22	3.6	6.4	8.1	11.8	23.3
Investment rate (%)	22.6	8	1.5	14.1	17.5	22.7	36.7
Employees per 100 inhabitants	7.6	8	2.8	4.6	6.1	7.6	10.8
EFTEU per 100 inhabitants	7.3	6	2.7	4.4	5.5	7.2	10.7
TPE (thousand EURO)	105.4	23	68.2	121.1	160.8	344	1 140.1
GVA per employee (thousand EURO)	26.1	24	16.1	31.8	41.9	87.3	477.5

The comparative analysis has shown that Lithuania belongs to EU countries having relatively high proportion of employees employed in manufacturing (8th rank). In this country 7.6 persons from 100 inhabitants work in manufacturing enterprises. The least proportion is in Greece (2.8), Cyprus (3.9), and Netherlands (4.0). Analysing the employees in full time equivalent units (EFTEU) per 100 inhabitants we can see that Lithuania is above 3rd quartile (7.2) and obtains 6th rank. So, in Lithuanian labour market the manufacturing sector plays very important role, but the productivity of manufacturing personnel is insufficient. The turnover per person employed (TPE) is only 105.4 thousand EURO moving Lithuania in the list of EU-27 countries to 23rd place below 1st quartile of 121.1 EURO. Lithuanian indicator is higher only than Bulgaria (68.2 EURO), Latvia (80.3 EURO), Croatia (81.0 EURO), and Romania (85.1 EURO). The highest turnover per person employed in 2019 were able to reach Ireland (1 140.1 EURO), Belgium (525.5 EURO), and Netherlands (512.7 EURO). The gross value added (GVA) per employee in Lithuanian manufacturing with value of 26.1 thousand EURO obtained the 24th rank in the list of EU-27 countries. The worse manufacturing productivity is only in Bulgaria (16.1 thousand EURO), Romania (19.7 thousand EURO), and Latvia (24.7 thousand EURO). The leading EU-27 country according to manufacturing productivity is Ireland having the value of 477.5 thousand EURO. The other 4 leading countries (Denmark, Belgium, Netherlands, and Sweden) were able to exceed the 100 thousand EURO of gross value added per employee.

The productivity of personnel in manufacturing enterprises of EU-27 countries directly depend on the amounts of investments per person employed (see Fig. 3a). Higher investments tend to higher productivity. The distribution curve of investments per person employed (year 2019) indicates that in most EU countries this rate does not exceed 15 thousand EURO. However, the turnover per person employed in range of [8; 15] thousand EURO of investments is significantly higher than having the manufacturing sector's investments per person employed value up to 8 thousand EURO. In 12 EU countries where manufacturing enterprises' investments per person do not exceed 8 thousand EURO, the average manufacturing turnover per person employed is 112.9 thousand EURO. The outlier is Ireland having the highest turnover of 1 140.1 thousand EURO (see the top point in Fig. 3a) in this group of EU-27 countries. In 11 EU countries having the investment value in range of [8, 15] thousand EURO, the average manufacturing turnover per person is 281.0 thousand EURO (the value is 148.9 % higher).

As the capital investments are related to higher manufacturing efficiency, the higher gross value added per employee directly positively impacts the GDP of a country (see Fig. 3b). Ireland and Luxembourg were excluded from this analysis as the outliers having extremely high values. The Pearson correlation coefficient between gross value added and GDP in the rest of EU countries is 0.95, what indicates the crucial importance of investments and abilities to create value in the most efficient way for manufacturers.

For the development of country's industry, the research and development (R&D) activity is necessary including the business, government, and higher education sectors. The gross domestic expenditure on R&D per Lithuanian inhabitant in 2020 was 205 EURO. In this number the contribution of business sector was 98 EURO, higher education

sector 75 EURO, and 32 EURO were obtained from government. The EU-27 average expenditure is 608 EURO, so Lithuania spends for R&D only 33.7 % of EU average. This limited Lithuanian R&D activity cannot ensure the promotion of Lithuania to the leading industry positions. The R&D leaders in EU are Denmark, Sweden, Belgium, Austria, Germany, Finland, Luxembourg, and Netherlands spending more than 1 000 EURO in 1 year on R&D activities per inhabitant (see Fig 4).

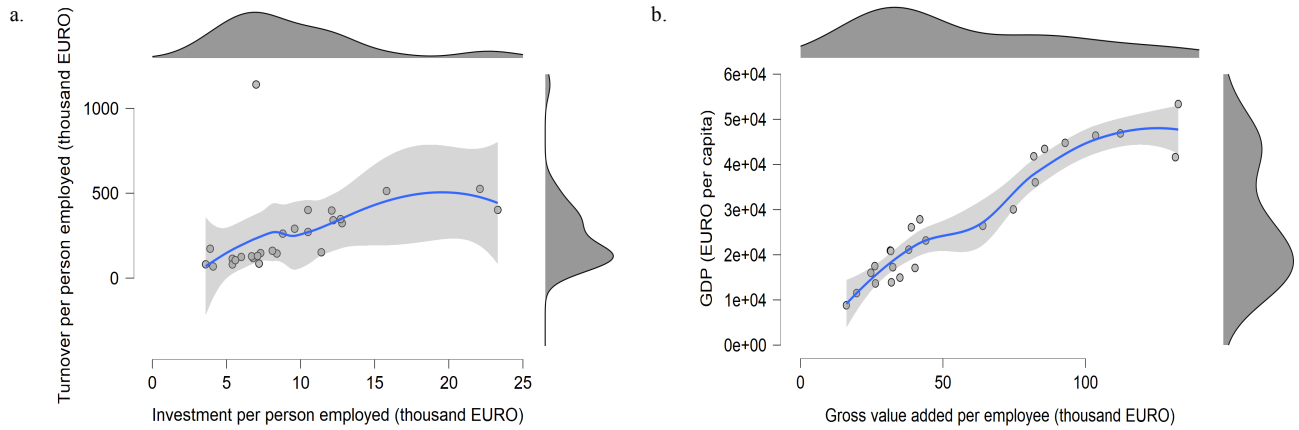


Fig. 3. Statistical interrelations between EU manufacturing indicators: (a) investments and turnover; (b) gross value added and GDP

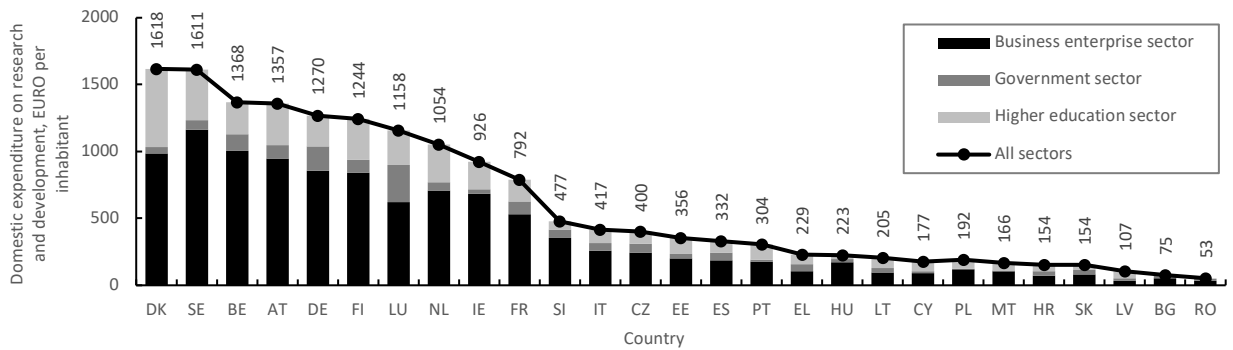


Fig. 4. EU-27 gross domestic expenditure on research and development per inhabitant in 2020

The Lithuanian construction sector since 2015 increased the production by 22.0 % in 2019 and during the global economic lockdown in 2020 its production was higher by 19.7 % (see Fig. 5).

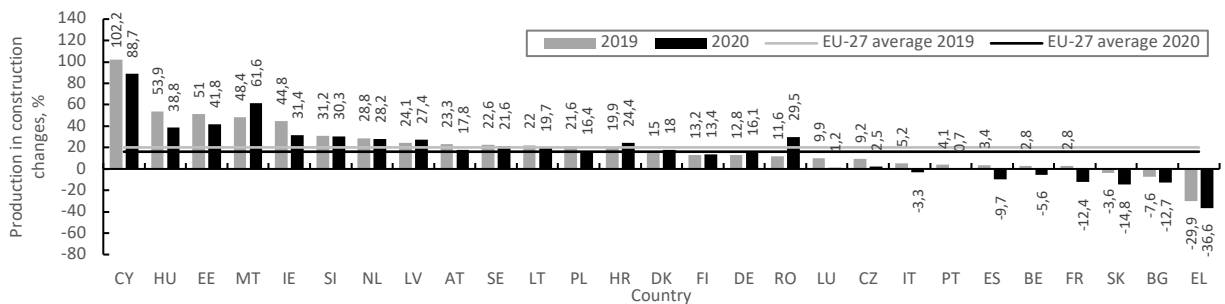


Fig. 5. EU-27 production in construction changes (%) in 2019 and 2020 compared to 2015

According to 2019 year's growth rates Lithuania was in 11th place compared to other EU-27 countries. During the 2019–2020 period Lithuanian construction production growth was above EU averages (20.1 % and 16.1 %). In both these years the construction production decline was observed in Greece, Bulgaria, and Slovakia. The most intensive construction growth was in Cyprus, Hungary, Estonia, Malta, Ireland, and Slovenia, where even in 2020 the construction amounts were higher by more than 30 % compared to 2015 year's levels.

The development prospects of ICT services in Lithuania are optimistic. According to the average annual percentage change of value added in this sector Lithuania is one of the leading countries in EU (see Fig. 6), having the growth rate of 3.69 % yearly during the period of 2010–2019.

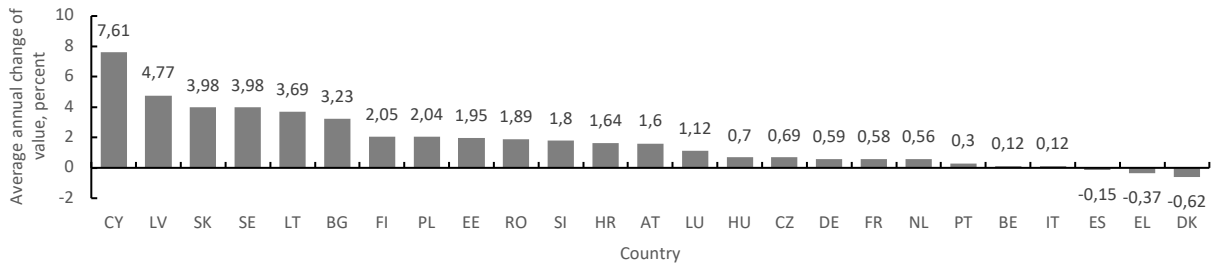


Fig. 6. EU average annual percentage change of value added by ICT services in 2010–2019

Lithuania is in the 5th place after Cyprus, Latvia, Slovakia, and Sweden. Ireland and Malta were not included into this analysis due to the lack of statistical data. The EU average of this indicator is 1.75 %, so Lithuania overpasses this level 2.1 times.

5. Future challenges for Lithuanian industry, construction, and ICT services sectors

The future challenges related to human resource were analysed in this research highlighting the risk of specialist insufficiency for Lithuanian industry, construction, and ICT services. The technological universities must be oriented towards the education of highly skilled professionals for these economic sectors. The trends of employees working in Lithuanian industry, construction, and ICT services during the period of 2006–2021 can be seen from the regression lines with 95 % confidence intervals in Figure 7.

The number of employees in Lithuanian industry tended to decline until the beginning of 2012, when only 203 629 persons were employed. Afterwards the rapid growth period was observed until the end of 2015 when this number stabilized and started the slight decline until 2021. The construction sector is very sensitive to economic cycles. The peak-point of employees was reached at the end of credit boom period in 2009, when 130 223 persons were employed there.

Until the beginning of 2012 the number of employees in construction declined by 39.6 %. The enterprises of this sector started 2021 having 74.3 % of employees compared to 2009. The widest construction sector's confidence interval in Figure 7 indicates the highest instability in labour-force demand. However, the current trend of 2018–2021 is positive. The most stable employee growth was observed in ICT services, where the long-term trendline is the most straight and the confidence interval is the narrowest. In the beginning of 2021 this sector had 65.2 % more employees than in 2006. In current 15 years the demand of ICT specialists grows in average by 3.4 % yearly.

The depopulation of Lithuania causes the lack of workforce under the circumstances of industry development. In 1991 Lithuania had maximal number of inhabitants (3 704 134 persons). In the beginning of 2021, the country's population was 2 795 680 persons (-24.53 %).

Since 1996 the least depopulated counties are Vilnius (-5.42 %), Klaipėda (-18.65 %), and Kaunas (-22.69 %) where are directed the main capital investments (4 414, 3 367, and 3 101 EURO per capita in 2020). The rest counties have lost from 29.79 % (Telšiai) to 37.32 % (Utena) of population and the capital investments there vary from 1 504 EURO (Alytus) to 2 348 EURO (Šiauliai) per 1 inhabitant (see Fig. 8).

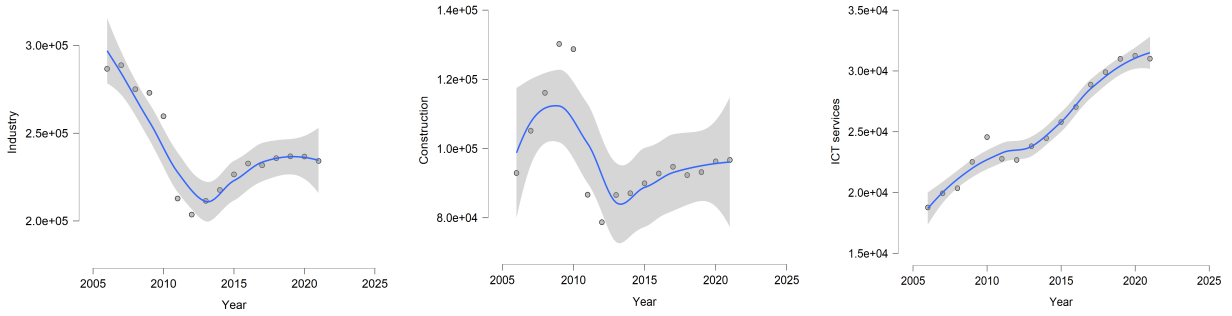


Fig. 7. Regression lines with 95 % confidence intervals of employees in Lithuanian industry, construction, and ICT services

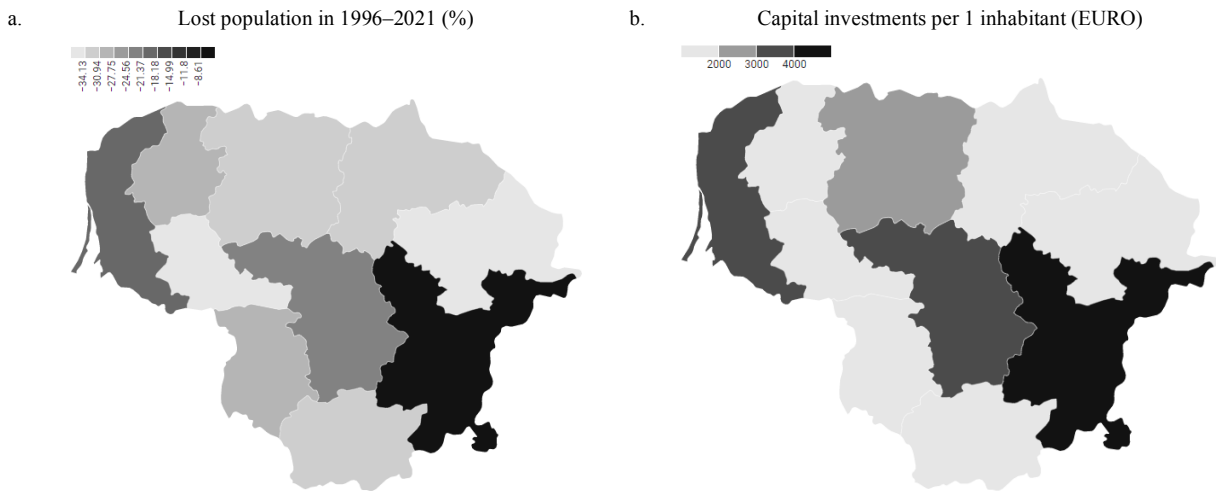


Fig. 8. Lithuanian (a) depopulation percentage in counties; (b) capital investments per 1 inhabitant in 2020

The outstanding foreign direct investments (FDI) attracting Lithuanian county is Vilnius, where in 2020 this indicator was 21 830 EURO per 1 inhabitant. The other least depopulating counties (Klaipėda, Kaunas, and Telšiai) also have following higher FDI values from 3 743 to 5 134 EURO. The most depopulated counties obtained values from 880 EURO (Tauragė) to 2 223 EURO (Panevėžys). The most populated areas of Vilnius, Kaunas, and Klaipėda intensively attracting investments are able generate the highest value added (3 999.9; 2 196.2; and 1 458.3 million EURO accordingly in 2020). The value creation enables to increase the standards of living what attracts population and promotes further investments. The other mostly depopulated counties in 2020 created only from 260.1 to 973.4 million EURO of value added (see Fig. 9).

Estimating the statistical dependencies between the ranked values of remaining population, capital investments, foreign direct investments, and value added in Lithuanian counties, the Spearman’s rho and Kendall’s Tau B matrix was composed in Table 3.

Spearman’s rho:

$$\rho = 1 - \frac{6 \times \sum d_i^2}{n \times (n^2 - 1)}, \tag{1}$$

where d is the difference of variables’ ranks, and n is the number of variables. Kendall’s τ_B :

$$\tau_B = \frac{n_c - n_d}{\sqrt{\left(\frac{n \times (n-1)}{2} - \sum_i \frac{t_i \times (t_i - 1)}{2}\right) \times \left(\frac{n \times (n-1)}{2} - \sum_j \frac{u_j \times (u_j - 1)}{2}\right)}}; \quad (2)$$

where n_c is the number of concordant variable pairs, n_d is the number of discordant variable pairs, t_i is the number of tied values in the i^{th} group of ties for the first quantity, u_j is the number of tied values in the j^{th} group of ties for the second quantity, and n is the number of variables.

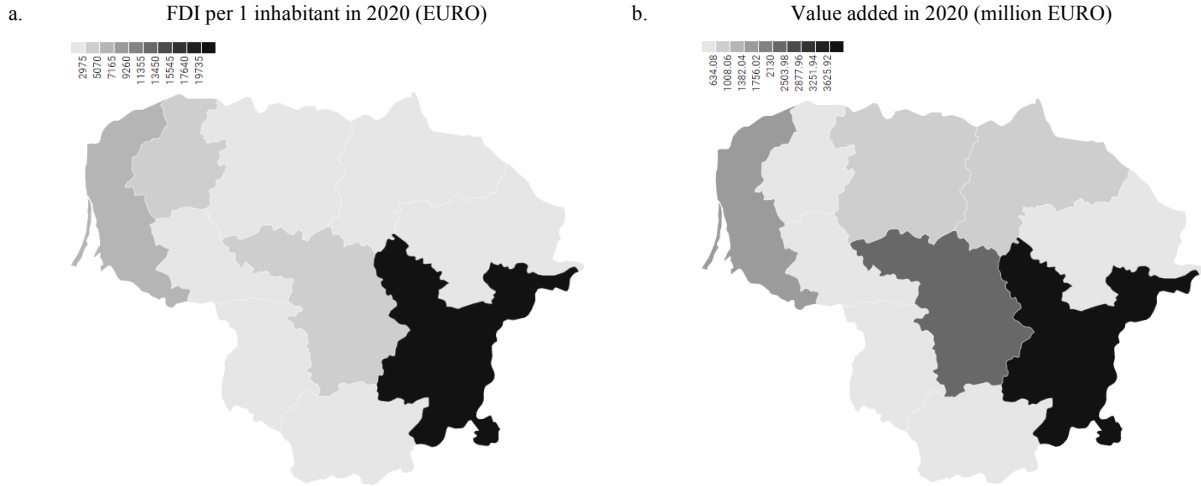


Fig. 9. (a) FDI per 1 inhabitant; (b) value added in Lithuanian counties (2020)

Table 3. Matrix of Spearman's rho and Kendall's τ_B

Variable	Statistical indicator	Population	FDI	Value added
1. Population	Spearman's rho	-		
	p -value	-		
	Kendall's τ_B	-		
	p -value	-		
2. FDI	Spearman's rho	0.770*	-	
	p -value	0.014	-	
	Kendall's τ_B	0.60	-	
	p -value	0.017	-	
3. Value added	Spearman's rho	0.648*	0.842**	-
	p -value	0.049	0.004	-
	Kendall's τ_B	0.511*	0.733**	-
	p -value	0.047	0.002	-
4. Capital investments	Spearman's rho	0.915***	0.855**	0.830**
	p -value	< 0.001	0.004	0.006
	Kendall's τ_B	0.822***	0.689**	0.689**
	p -value	< 0.001	0.005	0.005

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The statistical dependency analysis results evidently indicate that capital investments ($\rho = 0.915$; $\tau_B = 0.822$), FDI ($\rho = 0.77$; $\tau_B = 0.6$), and value added ($\rho = 0.648$; $\tau_B = 0.511$) significantly directly depend on population in Lithuanian counties. The overall and foreign direct investments highly directly correlate ($\rho = 0.855$; $\tau_B = 0.689$). The value added in Lithuanian counties has strong dependencies on capital investments ($\rho = 0.830$; $\tau_B = 0.689$) and FDI ($\rho = 0.842$; $\tau_B = 0.733$).

The number of industry, construction, and ICT new specialists educated by Lithuanian universities and colleges in 2013–2020 are given in Table 4. The average annual change rate (ΔY (%)) of this period was also calculated for every group of specialists. Analysing the university bachelor graduates the most average annual decline is being observed in architecture and construction, physical sciences, and engineering (from -6.3 % to -15.4 % yearly). The education of manufacturing and processing specialists also declines. The growing number can be observed only in ICT sphere. The university master graduates constantly decline in all analysed professions (from -2.8 % to -7.0 % yearly). In Lithuanian colleges the ICT specialist graduation tends to grow, however all other professions decline.

Table 4. Industry, construction, and ICT specialists educated by Lithuanian universities and colleges in 2013–2020

	2013	2014	2015	2016	2017	2018	2019	2020	ΔY (%)
University bachelor graduates:									
Physical sciences	367	301	284	308	270	275	247	209	-7.7
ICT	598	428	384	382	488	555	667	709	2.5
Engineering	1 967	1 459	1 530	1 431	1 469	1 381	1 351	1 245	-6.3
Manufacturing and processing	166	85	98	92	115	191	161	133	-3.1
Architecture and construction	1 142	783	727	586	475	455	416	355	-15.4
University master graduates:									
Physical sciences	161	148	132	128	118	117	108	108	-5.5
ICT	155	158	137	127	173	149	127	127	-2.8
Engineering	852	679	671	682	712	682	692	682	-3.1
Manufacturing and processing	91	73	78	65	79	55	49	73	-3.1
Architecture and construction	351	349	291	266	291	262	228	211	-7.0
College graduates:									
Physical sciences	-	-	-	16	22	21	13	14	-3.3*
ICT	98	101	58	86	91	108	118	131	4.2
Engineering	1 349	1 401	1 311	1 335	1 368	1 269	1 181	1 032	-3.8
Manufacturing and processing	211	240	223	255	227	281	229	209	-0.1
Architecture and construction	714	630	465	435	425	469	429	366	-9.1

* Average annual change rate in 2016–2020

Analysing the quality of Lithuanian educational institutions 6 indicators from The Global Competitiveness Report 2019 of World Economic Forum and Program for International Student Assessment (PISA) 2018 Results document were compared to 7 geographically nearest countries to Lithuania (see Table 5).

Table 5. Comparative analysis of Lithuanian educational system indicators

	LT	LV	EE	PL	RU	BY	SE	FI
Skillset of graduates (rank/141)	82 (6)	58 (4)	28 (3)	101 (7)	77 (5)	-	11 (2)	2 (1)
Ease of finding skilled employees (rank/141)	124 (7)	100 (5)	122 (6)	80 (4)	47 (3)	-	25 (2)	5 (1)
Research institutions prominence (rank/141)	61 (5)	73 (7)	67 (6)	18 (2)	9 (1)	-	23 (3)	28 (4)
PISA reading score	476 (6)	479 (5)	523 (1)	512 (3)	479 (5)	474 (7)	506 (4)	520 (2)
PISA mathematics score	481 (7)	496 (5)	523 (1)	516 (2)	488 (6)	472 (8)	502 (4)	507 (3)
PISA science score	482 (6)	487 (5)	530 (1)	511 (3)	478 (7)	471 (8)	499 (4)	522 (2)
Average rank in group of 8 countries	6.17	5.17	3.00	3.50	4.50	7.67*	3.17	2.17

* Only 50 % of criterions were ranked of Belarus due to lack of statistical data

The ease of finding skilled employees in Lithuania is the worst not only compared to the nearest states, but it is also one of the worst (124 rank) in the list of ranked 141 world’s countries. The skillset of graduates is too low in Lithuania (82nd rank from 141). In the region of nearest countries, Lithuania is overpassing only Poland and is far from leading Finland. The nearest to Lithuania research institutions prominence leader is Russia, while Lithuania is in the 5th place relatively comparing to neighbour countries and is 61st in the world. According to PISA reading, mathematics, and science scores the leader in the list of 8 countries is Estonia, while Lithuania is far from leading positions. In the last row of Table 5 the average ranks in analysed group of 8 countries were calculated using these countries’ ranks in the brackets above. According to these aggregated ranks, Lithuanian educational system’s quality is behind Finland, Estonia, Sweden, Poland, Russia, and Latvia.

The average annual decline rate of student admission to Lithuanian universities in 2008–2020 was -6.2 %, while in colleges the number of students declined by -6.12 %. Lithuanian population in 1990–2020 declined in average by -0.93 % yearly and according to the statistical projections of EUROSTAT, in 2100 this country will have lost 54.6 % of its population (see Fig. 10). The power regression models were developed to predict the student admission to Lithuanian higher education institutions until 2040 (see Fig. 11), where on x axis the year 2008 = 1.

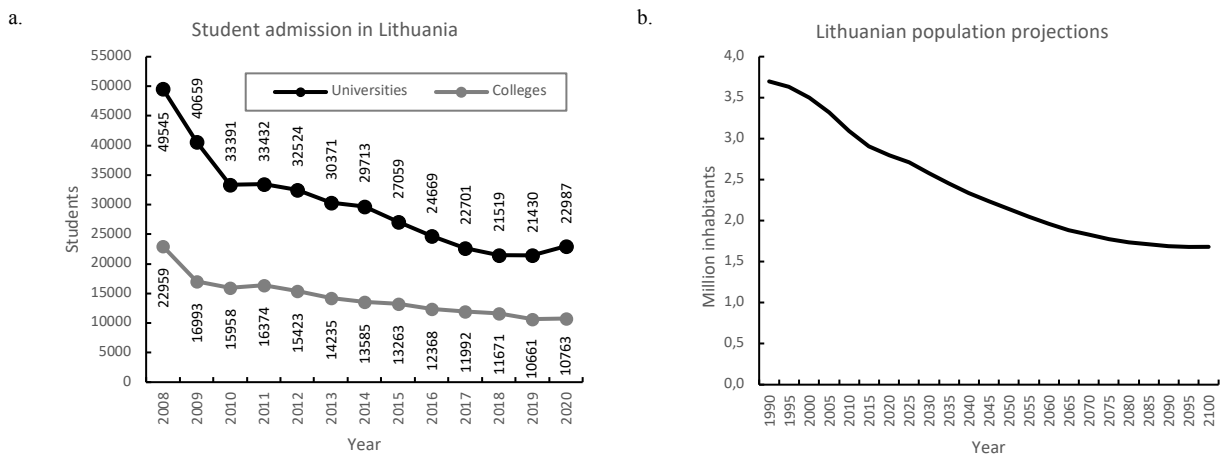


Fig. 10. (a) Student admission to Lithuanian higher educational institutions; (b) Lithuanian population projections until 2100

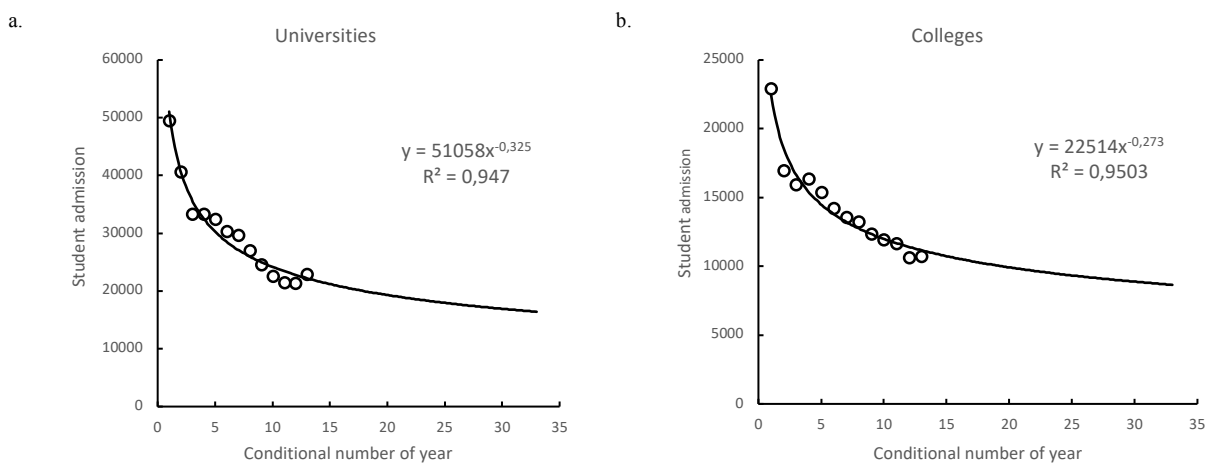


Fig. 11. Statistical prediction models of student admission to Lithuanian (a) universities; (b) colleges until 2040

The correlation coefficients between dependent variables and time factor in power regression models are in range of 0.9756–0.9801. The number of admitted students at Lithuanian universities in 2025 will be lower by 59.7 % and in 2040 by 66.9 %, compared to year 2008. The colleges can expect the students’ admission decline by 55.5 % and 62.2 % accordingly (see Table 6).

Table 6. Student admission to Lithuanian higher education institutions forecasts by power regression models

	2025	2030	2035	2040
Student admission to universities	19 957	18 429	17 288	16 389
Change compared to 2008 (%)	-59,7	-62,8	-65,1	-66,9
Student admission to colleges	10 227	9 565	9 065	8 668
Change compared to 2008 (%)	-55,5	-58,3	-60,5	-62,2

The economic indicators of industrial, construction, and ICT businesses evidently show the rapid development of these sectors in Lithuania, however, the changes in country’s social environment make serious challenges for these enterprises to obtain the highly qualified specialists. The continuous depopulation of Lithuania causes the lack of workforce. In addition, the statistical indicators of Lithuanian educational system performance are worse than most neighbour countries have. The investors evaluating the country’s investment climate cannot be satisfied by current social trends in Lithuania, what increases the risk to lose significant investments and slow down the growth of economy.

6. Conclusions

During the last 10 years period in Lithuania the industry, construction, and ICT services sectors tended to grow increasing the number of enterprises, employees, and value added. In 2020 25.8 % of capital investments and 24.5 % of foreign direct investments were directed to these sectors. In overall Lithuanian industry the manufacturing sector is the most important, having 92.3 % of enterprises, 88.1 % of employees, creating 89.5 % of production value, and 85.3 % of value added. However, in the context of EU-27 countries Lithuanian manufacturing production value, gross investments in machinery and equipment, value added, investments per person employed, turnover per person employed, gross value added per employee are below EU median, positioning Lithuania in 20th – 24th places. In Lithuanian manufacturing enterprises work relatively more employees per 100 inhabitants compared to most EU countries, but the labor productivity is insufficient. The relatively low involvement of Lithuanian business, government, and higher education institutions into the research and development activity cannot ensure the promotion of Lithuania to the leading industry positions, when the total expenditures for research and development in this country are 33.7 % of EU average. The Lithuanian construction sector significantly grows its production and even during the global economic lockdown in 2020 its production growth was above EU average. The development of ICT services in Lithuania is also quite intensive. According to value added growth rate in this sector Lithuania is one of the leading countries in European Union.

The main challenges of Lithuanian industry, construction, and ICT further development are related to changes in social environment, appearing in continuous country’s depopulation and possible future deficit of specialists. The most significant growth is being observed in the demand of ICT specialists. The construction sector also increases the number of employees, but it is very sensitive to the business cycles, so the labour demand there is highly fluctuating depending on the stage of economic cycle. The industry currently stabilized the necessary quantity of workforce, and it started the slight decline. The least depopulating Vilnius, Kaunas, and Klaipėda counties attract the most investments and create the highest value added. That indicates the importance to accumulate the technological specialists in these areas ensuring the business investments, the growth of knowledge-intensive sectors and the whole Lithuanian economy.

The education of new technological specialists in Lithuanian higher educational institutions constantly declines, except the ICT graduates. The highly qualified workforce supply is declining what deteriorates the general investment climate of Lithuania. The comparative analysis of Lithuanian educational systems indicators has shown that this country concedes the leading positions for the nearest countries. The skillset of graduates and ease of finding skilled

employees is complicated according to the rankings of world countries. The student admission to Lithuanian higher educational institutions declines highly correlating with country's massive depopulation. The official future population projections were used to forecast the possible magnitude of students decline what allows foresee the increasing deficit of technological specialists for Lithuanian industry.

The businesses in future will see higher investment risk related to the lack of technological specialists, especially in highly depopulated Lithuanian regions. The highly qualified specialists are the main factor developing the knowledge-intensive economic activities. So, the technological universities in Lithuania have the crucial importance for the development of country's industrial sector and responsibility to educate the highly qualified technological specialists. Directing the studies and scientific research activities of technological universities only to industry's knowledge-intensive sectors demands, employing the highly specialized scientists and experienced professionals of technologies, industrial business and industrial economics can promote the Lithuanian industry, construction, and ICT sectors' growth increasing the trust of students, business enterprises, and investors.

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Project Activities as a Tool for Intercultural Competence Development of Vocational Teachers

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Abstract

Constant changes of science and technologies pose increasingly higher requirements to vocational teachers both as specialists of corresponding vocational subject area and personalities seeking for diverse improvement, being open to education innovations and international integration, and able to flexibly adapt to constant changes and realise the accumulated potential. Competence development of educators is influenced by international projects implemented by educational organisations under the *Erasmus* programme. Participation of vocational teachers in projects enables them acquiring intercultural education experience and developing the general competencies and particularly the intercultural competence that helps the educators become more effective in the chosen area of education. Thus, the authors of the paper seek to substantiate the project activities empirically as a tool for intercultural competence development of vocational teachers.

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1. Introduction

In general, a project is defined as complex coordinated efforts limited by time, budget, resources, and purposive execution specifications and aimed at meeting the consumer needs [1]. In the context of education, a project is described as a cooperation process intended for attaining certain learning results through thoroughly planned activities

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and involving different teachers and the entire education community [2]. Education projects are created for the benefit of the learners and, importantly, for the project participants to acquire specific knowledge and skills [3].

In Lithuanian education literature, a project is generally referred to as a teaching method, pedagogical technology, teaching system, and education project [4], one of the oldest methods of teaching based on the philosophical concept of pragmatism [5], a public and collegial form of group work, learning or studies oriented to development and activity and helping solve uncertain situations, assess and give sense to relations of an individual with the surroundings breaking wide open [6]. Project activities and project learning are defined as a multidimensional concept, *i.e.* as a didactic competence, combination of teaching / learning methodology, knowledge construction, and scientific approach, as a means for reforms and democratic transformation rather than just a learning / teaching method [7].

In a contemporary education system, projects represent one of the means for education system modernisation, provided for in strategies of all vocational training institutions as a factor promoting the transformation of education and improvement of teacher competences. In particular, personal qualities of educators are emphasised as well as their motivation, innovative approach to their activities and willingness to constantly improve themselves while taking over the best practices of vocational training and modern educational technologies of the subjects taught from foreign countries [8]. Project activities help acquire new competences and develop those already possessed. They reveal the holistic competence of a person, *i.e.* the ability to assess new situations by using the available knowledge; to choose the appropriate methods and ways of action and, following personal values and beliefs, to enable the people to act in uncertain situations, and to integrate the subject, vocational and general competencies [9]. Besides the already mentioned competencies, the Description of the competence of the teacher's profession of the Republic of Lithuania [10] singles out the general culture competence that is described as knowledge, skills, abilities, personal qualities, and values determining successful activities of an individual in a specific culture.

Vocational teachers are motivated to take part in the activities of international mobility and partnership projects by the opportunity to develop their intercultural competence. As suggested by descriptions of activities and agendas of projects involving educators, almost all project activities contain cultural cognition activities that unquestionably help improve language skills and abilities, get to know different cultures better, develop cultural awareness, and encourage intercultural collaboration, *i.e.* develop the intercultural competence of vocational teachers.

The concept of intercultural competence (IC) is a multi-layered entirety of different abilities, individual personal qualities, skills, attitudes, understanding of a different culture (including language), and effective communication with representatives of another culture. The majority of researchers define intercultural competence as the entirety of a person's cognitive, emotional and behavioural competences encompassing attitudes, knowledge, skills, awareness, and knowledge of foreign languages [11–15]. Fantini [16] emphasises intercultural abilities that become evident through behavioural manifestations or qualities becoming apparent through such attributes as respect, empathy, flexibility, patience, engagement, curiosity, openness, motivation, sense of humour, and tolerance. According to Deardorff [13], IC is a competence of continuous learning, while its development is understood as a continuous process transpiring in different ways, with the key points being empathy and ethno relative view.

Intercultural competence development is a long-term spiral process lasting one's whole life and a composite element of each individual's development. Intercultural competence development methods mostly referred to in scientific literature include formal and non-formal / informal learning methods [13, 17] Learning can also occur through experience, while interacting with people from different countries and cultures, participating in mobility, intercultural cooperation, best practice sharing, education, and teaching projects. In response to changes occurring in the society, economy, and education, vocational teachers should develop their IC in an integrated manner, combining formal development programmes and non-formal and informal learning.

Lithuanian teachers take part in different international projects, whereas teachers from vocational schools generally implement the projects under *Erasmus+* strategic partnership programme. Participating in activities of international projects, vocational teachers familiarise themselves with education and vocational training systems of different countries, cultural features inherent to certain countries, build international relations with vocational schools and companies, meet people of different cultures and nations, and create diverse structures of interaction. Thus, intercultural competence and its development are dedicated significant attention. The latter insights suppose the objective of the research empirical evaluation of project activities as a tool for intercultural competence development of vocational teachers.

2. Research design

Seeking for the set research objective, qualitative and quantitative research approaches were selected. The research proceeded in two subsequent stages. In the first stage, invoking the quantitative research method, the manifestation of intercultural competence dimensions of vocational teachers was analysed. Following Byram [18], five dimensions of intercultural competence were selected: (1) intercultural attitudes, (2) knowledge, (3) skills of interpreting and relating, (4) skills of discovery and interaction, (5) critical cultural awareness.

Quantitative research instruments and procedures. For the quantitative research, a questionnaire was used that was compiled based on intercultural competence assessment tools of Byram [11] and Fantini [16]. The questionnaire version was prepared and adapted in Lithuanian by the scientists of Kaunas University of Technology [19–20]. Items comprising the questionnaire were rated on a 5-point Likert scale. Each statement was evaluated by calculating the arithmetical average and general average (M), reflecting the manifestation level of each individual intercultural competence dimension from low (1) to high (5).

Seeking to assess whether all statements of the questionnaire scale reflected the value under consideration, a Cronbach's alpha coefficient was used. An acceptable Cronbach's alpha coefficient should be above 0.7 [21]. After verifying the questionnaire used for the survey with a SPSS 24.0 package, a Cronbach's alpha of 0.919 was obtained. This value suggests that the correlation between all items of the questionnaire is sufficiently strong (> 0.7); hence, it can be stated that the questions included in the questionnaire are reliable and reveal the phenomenon under consideration – manifestation of intercultural competence dimensions of vocational teachers in project activities.

Invoking a purposive sampling method, questionnaire survey was conducted in vocational training institutions located in ten regions of Lithuania: one vocational training institution from each region of the country, which participated in at least two national and at least four international projects in 2015–2019. A five-year period was selected in consideration of project classification by duration. Questionnaire survey was conducted in September–October 2020 with a total of 211 respondents surveyed.

In the second stage, a semi-structured questionnaire was chosen to obtain insights into the manifestation of international / intercultural experience and intercultural competence development of vocational teachers in project activities. The sequence of questions mapped in the interview plan is to be linked with the international / intercultural experience acquired by the vocational teachers and intercultural competence development methods applied.

Instruments and procedures of qualitative research. Conversation that best allows for disclosure of individual experiences [22] was applied in the qualitative research identifying the benefits of vocational teachers' participation in *Erasmus+* programme projects and interview method was selected enabling to come closer to the individual perception, meanings of a phenomenon and construction of reality [23–24]. Research participants were surveyed using a semi-structured interview face-to-face, *i.e.* in the course of the conversation, they were asked open-ended questions.

Selection of the research sample and justification. When organising qualitative research, the research sample representativeness [23–24] was taken into account. The sample of interviewees was compiled based on the research objective and criteria of the participants, *i.e.* target or criterion-based selection was applied to select certain individuals deliberately, seeking to obtain important information that could not be otherwise acquired [25–26].

When compiling the research sample, the aim was to:

- cover a maximum territory, *i.e.* the largest vocational training institutions operating in the regions of the country (regions of Vilnius, Kaunas, Klaipėda, Šiauliai, Alytus, Panevėžys, Utena, Marijampolė, Tauragė, and Telšiai);
- expediently select the research subjects who are able to provide sufficient information about the issue under consideration.

The qualitative research sample is comprised of the observation subjects who are sufficiently informative in respect of the research and represent the population responsible for the specific activity relevant to the research. In the current research, the target group comprised 9 vocational teachers and vocational teachers who have worked as international project managers and participated in more than two national and international projects in 2015–2019 of the vocational training centres with the largest experience in project activities (Alytus Vocational Training Centre, Public Institution Panevėžys Vocational Training Centre, [Kaunas] Karalius Mindaugas Vocational Training Centre) and those with less

experience in project activities (Vilnius Vocational Training Centre of Service and Business Employees, Tauragė Vocational Training Centre, Šiauliai Vocational Training Centre). The research was conducted in September–October 2020 [27].

Data analysis methods used in qualitative research. To process the qualitative research data, a qualitative content analysis method was used. This method helped identify certain meaningful examples of empirical indicators reflecting the experience and attitudes of the subjects associated with the research questions. When processing the data, each respondent was given a code including the target group [T], case number, and transcribed text page number containing the sample of notional context, *i.e.* statement.

3. Research findings

Manifestation of IC dimensions of vocational teachers. It was determined that the intercultural competence of vocational teachers and project leaders who took part in the survey was high (see Table 1). Seeing that the survey involved both project leaders of vocational training institutions who worked with vocational teachers and the vocational teachers themselves who carried out the project activities, the statistical significance of differences between statements was assessed applying the Mann-Whitney criterion.

It was established that there was no statistically significant difference between the answers of vocational teachers and project leaders who took part in the survey (significance level, $p > 0.05$). The paper presents summarised results of the IC dimensions' manifestation of vocational teachers.

The Mann-Whitney criterion was applied to assess the influence of qualification category (lowest and highest) of vocational teachers on the manifestation of IC. It is noteworthy that no statistically significant differences were identified between the vocational teachers with the qualification category of a vocational teacher and those with the methodologist's category ($p > 0.05$), *i.e.* the qualification category held by the vocational teachers had no effect on the manifestation of IC dimensions.

Seeing that in vocational schools, vocational teachers were distributed by gender unequally (more females than males), efforts were made to compare the differences of answers given by females and males participating in the survey to the items presented. Application of the Mann-Whitney criterion showed that overall, the manifestation of IC dimensions in project activities in terms of gender was not statistically significant ($p > 0.05$).

Statistical analysis of socio-demographic characteristics showed that there were no statistically significant differences; hence, the paper presents summarised survey results of vocational teachers expressed as manifestation of the respondents' IC competence (see Table 1).

Table 1. Manifestation of intercultural competence dimensions

Dimension	Item average and standard
Knowledge	3.99 ± 0.92
Attitudes	4.13 ± 0.79
Skills	4.01 ± 0.79
Cultural awareness	4.39 ± 0.82
Knowledge of foreign language	3.48 ± 1.15
In total	4.0 ± 0.89

The findings revealed that the manifestation of the IC dimension “cultural awareness” in project activities was rated by the vocational teachers very highly. Attitudes’ and “skills” received an above-average ratings as well. The average of the ratings of the IC dimension “knowledge” is ascribable to the moderate level of manifestation. The IC dimension “knowledge of foreign language” received the lowest ratings, and its manifestation in project activities, compared to other dimensions, was rated by the respondents the lowest.

Although the manifestation of the vocational teachers' IC dimension **knowledge** was rated as average ($M = 3,99 \pm 0,92$), their knowledge about the cultures of their nation (or country) and other counties (or nations) helped the vocational teachers carry out the *Erasmus* project activities and engage in further development of their intercultural competence. The latter was directly associated with their professional improvement and excellence,

positive attitudes towards the integration of students of other nationalities, countries, and cultures in the Lithuanian education and vocation training system, towards their education and vocational training.

Manifestation of the IC dimension **attitudes** revealed that involvement in *Erasmus* projects developed the attitudes of vocational teachers towards other cultures. High manifestation level of this intercultural competence dimension ($M = 4.13 \pm 0.79$) suggests that participation in project activities transforms the attitudes of participants towards other cultures and cultural values, shapes positive attitude to project participants (pupils, vocational teachers) from other countries and promotes the diversity of individual interaction with people of other countries and cultures and searching for new ways and means of interaction.

It was determined that the manifestation of the IC dimension **skills** was also high ($M = 4.01 \pm 0.79$). Participation in *Erasmus* project activities helps rouse the intercultural thinking and ability to adapt appropriately in the setting characterised by cultural differences, change one's attitude and behaviour in a different culture, and develop life and professional skills for the vocational teachers. This is one of the active methods creating conditions conducive for the development of the project participants' world-view and strengthening of intercultural skills.

Seeing the trend of constant global transformation, vocational teachers realise that the world demands a modern approach, openness and respect for other cultures, views, and values. Pursuing the activities of international projects, vocational teachers develop their cultural awareness while spreading the respect for distinctive cultural identity, non-discrimination on the grounds of religion or beliefs, and tolerance among the project participants. This was shown by high manifestation of the IC dimension **cultural awareness** of vocational teachers ($M = 4.39 \pm 0.82$).

Foreign language helps foster general culture norms and values and engage in mutual interactions in everyday situations as well as in more complex situations, work-related activities, and discussions. Knowledge of a foreign language is particularly important when carrying out the activities of international projects. Consequently, the research aimed at determining the language skills of vocational teachers. The research findings revealed that *Erasmus* projects also included vocational teachers with just basic skills of a foreign language, which was illustrated by moderate manifestation of the IC dimension **knowledge of foreign language** ($M = 3.48 \pm 1.15$). It could be assumed that *Erasmus* project activities could indubitably be among the key tools (means) for professional and language competence development of the vocational teachers.

Manifestation of international / intercultural experience in projects. All project participants including the vocational teachers appreciated their participation in international and *Erasmus+* project activities. In the course of the research, vocational teachers revealed that implementation of project activities enhanced self-confidence, enriched personality and helped acquire invaluable international, cultural and organisational experience for them as individuals (personalities). During the interviews, project participants emphasised that “<...> *first of all, international cultural experience*” [T7; 1] was highly important; “*culture and cultural cognition are the most important to one, as a person, as an individual*” [T9; 3]; and “*cultural distinctions, features and getting to know them <...>*” [T4; 8]. Participating in projects, teachers singled out the following aspects: “<...> *I always observe the culture of other nations, and learn something <...>*” [T3; 4]; “*above all, interest in cultural aspects is very important*” [T8; 1]; “*getting to know a foreign culture is very important to me*” [T9; 1].

Experience gained while participating in project activities manifests in practical activities of vocational teachers too. During the interview, vocational teachers emphasised the improvement of qualification, introduction of innovations in lectures, and improvement of lecture quality as well as improvement of foreign language competences and development of intercultural relations through cooperation with colleagues from vocational schools of foreign countries.

According to the vocational teachers who took part in the survey, “*improvement of general and speciality foreign language skills*” [T7; 2] was a particularly important aspect of project activities. When speaking of foreign language skills' development, the informant [T4; 4] accentuated the benefits of its improvement while building the cooperation relations, preparing for lectures, collecting information, and analysing literature in a foreign language. A vocational teacher who took part in the survey [T9; 7] emphasised the benefits of speciality language development: “*whenever I go to projects related to my speciality, I always check and analyse the specific glossary of speciality terms <...>*”.

The research participants listed the ties with colleagues from vocational trainings institutions of other countries and knowledge of foreign countries' vocational training system and curricula as being among the benefits of participation in activities of international projects. According to vocational teachers [T2 and T9], “*participation in projects enables building relations with colleagues*” [T2; 1]. In their opinion, it was very important that the “*new relations built*

continued after the project” [T9; 8]. Interviews with vocational teachers revealed that cooperation of vocational teachers with vocational training institutions in foreign countries helped form “*a common direction in vocational training*” and strive “*for a higher vocational training level*” [T6; 3]. International experience gained in project activities and common direction of vocational training, according to informant [T4; 5], was significant when striving for international integration.

Vocational teachers participating in the survey were asked about the benefits of participation in projects for the students. According to the informants, new knowledge and competences as well as practical experience were the main benefits experienced by students from participation in project activities under *Erasmus+*. Vocational teachers [T1–T3, T5, T7–T9] stated that participation in projects developed the students’ vocational and personal competences [T7;4], gave them “*practical experience*” [T8; 5] that “*opened the opportunities for successful integration into the labour market*” [T5; 7]. A vocational teacher who took part in the survey also emphasised the “*<...> cultural experience after seeing other countries and their cultures <...>*” gained by the students. The students do not necessarily realise the benefits of intercultural cooperation immediately; the experience might become relevant “*perhaps in a few years or after some time*” [T9; 10].

Intercultural competence development methods. The answers of the survey participants revealed different ways of intercultural competence development. It turned out that the informal method of IC development was acceptable and popular among the informants: reading and analysing information and fiction literature and papers on cultures, traditions, customs, history, and geography of other countries. While emphasising the expansion of intercultural view and the necessity for cultural growth, informants [T4; T9; T2] stated that they read “*fiction and information literature*” [T4; 2], liked watching “*TV programmes and documentaries about other countries*” [T8; 2]. Moreover, they developed cultural awareness by taking interest in “*culture, traditions, values, and customs of other countries*” [T1; 1].

Given the insufficient knowledge of foreign language of vocational teachers participating in project activities and the lower effectiveness of the IC development methods referred to by the informants, the vocational teachers need more modern and effective ways of foreign language learning. According to vocational teachers [T3; T9; T6], social networks and browsing on the internet were effective means for the development of intercultural competence: “*I take interest in the activities of peers in foreign countries, follow several accounts on social networks, analyse them; we actively correspond and hold discussions with colleagues from other countries*” [T6; 3]. They were echoed by another informant who took part in the survey [T5; 7], however the latter emphasised the importance of “*eye-to-eye*” communication: “*we regularly improve our intercultural competence: knowledge, social networks, and everything else; however, this can never replace live interaction with people when one goes abroad*”.

It is noteworthy that the vocational teachers who took part in the interview also mentioned the formal method of intercultural competence development – project activities in the course of which general and intercultural competences are developed: “*the weightiest contribution to the development of one’s intercultural competence is [brought] by participation in project activities and business trips*” [T4; 4]. Project activities were referred to as a method of intercultural competence development also by other vocational teachers who took part in the survey [T2; T3; T7; T9]: “*I take part in Erasmus+ projects, international competitions, and exhibitions*” [T3; 4]. The research revealed that vocational teachers associated the IC development with the improvement of foreign language skills that is particularly evident in carrying out international project activities [T4; 5]. While analysing the positions of informants [T2] and [T8], it turned out that, they linked their intercultural competence development with the speciality training: “*observing the lectures conducted by foreign colleagues, sharing pedagogical practices*” [T2; 2] and taking constant interest in speciality innovations “*that emerge or establish themselves in the labour market of other countries*” [T8; 3]. The informants noted that they simultaneously improved their knowledge of foreign language while taking interest in global innovations concerning their speciality, seeing that “*all information available on the internet was generally in the English language*” [T8; 4]. The research revealed that vocational teachers generally participated in *Erasmus* international projects; hence, the intercultural competence development aspect becomes especially significant.

4. Discussion

Intercultural competence may be developed applying formal, informal and non-formal learning [17]. The research revealed that intercultural competence development methods used by vocational teachers included reading information, fiction, scientific literature, independent learning of a foreign language, searching for information on the

internet, and communication on social networks. Vocational teachers who took part in the survey referred to projects and project activities as being among the IC improvement methods. The research findings revealed that participation in activities of *Erasmus* projects enabled the vocational teachers to communicate with representatives of different cultures, whereas interaction with them provided new knowledge, shaped attitudes and views, promoted curiosity, and developed courage and cultural awareness: *“thanks to project activities, I could communicate with individuals from different cultures both in Lithuania and abroad”* [T3; 2], *“involvement in projects creates excellent opportunities to get to know the work culture of other countries and traditions”* [T1; 2]. When speaking about project activities, all informants emphasised the importance of these activities for intercultural competence development: *“this helps unambiguously, seeing that communication with representatives of different cultures constantly develops our intercultural competence”* [T2; 1]. Furthermore, teachers pointed out the importance of tolerance in intercultural development: *“we become open to innovations, and develop our tolerance through projects”* [T7; 2] as well as creativity, sharing of cultural experiences, and thirst for knowledge.

Vocational teachers associate the importance of IC in their professional activities with increased tolerance, positive attitude towards people having different beliefs and views: *“my intercultural competence manifests through tolerance and respect for other cultures”* [T9; 2]; *“tolerance and respect for others regardless of their race, sex or orientation”* [T1 and T8].

Speaking of intercultural competence development in project activities, the informants emphasised its practical benefits in professional context: *“an opportunity arises to compare the cultural differences that determine the working relations with customers”* [T7; 3], *“application of knowledge received and skills acquired in project activities in the practice; ability to build new working relations”* [T2 and T6]. The informants also linked their participation in project activities with new challenges: *“participation in a project promotes creativity, brings in new ideas and challenges”* [T6; 4].

During the interview, vocational teachers constantly stressed formal and informal learning, which, in their opinion, helped develop their intercultural competence and strengthened their foreign language skills. When communicating with teachers and pupils arriving from foreign countries to the schools where vocational teachers worked, *“<...> I find it easier to understand the needs of the new arrivals and build a rapport”* [T8; 4]; *“more frequent use of a foreign language helps not lose the skills”* [T7; 3], *“successful cooperation and communication require higher-level knowledge of foreign language rather than just basics”* [T8; 7].

It is noteworthy that vocational teachers who took part in the survey expressed their intercultural competence giving *“lectures in a foreign language”* [T3; 3]. The interviews with the informants showed that in vocational schools, *“number of students of other nationalities was increasing”* [T4; 7], and consequently a necessity appeared for the vocational teachers *“to show the intercultural work they have done and the key thing is, therefore, to have it”* [T8;9]. Connections built in the course of *Erasmus+* project implementation are not severed and collaboration and communication with peers from other countries continue through practical / professional activities and speciality lessons: *“<...> the knowledge of the context and direction the colleagues of foreign countries are taking helps me focus my students on a higher-level teaching adapted to the global context”* [T6; 4]. This encourages and simultaneously obliges the vocational teachers to constantly develop their intercultural competence.

Project activities as a method of active learning / teaching involves the vocational training participants (students, vocational teachers) in the implementation of national and / or international project activities by creating a “distinctive chain of benefits” where all parts of the chain are tightly interlinked, *i.e.* the benefits “brought” into the practical activities of the vocational teacher through the benefits experienced by them as individuals are transferred further through different activities to their students. Consequently, the benefits experienced by the vocational teachers and students unquestionably are advantageous for the vocational training institutions too, whereas a popular and competitive vocational training institution is valuable for the general society, Lithuanian and international market. Development of general competences and intercultural competence of vocational teachers and students and their mutual balance are among the most significant benefits of international project activities.

5. Conclusions

The research revealed that the manifestation of intercultural competence dimensions (knowledge, attitudes, skills, and cultural awareness) of Lithuanian vocational teachers who participated in activities of *Erasmus+* projects was

high. It was determined, that the cultural awareness dimension of IC manifested in the project activities the most, whereas the knowledge of foreign language, compared to other dimensions, was expressed the least. Educators share the intercultural experience gained in international projects with colleagues and their students in vocational training, formal and non-formal activities when demonstrating their positive attitudes, respect and tolerance in respect of people with different cultures, religions, beliefs, and views, *i.e.* their intercultural competence. This supposes an idea that project activities represent an effective, active method of learning/teaching helping to develop the awareness and understanding of project participants of other cultures, and their ability to combine knowledge and behaviour and promoting the learning of foreign languages. The outcome of this is a prominent intercultural competence of vocational teachers.

Participating in *Erasmus+* projects, vocational teachers acquire diverse experience that is beneficial for practical activities of vocational teachers (diversity of vocational training, experience of international activities, higher level of intercultural competence, international integration) and that helps shaping a cohesive overall direction of vocational training and the striving for a higher level of teaching.

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Corporate Compliance in Sustainable Tourism

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Abstract

After the publication of the Environmental Code of Conduct in Spain and the modification of the Penal Code, this study aims to analyse the influence of these documents on Spanish companies. This influence is measured from three perspectives: the effect of legal regulations on the environmental awareness of companies, the influence of imposing compliance with these regulations on environmental companies, and cooperation regulations as a form of control to avoid sanctions. 407 companies have participated in the research. The data has been processed from the PLS version 3.29. The statistical results show that the new code improves the awareness of environmental companies towards nature. Although, the cooperation norms are the best evaluated by the companies that have the greatest effect.

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Keywords: Corporate compliance; Companies; Control; Cooperation.

1. Introduction

Environmental policies have tightened in recent years due to the increase in environmental crimes [1] Although, the legal consequences for its non-compliance are ineffective in dissuading its commission [2]. In addition, they present other drawbacks such as the lack of understanding of the laws due to their constant renewals [3], the redundancy in their wording, the slight monetary fines and the few inspections [4]. Given the concern of perpetuating the environmental degradation caused by business development, some companies committed to confronting it emerged [5]. Sustainability in the field of entrepreneurship has become a useful tool to achieve this [6]. Likewise, these companies minimize the environmental damage they cause [7] and apply organizational changes to implement

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sustainability throughout their structure [8]. In addition to these business changes, laws have been tightened to protect nature [9]. Although companies receive benefits by taking into account the protection of nature in their operations [10], it does not really influence their ethical commitment [11].

In Spain, with the change in the Penal Code regarding environmental criminal sanctions and the [12] Corporate Governance Code 1/2015, of March 31, 2015 (New Modification of the Penal Code, Organic Law 1/2015), which modifies the previous [13] Organic Law 10/1995, of November 23 (Criminal Code 10/1995), the possibility of blaming companies for the damage they cause was established. The requirement was imposed to have an internal monitoring and evaluation system in the company to avoid criminal sanctions and better protect nature [14].

With this approval of the Penal Code and the scarcity of empirical studies that deal with this matter, we consider the influence that this legal modification has had on the improvement of attitudes towards nature by companies. The aim is to ensure the proper use of natural resources, taking into account environmental regulations or carrying out organizational changes framed in the Spanish Corporate Governance Code [15].

The purpose of this research has two dimensions. First, to study the willingness of environmental companies to implement structural environmental measures in their organization. Second, to evaluate the effect that legal norms have on the predisposition of environmental companies towards nature contextualized in the Corporate Governance Code. The statistical study of this research using SmartPLS [16] and carried out on 407 environmental companies has contributed to knowing the benefits of the Corporate Governance Code on companies for compliance with current laws. These discoveries can be useful for environmental authorities by having useful tools that prevent crimes. After this introductory section, the variables that influence the improvement of nature protection by environmental companies are detailed. Then, the data obtained from the information provided in the questionnaires are presented to finally explain the results of the data analysis and the conclusions.

2. Literature review

2.1. *Business environmental compliance with environmental regulations (EC)*

The new modification of the Spanish Penal Code grants punishments to companies that intervene in environmental crimes as long as the crime has been committed by a natural person. The company will have indirect responsibility for the crime as it is considered a participant [17], but guilt and criminal responsibility will be attributed to a natural person, either an employee of the company or its legal representative.

This modification provides a change in the legislation toughening the consequences for the environmental damage. Environmental regulations have made progress globally [18] although they are still not strong enough to put pressure on business and reduce environmental crime. In this context, the first hypothesis of the model (H1) studies how the legal framework affects improvements in business attitudes towards nature. Specifically in the balance between economy and ecology and in the concern about the future deterioration of nature

Hypotheses 1 (H1). Business compliance with environmental regulations positively influences business awareness of nature.

2.2. *Business obligation of the environmental standard*

Environmental regulations are not only influenced by the legislative framework but also by external forces such as activism or the development of the market itself [19]. Companies have to try to comply with these laws and develop internal measures that also ensure their execution. In order for the company to adequately extend compliance with a standard to the rest of the organization, it must first know how to comply with it itself [20]. Hypothesis 2 is based on corporate control used to protect the environment and exert a positive influence on the rest of the organization and comply with environmental legal regulations.

Legal regulations have improved attitudes towards nature by promoting human and natural conditions [21]. In this way, the implications in the organization have been aimed at complying more efficiently with these standards. One of the indicators to assess a favourable environmental status is the environmental results. However, companies are limited to complying with the standards, so this measure has not been very effective with respect to awareness [22]. As

companies have not shown confidence in environmental awareness by reaching the minimum results, other awareness tools such as intimidation, threats, prosecution, apprehension, etc. are required.

The Spanish Penal Code contemplates all these coercive measures, although it also tolerates the reduction of sanctions for companies that exceed the prospects of the minimum standards. Hypothesis 3 connects the positive impact that the modification of the Spanish Penal Code has on business awareness towards the environment. Starting from the organizational changes that companies must make in their decision-making process to be more respectful of nature, including in this process, the voluntary dissemination of environmental standards [23].

Hypotheses 2 (H2). Corporate environmental compliance positively influences organisational commitment to environmental respect.

Hypotheses 3 (H3). Organisational obligation towards environmental respect positively influences corporate awareness of nature.

2.3. Cooperative environmental measures

With the modifications of Corporate Compliance, the figure of compliance officers (ECOs) has been established, who provide the company with managers trained in environmental matters and are in charge of integrating this information and raising awareness among the rest of the organizational structure. Hypothesis 4 reinforces the figure of compliance officers in the decision-making process, constructively contributing respect for environmental regulations [24].

Corporate Compliance makes employees aware of the importance of standards thanks to training and exposure of the results achieved, thus improving environmental commitment and generating ethical awareness [25]. This new form of management prevents legal crimes and irregular actions from being committed. Hypothesis 5 relates the benefits of promoting ethical behaviour within the business organization to make the decision-making process more flexible and cooperative [26]. Reflecting in a business contribution and a more ethical collaboration that focuses on nature above legal regulations.

Hypotheses 4 (H4). Business environmental compliance positively influences structural co-operation towards environmental respect.

Hypotheses 5 (H5). Structural cooperation towards environmental friendliness positively influences business awareness of nature.

3. Methodology

3.1. Measurements

After carrying out a bibliographic analysis that brings together the Corporate Governance Code, the Spanish Criminal Code and environmental companies, the following model is proposed with the relationships established between the variables and their constructs (see Fig. 1).

The constructs were designed according to the indicators of the questionnaire shown in Table 1 and grouped according to their variable.

Table 1. Latent variables and the developed questionnaire

Variables latentes	Questions
EC: Environmental Consciousness	Is it important for your company to be aware of being a good steward of natural resources (EC1)?
	Is it important that your company is oriented towards not polluting the environment when investing in resources (EC2)?
	Is it important that your company has the attitude of respecting environmental standards (EC3)?
ECOM: Environmental compliance by companies	Is Corporate Compliance helping your company to respect nature (CEC1)?
	Is Corporate Compliance helping to prioritize environmental issues over economic ones (CEC2)?
	Does corporate compliance help you be more aware of potential environmental damage (CCE3)?
	Is it important for you to have a Compliance Officer in charge of developing organizational measures (CEC4)?
ECON: Environmental control in	Is it important for you to establish an environmental control based on organizational standards (ECON1)?
	Is it important for you to update the environmental control standards in your company (ECON2)?

Variables latentes	Questions
companies	Do you think that holding the company responsible for an environmental crime committed will contribute to respecting nature more efficiently (ECON3)? Is it important for you to avoid sanctions that could hamper the company's reputation (ECON4)?
OD: Organizational design to respect nature	Is it important to have a cooperative rules-based mechanism to avoid legal sanctions (OD1)? Is it important to implement organizational standards, especially in departments with a higher risk of committing crimes (DO2)? Is it important for you to develop a model of cooperation between public authorities and employees to respect nature (OD3)? Is it important for you to have guidelines to strengthen moral behaviour (OD4)? Is it important for you to focus more on environmentally ethical solutions and uncovering new opportunities to protect nature than on strict compliance with rigid regulations (OD5)? Is it important for you to establish protocols or training procedures to apply surveillance standards in your company (OD6)? Is it important for you to allocate financial resources to execute the corporate preventive model (OD7)? Is it important that you include a disciplinary system to avoid non-compliance through sanctions (OD8)?

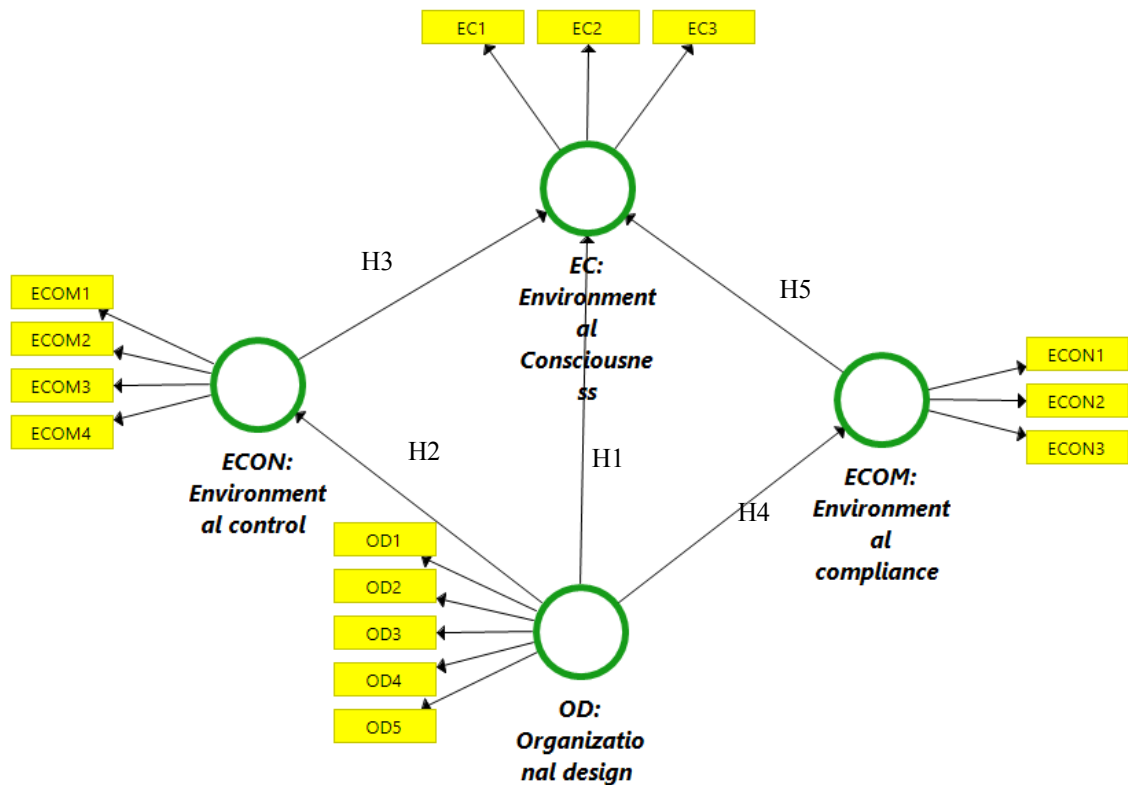


Fig. 1. Model (Note. EC: Environmental Consciousness; ECOM: Environmental compliance by companies; ECON: Environmental control in companies; OD: Organizational design to respect nature)

The questions in the questionnaire were assessed using a Likert scale, whose values between 1 and 5 represented 1 (“strongly disagree”) to 5 (“strongly agree”). The sampling was carried out in the entire available population, but out of 916 companies, 407, a total of 45 %, accepted to carry out the survey. These surveys were done by telephone, so the answers were then transcribed.

3.2. Questionnaire

Initially, a questionnaire was drafted including the information from the literature review that was validated in March 2018 through four qualitative interviews belonging to two focus groups. The category of companies chosen was waste management, since there are more than 500 companies registered with the Ministry of Ecological Transition and their activity represents one of the greatest threats to the environment.

After validation of the questionnaire, some indicators were eliminated (EC4, OD6, OD6, OD8). The information analysis methodology was structural equation modelling by variance (SEM) [27] together with the PLS technique suitable for composite models or constructs [28].

3.3. Population and sample

Table 2 shows the total population of waste management companies registered with the Ministry of Ecological Transition and the proportional sample for each category.

Table 2. Waste management companies in Spain resort to the Ministry of ecological transition

Category	Subcategory	Population	Sample
Waste management	Elaboration of toxic compounds with mining matrix	12	6
	Organization of empty containers	27	14
	Organization of graphic arts waste	20	10
	Organization of pharmaceutical and hospital waste	19	10
	Organization of automotive workshop waste	20	10
	Comprehensive organization of industrial waste	23	12
	Waste burnings	11	6
	Radioactive waste reduction	15	8
	Sludge and sludge reduction	11	6
	Manure reduction and recycling	15	8
Waste collection and transport	Reduction of paper recycling	18	9
	Reduction of used oils and lubricants	14	7
	Subtotal	205	103
	Collection of fluorescent lamps	11	4
	Reuse and transportation of hospital waste	14	16
	Reuse of used batteries	12	9
	Reuse of urban solid waste	11	8
	Reuse and transportation of special waste	13	7
	Reuse of aerosols	13	5
	Garbage tire burning	12	6

Category	Subcategory	Population	Sample
	Reduction of environmental emergency services	19	8
	Reduction of agricultural and livestock waste	10	5
	Improvement of environmental devices	11	6
	Reuse of toys and leisure equipment	17	7
	Reuse of electronic waste	11	5
	Wood recycling	11	7
Subtotal		212	91
Total		417	194

According to the information obtained from the questionnaires, 29 % of Spanish environmental companies are aware of the regulations, but only 5 % have a compliance officer within their company while 17 % outsource this function. This outsourcing has favoured the emergence of 71 companies dedicated to forms for compliance officers. However, only 11 % have managed to implement internal control standards to prevent illegal or irregular activities by their employees (see Table 3).

Table 3. Regulatory compliance in Spanish environmental companies

Information	N = 407	Percentage (%)
Knowledge about the recent Corporate Compliance		
Yes	119	29
No	288	71
Total	407	100
Internal or external compliance		
Internal	21	5
External	71	17
Non of them	315	77
Total	407	100
Surveillance measures		
Yes	43	11
No	364	89
Total	407	100
Sanctions		
Yes	35	9
No	372	91
Total	407	100

4. Data analysis

4.1. Measurement model

The individual reliability of the load (λ) of each element was first measured. Typically, the minimum level of acceptance is established as part of the construct, which is $\lambda \geq 0.707$ (29) Cronbach's alpha determines a consistency

index for each construct and presents values between 0 and 1. The lower limit for construct acceptance reliability is generally established between 0.6 and 0.7 [30].

According to Table 4, all the values are close to 1, so all the variables are valid. Just as the variance has been used to measure the individual indicators, it has been used in the variables (AVE). Being greater than 0.5, the construct represents more than half of the variance of its same indicators, so all the constructs meet this requirement [31]. In addition, another indicator known as rho_A [32] is verified, where all the constructs exceed the value 0.7.

Table 4. Validity and reliability

	Cronbach Alfa	rho_A	Composite reliability	Extracted variance average (AVE)
EC	0.752	0.755	0.858	0.668
ECOM	0.814	0.823	0.890	0.730
ECON	0.817	0.817	0.880	0.647
OD	0.804	0.823	0.863	0.559

On the left side of Table 5, the correlations between the constructs measured according to variance are observed. This correlation is measured by observing that the value of the square root of the AVE is greater than the correlation between that construct and the rest. In this case, it can be affirmed that this model is valid since the constructs have more variance with their indicators than with the rest of the constructs in the model.

On the right side of Table 6, another validation technique based on the heterotrait-monotrait (HTMT) relationship is presented [33]. In this case, all constructs have a HTMT ratio < 0.90 [34].

Table 5. Measurement model: discriminant validity

	Criterion de Fornell-Larcke				Heterotrait-Monotrait (HTMT)			
	EC	ECOM	ECON	OD	EC	ECOM	ECON	OD
EC	0.817							
ECOM	0.589	0.854			0.748			
ECON	0.638	0.566	0.804		0.814	0.696		
OD	0.686	0.558	0.606	0.748	0.858	0.677	0.727	

4.2. Structural model's analysis

The effectiveness of the proposed hypotheses is analysed in Table 6. The structural model was verified and the statistical significance of the path coefficients was estimated based on a 5000-sample bootstrapping test. The structural model was verified taking into account the coefficient of determination (R2) of the endogenous latent variables [35]. All R2 are above 0.2 but close to that value. However, the main endogenous construct is above 0.5 (R2 EC = 0.575).

Table 6. Hipoteses

Hypotheses	β	Lower CI	Higher CI	T-statistic	p-value
H₁ OD → EC	0.403	0.434	0.667	8.077	0.000***
H₂ OD → ECON	0.606	0.613	0.042	14.555	0.000***
H₃ ECON → EC	0.276	0.304	0.497	4.640	0.000***
H₄ OD → ECOM	0.558	0.531	0.687	8.893	0.000***
H₅ ECOM → EC	0.208	0.157	0.389	3.566	0.000***

Notes: For $N = 5,000$ subsamples, for the $T(499)$ distribution single-queued students:

* $p < 0.05$ ($T(0.05, 499) = 1.64791345$);

** $p < 0.01$ ($T(0.01, 499) = 2.333843952$);

*** $p < 0.001$ ($T(0.001, 499) = 3.106644601$).

Therefore, this model has a moderate to strong explanatory capacity in the context of Corporate Compliance. All those listed provide confidence levels close to 99.9 %. The most loaded hypotheses are H2 and H4.

The approximate fit of the model [36] was measured taking into account the SRMR value. This is used to measure the difference between the observed correlation matrix and the implicit correlation matrix in the model. In this model, the SRMR value is close to 0.07, but within the admission range, since if SRMR is greater than 0.08, it does not present a goodness of fit [37].

Finally, it is stated that the model is predictive based on the verification of the Stone-Geisser test Q2 [38, 39], where $Q2 = 0.377$ and is greater than 0, so it can be stated that the model has predictive capacity.

5. Discussion

5.1. Theoretical implications

The results obtained show the great influence that corporate compliance has on companies. This importance is manifested in the fact that the relationships with the highest statistical load are presented in $H2 = OD \rightarrow ECON$ ($\beta = 0.606$, T -statistic = 14.555). In other words, this study shows the pressure exerted by Corporate Compliance in Spain, and specifically organizational design as a measure to improve respect for the environment. Therefore, an environmental legal framework is necessary and its duty of compliance for the company applies coercive measures. Although environmental companies do not give importance to this external legal framework since they transfer control to their employees (H2). For these standards to be valued, they must emphasize the business benefits that will be obtained from their compliance and show the collaborative and social values that will favour your company ($H4 = OD \rightarrow ECOM$ ($\beta = 0.531$, T -statistic = 8.893).

The companies have shown their support for the implementation of surveillance measures that control activities that may be illegal in order to avoid future sanctions. In addition, structural cooperation has fostered awareness of the environment and promoted ethical behaviour in its employees. Although, this information is not representative since a large number of companies are unaware of this regulation. Likewise, the figure of the company and its directors as possible perpetrators of an environmental crime implies greater respect for nature and ensures that sanctions do not harm the prestige of the company. However, legal environmental standards help improve environmental awareness but are not enough for nature, despite the fact that the measures intended to protect nature have not been consistent.

5.2. Practical implications

The modifications in the Penal Code and the Corporate Governance Code aim to improve the relationship between companies and the environment with coercive and cooperative measures, but they also have a direct effect on business attitudes (H1). Companies, applying internal measures that lead them to comply with environmental law, are more aware of and sensitive to natural damage, and put natural aspects before economic ones.

The leading role of cooperative actions as opposed to coercive ones provides companies with the tools to collaborate with each other and prevent sanctions. The adoption of cooperative models in the company focused on training and in collaboration with the rest of the organization leads to an improvement in business awareness towards nature, since compliance with legal regulations ethically and morally commits employees and managers of the company.

Companies have highly valued having a CEO in the areas that are most susceptible to crime. Finally, the companies show their interest in complying with the code in the future while it is more focused on ethical and management measures, this relationship is reflected in the predictive valuation of the model ($Q2 = 0.377$). In this way, the model will be effective if the companies have standardized surveillance controls and economic resources to prevent illicit actions. According to the explanatory capacity of the model ($R2\ EC = 0.575$), it can be stated that the new regulations serve as a dissuasive method for non-compliance with the regulations.

6. Conclusions

With the exposed results, legal sanctions are inefficient to ensure compliance with the law and respect for the environment. Therefore, it is necessary to promote the ethical collaboration and cooperation in management in the

establishment of plans. In addition, economic efforts are required for the training of employees who prevent and train the rest of the organization in matters of awareness and regulatory compliance.

Taking into account the positive assessment given by companies to cooperation processes, it would be useful to have tools and standards that facilitate collaboration. The future plans of the codes could contemplate cooperation norms to avoid legal sanctions.

The companies that are part of this research (see Table 1) offer added value to the application of the results. Its dedication to the treatment of waste from industrial companies and to the improvement of the environment allows a greater influence on awareness towards nature. The publication of the code has been so recent that it limits knowing exactly its real impact. This effect can be studied in the long term when the companies have adjusted to the Corporate Code and their perception of the environment and adaptability to the standard are analysed.

Future lines of research are aimed at comparing the results of this type of company with others, applying the same model.

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Y and Z Generation Career Motivation in the Context of the COVID-19 Pandemic

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Abstract

The objective of the article was to reveal the career motivation of generations Y and Z in the context of the COVID-19 pandemic. The notion of career motivation can be defined as the elements of an individual’s needs, interests and personality traits that reflect career-related behaviour and includes three elements: career identity, insight and resilience. This analysis revealed that the COVID-19 pandemic had a strong impact on the career motivation of all employees. The Y and Z generations, which are the most active in the labour market and have the highest career expectations and plans, have been hit hardest. Looking at career motivation from the perspective of different generations, Generation Y appreciates the time allotted to them by organizational leaders when discussing their career opportunities, the most. Generation Z is characterized by exceptional technological talent and digital maturity; therefore, it hopes to work in a modern organization. The study revealed the differences between the Y and Z generations. Generation Y is more involved in their work, knows their goals, analyses their strengths, adapts more easily to new conditions, but this generation has more fears about their future, and has become much more cautious and more secure in their workplace. Generation Z is more inclined to perform properly and efficiently the tasks assigned to them, for them it is important to combine work with leisure time and flexible work schedule is a priority.

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1. Introduction

Career planning, organisation and development have always been a topical issue, both for the organisation and its employees. Technological development, the development of the information society and globalisation are forcing organisations to look for new forms of work organisation, changing the traditional approach to staff motivation, satisfaction of needs and, in particular, to the potential of career development as a motivational factor. Career as a motivational factor has been analysed in the work of Day and Allen [1]. Haase, Lautenschläger [2], Anthony, Weide [3] emphasise that career motivation at work depends on the employee's ability and desire to pursue a career and on his / her perception of the direction in which he/she wishes to develop his/her career prospects. Muslima, Deanb, Cohenb [4] identified in their study that 54 % of employees cite the desire to face new challenges as the main reason for leaving their organisation, while a similar percentage of the subjects stated that the lack of career opportunities was the reason for their decision to leave their organisation. Generations X and Y have been the main focus of academic research over the last few years.

However, in the current period, Generation Z is entering the labour market, starting their careers in the context of the Industry 4.0 revolution, with the mobility of global citizens limited by the threats of the global pandemic COVID-19. This naturally raises the questions of how the most active Generations Y and Z in the labour market are projecting their career paths in the face of these global challenges, in particular the COVID-19 pandemic; what are their career motivations; and what are their career expectations in relation to their organisation. The issues of work and career motivation from a cross-generational perspective have been explored by Lloyd [5], Harrington, Deusen, Fraone, Morelock [6] and others. Various researchers (Puspanathan, Ramendran, Muthurajan, Singh, [7]; Suslova, Holopainen [8]; Deloitte [9]) have studied the expectations of the youngest Generation Z with regard to reward, career, leadership and working relationships.

However, the global crisis of the COVID-19 pandemic is triggering new research in various scientific fields. Researchers acknowledge that this pandemic, which limits the mobility of young people, will have a clear impact on their careers (Baert, Lippens, Moens, Sterkens, Weytjens [10]). Based on the evidence presented, this paper addresses the research problem by formulating a problematic question: what are the fundamental changes in the career motivation of Generations Y and Z in the context of the COVID-19 pandemic?

2. Theoretical framework

2.1. *The concept of the career motivation*

For many people, a career means the part of life that involves employment. In occupational terms, it refers to the sum of the different jobs held by an individual during the course of his or her employment. According to Nishanthi [11], a career can be defined as a set of decisions that guide a person's educational, social, economic, political and spiritual endeavours and that reflect the unique qualities of the individual and the core values of life. In the search for a concept of career, many researchers (Alpatanni [12]; Dries [13]; Haase [2], etc.) have presented and compared traditional (bureaucratic) and modern definitions of career. In the first case, the term "career" is traditionally associated with paid work and refers to a single occupation. In the modern world of work, on the other hand, the term "career" is seen as the result of a process of continuous learning and development. According to Mulhall [14], a career consists of the changes in values, attitudes and motivation that occur as a person ages. Stanišauskienė [15] points out that a career involves changes in knowledge and skills. An analysis of the scientific literature reveals that career is individually perceived and can be said to be a person's changing experience of work, which consists of values, attitudes and inner job satisfaction. However, Arabi, Akeel and Subramaniam [16] point out that career is a process that is managed by the individual and not by the organisation. In their view, it consists of all the experiences a person has through schooling, training, different organisations and changes in occupations. Career development involves continuous learning, focused on the self, on building and maintaining relationships and on the challenges of work. In this process, the individual is motivated to achieve psychological success, *i.e.* an inner sense of success. The most important motivation for personal development is that the "new career contract" is not with the organisation, but with oneself and one's work. Psychological success, according to Pillay, Dawood, and Karodia [17], involves a sense of satisfaction, pride, and accomplishment that comes from achieving one's most important life goals.

In summary, the modern approach allows us to define a career as a change in an individual's professional and other roles in life, based on his / her personal responsibility, motivation and competences, which can be not only vertical, with higher status professional positions, but also horizontal, with a change of roles, moving from one organisation to the next. In this respect, career success is measured in terms of personal fulfilment, the achievement of ambitious life goals and personal development objectives. This conception of careers underpins the subjective element: a person's perception of his or her career is highly individual, conditioned by changes in his or her values, attitudes, motivations and competences, and revealing a unique path of identity change.

This approach to the concept of career raises the question of how the concept of career motivation can be defined. The academic literature is not rich in definitions of career motivation. Researchers often examine people's aspirations and attitudes towards career development or career choice in the context of different motivational theories. Career motivation from a scientific point of view is a multidimensional construct combining elements of needs, interests and personality traits that reflect the stimulus, direction and persistence of career-related behaviour. Career motivation and its dimensions were perhaps most extensively studied by London, Neo [18] more than 20 years ago. They defined career motivation as the willingness to strive to reinforce career goals and identified three key areas of career motivation: **career identity, career resilience (resilience) and career insight.**

According to the researchers, career insight is a stimulating or energising component. It is human ability to realistically assess oneself and one's career. People with high career insight have an accurate understanding of their strengths and weaknesses and set clear career goals. They try to assess their capabilities and the work environment as accurately as possible, seek feedback on their work and the company's performance, and only then set specific goals and measures to achieve them. Many authors (Minor [19]; Shaito [20]; Guan, Arthur, Khapova, Hall, Lord [21]) argue that an important part of career development, as well as motivation, is the individual's awareness or self-awareness, as it forces them to take an objective view of themselves, to analyse their strengths and weaknesses, achievements and failures, and to clarify what is working, and what isn't in order to be able to model their new career goals. As Minor [19] argues, understanding oneself is vital for learning to be proactive, creative and innovative in the workplace. Without self-awareness, employees "often react reactively on auto-pilot", self-aware employees use their skills and talents to initiate and engage rather than complain or criticise.

Career identity is a directional component that describes a person's degree of engagement in work. People with a high career identity are highly engaged in their work, their organisations and / or their professions. Employees with a strong career identity are very responsible in their work, and care about their careers and competence development. They have career goals and pursue them.

Career resilience is a component of persistence that shows an individual's ability to pursue a career and to cope with obstacles and crises at work. People with high career resilience believe in themselves, are not afraid to take risks, and know when they will perform better when working in groups or individually.

According to London, Neo [18], these elements of career motivation are complementary and can determine an individual's career planning and development. Moreover, they constitute different patterns of career development. Career resilience provides the basis for meaningful career insight (*e.g.*, responsiveness to feedback), which in turn influences the definition of an achievable career identity. According to Kroth [22], people who are resilient at the beginning of their careers are more likely to use information about themselves and their environment to develop accurate career insight and a realistic career identity. They will be able to overcome career barriers and, if necessary, change careers. Failure or strong negative feedback can undermine resilience. According to Suhendro [23], people who lack confidence from the start are likely to have low or unrealistic career goals.

It should be noted that the assessment of employees' career motivation in companies is used for organisational career management decisions. For example, career resilience can be strengthened by identifying opportunities for achievement, introducing rewards for innovation, nurturing interpersonal relationships and positive reinforcement for excellent performance. Career insight can be reinforced by providing career information and feedback and encouraging goal setting. Career identity is supported by providing work challenges, professional development opportunities, and leadership and development opportunities.

In summary, career motivation can be defined as the elements of an individual's needs, interests and personality traits that reflect career-related behaviours. Career motivation comprises three key elements: career identity, career resilience and career insight. Career resilience provides the strength and courage to try and move forward even in the face of obstacles and failures. Career insight is the energising component, developed through experience and

reflection, that enables an individual to choose and pursue a career path that maximises his or her talents. Career resilience enables a realistic assessment of career obstacles and the identification of constructive coping strategies. The individual approach to careers emphasises that in order to realise one's career potential, the individual needs to have self-awareness or self-consciousness, sufficiently high self-esteem and determination, and to develop competences related to self-knowledge and career management.

2.2. *The concept of generation and its classification*

Different generations as an object of research are studied in the fields of anthropology, philosophy and sociology. The most prominent representative of the latter is Karl Mannheim, who in 1923 wrote a book entitled "The Problem of Generations". However, the debate on generations has increased considerably after the publication of Strauss and Howe's book "Generations" in 1991, in which the authors declared that the theory of generations can be used to solve communication problems in the family, in the workplace, and wherever people of different ages come together. The idea of generations has popularised the idea that people of a certain age share similar beliefs, attitudes and behaviours because they all grow up to adulthood in the same historical period. There are a number of different conceptions of "generation" in the scientific literature, as authors use different criteria. In everyday life, the term "generation" usually refers to people who share the same stage of family life – children, parents, grandparents. In psychological terms, each generation is shaped by two main things: the interests associated with the life stage and the historical experiences that shape personality. According to Gürçüoğlu, Çelik [24], a generation is a group of people who are linked by age and shared cultural experiences, who are born and live in the same period. According to Strauss and Howe, a generation is a group of people born in approximately twenty years or in approximately one stage of life. However, there is no common view on the criteria that should be used to classify people as a particular generation. There is a broad consensus that generational membership is determined by growing up in the same time period, having lived through and experienced significant events that have shaped similar value systems, attitudes and life experiences. Many researchers follow Strauss and Howe's classification of generations, according to which eight generations are established, while the ninth, the Alpha Generation, is still in the process of forming its worldview and entering the phase of formal education (see Table 1).

Table 1. Classification of generations according to Strauss and Howe

Generation	Period of birth
The Lost Generation	1883–1900
The Great Generation	1901–1924
The Silent Generation	1925–1945
Baby Boomer Generation	1946–1954
Baby Boomer Generation II	1955–1965
X Generation	1966–1976
Y Generation	1977–1994
Z Generation	1995–2012
Alpha Generation	2013 – till now

This article focuses on the career motivation of Generations Y and Z, and therefore elaborates on the characteristics of these generations.

Lissitsa, Kol [25] describes Generation Y (1977–1994) as the children of the Internet, of social networks, born in the midst of computerisation. They expect to be able to grow and develop and do not hide their high personal ambitions. This generation cares about the opinions of others and devotes a lot of time and effort to their image, placing great importance on their appearance. Generation Y (especially the female gender) dreams of staying young forever. It is about being liked, known and better than others. They are the apparent "slaves" of advertising, believing unconditionally in the information they are given. At work, Generation Y is professional and competent: active, open to innovation and presenting ideas. They are well skilled in new technologies, speak several foreign languages and

travel freely. But as employees, they often do not have the patience to pursue long-term goals. Young people want quick results and recognition. They want to control others, but do not like to be subordinates themselves. This generation's choice of profession is mostly determined by lifestyle, as they want work to be enjoyable and not just a source of money. Shopping has become a new entertainment for this generation. Young people go to the shops with a group of friends and have fun there. Generation Y is a growing health-conscious generation, spreading the ideas of vegetarianism and ecology.

As the third millennium begins, the youngest generation – Generation Z – has entered the world. It includes children born since 1995. According to generational theory, the number of Z's will continue to grow until 2023. This generation is ready to conquer the world. It is also known as the “Google Generation” because it is always looking for information, interested in new things and knows where to find them. Parents encourage their offsprings with money, sometimes lacking sincere communication within the family. The leisure time of the Generation Z is linked to computer technology. From an early age, children are equipped with mobile phones and tablets. Every member of Generation Z wants to be unique in the group (Nagy, Kölcsey [26]). The modern generation does not like pressure, strict rules and restrictions. The person who provides Generation Z representatives with knowledge they cannot find on the Internet becomes the authority. Generation Z wants to be consulted and treated as equals by adults. They often emphasize that they know their rights and, unfortunately, often forget their responsibilities.

2.3. Career motivation of the generations Y and Z

The differences between Generations Y and Z raise the question: what are the career expectations of the youngest Generations Y and Z in the labour market, what is important to them in pursuing a career, and how do they measure their career success?

According to Lloyd [5], Generation Y identifies itself not with the organisation, but with the activities performed. This generation believes that they can work away from the office and achieve quality results. Generation Y usually define themselves in terms of the career they expect, not the position they hold. Researchers (Lloyd [5], Cruz [27]) have identified three attitudes towards work and career among this generation: 1) A desire for flexibility; 2) A desire for continuous learning; and 3) A preference for teamwork. In a study on Generation Y careers by Harrington, Deussen, Fraone, and Morelock [6], six criteria for career success were identified for this generation: work-life balance (44 %), job satisfaction (43 %), rate of salary/salary growth (35 %), achievement of personal goals (27 %), job accomplishments (25 %), and development of new skills (24 %). The goal of this generation is to find a job and build a meaningful life. Generation Y expects organisations to continuously help them to find this meaning through their current and future career goals. The learning and development provided by the organisation is essential and is not perceived as a reward.

As Mills (Brownstein [28]) argues, Generation Y expects a faster career growth and learning environment. If Generation Y does not find the opportunity to climb the ladder of the organisation, they choose to leave the workplace. In pursuit of a career, they seek knowledge and information. Being technologically skilled, they prefer learning management systems or e-learning to traditional learning methods. Generation Y wants to control their working time and tries to be more flexible with their time. In fact, this is supported by the argument that they expect a work-life balance.

Generation Y can choose several career paths and start a career revolution by creating an independent life. It should be noted that Generation Z is similar in this respect, as information technology is also important in their living environment.

One of the strongest characteristics of Generation Z's career expectations is the desire to learn and grow. They are looking for positions where they will have the opportunity to learn skills from other jobs as well as their own. They are a socially conscious generation, focused on their technical skills, using technology to communicate and collaborate, and to create ideas (Harrington, Deussen, Fraone, Morelock [6]). Mills (Brownstein [28]) investigated Generation Z's expectations in the workplace and made interesting generalisations. According to him, members of Generation Z are currently the most optimistic people in terms of their attitudes towards work. Generation Z is ready to get things done and achieve goals. However, work is not about a sense of duty, and motivation comes from seeing meaning in the tasks at hand. Flexible working and coordination of leisure time are important to them. Suslova and Holopainen [8] identified the following factors as the most motivating for Generation Z: self-fulfilment, positive

attitudes, a sense of purpose and contribution to society, a sense of the meaning and importance of their work, trust, good colleagues.

In summary, Generation Y appreciates the time given to them by the leaders of organisations to discuss their career opportunities. They recognise that they still have a lot of room for improvement and are therefore willing to take advantage of the development opportunities offered by the organisation or the mentoring of high achievers in the organisation.

Generation Z has exceptional technological skills and digital maturity and looks forward to working in a modern organisation, and believes that technology and process automation will help to prevent bias and discrimination and bring more equality to the working environment.

3. Research methodology

3.1. Research aim and participants

In order to achieve the aim of the study – to investigate the career motivation of Generation Y and Generation Z in the context of the COVID-19 pandemic – 205 respondents were interviewed, namely 103 Generation Y and 102 Generation Z. According to the survey data, the statistical profile of Generation Y is that of those in their first job (29.13 %) and those in a professional position (34.95 %).

Generation Z is also in their first workplace (45.10 %) and in an administrative position (22.55 %). The overall total was made up of those in their first job (37.1 %), those in their second job (30.2 %), those who have changed jobs five or more times (17.6 %) and those in their third company (15.1 %). 27.8 % of the respondents hold a specialist position, 25.4 % an administrative position and 18 % a technical position

3.2. Research methods

In order to investigate the career motivation of Generations Y and Z in the context of the COVID-19 pandemic, a quantitative survey was chosen, using a closed-ended questionnaire. The questionnaire consisted of two main diagnostic blocks: 1) Changes in the importance of career factors / motivators, where respondents were asked whether their perceptions of the importance of career motivators or factors had changed during the pandemic period, and 2) Changes in career motivation in the context of COVID-19, which were assessed by modelling statements that revealed these transitions through the three domains of career motivation – career identity, insight and resilience.

SPSS Statistics software was used for data analysis. The Mann-Whitney-Wilcoxon criterion was used to compare means of independent samples.

4. Research results

4.1. Statistical indicators of changes in career opportunities and career

The results of the study indicate that both Generation Y and Generation Z did not experience major career changes during the COVID-19 pandemic (see Table 2).

The results show that half of the respondents of both generations (Generation Y – 54.45 %, Generation Z – 50 %) stayed in their current job and nothing changed during the COVID-19 period.

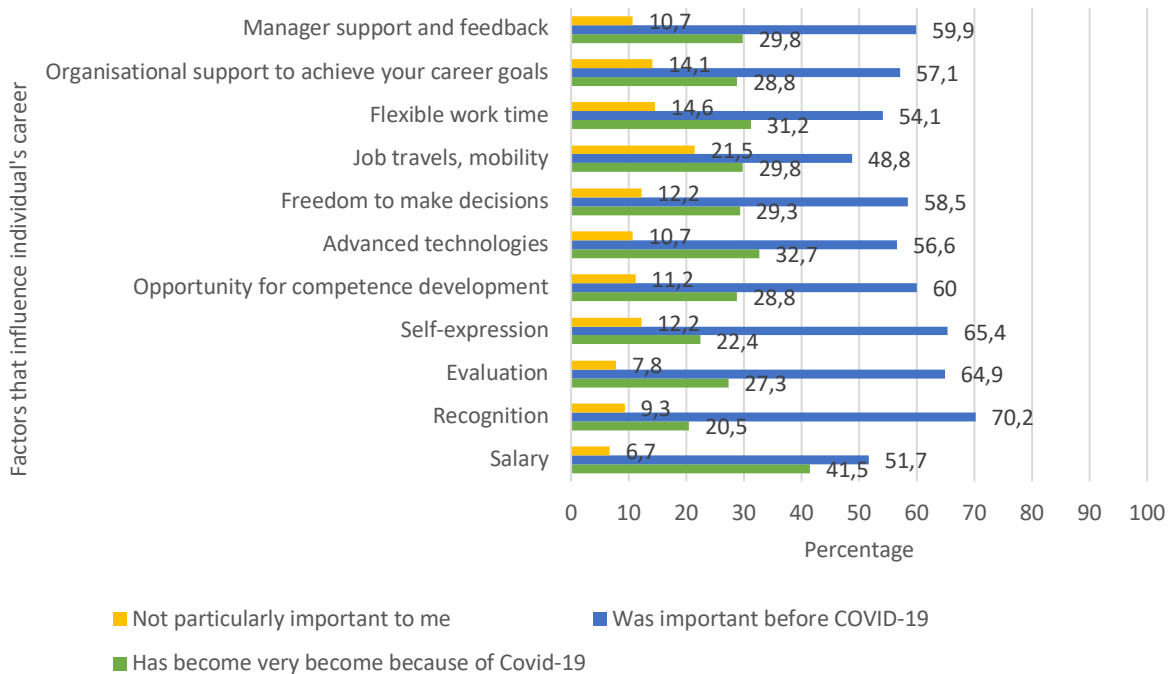
Some Generation Y and Z respondents indicated that they had taken time for self-learning (44.66 % and 30.39 %, respectively) and had the opportunity to acquire new or improve existing competences through distance learning (36.89 % and 32.35 %, respectively) (see Table 2).

However, a third of the respondents have started additional income-generating activities (31.06 % and 29.41 % respectively), 30.09 % of Generation Y respondents have started their own business and a significant proportion of Generation Z respondents (37.25 %) have started their own business. It should be noted that for one third (34.31 %) of Generation Z respondents, new opportunities for promotion within a new or existing organisation have arisen.

In terms of whether the COVID-19 pandemic has changed career attitudes, it can be noted that all the statements highlighted were generally relevant to all respondents before the pandemic (see Fig. 1).

Table 2. Changes in career opportunities in Generation Y and Generation Z samples (%)

	Y generation	Z generation
I had to give up better working conditions abroad to stay in Lithuania	10.68	15.68
I got better working conditions in my current job	22.33	30.39
Nothing has changed, I have stayed in my current job	54.45	50
I have started an additional income-generating activity	31.06	29.41
I launch my business idea	30.09	37.25
I got an opportunity for promotion in my current/new company	26.21	34.31
Promotion postponed by my employer	29.12	22.54
I had the opportunity to acquire new / improve my competences through distance learning	36.89	32.35
I had made time for self-education	44.66	30.39
A new job offer received has been withdrawn for COVID-19	19.41	25.49
My career opportunities have been reduced due to restricted mobility	13.59	25.49

**Fig. 1.** Importance of career factors for Generation Y and Generation Z respondents (%)

The COVID-19 pandemic had the strongest impact on the salary factor, with almost half of the respondents indicating that its importance increased during the pandemic. A third of respondents indicate that factors such as advanced technology, flexible working arrangements, travel and secondments, and support and feedback from their manager have become more important during the pandemic. Looking at the differences between Generation Y and Generation Z, Generation Y considers flexible working hours (35.92 %) and organisational support to achieve career goals (33.01 %) to be quite important, while Generation Z considers travel and business trips (29.41 %) and appreciation (28.43 %) more important

4.2. Statistical indicators of changes in career motivation in the context of COVID-19

In order to answer the question of whether the career motivation of Generations Y and Z has changed in the context of COVID-19, changes in three elements of career motivation – career identity, career insight and career resilience – were assessed. The results are summarised in Table 3.

Table 3. The changes in career motivation of Generations Y and Z in the context of COVID-19, percentage

	Gen Y	Gen Z
My commitment and motivation to pursue my career goals have not diminished	33.98	22.54
I set myself new career goals	27.18	29.41
I have started to take an interest in new things that will help me on my career path	43.68	30.39
I have become more cautious and very protective of my workplace	33.98	38.23
I do not worry about career obstacles	27.18	29.41
I take the constraints of COVID-19 as challenges that are interesting to overcome	33.98	29.41
The pandemic has prompted me to look for new influential people to help me on my career path	17.47	18.62
I plan to get a position with more responsibility	16.5	32.35
COVID-19 reveals how much I still do not know	32.03	28.43
I am not sure about the future	34.95	19.6
COVID-19 helped me understand the importance of mobility for my competences	26.21	25.49
During the pandemic, I discovered my new strengths	33.01	26.47
This pandemic situation has led to a change in career objectives based on the organisation's new functions	22.33	23.52
During the pandemic, I took the opportunity to demonstrate new skills that would lead to better career opportunities for the organisation	14.56	19.6
I had to react quickly to the situation and look for new job offers	3.88	14.7

When looking at the changes in career motivation between Generation Y and Generation Z in the dimension of career identity, it emerged that in the context of COVID-19, both generations have started to be interested in new things (Generation Y: 43.68 % and Generation Z: 30.39 %). Generation Y notes that their engagement and motivation to pursue their career goals has not decreased (33.98 %), while Generation Z is planning to take on more responsible responsibilities (32.35 %). The results suggest that Generation Y perceive themselves as professionals in their field and they are particularly committed to their work. Generation Z, like Generation Y, is involved in their work and volunteers to carry out tasks. However, during the pandemic, Generation Y has started to take an interest in new things that help them to become professionals in their field, and their motivation has not diminished, which helps them to be engaged in their work. Generation Z has managed to obtain positions of greater responsibility during the pandemic, which confirms the benefits of their voluntary work.

Comparing changes in career motivation between Generations Y and Z on the career insight dimension, Generation Y discovered new strengths (33.01 %) and weaknesses (32.03 %). Generation Z changed their career goals during this pandemic (29.41 %) and realised how much they did not know (28.43 %). Only a small proportion, almost a quarter, of both generations had to change their career goals as a result of the new roles given to them by their organisation during the pandemic. Overall, Generation Y describes itself as knowing and looking for its strengths both before and during the pandemic. Generation Z's career insight is characterised by the fact that they have clear and realistic goals, although during the pandemic they had to change them and adapt to the changing situation.

Changes in career resilience show that Generation Y have become more cautious and protective of their jobs (33.98 %) and accept constraints as challenges that are fun to overcome (33.98 %). It is worth noting that, unlike Generation Z, Generation Y is more fearful about their future (34.95 % for Generation Y and only 19.6 % for Generation Z). Generation Z, like Generation Y, has become more cautious (38.23 %) and accepts all limitations as challenges (29.41 %). When comparing the changes in career resilience between the two generations, it is useful to

note that while Generation Y is adapting to changing conditions and trying to solve problems themselves, the pandemic has made them more fearful about the future.

When looking at career motivation in a sample of Generation Y and Generation Z, Generation Y has a stronger expression of career insight, career identity and career resilience. These differences are not substantial, but suggest that Generation Y is more familiar with the labour market, having survived the economic crisis of 2008 and thus having acquired a certain resilience in their career path. Generation Z is more ambitious and strives for higher positions, but they are more cautious and protective of their jobs. For this generation, it is likely that the current pandemic is the first global event to seriously challenge their careers.

A comparative analysis of the individual career motivation statements revealed the following statistically significant differences between the two generations:

- generation Y believes that they are more engaged in their work, perceive themselves as professionals and treat themselves as experts in their field. Generation Z is more likely to volunteer to do their tasks because they know it will benefit their future career.
- generation Y is clear about their goals, which are realistic and achievable. They value the support of their managers in achieving their goals. Generation Z is more likely to do more work, but flexible working and the ability to combine it with leisure time remain their priority.
- generation Y can easily adapt to new conditions, while Generation Z is more likely to bring new ways of working, technical knowledge and new thinking.
- generation Y is more likely to change jobs, and if they don't have the support and help of their managers, they are more likely to change jobs. Unlike Generation Y, Generation Z expects and wants responsibility, and they strive to do their jobs thoroughly to earn the trust of their managers.

5. Conclusions

An analysis of the scientific literature allows us to define a career as an individually perceived, evolving work experience, which consists of values, attitudes and intrinsic job satisfaction. An individual approach to career emphasizes that the individual must be motivated by self-knowledge and a commitment to continuous self-improvement. Related to this concept is the notion of career motivation, which can be defined as the elements of an individual's needs, interests and personality traits that reflect career-related behaviour, which includes three elements: career identity, insight and resilience.

When analysing the career motivations of Generation Y and Generation Z, it is evident that Generation Y values the time given to them by their managers and their willingness to learn and develop. Generation Z values technology and is therefore attracted to companies that use the latest information and technology solutions and devices. They see the automation and digitalisation of workplaces as a solution to many of the company's problems.

The empirical study shows that Generation Y is more motivated than Generation Z. Generation Y wants to have clear goals, they know what they need to do to achieve them. Generation Z prefers an individualistic work style. In the context of the COVID-19 pandemic, the following changes in the career motivation of Generations Y and Z have been identified: both Generations Y and Z have become interested in new things; Generation Y's engagement and motivation to achieve their career goals has not decreased, while Generation Z's aspiration is to get promoted. Generation Y is more fearful about their careers, while Generation Z is not stressed about their career expectations. In both generations, the COVID-19 pandemic has been identified as having led to an increase in the importance of salary, flexible working hours and technology as career drivers. The pandemic has enabled the introduction of new activities that would generate additional income. Respondents devoted more time to self-education or education to develop competences.

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Working while Studying at Lithuanian Universities: Does Work Facilitate or Conflict with Bachelor Studies?

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Abstract

In the past few decades, working while studying has been increasing in Lithuania. Students are no longer ordinary students who only study. On contrary, they try to combine two domains, namely work and studies. Although the previous literature has focused on various aspects of students' activities and achievements or failures, still the work-study interface lacks the necessary attention. Addressing the gap in the literature, the paper aims at revealing work-study facilitation and work-study conflict. A quantitative survey was conducted in Lithuania asking bachelor students about their attitude towards work-study interface (pilot study). Turning to the results, students reported the higher level of work-study facilitation than work-study conflict. Such results lead to the conclusion that bachelor students see the added value work can provide to their studies.

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Keywords: Working while studying; Work-study facilitation; Work-study conflict; Bachelor students.

1. Introduction

Working while studying can be financially, professionally, and personally beneficial [1]. The students who choose this option must be well disciplined and have access to a great support network to be successful [2], as balancing learning and earning is difficult.

There were 42 226 bachelor's students in Lithuania in 2021–2022 [3]. Along with external pressure from parents and schools, the choice of bachelor's degree is affected by multiple psychological factors, including person's own motivations for further education as well as what they expect to get out of their degree [4]. Disciplines offer different

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opportunities to fulfil these motivations and that defines the choices people make [5]. For instance, those who are career minded are potentially more likely to choose a degree with clear career prospects, while others might be motivated purely by intrinsic motivation for their subject. It is not evident how many students work while studying. Nevertheless, there are distinct reasons why students choose to work during the pursuit of their bachelor's degrees [6].

It is worth mentioning how bachelor's studies are organised at Lithuanian universities because it affects the ability for students to coordinate studying and working at the same time. Usually, the attendance is compulsory only during the first year of the degree, after that students gain more freedom to manage their studies and plan their time [7]. Additionally, another aspect that is important why some students choose to work is labour shortage in Lithuania [8]. An especially important reason of decrease in country's population and labour supply is emigration or "brain drain". Increased migratory mobility is one of the features of the development of modern society, especially typical in post-communist countries, including Lithuania [9]. For this reason, some Lithuanian employers, because of labour supply shortage, promote student work and create opportunities for flexible work.

Although the previous literature has focused on various aspects of students' activities and achievements or failures, still the work-study interface lacks the necessary attention. Trying to narrow the gap, the paper aims at revealing work-study facilitation and work-study conflict for bachelor's students.

The paper aims at contributing to literature in several ways. First, the paper contributes to the literature on students' employment. Second, the paper provides the empirical findings tackling the bachelor students in the particular setting. Third, the paper calls for deeper discussion on working while studying phenomenon as students' employment can have the consequences for labour market in short-term and long-term perspectives.

The remaining sections of the paper are structured as follows: the theoretical part gives an overview of the literature on the reasons why bachelor's student work, on work-study facilitation, and on work-study conflict. Later, the applied research method is described. The empirical results and discussion come further. Finally, the conclusions are drawn.

2. Theoretical part

Students who work in Lithuania and Europe. It is important to compare Lithuanian students' situation to other European countries. On cross-country average, 38 % of students indicate regular, casual, or periodical prior experience in the labour market [10]. The percentage of students who have continually worked prior to entering higher education is much greater among alternative access route students than among standard access route students [11]. Female students in Finland, Iceland, Luxembourg, and Sweden indicates regular work experience prior to entering higher education with larger percentages than male students. The opposed relationship can be found in Austria, Croatia, Romania, and Turkey. While domestically educated students without a migration background in Austria, Denmark, Hungary, Iceland, Ireland, Malta, Norway, Romania, and Switzerland have more frequently worked regularly before enrolling in higher education, domestically educated second-generation migrants in Estonia, Lithuania, and Poland more frequently indicate regular work experience than their fellow students without a migration background. Students who hold a paid job while studying make use of the option of part-time studies particularly often: on cross-country average, almost half of students (48 %) who work more than 20 hours per week in paid jobs indicate that they are studying in formal part-time mode, compared to only 5 % of students without paid jobs and 6 % of students with paid jobs amounting to 20 hours per week or less. This finding is prevalent in all countries that participated in these findings and that allow formal part-time studies. Across countries, percentages of formal part-time studies are largest among working students with a workload of more than 20 hours per week in Hungary (65 %), Ireland (65 %), Malta (86 %), Norway (68 %), Poland (68 %), and Sweden (65 %) [12]. It is evident that most students who work in Lithuania are without a migration background and work similar hours per week as in other European countries.

The reasons why bachelor's students work. Bachelors' work is often financially motivated [13]. Tuition, student loans, and living expenses are often a struggle for students. It can be due to lack of financial support from relatives, moving away from home and living in a different city, or studying at a non-public university which does not receive government funding [14]. Additionally, psychological issues, such as family problems, can interfere with students' grades in secondary school and affect their chances of receiving funding. Another reason bachelors' work is professional [15]. To gain experience and be employable in the future, career-oriented students usually fill their time with meaningful work. By working, young people develop discipline and time management skills. Such a professional history can often demonstrate to a future employer that a person is trustworthy and profitable for the company after graduation. Students with a clear career plan tend to fill their time with work early on in their careers for this reason during their bachelor's degree program, for instance [16]. The last reason bachelors' work is personal. Those who

realize that even the tiniest mundane acts of daily living can help build their confidence often turn to practicing a job to build discipline and confidence [17]. Working while studying is not an easy journey. Nonetheless, sacrificing time that would otherwise be spent on social media improves the existing habits of students [18]. It also helps students gain new skills as well as life experience [19]. The experience of working while pursuing a degree can be rewarding for the student. However, it can have the negative consequences as well.

The work-study facilitation. Work-study facilitation is one of the pillars of work-study interface [20]. Work-study interface refers to the extent to which students' jobs influence their ability to meet study-related demands and responsibilities both positively (e.g., work-study facilitation) and negatively (e.g., work-study conflict) [20]. Facilitation is the act of assisting or making easier the progress or improvement of something [21]. Facilitation reflects, "the extent to which experiences in one role improves the quality of life in the other" [22, p. 73]. Following Creed et al. [23], role-to-role facilitation is enhanced by being exposed to enabling resources, psychological rewards, and by being involved. Turning to students, enabling resources are skills and abilities learned in work that aid performance in studies domain. Psychological rewards reflect status enhancement and privileges gained in work that aid achievements in studies. Finally, involvement is the satisfaction and enthusiasm generated in work that spills over to motivate and energise in studies. Thus, the facilitation perspective considers that participation in studies is enhanced and made easier by engagement in work, especially when the work is meaningful and satisfying [23]. Finally, the literature review allows to conclude that working while studying can lead to better labour market outcomes for students through the accrual of work experience, professional connections, and the development of soft skills that contribute to academic and professional success [24].

The work-study conflict. Work-study conflict is the second pillar of work-study interface [20]. Conflict is a serious disagreement or argument, typically a protracted one [25]. In the work-study context conflict occurs when the demands of one role are incompatible with those of another [20]. There are several predictors for work-study conflicts, including feelings of exhaustion and disengagement among nonstudent workers, as well as job demands and job resources [26, 27]. Students employed in poorly designed workplaces with high demands and little support are more likely to face work-study conflicts [28]. High-demand work environments take away time and energy that students need for their studies, causing feelings of conflict between work and study [29, 30]. Students with high levels of job resources, such as control and rewards in the workplace, report lower levels of work-study conflict [23]. Social support, university support, family support, and work support are additional resources that might have an impact on work-study conflict [30].

3. Methodology

Sample and data collection. Considering the objective of the research, data was collected by using a convenience sampling type from bachelor's students in Lithuania. Convenience sampling is a type of non-probability sampling where members of the target population, that meet certain practical criteria, such as easy accessibility, availability at a given time, geographical proximity or the willingness to participate, are included for the purpose of study [31].

The questionnaires were distributed *via LinkedIn* and *Facebook*. Due to the way of questionnaire dissemination, it is impossible to estimate the number of respondents the questionnaires were sent to and the response rate. While distributing the questionnaires, information about the aim of the survey and a link to the survey were enclosed. Data collection took place in February–April, 2022. At the end of the research, 114 questionnaires were collected. The profile of respondents, including gender, working hours per week, students' grade point average (GPA) in the last semester and study year is presented in Table 1.

Table 1. Respondent's profile

Characteristics	Frequency (<i>n</i>)	Percentage (%)
Gender		
Female	80	70.2
Male	33	28.9
Other	1	0.9
Working hours per week		
40 hours	38	33.3

Characteristics	Frequency (n)	Percentage (%)
20 hours	51	44.7
10 hours	10	8.8
Other amount of hours	15	13.2
GPA in the last semester		
10	3	2.6
From 9.9 to 9.00	44	38.6
From 8.9 to 8.00	48	42.1
From 7.9 to 7.00	19	16.7
Study year		
The first year	28	24.6
The second year	33	28.9
The third year	20	17.5
The fourth year	33	28.9

Measures. A self-reported questionnaire with a five-point Likert scale was used in the study where 1 indicated “strongly disagree”, and 5 indicated “strongly agree”.

Work-study facilitation was assessed using nine items provided by Meeuwisse et al. [20]. The example of items are: “*The things I do at work help me deal with personal and practical issues at university*”, “*My job makes me enjoy my course program more*”, “*Having a good day at work makes me a better person at university*”. Cronbach’s alpha was $\alpha = 0.930$.

Work-study conflict was measured with twelve items provided by Meeuwisse et al. [20]. Items like “*Because of my job, I go to university tired*” and “*My study suffers from my stressful job*” serve as examples of how work-study conflict was measured. Cronbach’s alpha was $\alpha = 0.903$.

The mentioned measures were subjected to reliability analysis. As all Cronbach’s alpha coefficients exceeded 0.7, all measures were considered acceptable for the analysis [32].

Three control variables, namely gender, working hours per week, students’ GPA in the last semester and study year, were used in the analysis. In case of gender, 1 indicated “female”, 2 – “male”, 3 – “other”. In case of working hours per week, 1 indicated “40 hours”, 2 – “20 hours”, 3 – “10 hours”, and 4 – “other amount of hours”. In case of students’ GPA in the last semester, 1 indicated “10”, 2 – “from 9.9 till 9.00”, 3 – “from 8.9 till 8.00”, and 4 – “from 7.9 till 7.00”. In case of study year, 1 indicated “the first year”, 2 – “the second year”, 3 – “the third year”, and 4 – “the fourth year”.

4. Results

As already identified, the aim of this paper was to reveal work-study facilitation and work-study conflict experienced by bachelor’s students.

The means, standard deviations and correlation matrix are provided in Table 2.

The results, presented in Table 2, indicate that the mean of ratings of work-study facilitation perceived by the students, was 3.29. Meanwhile, work-study conflict ($M = 2.75$) was evaluated lower in comparison to work-study facilitation.

It could be further deduced from Table 2 that statistically significant relationship between work-study facilitation and work-study conflict was not identified. The same situation was observed in respect to all control variables and work-study facilitation and work-study conflict. As it is seen, statistically significant relationships between work-study facilitation (also work-study conflict) and gender, working hours per week, students’ GPA in the last semester and study year were not found.

Next, mean scores of work-study facilitation and work-study conflict were determined according to gender, working hours per week, students’ GPA in the last semester and study year (see Table 3).

Table 2. Means, standard deviations and correlations

Variable	Mean (M)	SD	1	2	3	4	5	6
1. Gender	1.31	0.482						
2. Working hours per week	2.02	0.977	0.345**					
3. Students' GPA in the last semester	2.73	0.768	0.204*	0.018				
4. Study year	2.51	1.154	-0.124	-0.267**	-0.282**			
5. Work-study facilitation	3.29	1.006	0.065	0.085	-0.156	0.072		
6. Work-study conflict	2.75	0.7938	-0.018	-0.067	0.176	0.010	-0.066	

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table 3. Means and standard deviations according control variables

Variable	Work-study facilitation	Work-study facilitation	Work-study conflict	Work-study conflict
	Mean (M)	SD	Mean (M)	SD
Gender				
Female	3.24	1.00883	2.76	0.81789
Male	3.39	1.02293	2.68	0.74507
Other	3.44	-	3.41	-
Working hours per week				
40 hours	3.27	1.16009	2.84	0.92103
20 hours	3.18	0.91038	2.69	0.70378
10 hours	3.61	0.91512	2.74	0.93908
Other amount of hours	3.47	0.98352	2.68	0.68444
GPA in the last semester				
10	3.29	0.84132	3.02	1.54185
From 9.9 to 9.00	3.40	1.01800	2.55	0.86542
From 8.9 to 8.00	3.35	1.01841	2.80	0.71761
From 7.9 to 7.00	2.84	0.91565	3.02	0.60544
Study year				
The first year	3.24	0.85499	2.63	0.69145
The second year	3.13	0.90865	2.81	0.66708
The third year	3.51	1.02044	3.00	0.85176
The fourth year	3.34	1.20530	2.63	0.93650

As can be seen from Table 3, males ($M = 3.39$) rated work-study facilitation higher when females ($M = 3.24$), while females ($M = 2.76$) rated work-study conflict higher than males ($M = 2.68$). Still, the Mann-Whitney U test (see Table 4) did not reveal any statistically significant differences between genders ($p > 0.05$).

As can be seen from Table 3, students working 10 hours per week ($M = 3.61$) rated work-study facilitation higher in comparison with students working 20, 10 or other amount of hours. Referring to work-study conflict, students working 40 hours per week reported the highest conflict ($M = 2.84$). Still, Kruskal-Wallis test (see Table 5) did not reveal any statistically significant differences between students working different amount of hours per week ($p > 0.05$).

Table 4. Gender differences in assessing work-study facilitation and work-study conflict (Mann-Whitney test)

Variable	Females mean rank	Males mean rank	Mann-Whitney <i>U</i> test	<i>Z</i>	Sig.
Work-study facilitation	55.88	59.73	1 230.000	-0.569	0.569
Work-study conflict	57.93	54.74	1 245.500	-0.471	0.637

Table 5. Working hours per week differences in assessing work-study facilitation and work-study conflict (Kruskal-Wallis test)

Variable	40 hours per week	20 hours per week	10 hours per week	Other amount of hours	Kruskal-Wallis <i>H</i> test	Df.	Sig.
Work-study facilitation	59.28	52.33	68.70	63.10	2.945	3	0.400
Work-study conflict	61.86	55.31	57.15	54.13	1.043	3	0.791

As can be seen from Table 3, students who had GPA in the last semester between 9.9 and 9.0 ($M = 3.40$) rated work-study facilitation higher in comparison with other students. Meanwhile, students who had GPA 10 and students who had GPA between 7.9 and 7.0 evaluated work-study conflict giving the same mean ($M = 3.2$). Still, Kruskal-Wallis test (see Table 6) did not reveal any statistically significant differences between students having different GPA in the last semester ($p > 0.05$).

Table 6. GPA in the last semester differences in assessing work-study facilitation and work-study conflict (Kruskal-Wallis test)

Variable	10	9.9–9.0	8.9–8.0	7.9–7.0	Kruskal-Wallis <i>H</i> test	Df.	Sig.
Work-study facilitation	57.83	60.76	60.13	43.26	4.272	3	0.234
Work-study conflict	64.33	49.11	60.32	68.71	5.515	3	0.138

As can be seen from Table 3, the third-year students evaluated work-study facilitation ($M = 3.51$) and work-study conflict ($M = 3.00$) higher in comparison with other students. Still, Kruskal-Wallis test (see Table 7) did not reveal any statistically significant differences between students from different study years ($p > 0.05$).

Table 7. Study year differences in assessing work-study facilitation and work-study conflict (Kruskal-Wallis test)

Variable	The first year	The second year	The third year	The fourth year	Kruskal-Wallis <i>H</i> test	Df.	Sig.
Work-study facilitation	52.66	51.98	66.30	61.79	3.505	3	0.320
Work-study conflict	51.13	58.74	67.38	55.68	2.984	3	0.394

5. Discussion and conclusions

The paper aimed to reveal work-study facilitation and work-study conflict in case of bachelor students.

Most now consider working while studying to be normal [23, 33]. Actually, such situation is caused by two parties, namely by the students and by the universities. First, bachelor students are increasingly engaging in work experiences, often directed towards enriching their study and promoting employability in the future. Second, recently a common feature of all universities is the inclusion of work experiences either directly in students' programmes of study or as a requirement accompanying them [34].

The literature argues that employment during studies can have both negative and positive effects on students' life [20]. Working while studying means performing two different roles at the same time. There are two competing theories related to multiple role research [23]. The first is the depletion model, which proposes that the opposing pressures arise from engaging in multiple roles and can be incompatible by requiring different roles (for instance work, family, study) to compete for an individual's limited time resources as well as the strains associated with one or more roles [35]. As such, people have fixed levels of physical and psychological energy to expend, and that resources used in one role deplete those available for another role [23]. Applied to bachelor students, the depletion model suggests that working will reduce the resources available for study, producing work-study conflict [23]. The second model is enrichment model, which proposes that engaging in multiple roles provides benefits for individuals that outweigh the negative effects of cross-role demands [23]. The model supposes that individual resources are abundant and expandable and due to this reason, the individuals to not only meet demands across multiple domains but also to draw on resources from one domain to enhance engagement in the other [36]. Applied to bachelor students, the enrichment model suggests that engagement in the work role would energise the student and facilitate outcomes in studies [23]. As such, work-study facilitation construct is proposed.

The empirical data shows that bachelor students highly enough evaluated their work-study facilitation (mean 3.29). The previous studies demonstrate similar results. For instance, in the study of Cinamon [37] 289 Israeli working students reported 2.85 mean for work-study facilitation. Thus, the idea that skills and responsibilities learned in the work role can enhance studies at university [22] is likely to be supported.

Turning to work-study conflict, the bachelor students evaluated their work-study conflict as low (mean 2.75). In case of Cinamon [37] study, the result was even lower: 289 Israeli working students reported 2.30 mean for work-study conflict. However, the study of Thamrin [38] with international students working in Australia provided opposite findings, as almost 70 % of participants reported that their employment created a work-study conflict.

Overall, in the current study, statistically significant relationships between work-study facilitation (also work-study conflict) and gender, working hours per week, students' GPA in the last semester and study year were not found. Students working 10 hours per week rated work-study facilitation higher in comparison with students working 20, 10 or other number of hours. Referring to work-study conflict, students working 40 hours per week reported the highest conflict. Males rated work-study facilitation higher than females, while females rated work-study conflict higher than males. Students who had GPA in the last semester between 9.9 and 9.0 rated work-study facilitation higher in comparison with other students. Meanwhile, students who had GPA 10 and students who had GPA between 7.9 and 7.0 evaluated work-study conflict higher in comparison with other students. The third-year students evaluated work-study facilitation and work-study conflict higher in comparison with other students.

Practical implications. The data from this study reveals several practical applications. First, this study shows that among Lithuanian students, the work-study conflict was evaluated lower in comparison to work-study facilitation. Such notion leads to idea to invite more business people to deliver lectures while sharing practice-based experience. In such, non-working students will give some practical insights which could help them while studying. Second, students need some support from Universities in order to manage work and studies, as work can be beneficial for students [23]. Third, the national strategy on how to deal with working and non-working students is necessary, especially referring to the assumption of resource scarcity in which potential resources (*e.g.*, time, energy) are viewed as finite [20].

Limitations. This study has potential limitations. This study involves Lithuanian bachelor's students and may not be applicable to students outside of this designation. There is no similar research conducted on Lithuanian students which limited a possibility for comparison. Time constraint is another limitation of this study. The results were acquired in February–April of 2022. Therefore, only 114 of the questionnaires were collected and because of this reason, the research is limited to the opinion of 144 Lithuanian bachelor's students. Additionally, the questionnaire was disseminated on social media platforms such as *LinkedIn* and *Facebook* and as a result, people tended to not be as responsive as if they were asked to complete a questionnaire in person.

The paper calls for further discussions and investigation of the work-study facilitation and the work-study conflict, as managing two roles is not easy task, which can lead to unsustainable consequences for various stakeholders, namely students, their parents, business, society.

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Do and How Recovery from Work Influences Task Performance while Working Remotely During COVID-19 Lockdown

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Abstract

In the past few decades, the research on recovery from work has been increasing, providing theoretical insights and empirical evidence that relaxation from work is beneficial for employees and organisations. However, the research into the linkage between recovery from work and task performance still lacks consistency; moreover, the majority of them were not conducted in a crisis situation. Addressing the gap in the literature, the paper aims at revealing the relationship between recovery from work and task performance while working remotely during COVID-19 lockdown. A quantitative survey was conducted in Lithuania (pilot study). Initially, it was predicted that recovery from work and its four experiences, namely psychological detachment from work, mastery, relaxation and control would be positively related to task performance. However, contrarily to the expectations, task performance was solely increased by control.

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Keywords: Recovery from work; Recovery experiences; Task performance; Remote work; COVID-19.

1. Introduction

Historically, pandemics have shaped the world of work in terms of work perception, performance and organisation [1]. COVID-19 is not an exception; thus, it strongly influences such domains as work-family balance [2], leadership [3] or job insecurity [4]. Furthermore, remote work [5] seems to be one of the main characteristics and issues related to COVID-19 pandemic. Working remotely while performing work and family roles in the same location

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[6], does not only increase role blurring [1], but also makes it more difficult for employees to recover from work [7]. The idea that “*employees need breaks from the demands of work in order to function optimally*” [8, p. 868] is crucial for recovery concept. As workplaces are becoming more and more demanding environments [9], work requires an increasing amount of employees’ energy and time in comparison to previous generations [8], and remote work due to COVID-19 involves radical changes in the ways of working [10]. Moreover recovery from work serves as a critical process with positive outcomes for employee wellbeing, employee performance and organisational performance [8].

Previously reviewed literature on recovery from work generally focuses on several areas. Firstly, the number of studies propose the conceptualisation of recovery while examining recovery as a process (experiences) and an outcome of the process [8, 11, 12]. Secondly, other studies indicate the predictors and / or outcomes of recovery [8, 13]. Furthermore, it should be emphasised that the majority of studies were conducted not in the context of such crisis as COVID-19 pandemic.

Remote work during COVID-19 lockdown is within the scope of this paper. However, the paper limits its focus to recovery experiences, as “*it is not a specific activity per se that helps to recover from job stress but its underlying attributes*” [12, p. 204]. Although employees can recover during work breaks, holidays, weekends, the paper focuses on the analysis of recovery after official working hours. Moreover, the paper belongs to the research stream which analyses the outcomes of recovery, more specifically, task performance, defining it as job explicit behaviours which include fundamental job responsibilities assigned as a part of job description [14]. Thus, the aim of the research is to identify the relationship between recovery from work and task performance while working remotely during COVID-19 lockdown. A quantitative survey was conducted in Lithuania (pilot study). The data was collected from the employees who only worked remotely due to lockdown conditions.

The paper tries to fill some gaps in previous studies and aims at contributing to literature in several ways. Firstly, COVID-19 pandemic context poses a unique opportunity to study employee recovery from work and their task performance in crisis conditions, related to lockdown. Such findings contribute to the literature on crisis management and employee recovery in unforeseen circumstances. Secondly, the paper adds value to the research into task performance by responding to the call of the survey [15] where managers’ major concerns about remote work refer to reduced employee productivity and reduced employee focus. Thus, the paper expands the pool of empirical evidence regarding performance enhancement: do and what recovery experience have a positive impact on task performance. Furthermore, given mixed empirical results, the paper responds to the need [8] to further analyse the relationship between employee recovery and task performance. Finally, the paper contributes to the literature identifying the most common recovery experiences among employees working remotely during COVID-19 lockdown.

The remaining sections of the paper are structured as follows: the theoretical part gives an overview of the literature on recovery experiences and task performance. Later, the hypotheses are developed. Further, the applied research method is described. The empirical results and discussion come further. Finally, the conclusions are drawn.

2. Theoretical part

Recovery from work. Recovery refers to “*unwinding and restoration processes during which a person’s strain level that has increased as a reaction to a stressor or any other demand returns to its prestressor level*” [16, p. 366]. Recovery process can be perceived as an opposite process to strain process [12], and decreased strain level serves as the indicator of a successful recovery [11].

Two complementary theories, namely Effort-Recovery model [17] and Conservation of Resources theory [18], are used by recovery researchers, highlighting the important role of demands and resources and explaining the recovery process. According to the Effort-Recovery Model, facing high demands at work leads to load reactions in the employee, such as fatigue or increased cortisol level [7]. In order for recovery to occur, the demands must cease [17] and the functional system, burdened during working time, must not be called upon any longer [12]. Conservation of Resources theory focuses on protecting, gaining and preserving resources [19]. According to Conservation of Resources theory, working under high demands threatens employees’ resources. In order for recovery to occur, employees need to invest additional resources, such as time, that help to replenish the resources needed to come back to work [7].

Employees may use different strategies to recover from work. As it has already been mentioned, this paper limits its focus to recovery experiences. The argument behind choosing recovery experiences lies in the notion that recovery

experiences are the mechanisms through which recovery process occurs [20]. As such, not the activities themselves, but the psychological experiences attached to these activities are relevant for recovery [12]. For example, one employee might recover from work while playing soccer with friends, whereas another person prefers going to the cinema. Although activities are different, the underlying processes (in the case of relaxation) are rather similar.

Sonnentag and Fritz [12] proposed a taxonomy of four recovery experiences, namely psychological detachment from work, relaxation, mastery and control.

Psychological detachment from work refers to “*an individuals’ sense of being away from the work situation*” [21, p. 579]. Detachment does not only imply being unoccupied by work-related duties, but also mentally dissociated from work by not thinking about work-related issues, opportunities or challenges [22]. Psychological detachment is often experienced as “switching off” [20]. It is relevant to mention that when employees do not detach from work they are mainly disturbed by negative, work-related thoughts [22], meanwhile, employees who psychologically detach from work, generally feel better [11]. Accordingly, psychological detachment from work is considered as the crucial aspect of any recovery process [12].

Relaxation refers to the processes characterised by low sympathetic activation [12] and is often associated with leisure activities [23]. Relaxation can be achieved by meditation or everyday activities that calm body and mind [7].

Mastery experience refers to “*off-job activities that distract employees from work by providing challenging experiences and learning opportunities in other domains*” [12, p. 206]. Classical examples include language courses or learning other new things. Actually, mastery experience is not necessarily effortless as recovery may require some kind of effort investment, but the demands are different from the demands one faces at work [20].

Control refers to the employee’s ability to choose an action from two more options [12]. As control refers to self-determination during off-job time, by choosing the activity, deciding when and how to pursue it, may help an employee to recover [20].

Task performance. Acknowledging different types of job performance, scholars claim that job performance itself refers “*to scalable actions, behaviour and outcomes that employees engage in or bring about that are linked with and contribute to organizational goals*” [24, p. 216]. As previously reviewed literature focused on the issue of task performance decline due to lockdown [25], the current paper merely focuses on this type of performance identifying its important role and claiming that task performance ensures organisational vitality and longevity. Task performance is directly related to the organisation’s technical core, either by executing its processes or by maintaining and servicing its technical requirements [26]. Task performance refers to employee’s success in performing formally assigned duties on the job [27]. Thus, task performance may be defined as performing specific work tasks that are usually specified in a job description [28].

The relationship between recovery experiences and task performance. It seems that task performance is one of the reasons why employees and organisations are encouraged to treat employee recovery seriously. According to Conservation of Resources theory [18], if employees are able to recover and replenish their resources, they will further invest these resources into fulfilling tasks defined in job descriptions. The majority of empirical evidence suggest positive relationship between recovery experiences and job performance. For instance, the study of public sector organisation revealed that being recovered in the morning was positively related to daily task performance [29]. With respect to specific recovery experiences, Wendsche and Lohmann-Haislah [30] found that detachment was positively related to task performance. More recent study has found that post-work recovery has a positive influence on employees’ next-day performance [31]. Evening relaxation was identified to be positively related to the next day performance related behaviours [32]. Furthermore, Sonnentag et al. [16] warn that findings remain inconclusive, as in some studies no effect or non-linear effect, or mixed affect between recovery experiences and job performance have been identified [7]. Notwithstanding the previous empirical uncertainty and following the recent metaanalysis conducted by Steed et al. [8], the current paper addresses the following hypotheses:

- H1. Employee recovery from work will be positively related to task performance.
- H1a. Detachment from work will be positively related to task performance.
- H1b. Relaxation will be positively related to task performance.
- H1c. Mastery will be positively related to task performance.
- H1d. Control will be positively related to task performance.

3. Methodology

Sample and data collection. Considering the objective of the research, data was collected by using a convenience sampling type from the employees who have an employment contract and who were only working remotely during COVID-19 lockdown (country – Lithuania). Convenience sampling is a type of non-probability sampling where members of the target population, that meet certain practical criteria, such as easy accessibility, availability at a given time, geographical proximity or the willingness to participate, are included for the purpose of study [33].

The questionnaires were distributed via *LinkedIn*, *Facebook* and other social networks. Due to the way of questionnaire dissemination, it is impossible to estimate the number of respondents the questionnaires were sent to and the response rate. While distributing the questionnaires, information about the aim of the survey and a link to the survey were enclosed. Data collection took place during COVID-19 lockdown period, only in April, 2020. At the end of the research, 166 questionnaires were collected. The profile of respondents, including gender, work position and working experience in the current organisation, is presented in Table 1.

Table 1. Respondent's profile

Characteristics	Frequency (n)	Percentage (%)
Gender		
Female	146	88
Male	20	12
Work position		
Managerial	39	23.5
Non-managerial	127	76.5
Work experience in the current organisation		
Up to 1 year	28	16.9
From 1 year to 3 years	34	20.5
From 3 years to 5 years	23	13.8
From 5 years to 10 years	18	10.8
More than 10 years	63	38.0

Measures. A self-reported questionnaire was used. The four recovery experiences were measured with items from Recovery Experience Questionnaire [12]. Each recovery experience was measured with four items referring to one's free time outside working hours. Recovery from work was measured as a second order construct consisting of four individual experiences. A 4-item scale by Verburg et al. [34] was used to measure task performance. All these variables were measured on a five-point Likert-type scale where 1 indicated "strongly disagree" and 5 indicated "strongly agree". Three control variables, namely gender, work position, and working experience in the current organisation, were used in the analysis.

Table 2 displays items of the constructs, factor loadings and Cronbach's alphas.

Table 2. Factor loading and Cronbach's alphas

Items	Psychological detachment from work	Relaxation	Mastery	Control	Recovery from work (all experiences)	Task performance
I forget about work	0.907					
I don't think about work at all	0.879					
I distance myself from my work	0.918					
I get a break from the demands of work	0.768					
I kick back and relax		0.769				

Items	Psychological detachment from work	Relaxation	Mastery	Control	Recovery from work (all experiences)	Task performance
I do relaxing things		0.818				
I use the time to relax		0.863				
I take time for leisure		0.831				
I learn new things			0.757			
I seek out intellectual challenges			0.854			
I do things that challenge me			0.805			
I do something to broaden my horizons			0.746			
I feel like I can decide for myself what to do				0.851		
I decide my own schedule				0.872		
I determine for myself how I will spend my time				0.898		
I take care of things the way that I want them done				0.683		
I adequately complete the assigned duties						0.854
I fulfil the responsibilities specified in job description						0.873
I perform tasks that are expected from me						0.895
I meet the formal performance requirements of the job						0.795
Cronbach's alpha	0.892	0.833	0.801	0.847	0.889	0.873

As all Cronbach's alpha coefficients exceeded 0.7, all measures were considered acceptable for the analysis [35].

4. Results

The means, standard deviations and correlation matrix are provided in Table 3.

Table 3. Means, standard deviations and correlations

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Gender	1.77	0.425									
2. Work position	3.33	1.554	-0.144								
3. Work experience in the current organisation	1.12	0.327	-0.025	-0.073							
4. Psychological detachment from work	2.52	1.001	0.149	-0.040	-	0.234**					
5. Relaxation	3.34	0.844	0.162*	-0.072	-0.088	0.697**					
6. Mastery	3.47	0.757	0.061	-0.120	0.090	0.077	0.244**				
7. Control	3.79	0.775	0.091	-	0.192*	-0.151	0.505**	0.512**	0.144		
8. Recovery from work	3.28	0.577	0.142	-0.121	-0.140	0.807**	0.864**	0.410**	0.744**		
9. Task performance	4.25	0.627	-0.019	0.048	0.019	0.113	0.046	0.086	0.198*	0.107	

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

The results, presented in Table 3, indicate that the mean of ratings of task performance perceived by the respondents, was 4.25. Meanwhile, recovery from work (mean 3.28) was evaluated lower in comparison to task performance. Referring to different experiences, the highest mean received control (mean 3.79), the lowest mean was given to detachment from work (mean 2.52).

It could be further deduced from Table 3 that statistically significant relationship between recovery from work and task performance was not identified. The same situation was observed in respect to some recovery experiences, seeing that statistically significant relationships between psychological detachment from work and task performance, between mastery and task performance, and between relaxation and task performance were not found. A weak correlation was only observed between control and task performance while working remotely during COVID-19 lockdown ($0.198, p < 0.05$). Therefore, only hypothesis H1d was supported.

5. Discussion and conclusions

The paper aims at revealing the relationship between recovery from work and task performance while working remotely during COVID-19 lockdown. In order to do this, a quantitative survey was conducted in Lithuania (pilot study). The data was collected from the employees only working remotely due to lockdown conditions. Initially, it was predicted that recovery from work and its four experiences, namely psychological detachment from work, mastery, relaxation and control would be positively related to task performance. However, contrarily to the expectations, only one hypothesis H1d was supported demonstrating that an employee's ability to choose an action from the set of actions increases their task performance.

The empirical data shows that respondents during COVID-19 lockdown highly evaluated their task performance (mean 4.25). Such high assessment correlates with results found in other studies conducted in pandemic period, for instance, respondents from educational institutions evaluated their task performance with 4.03 mean [36]. The studies on recovery from work, conducted before COVID-19 did not demonstrate high evaluation of recovery experiences. For instance, in the study of Sonnentag and Fritz [12] the following means were identified (5 point Likert scale): psychological detachment from work – mean 3.00; relaxation – mean 3.29; mastery – mean 3.04; control – mean 3.70. Similar evaluation was indicated by Derks and Bakker [37], demonstrating 3.75 mean for relaxation and 3.02 mean for psychological detachment. It seems that the situation during COVID-19 has not changed because the participants in the study of Fauzi et al. [38] reported the highest level of experiences in control, and psychological detachment from work indicated the lowest level of recovery experiences reported by the participants. Thus, the results of the current paper correspond to the previous findings underlying that recovery from work is a difficult process for employees. It could be predicted that it was extremely difficult to manage recovery from work due to lockdown restrictions and general unpredictability caused by the pandemic. The results showed that control was positively related to task performance ($0.198, p < 0.05$) while working remotely during COVID-19 lockdown. In lockdown situation, employee's ability to choose activities and decide how to spend time, led to enhanced task performance. Thus, employees who experienced higher control, were better task performers when working remotely. It could not be concluded regarding three other recovering experiences. As it has been mentioned before, in the cases of psychological detachment from work, mastery, relaxation, no statistically significant relationship with task performance was identified. This could be explained by several reasons. Firstly, as the study was conducted in lockdown situation, the employees could not have allocated much time for mastery or relaxation, and detachment from work was highly difficult due to blurred boundaries between work and home [6], having only one space for both work and private life [1]. Secondly, referring to the sample, the majority of respondents were women (88 %). It was extremely difficult for women to pursue recovering experiences because their children could not attend nurseries and schools and stayed at home during lockdown.

Practical implications. The current research has some managerial implications for practitioners. Seeing the value of recovery from work [7], organisations are encouraged to develop a “culture of recovery” having in mind that recovery will become even more difficult as more and more employees will continue working from home [39]. Organisations are supposed to help employees to gain mental distance from work during non-work time by not expecting employee to be available 24/7. Consistently with Effort-Recovery model [17], organisation should mitigate job demands, such as overload, cognitive, emotional and physical demands as these demands inhibit recovery process.

Finally, following the Resource Conservation theory [19], organisations are invited to increase job resources because they have the potential to improve recovery process.

Limitations. This research has some shortcomings that might be addressed in future research. The first concern is related to self-reported nature of the data regarding task performance [7]. For further studies, in order to avoid overrated results, other rated measures of task performance are recommended [40]. The second concern deals with types of job performance as only task performance was analysed in the current research. Taking different nature of various types of performance [34] into consideration, further research should focus on more types of job performance. The third concern refers to the situation, more specifically to the lockdown. Future research might analyse the relationship between recovery experience and performance in stable situation while findings are still limited and lack consistency.

Summing up, as relaxation and recovery from work are highly relevant for both, employee and organisation. Moreover, both parties are encouraged to rethink recovery experiences and support each other while striving for human and business sustainability.

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Corporate Social Responsibility Value for Customers

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Abstract

Despite extensive corporate social responsibility (CSR) literature most of research has examined corporate performance as its only outcome. We aim to fill this gap by introducing possible companies’ CSR initiatives that generate benefits for customers and their support. In that way, this research also makes theoretical and practical contributions. This study explores and discloses the most important elements of value generating by SR to the customers and from practical approach, this would allow companies to make better use of the potential of SA and increase their competitiveness through SA.

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1. Introduction

Corporate social responsibility (CSR) has become an inseparable part and priority for businesses of all sizes, and received attention due to its importance to customers, employees, shareholders, suppliers, the environment, and society as a whole [1, 2]. Currently companies try to show their human side especially in the strive to capture customer’s attention and heart.

Therefore, extensive studies have been conducted to better understand the components of CSR, as well as the correlations between their roles and customer perspectives with respect to brand and purchase intention. Bhattacharya et al. [3] find that CSR contributes to a customer’s sense of well-being, and that this benefit is “rewarded” by customers in the market.

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Retrospective analysis of CSR's history and evolution, challenges of COVID-19 crisis unveil that the understanding of corporate responsibility has evolved from generating profit to a broader range of responsibilities including the generation of shared values [4, 5].

Customers are increasingly affected by global issues in the field of sustainable development and how they can contribute while purchasing, so their focus is often on the social responsibility of organizations. As a result, boycotts of goods due to violation of human and animal rights and ecological principles in their production are becoming more frequent. The importance of the eco-label is growing too. Customers become loyal to the company's products / services once they are aware of their CSR activities and the benefits they bring to society. Loyalty is inalienable, it is earned. When a consumer trusts a company, the purchase process is shortened.

Hsu & Bui [1] performed the research measuring customers' perspectives and behaviors with respect to corporate social responsibility (CSR). It examined the impact of CSR practices on brand attitude and purchase intention. The results indicated that all customers considered CSR aimed towards themselves only priorities were different in different countries: Vietnamese customers prioritized a company's care for its employees, while both Indonesian and Taiwanese customers concentrated on the environment and society. It also revealed that CSR had a positive influence on customer purchase intention.

Therefore, it becomes more and more important for organizations to think about value their customers get from company's activities, products, or services. But it is still not a prevailing practice for companies to assess the value to the customer from purchasing their product or service.

Despite extensive corporate social responsibility (CSR) literature most of research has examined corporate performance as its only outcome. We aim to fill this gap by assessing companies' perceptions of their CSR activities' benefits for customers. In that way, this research also makes theoretical and practical contributions. This study explores and discloses the most important elements of value generated by SR to the customers and from practical approach, this would allow companies to make better use of the potential of SA and increase their competitiveness through SA.

2. Literature review of corporate social responsibility

At present, CSR has received a great deal of attention from the public. Many companies issue CSR reports as a means of communicating their CSR performance [1]. Public and company awareness leads to the growth of CSR initiatives [6].

The essence of CSR is the combination of three responsibilities in business: economic, social and environmental, creating value not only for the business itself, but also for the overall value of the business – society – environment. CSR does not seek to reduce or deny the goal of profit, but emphasizes profit in a responsible way.

Customers as one of the most salient stakeholders, reward corporations that engage in CSR activities and programs via favourable evaluations, and higher intent to buy their services and products [7, 8, 9, 10]. Murray and Vogel [11] outline customer support for CSR as an exchange process: *“The exchange is one in which the firm offers something of value – typically a social benefit or public service – to an important constituency and, in turn, anticipates receiving the approval and support”* of customers. Customers typically evaluate the CSR actions of a firm as they relate to their own interests. Rowley and Moldoveanu [12] consider CSR evaluations by stakeholders to be interest-based, and therefore will evaluate any CSR initiative relative to their own personal morals, values, and priorities. The prevailing academic discussions emphasize a void in the extant literature examining customer responses to CSR. Namely, a lack of examination of how CSR can create (or destroy) perceived value for customers [2]. The current research seeks to enhance our understanding of how CSR can create values for customers (see Fig. 1).

CSR towards customers. Customers are a substantial source of the value of a company [13]. Therefore, it must offer something valuable for the customers too to attract them. In the case that customers are unsatisfied with a company's products or behaviours, they can stop supporting or even boycott the company's products or services [1]. CSR is very important aspect in this area as it can create value for the customers [14, 2] because it is concerned with their needs. Thus, organizations should pay attention to customers' needs and must be ready to adapt their brands continually to these ever-changing needs [15]. They must maintain contact with customers and establish lasting relationships through known “relational marketing” techniques, whereby organizations adapt their ways of interacting with customers and their immediate environment.

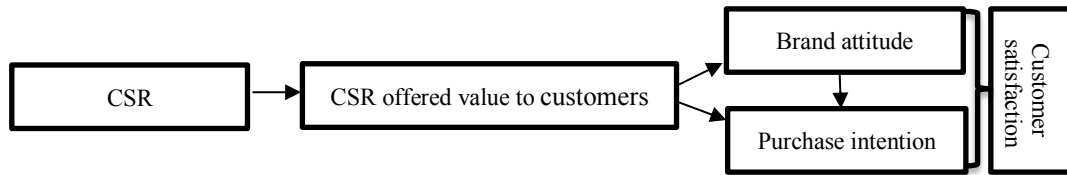


Fig. 1. Conceptual model of CSR offered value to customers

Consequently, CSR towards customers is key in CSR strategy. CSR towards customers can be considered as an enterprise making honest claims to customers through advertising or marketing, providing safe products with high quality, fair prices, possibility to support sustainability ideas and in that way to get value-satisfaction with being part of sustainability development [16, 17, 18]. Accordingly, customer satisfaction is a positive affective state ensuing from customers' overall evaluation of their experience with a firm's services or products [10].

Brand attitude. Brand attitude is predisposition of the customers toward a product and behavioural action or willingness to respond to a certain brand in a certain period. An individual's attitude toward any brand is based on the information or knowledge he or she has gained through particular sources, such as their family, friends, networking, cultural, and global aspects in our case company's respond to world sustainability goals through its socially responsible activities [17]. In this study, brand attitude refers to customers' attitudes towards brands that are socially responsible. According to previous research [18, 19], CSR can be important for improving brand attitude [1] as consistent with social exchange theory, customers feel the need to assist a firm if they perceive it to be doing well in terms of economic, social, and environmental responsibility [21, 10].

Purchase intention. Purchase intention is the propensity of customers to buy products or services. Specifically, after making a certain evaluation, customers have an intention to buy products or use services [1]. Many factors influence customers' intentions but, in this study, purchase intentions refer to customers' intentions to purchase products from companies taking on social responsibility [22]. If CSR practices related to the environment, society, and Eco sustainable projects are important to the customers, they get value from such company's products or services, in other words purchase intention is influenced by CSR and brand attitude.

3. CSR as a tool for competitiveness that adds value to the customer

Although research shows that customers expect a relatively high level of CSR, it does not specify what exactly they expect from businesses. This makes it more difficult for companies to develop effective and efficient CSR programs. The results show that companies lack a clear understanding of what society wants from them and how far they should go to meet society's needs. According to Kiyak and Šneideriene [23], what is value and how it is perceived depends on each individual. There is no single consensus on how value is defined, what the value structure is, and what factors shape value. It should be noted that measuring value is difficult because there is no unanimous decision on the suitability of value measuring instruments.

For the customer, the value of a product or service is a certain assessment of whether the purchased product or service will meet his needs. CSR can provide a customer with three values (see Fig. 2):

1. **Emotional value.** What feelings does the product or service give to the person (for example, a person feels good about purchasing a product that is made from recycled materials, because in this way it contributes to the preservation of the environment). When customers perceive CSR in some of the more "traditional" forms (*e.g.* donations to charity), this perceived value can be called as emotional one.
2. **Functional value.** Situational factors such as price and availability can affect behaviour. In general, functional value refers to the perception of utility. Functional value is created when the customer actually benefits from a product or service. For example, a fuel efficiency standard protects the environment, but it will save the customer money in a few years.
3. **Social value.** When a customer purchases a product or service from a company that is active in CSR. People make

decisions about a particular product or service based on other people's acquisition experience. For example, someone may discover social value by buying from a company that has active CSR and believes it will make a good impression on others [2]. Many of the same forms of CSR that provide emotional value for customers also provide social value. Customers recognize that CSR messages that promote environmental attributes, for example, can lead to enhancement in eyes of others, or be used to define oneself to the community.

Functional value expresses tangible benefits to the customer, which are factors in CSR that are directly related to the benefits they receive from that product or service, such as lower consumables costs, higher quality, *etc.*; emotional value is related to the feelings that arise in the process of consumption, *i.e.* obtained when there is satisfaction in customers being able to buy goods or services with social and environmental characteristics; and social value is the benefit to the customer that is relevant to the customer's social environment when purchasing goods and services from companies that are active in CSR and when customers can rely on this value to make purchase decisions.

As the figure (see Fig. 2) shows, corporate CSR business areas can satisfy a number of customer values. One responsibility can even include two values, *e.g.*, ethical responsibility includes both emotional value and social value. Customer values also interact with each other. This indicates that a customer may receive more than one value at a time after purchasing a product or service. Each of these values increases or decreases the overall value supply to the customer [2].

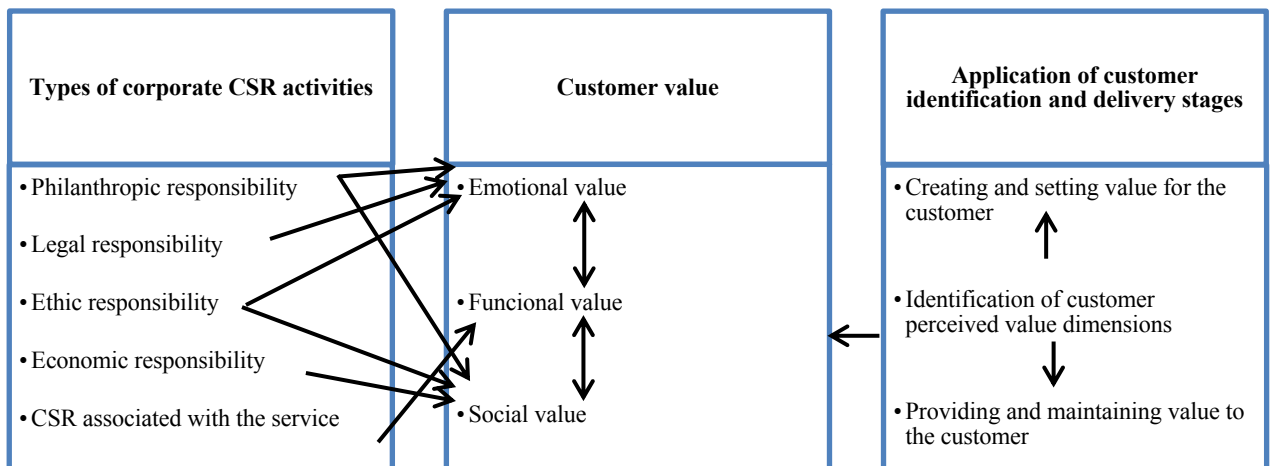


Fig. 2. A model for identifying customer perceived value (adapted from Green, Pelozo [2])

The activities carried out during the value creation and valuation phase of socially responsible companies' products / services are closely related to segmentation, target segment selection and positioning. In particular, the company seeks to identify customer needs and expectations and identifies the target segment based on the criterion of customer perceived value. Identifying the target segment provides an opportunity to offer customers a product / service that meets their needs and expectations. At this stage, the customer, having realized the need for a particular product / service that can meet his perceived need, is considering purchasing it. When the company actively communicates with the customer, the latter is convincing to buy the offered product / service. By purchasing said product / service, the customer receives a value related to both tangible and intangible features, receives emotional, social or functional value. The result of this stage is the creation of the main value for the customer [23].

4. Framework for customer value identification via CSR

The values created by CSR activities for customers affect each other and there are two possible effects – both positive and negative – on other sources of value. Positive effects can occur when products with signs of CSR create

emotional or social value and provide a higher level of functional value. Customers themselves are involved in creating value. Negative effects occur when customers associate the products of socially responsible companies with the lower quality of these products, and such an assessment has unintended consequences, such as refusing to buy goods or services due to poor quality, choosing alternative products, communicating negative opinions, and so on (see Fig. 3).

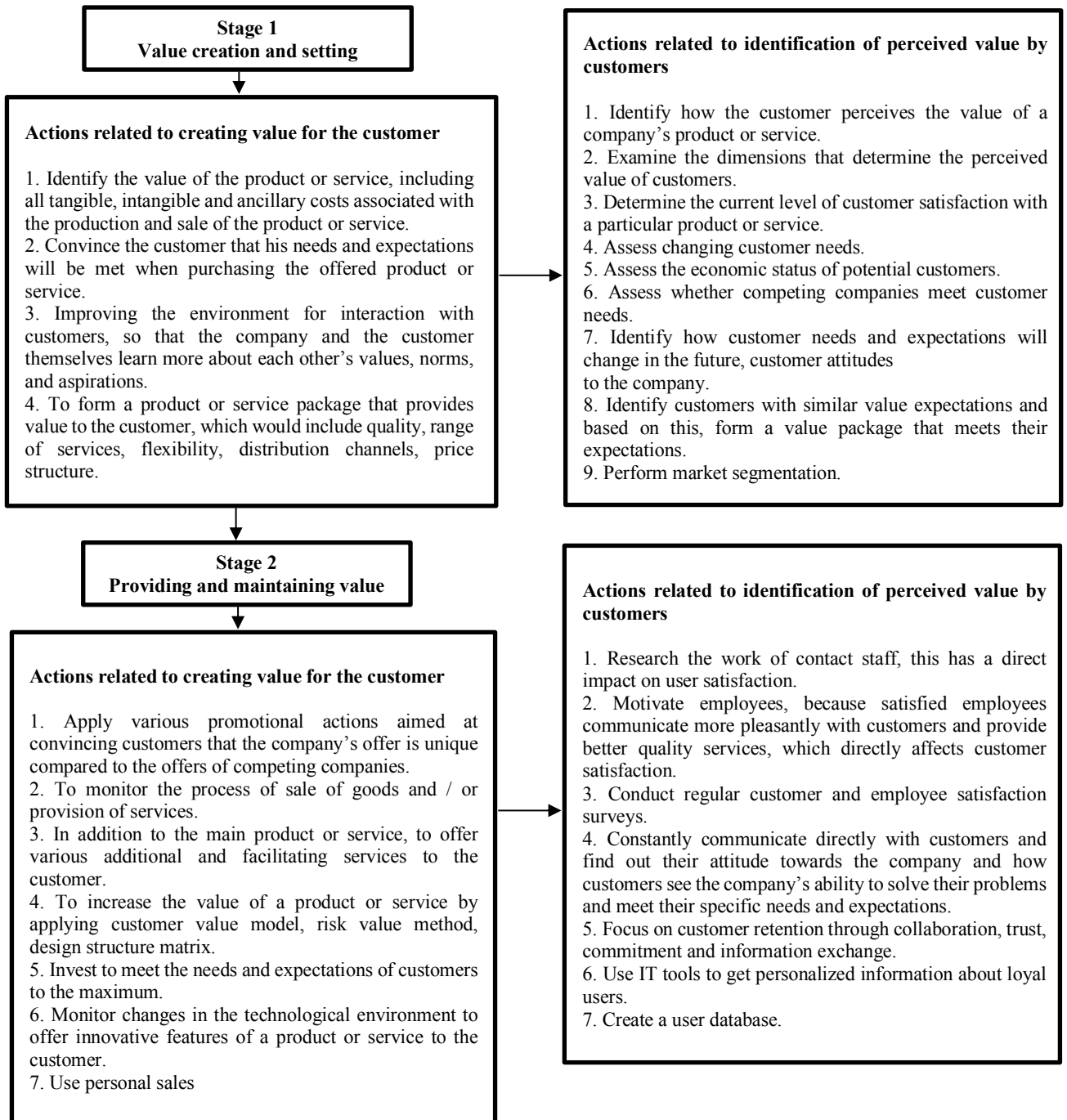


Fig. 3. Framework for customer value identification via CSR (created following [1, 2, 6, 23])

A company can increase the value of a product or service to the customer in several ways:

- increase the benefits;
- reduce prices or costs;
- increase benefits and reduce prices;
- benefits outweigh prices;
- reduce benefits but less than prices.

Customers need to be involved in order to increase the value creation process. In this way, the greatest benefit to the company can be achieved. The universal involvement of the customer in the process of supplying or pricing a service or product and the creation of customer-perceived value leads to the need to build close and trusting relationships with customers, which encourages market orientation.

Researchers claim that a customer may experience more than one value at a time when purchasing a product / service. Values are intertwined. Therefore, it is difficult to say what the main customer gets after purchasing a product / service. Functional value is a key CSR criterion for customers.

If the customer experiences a positive value side after purchasing the product / service, *i.e.* he receives not only satisfaction but also benefits, there is a high probability that he can re-purchase the goods / services provided by that company, thus becoming a loyal customer of that company's products or services. After reviewing the integrated model of Kiyak and Schneiderienė's [23] customer value and customer perceived value identification and the Green & Pelozo [2], Lam et al. [24], Gupta et al. [25] multi-customer value model, the framework for customer value identification via CSR is devised.

5. Discussion and implications

Academic literature highlights the growing significance of CSR as a strategy creating value for customers. Accordingly, our research provides a better understanding of customer support for CSR exploring values that CSR can provide a customer. The insights uncovered three possible values: emotional, functional, and social.

The customer can get more than one value, so a multi-customer value model is created. Researchers have found that the most important value is the functional value because it is directly related to the benefits that the consumer receives. Perception of value is an individual and subjective thing. Different consumers may experience different values when purchasing the same product or service. The value to the consumer depends on various aspects, such as the consumer's financial situation, the environment in which the consumer lives, the necessity of the product / service, the current situation, education, age, gender, perception, *etc.* Businesses should therefore carry out research to identify the values that their consumers experience, and which value is most important to them.

The research tried to fill this gap by devising a multi-customer value model, which is the framework for customer value identification via CSR. From theoretical approach, this study explored and disclosed the most important elements of value generated by SR to the customers and from practical approach, this would allow companies to make better use of the potential of SA and increase their competitiveness through SA.

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Assessment of Relationship Value Dimensions from the Perspective of Social Service Consumers

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Abstract

This article reveals the conception of the relationship value, identifies the relationship value dimensions, their importance and implications for social services, and presents an empirical assessment of the relationship value manifestation following the example of Lithuanian social non-governmental organisations. The research empirically confirms and theoretically proves that the relationship value of Lithuanian social non-governmental organisations is determined by the relationship benefits and costs that function as equal components in the creation of the relationship value in social services. The relationship benefit dimensions – (non)opportunistic behaviour and functional benefit – are fundamental components of the relationship value that determine the trust of the social service consumers in the service provider and stronger mutual relationships.

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1. Introduction

Fulfilment of the consumer needs and fostering of their loyalty are among the priority fields of the company's activities. Under intense competition, the application of relationship marketing as a marketing concept enables the service provider / product supplier to create and offer their consumers an added value – relationship value that is created as the company and consumer maintain long-term relationships [1].

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Although the benefits and necessity of relationship value as an effective competition means is nowadays clearly recognised [2] believe that measuring the value of relationship is still ambiguous and no one so far has confirmed the dimensions of relational value [3, 4]. According to Park et al. [5], many studies on customer participation focused on commercial services, but only a few focused on social services [6]. The provision of social services is not limited solely to state institutions. Other providers of social services join the market of social services: non-governmental organisations, confessional communities, private providers of social services, self-help groups, and volunteers. Non-governmental organisations are divided into two subtypes: traditional non-governmental organisations (NGOs), which do not generate revenues and those NGOs, which generate revenues [7]. The latter subtype is also referred to in scientific literature as social NGOs. The key criterion characterising the social activities of such organisations is a clear perception of the goals and mission of the activities [8, 7]. This notion is associated with the expression of assistance for the individual that is referred to as complex psycho-social assistance to the individual [7]. All this results in social NGOs engaging in social-psychological and educational assistance for the children, their parents, adults, and families [9]. Social activities of the organisations in question are focused on diverse assistance for the target group in the cases where the assistance of state and market measures are unavailable or insufficient [7]. Moreover, NGOs can meet the needs of underprivileged communities more effectively, they are able to generate creative and innovative development programmes, and thus social NGOs represent an innovative means for solving the special (social, psychological, education (information) problems of the society determining full-rate functioning of individuals in a state and the level of the state development per se.

Hence, as the need for social services grows, the infrastructure of social services also changes increasingly invoking alternative and innovative forms for the provision of social services. Considering the fact that in the social service provision, the service provider directly cooperates with the service recipients, consumer value created, i.e. relationship value based on mutual trust, commitment and other relationship dimensions, plays a special role. This paper is aimed at disclosing the conception of relationship value while emphasising the relationship value dimensions, their importance and implications in social services.

2. Definition of relationship value

In a contemporary business setting, value conception is particularly relevant when analysing the relationships of the product supplier / service provider and consumers [3]. According to Grönroos [1], as companies operate under intense competition, it is important to create added value alongside the value created by the principal product and that is achieved through long-term relationships maintained by the company and the consumer. However, while recognising the benefits offered by the relationships in the opportunity to retain the consumer, which is substantially less costly than attracting new consumers, lower consumer price-sensitivity, economy due to lower marketing costs, and increased profitability, the scientists disagree about the contents of the relationship value conception.

In earlier scientific literature, value is defined as a one-dimensional construct [10]; however, later on researchers started suggesting that value should be measured as a multi-dimensional construct, as a ratio of benefits gained and costs incurred by the consumer [3, 11]. Hassan [12] noted that in consumer value creation it is particularly important to focus on the properties and functionality of the product / service seeing that the consumer characterises value as experience perceived when consuming the product or service. Consumer value might manifest both through tangible and intangible properties of the service offered to the consumer [13]. Non-material (intangible) benefit, according to Jucaitytė and Maščinskienė [14], is one of the components of the relationship value, where the relationship value is the key variable in the relationships of the product supplier / service provider and consumer [15].

Roig et al. [16], Wang et al. [17] state that in a business-to-business market, relationship value represents a chain comprising economic value, strategic significance and qualitative behavioural value; in the meantime, in the business-to-consumer market, it would be complicated to describe the relationship value by this chain. According to Jemaa and Tournois [15], added value for the consumers is provided by such attributes as safety, reliability Ulaga and Eggert, [3], continuity of relationships [18, 16], service provider's support [19], information sharing, public appreciation of the service provider's activities [20], long-term contracts, action coordination and the degree of involvement [21], and application of total quality management principles [22]. This opinion is also supported by Huber et al. [18] emphasising that the relationship value for the consumers does not mean meeting their expectations in a one-off transaction, but it is rather an outcome of long-term relationships.

Based on Jemaa and Tournois [15] state that the relationship value for the consumers is subjective in nature, directly dependant on the context of a specific situation and constantly changing in time. Lapierre [19] believes that relationship value is the consumer-perceived value and defines it as a compromise between the costs and the benefits experienced, determined by the relationship maintained by the two interacting parties. According to Badenhorst-Weiss and Tolmay [22], relationship value is determined by trust, commitment, long-term orientation, and other variables associated with long-term relationship development. A similar definition of relationship value is presented by Chattanaton and Trimetsoonton [23] emphasising that relationship value constructs include trust, commitment, communication, common values, non-opportunistic behaviour, and mutual dependence of stakeholders. Christopher et al. [24] believe that the relationship value refers to the development of relationships. Woodall [25] expands this definition by stating that the development of relationships is enabled by the perception of common goals and making of common decisions. In support of this idea, Badenhorst-Weiss and Tolmay [22] and Shanker [20] are unanimous that the relationship value is the outcome of the relationship between the company and the consumer determined by common perception of goals, decision-making, and cooperation.

3. Creation of relationship value

According to Tolmay [26], value of relationship between the market participants is a higher-degree construct that encompasses cooperation and the atmosphere created by it as well as the adaptation of the service provider and consumer. As stated by Wang et al. [17], Huber et al. [18], the necessity for the creation and provision of innovative relationship value for the consumers arises due to fierce competition in the market. Higher-value relationships with consumers built by the companies suppose the circumstances for the resultant increased consumer satisfaction and retention, thus strengthening the company's position in the market. Roig et al. [16] note that the creation of relationship value through consumer satisfaction also determines long-term relationships of the company and consumers, which naturally turn into a difficult-to-copy outcome of the competitive advantage.

Contrary to the commodity sector, relationship value creation for the consumers in the social service sector is more complex due to the nature of services – their intangibility and heterogeneity. Bagdonienė and Jakštaitė [27] believe that in the service sector, relationship value can be created and experienced only when providing services of high quality in the long term and simultaneously enhancing the trust of both the consumer and the service provider. The development of trust is a key activity in relationship marketing generally [28] and in the non-profit sector [29]. Ulaga [30] states that relationship value is a construct of the benefit of services that arises from the perception that the relationship value refers to a set of economic, technical, service, and social benefits intended for creating a product or service and carrying out the exchange.

According to Biggemann and Buttle [31], relationship value is created invoking the variables of personal, financial, knowledge, and strategic benefit. The authors believe that personal benefit is created through emotions that are determined by common history, values, goals, interests, beliefs, commitments, dependence, social support, personal relationships, respect, and trust. Financial benefit is created by the service quality corresponding to the objectives set by the service provider, monetary value and higher results of activity planning. Sharing the information in one's possession, suitable response to the ever-changing needs, business process improvement, and new idea generation determine the benefit of knowledge. The researchers suggest that the companies could generate the relationship value by managing their assets more effectively and accurately, minimising the investment risks, and creating a strong fundament for long-term planning. All this, according to Biggemann and Buttle [31], determine the strategic value.

In the opinion of Lambert and Enz [32], companies are capable of creating relationship value only through close cooperation with the consumers. Christopher, Payne and Ballantyne [24] stress the essential participation of the consumers in the product or service creation, which according to Kazakevičiūtė et al. [33] is defined as co-creation. Such cooperation determines the disclosure of consumer expectations, product/service quality perception and other subjective factors [32].

Based on the scientific works of their predecessors, Cui and Coenen [21] single out sustainability as an important variable that determines the relationship value. According to them, sustainability is significant for its guaranteeing that the company will provide value for the consumer for a long time in the future.

Thus, the arguments presented by the scientists allow stating that the relationship value is illustrated by two components – benefit and costs of the relationship [13, 3]. Relationship benefit that is perceived as a relative value

[34], is determined by two variables: functional value of the relationship that manifests through trust and special care, and social benefit of the relationship that reflects the emotional aspect of the relationship.

Relationship costs, according to Cui and Coenen [21], are determined by the service price and process costs. Service price is the most easily recognisable variable of the relationship value [30], which is one of the major factors when selecting a service provider [21]. According to Ulaga [30], process costs appear in the processes of service acquisition, consumption and supervision. It is noteworthy that in these cases, the costs can be both monetary and not, such as costs of time, effort, choice, delivery, process coordination, communication, monitoring of activities, and solving of the arising problems [21]. The importance of benefits received from the relationship and decreasing costs in the relationship value creation process is stressed by Gronroos [35]. The researcher classifies the relationship costs as follows:

- direct costs that appear when building the relationship;
- indirect costs, associated with the unmet consumer expectations;
- psychological costs, determined by the fears that arise because of the difficulties and problems encountered in the course of cooperation that hinder proper performance of the assignments.

In the meantime, Grönroos and Helle [36] note that the symbiosis of the relationship benefits and costs determines the commitment of the service provider and consumer that represents a certain maturity of relationship [37].

Based on the scientific insights above, a theoretical model was developed for the identification of consumer relationship value in the service sector, where the key components of the relationship value – relationship benefits, relationship costs and the dimensions that determine them – are integrated (see Fig. 1).

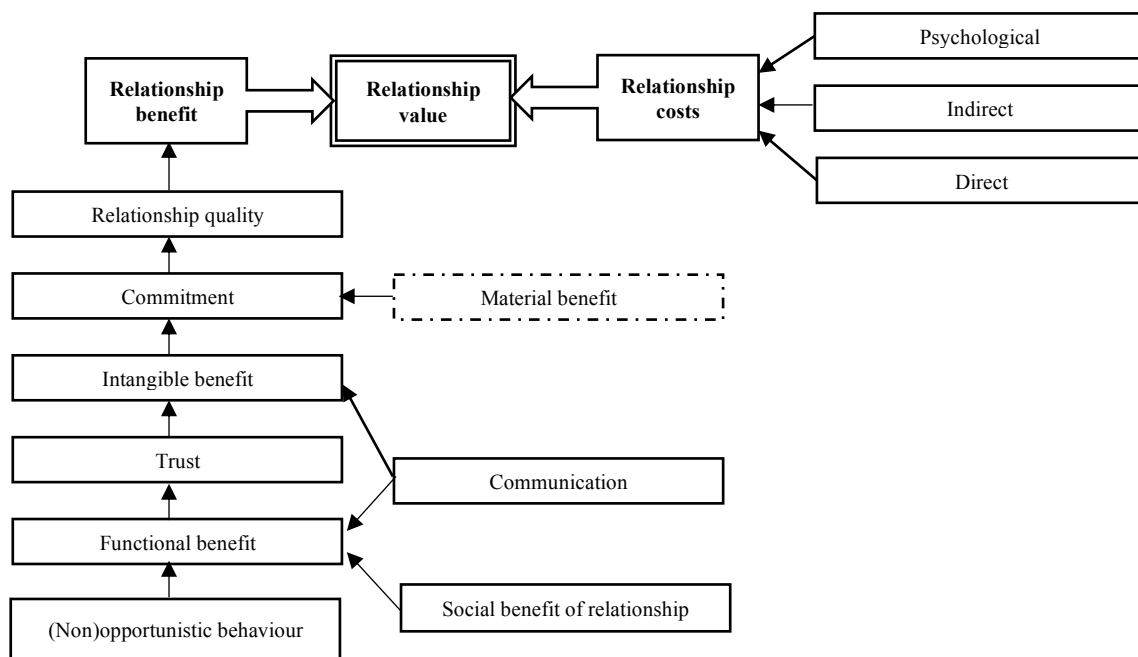


Fig. 1. Relationship value for the consumer in the service sector

In the service sector, relationship value is perceived as the ratio of two components – benefit and costs of the relationship.

The relationship benefit manifests through:

- (non)opportunistic behaviour as a key variable that determines the appearance of functional benefit. According to MacMillan et al. [38], (non)opportunistic behaviour is one of the fundamental components of the

relationship value that enables the consumers to assume, based on the information (knowledge) available, that the company will conduct itself (in)appropriately – choose the kind of policy and tactics that will (not) enable attaining the highest benefit for the consumer irrespective of the principles of the company itself.

- functional benefit that is formed by the service properties, its utility and compliance with the needs [39, 40], price and quality ratio, and properties of reliability, safety and efficiency for the consumers [41]. It includes:
 - the benefit of trust that, according to Damkuvienė et al. [42], reflects the tangible and intangible caring for the service consumer. This benefit manifests through lower perception of worry and knowing what to expect, in other words, it provides for the consumer the benefit of certainty [42];
 - benefit of special care that is defined by Henning-Thurau et al. [43] as economic and non-economic benefit received through individualised consumer care.
- social benefit of relationship that is relevant in the social surroundings of the consumer. Smith and Colgate [39] define social benefit as experiential / hedonistic benefit – experience generated by the consumption of the product or service, feelings and emotions evoked for the consumer. According to MacMillan et al. [38], social benefit of relationships directly affects functional benefit and has a positive influence on the consumer satisfaction; hence, in the opinion of Hennig-Thurau et al. [43], when seeking to generate the relationship value it is advisable to provide the social benefit of relationship for the consumer on top of the functional benefit of the relationship.
- communication, whose frequency, relevance and timeliness enhance the functional benefit [44, 38]. When seeking to increase the functional benefit, bi-lateral communication is required, where the consumer is heard out as well as informed through different means of communication. According to MacMillan et al. [38], communication with the consumers of the employees who provide the services is one of the most important components that build trust.
- tangible benefit, directly supposed by the quality of the communication process and which is determined by the knowledge possessed by the employees and their professional attitude towards the work performed, friendly and kind service, and full devotion to one's job. This benefit directly and indirectly affects the commitment of the consumer towards the service provider through trust [38].
- tangible benefit that, according to MacMillan et al. [38], and Morgan and Hunt [44], in the service sector is less important than the intangible benefit. No direct link was established between the tangible benefit and commitment.
- trust as one of the key prerequisites for the development of successful relationships [45], as a key feature of a healthy personality, as the basis for interpersonal relations, as an indispensable condition for cooperation, and as the grounds for stability in social institutions and markets [46]. According to Eisingerich and Bell [47], and Soureli, Lewis and Karantinou [48], the central axis of trust – integrity and reliability is determined by positive cooperation experience. Tejpal, Garg and Sachdeva [49] suggest that trust is first of all the reliance on the exchange partner's honesty that is determined by the conviction that the partner is trustworthy. However, Yau and Mcfetridge [50], and Barry, Dion and Johnson [51] note that trust is formed by consistent and competent customer service and fair and just treatment. Even when there is a direct customer transactional relationship with a non-profit organization, Garbarino and Johnson [52] found that trust is more important in generating long-term loyalty than the benefits received in the exchange itself [38].
- commitment that is perceived as a long-term striving to preserve a valuable relationship in hopes for equal exchange. Morgan and Hunt [44] state that commitment manifests when both stakeholders are loyal to each other and realise that mutual relationship will give them not just benefit, but also satisfaction.
- relationship quality whose key components – trust (functional benefit) and satisfaction (social benefit) as well as commitment – are interrelated [43, 3].

In the meantime, the relationship costs manifest through:

- direct, indirect and psychological costs. Such classification of costs emerges from the specifics of the service sector, where costs appear in the process of building a relationship [35, 3, 40], non-meeting the consumer expectations [35, 53, 3], and as fears appear whether the cooperation terms will be duly complied with [35, 40].

Thus, it can be stated that in the sector of social services, the consumer value creation is much more complex than in the commodity sector due to the inherent nature of services – their intangibility, coincidence of provision and consumption, and provider and consumer interaction. The relationship value is perceived by the consumer as the ratio of relationship benefit and relationship cost experienced in the long-term, while receiving quality services through mutual cooperation and other dimensions of relationship marketing that confer a competitive advantage for the service provider.

4. Methodology and research methods

A quantitative research was carried out seeking to disclose the manifestation of relationship value dimensions in the relationships of the service provider with consumers on the empirical level. In order to attain the set objective of the empirical research, a quantitative research strategy was applied invoking the questionnaire survey method. For the evaluation of the relationship value dimensions from the perspective of social service consumers, a research instrument was compiled that encompassed the relationship value components – dimensions of relationship benefit ((non)opportunistic behaviour, functional and social benefit of relationship, communication, trust, intangible benefit, and commitment) and relationship costs (direct, indirect and psychological costs). The empirical research was carried out in a social non-governmental organisation, which provides various social services for the residents of the largest Lithuanian cities, by surveying the consumers of its services. In total, 249 respondents have been surveyed.

In the empirical research, material benefit (as a dimension of relationship benefit) comprising, for example, funders learning from the NGOs and receiving positive publicity from their relationship with it [54] was eliminated. This decision was determined by the specifics of the social non-governmental organisation and special characteristics of the consumers – as socially vulnerable individuals or their groups apply for social services, material benefit is not relevant. Seeing that the respondents had not personally experienced any material benefits, they could not provide any objective information.

5. Results

The empirical research was primarily aimed at finding out the extent to which the relationship value components – relationship benefit and relationship costs – were expressed according to individual dimensions in the relationships of the organisation offering social services with the consumers. The manifestation of the relationship value was assessed calculating the general averages (M) and standard deviations (sd) of the relationship value components. The respondents were asked to assess the strength of the relationship value components, where “completely agree” corresponded to the highest rating of “5” and showed the greatest strength of the relationship value component, whereas “completely disagree” showed the least strength of the component (“1”).

The analysis of the empirical research data revealed that the value of long-term relationships between the provider of social services and consumer is equally affected by both components of the relationship value. Considering the relationship value components – dimensions of relationship benefit and relationship costs – it was determined that the majority of averages were above medium (see Table 1).

Given the fact that the rating of the relationship costs’ component is reciprocal to the rating of the relationship benefit, it was established that the manifestation of the relationship costs’ dimensions was also sufficiently strong. The obtained findings of the empirical research confirmed the theoretical insights that the relationship value was determined by the relationship benefit and relationship costs, which are equally significant in the relationship value creation [3].

In the relationships of the examined organisation providing social services with the consumers, dimensions of the relationship benefit manifested the most strongly – (non)opportunistic behaviour ($M = 4.59$, $sd = 1.063$) and functional benefit ($M = 4.58$, $sd = 1.047$). Furthermore, a rather strong manifestation of such dimensions as trust ($M = 4.51$, $sd = 1.015$), social benefit of relationship ($M = 4.50$, $sd = 0.983$), and relationship quality ($M = 4.38$, $sd = 0.798$) was recorded. The research findings support the insights of Yau and Mcfetridge [50], Barry, Dion and Johnson [51] that the consumer trust in an organisation is presupposed by consistent and professional customer service, and fair treatment. In the opinion of respondents, intangible benefit, compared to other dimensions of relationship value, manifested the most weakly ($M = 3.20$, $sd = 0.456$). Such results were possibly determined by ineffective use of the

knowledge possessed by the workers, lack of professionalism, insufficient devotion to work, unsuitable customer service culture, and insufficiently expressed friendliness.

Table 1. Assessment of the relationship value components in the company's relations with consumers

Relationship benefit dimensions	<i>M (sd)</i>
(Non)opportunistic behaviour	4.59 (1.063)
Functional benefit	4.58 (1.047)
Trust	4.51 (1.015)
Social benefit of relationships	4.50 (0.983)
Communication	4.19 (0.694)
Intangible benefit	3.20 (0.456)
Commitment	4.14 (0.859)
Relationship quality	4.38 (0.798)
<i>General average of dimensions</i>	4.23 (0.733)
Relationship cost dimensions	<i>M (sd)</i>
Direct costs	1.46 (0.427)
Indirect costs	1.46 (0.427)
Psychological costs	3.28 (0.688)
<i>General average of dimensions</i>	2.07 (0.627)

The assessment of relationship costs' dimensions from the social service consumers' point of view revealed that direct ($M = 1.46$, $sd = 0.427$) and indirect costs ($M = 1.46$, $sd = 0.427$) were equally important for the respondents and manifested substantially more strongly compared to the psychological costs sustained ($M = 3.28$, $sd = 0.688$). Thus, seeking to optimise the ratio of the relationship benefit and costs to generate the greatest relationship benefit from the consumers' perspective, it is advisable to mitigate the psychological costs by reducing the possibilities for the appearance of fears regarding the fulfilment of the cooperation terms.

When exploring the effect of relationship benefit dimensions on the relationship value, the link between the relationship benefit dimensions was examined. To assess the link, a canonical correlation coefficient was invoked. This coefficient allows establishing the strength of correlation between factors in two groups. Table 2 presents the correlation strength (r) between the appropriate relationship benefit dimensions ((non)opportunistic behaviour and functional benefit; functional benefit and social benefit of relationship, etc.).

Table 2. Correlation between the dimensions of relationship benefit

Dimension	Direction of relationship	Dimension	Correlation coefficient (r); p
(Non)opportunistic behaviour	→	Functional benefit	0.99; $p < 0.05$
Functional benefit	←	Social benefit of relationship	0.89; $p < 0.05$
Functional benefit	←	Communication	0.90; $p < 0.05$
Communication	→	Intangible benefit	0.95; $p < 0.05$
Functional benefit	→	Trust	0.98; $p < 0.05$
Trust	→	Intangible benefit	0.95; $p < 0.05$
Intangible benefit	→	Commitment	0.92; $p < 0.05$
Commitment	→	Relationship quality	0.99; $p < 0.05$

Data presented in Table 2 reveal that a strong or very strong correlation exists between all dimensions of relationship benefit.

The performed ranking of results emphasises that the link between the commitment and relationship quality ($r = 0.99$; $p < 0.05$) and the link between the (non)opportunistic behaviour of the service provider and functional benefit ($r = 0.99$; $p < 0.05$) bear the greatest significance on the value of the relationship between the provider and consumer from the social services consumers' perspective. The research findings confirm the scientists' insights

that (non)opportunistic behaviour and functional benefit are the fundamental components of the relationship value that determine the consumer's trust in the not-for-profit sector [38, 39]. Consequently, these links and indicators affecting them are analysed in the paper in more detail.

The canonical correlation established between (non)opportunistic behaviour indicators and functional benefit allowed identifying the influence of (non)opportunistic behaviour indicators on this link (see Table 3).

Table 3. Correlation of (non)opportunistic behaviour indicators and functional benefit

Indicator	Statements	0.99; $p < 0.05$	
		Canonical value (weight)	Canonical correlation coefficient (between indicator and functional benefit); p
Historical data of past behaviour	So far the service provider has been providing the services in good faith	0.474707	0.99; $p < 0.05$
	So far the service provider has provided to me all the important information	-0.067243	
Worker behaviour in the course of service provision	I feel that the workers providing the services sincerely try to help me	-0.479092	0.94; $p < 0.05$
	Workers providing the services value the relationships with me (clients)	0.504924	
Recognition of consumer interests and benefit	Workers providing the services make the decisions considering my (clients') needs	0.738925	0.98; $p < 0.05$
	The service provider resolves the arising problems immediately	-0.302084	

The empirical research data analysis suggests that historical data of past behaviour, compared to other indicators of (non)opportunistic behaviour, has the greatest influence on functional benefit ($r = 0.99$; $p < 0.05$). This correlation is the most significantly affected by activities carried out honestly in the past. Recognition of consumer interests and benefit also affect the correlation between (non)opportunistic behaviour and functional benefit very strongly ($r = 0.98$; $p < 0.05$). The strength of the latter link is mostly determined by decision-making considering the customer needs.

The quantitative research results corroborate the theoretical insights of MacMillan et al. [38] stating that in the not-for-profit sector (non)opportunistic behaviour is created on the basis of historical knowledge and recognition of consumer interests and benefit. Table 4 illustrates the effect of functional benefit indicators on the correlation of functional benefit and (non)opportunistic behaviour.

Table 4. Correlation between functional benefit indicators and (non)opportunistic behaviour

Indicator	Statements	0.99; $p < 0.05$	
		Canonical value (weight)	Canonical correlation coefficient (between indicator and (non)opportunistic behaviour); p
Service properties	Services offered by this service provider are trustworthy	-0.05741	0.96; $p < 0.05$
	Services of this service provider are safe	0.03178	
	Services provided by this service provider are useful for me	-1.16085	
Benefit of trust	This service provider does not cause me any concern	0.494221	0.98; $p < 0.05$
	The service provision process of this provider is clear to me	0.242750	
Benefit of special care	Services are provided to everyone according to individual needs	-0.708647	0.98; $p < 0.05$
	Individualised services provided improve my (clients') quality of life	0.656850	

When examining the nature of the correlation between the functional benefit indicators and (non)opportunistic behaviour, it was determined that this correlation is mostly affected by the indicators of the benefit of trust ($r = 0.98$; $p < 0.05$) and benefit of special care ($r = 0.98$; $p < 0.05$). The influence of the benefit of special care on this link manifests the most significantly in the cases where the social services are provided to everyone according to their individual needs; in the meantime, the benefit of trust – when the service provider does not cause any concern for the client. The ranking of the empirical research findings obtained corroborates the attitude of Žvirelienė and Bučiūnienė [55] and Henning-Thurau et al. [43] suggesting that the information held by the consumers about the (non)opportunistic behaviour of the organisation presupposes the trust in and commitment to the service provider.

Canonical correlation of commitment indicators and relationship quality revealed (see Table 5) that the cohesiveness of the latter variables ($r = 0.99$; $p < 0.05$) is mostly affected by common beliefs ($r = 0.83$; $p < 0.05$) and the relationship value ($r = 0.76$; $p < 0.05$), expressed through sound mutual relationships of the consumer and service provider.

Table 5. Correlation of the commitment indicators and relationship quality

Indicator	Statements	0.99; $p < 0.05$	
		Canonical value (weight)	Canonical correlation coefficient (between indicator and relationship quality); p
Common beliefs	Common approach to the appropriate and suitable behaviour is what links me and this service provider	-0.537516	0.83; $p < 0.05$
	My relationships with the service provider are good	0.734651	
Relationship value	It is worthwhile for me to interact with this service provider	0.498135	0.76; $p < 0.05$
	I am fully satisfied with interaction with this service provider	-0.573004	

Table 6 illustrates the influence of relationship quality indicators on the correlation between the relationship quality and commitment.

Table 6. Correlation between the relationship quality indicators and commitment

Indicator	Statements	0.99; $p < 0.05$	
		Canonical value (weight)	Canonical correlation coefficient (between indicator and commitment); p
Trust	This service provider is always predictable	0.274190	0.81; $p < 0.05$
	Workers providing the services always care a lot about my needs	-0.43025	
Satisfaction	Interaction with this service provider gives me positive experience	0.439041	0.63; $p < 0.05$
	I feel a need to express complaints about this service provider	-0.245712	

The ranking of empirical research findings showed that the particularly strong correlation between the relationship quality and commitment ($r = 0.99$; $p < 0.05$) is determined by consumer trust and satisfaction – the underlying dimensions of relationship marketing. Hence, consumer satisfaction with the social services is determined by the importance conferred by the workers providing the services to the consumer needs, thus strengthening their commitment to the organisation. This leads to an assumption that when there is a direct customer transactional relationship with an NGOs, that trust is more important in generating long-term loyalty than the benefits received in the exchange itself [52, 38].

The empirical research into the effect of the relationship benefit and relationship costs' dimensions on the relationship value allowed identifying the relationship benefit dimensions that create value for the consumers of

social services:

- (non)opportunistic behaviour ($r = 0.99$; $p < 0.05$);
- functional benefit ($r = 0.89$; $p < 0.05$), which is given additional weight in significance by the social benefit of relationship ($r = 0.89$; $p < 0.05$) and communication ($r = 0.90$; $p < 0.05$), presupposing the importance of intangible benefit ($r = 0.92$; $p < 0.05$) in the creation of relationship benefit;
- trust ($r = 0.95$; $p < 0.05$);
- intangible benefit ($r = 0.92$; $p < 0.05$);
- commitment ($r = 0.99$; $p < 0.05$);
- relationship quality ($r = 0.99$; $p < 0.05$).

Variables of relationship costs that influence the relationship value from the perspective of social services consumers were identified:

- direct costs ($r = 0.99$; $p < 0.05$);
- psychological costs ($r = 0.80$; $p < 0.05$);
- indirect costs ($r = 0.64$; $p < 0.05$).

The conducted empirical research into the manifestation of relationship value components and their effect on the relationship value in the relationships of social services provider with the consumers allowed determining that the manifestation of the relationship value dimensions in relationships of social service providers with the consumers is very strong and this results in high quality of these relationships.

6. Conclusions

Consumer value creation in the context of relationship marketing is becoming one of the most frequently discussed subjects for scientists and practitioners; however, studies oriented towards the identification of the value being created in social services are scarce. The findings of the conducted empirical research revealed that in the creation of relationship value for the consumers of social services, synergy of relationship benefit and relationship costs is necessary that is presupposed from the relationship benefit perspective by the dimensions that are inter-determinant and very closely interrelated: (non)opportunistic behaviour that is the basis for the relationship benefit creation; functional benefit that is intensified by the social benefit of relationship and communication; trust; intangible benefit enhanced by the communication pursued; commitment that determines the relationship quality which in turn elevates the service provider's and recipient's relationship into a new quality level based on cooperation, trust, and satisfaction. Direct, psychological and indirect costs sustained by the consumer of social services reflect the relationship costs that should be distributed consistently.

Taking into account that (non)opportunistic behaviour and functional benefit are the fundamental dimensions of the relationship value determining the trust of the social service consumers, it is advisable for the contemporary providers of social services, when seeking to increase the relationship value for the consumers, to perform the assessment of the need for social services in a customised manner, considering the needs of the consumers and the potential benefit of the decision made for them. Given the special importance placed by the consumers of this service sector on the information (knowledge) about (dis)honest activities previously pursued that presupposes the level of their trust and commitment, service providers should care about the consumer interests, cooperate with them as this enables the solving of problem, obtaining and conveying the knowledge, in other words – allows the stakeholders to improve themselves and strengthen their mutual relationships. Thus, social service providers who strive for long-term and sustainable relationships, should follow the Kant's imperative: "*Act only on that maxim through which you can at the same time will that it should become a universal law*". This commits every business undertaking to adhere by the commitments and rules that define the relationship quality.

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