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ECONOMIC UNCERTAINTY, ECONOMIC IDENTITY AND DIGITAL PERSONALISATION

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Annotation
In the article an issue is a substantial focus of analysis and thinking to discover new determinants of economical identity, thinking, digital personalization and management. There are reflections to economic uncertainty and digital identity for problems and need to new substantial research and smart innovative digital skills, personalization and personalism. The results of reflections and knowledge are summarized in conclusions at the end.
Key words: *uncertainty, economic identity, digital personalization, philosophy of digital society.*

Today conditions of economic and financial stability of individuals are of paramount importance both for personal and professional realization, and quality of life. Such stability, especially for young people and students is undoubtedly associated with different aspects of self-determination and cognitive degree of determinants for economical identity, thinking of values, work and management of personality.

Sociological interdisciplinary survey conducted on students in the Faculty of Social Sciences (University “Prof. Dr. Asen Zlatarov”, Burgas, Bulgaria) provided a database, which allows analyzing actual problems of education, economic uncertainty, economic identity and national identity. The study showed that despite negative impact of economic uncertainty on self-esteem and student realization, it also creates prerequisites for seeking sustainability through self-determination. In this sense, there is necessary to broaden substantial economic thinking, education and digital culture of young people and students to build early capacity for disclosure and adequate response to existing economic difficulties and sense of building economic identity and prosperity. Negative impact of economic uncertainty on economical identity can be overcome by effective governance at research and creative thinking, and innovative working. [3]

Economic Uncertainty and Identity

In the information era of digital societies, self-determination or identity is an issue that can make it difficult and essential to provoke a meaningless contradiction of value identification, especially when subject's external and internal conditions are in continuous and unclear change, unsystematic transformations, crisis economy and economic and social uncertainty. In such conditions without education and cultural affiliation, related to goals, standards of behavior, language and identification, the economic growth, socialization and inclusion are impossible, and vice versa – there is an expanding alienation and a deep self-deception of citizens in society, accompanied by many contradictions and conflicts.

Fluctuations in macro- and microeconomic security directly determine uncertainty. In this sense, determinants of economic uncertainty depend on both uncertainty of economic environment and failure to meet objectives, for example for sustainable growth of economy or emergence of economic and social shocks. A specific strategic challenge is growth of existential, social and economic uncertainty, along with evolution of transformations and development of certain sectors economy and society, science, technology and culture.

A few important factors of societal uncertainty, for example related to dimensions of data that reflects and acts at micro- and macro level, are followings:

- Risk situations (threats) and unwarrantedness;
- Economic uncertainty phenomena and crisis economy and globalization;
- Idealization of norms and standards; escape from problems in reality from environment, work conditions, meaning and knowledge of existence and relationships;
- Meaninglessness of social and economic values of subject, organization and community, as well as disappearance of small and middle markets, strategies, programs and measures for support and maintenance.

Uncertainty refers to situations, in which probabilities are neither known nor can be inferred, calculated or evaluated in an objective manner. In considering with such an issue, situations of insecurity are often reduced to risk situations.

Movement of capital, goods and services is accompanied by a variety of data, knowledge and communications. Interesting question is by what and how maintenance of established standards, models, mechanisms, instruments and regulations cause risks based on information flows, creating not only information prerequisites of economic uncertainty. In this sense, it is necessary to evaluate relativistic correlations and knowledge relations of cost and value information or disinformation about economic and social products and services that are related to techno-economic and socio-economic systems, as well as on risk management and reliability of data, knowledge and personality. In this context, reliability of information is a key tool of data realism and knowledge in research and estimates of random and predicted risks in models, simulations, positions and communications. [5]

Economic uncertainty separates but also connects identities of work, markets and culture. It has an impact on composition and decomposition of various indicators of identity and sociality, which is necessary for market observation and research, socio-economic phenomena, social and economic reforms and policies. Its broad and constant influence in the society, on the one hand, defines some expected usefulness of probabilities and hypotheses, but on the other hand, it creates prerequisites and leads to an economy of poverty and social exclusion.

"Identity" means self-determination that changes and refines itself with various elements and systems, both in terms of uniformity or similarity, and of meaning to clearly distinguish and demarcate any substantive and formal relationships about a given object or subject, in a way that is unique and recognizable. In this sense, identity creates difficulties, contradictions and problems that are complicated by increasing of data and knowledge, experience, value and change. On other hand, identity is influenced to a lesser extent by economic uncertainty, as it may even be a root cause of not only cost economic self-determination. This is often accompanied by phenomena of different crisis internal and external character, which requires precise cost attention and economic research, quick recognition and effective risk management of similar resources of subject.

A sense-minded and cognitive aspect of personality is inner and outer personal and social face – content and form of essence and meaning of existence, quality of life, thinking, work and relationships that determine knowledge abilities of personality and people to build organizations, community, nation, state and alliance from countries.

Identity is formed and builds from childhood to last breath. It is formed both by the subject's substance and educational, economic, social, scientific and cultural path and heritage. Identity provides a hold balance between objective and subjective sphere of work and life activity. But variety of types of identity and personalization into plurality of it is also problem because the reasons for existence are rooted both in the fluctuations of thinking, consciousness and uncertainty.

Problems arise by development of systems, human and technical essence within the impact of self-control of subject, machines and people as belongings and intellect, good and perfection or imperfection and uncertainty. Constructive thinking, knowledge and Humanistic paradigm qualities and skills are indispensable assets to sustainability and strength of Man, organization and society, and to unique power of searches and creations within of itself. But socialization and inclusion are not always with growth of new communication models and innovation in the postmodern digital economic and social life. [3]

Identity is a mental and cognitive construction that once created is dynamic potential for change into dimensions through thinking and knowledge, experience and values. It affects universal and passing conditions of economic and social uncertainty associated with common territory, markets, history, language, culture, race, ethnicity, religion, values, symbols, media and publicity.

Meaning of concept identity is expanded and transformed with design thinking of scope and inducing subject to focus on good, better or best substance of knowledge, qualities and perspectives within self-identification, self-management and perfection of personality by models of perfectness.

Economic Identity – substantial sign factor of personality

Economic uncertainty creates prerequisites and new risk conditions for wealth and poverty that affect and tread everything in capitalist society because capital in it has ability to quickly change its owners or to create financial, economic, social, political, etc. by type of crises, especially when ownership impedes development of economic relations within cost and value. It is competition, race and dynamics that continue to dominate Minds and move societies and modern communities to next stages and forms of economic and social life that are not perfect and will give way to those who have clearer and wider universal qualities and features for development of economic identity, economic relations and perspectives.

Personal economical identity is a slow variable process. Similar process begins in transition through consumer identity, formed in family, school, social and economic life with postmodern values of consumer and Digital society. This is a difficult process, especially in conditions of economic uncertainty and transition period of valuable transformations into techno-economical and socio-economical systems.

Economic self-determination is a multi-dimensional complex and dynamic phenomenon because the objective and subjective substance and sphere of citizen self-reflects itself and the Being that everything exists by matter of subject, organization, economy, nature, society and the world. In this discourse, formation and construction of an economic identity is not one-sided and unilateral issue and process.

Economic identity refers to the idea that people make economic choices based on both monetary incentives and identity: holding money incentives constant, people refrain from actions that contradict a concept or concept of themselves. The foundations of economic identity were first formulated by economists George Ackerlof and Rachel Kranton in the article “Economics and identity” (Quarterly Journal of Economics, 2010), which presented a framework for social inclusion identities in standard economic models. Social identity and ethnic identity turn out to be dependent on economic models, failures or successes, which, on the contrary, affect the factors of economic uncertainty or growth. [1]

Economic identity is determined by subject's ownership, assets and liabilities. It is by kind of individual and group. Both types of the economic identity are determined by the dimensions of the Being, economic thinking and knowledge, societies, nature and environment of existence, which the substance of Man and relations between people use and extend at objective measure but which are objectively independent of to some extent by themselves of it. It is therefore necessary to explore with various interdisciplinary and multidisciplinary approaches and models of self-determination by qualities and characteristics, behavior and cost orientation in the economic and social life.

Economic identity depends on the substance of economical thinking, knowledge and values. It is a basic complex to understand it because it is multifaceted and multi-layered in the Mind and reflections of Minds by data, knowledge and experience from the midst of existence, decision-making, self-management, substantial values and interactions of people. Economic identity is basis for status and development of economic personality and professionals.

The loss of one's own economic identity and a lack of adequate conditions for acquiring a new economic identity is a loss not only for economic relations, but it is also a prerequisite for alienation of subject in the society, depression and even trauma to the personality, because of loss identity is a loss of memory by a kind of material and immaterial property. In this sense, the problem of economic uncertainty is not only economic, but its essence has an important, even fateful, multidisciplinary and broad systemic character, especially in conditions of a crisis economy, endlessly known processes of economic and social changes and successively failing on realization of financial and economic plans and programs in the society.

Fluctuations and changes of economic identity within subjects in team, organization, enterprise, and society can accelerate or slow down certain factors of persons, corporate, organizational and social economic identity and uncertainty, because of potential of economic identity is the capacity for existence and development of economic relations as a basis of any economic and social action and activities, including related to own line of changes. Economic identity is special cost concept of revealing important determinants of quality work and governance that can overcome economic uncertainty and provide sustainable growth.

Further, economic identity is substance for successes and failures of subject as a specialist and professional in the economic and social life, because it is maintained authority and concept in the actions of personality. In this context, constant attention is needed to improve and enrich economic identity and culture at least as a factor, because it facilitates the best and quicker transmission of positive experience and results from economic actions stimulating economic thinking of human quality and relationships. By this sense, it is necessary to study and research valuable substance of economic identity and thinking of new by it.

Digital Identity and Digital Personalization

Value of personal digital identity is increasing by conditions of uncertainty and economic hardship. But it do not guarantee solution of subjective and objective contradictions and success with identity by itself, because data code and signal, technical system and network are only a means of transmitting value of data and knowledge, despite the fact that more and more automatic and automated information, computer and communication devices, systems and technologies are emerging.

Development of digital identity with virtual technologies has diverse and broad innovative potential not only for technical systems and businesses, but also for people and social

networks. But it requires constant observations and new inventions for objective and more realistic, more accurate, faster and more complete reflection and presentation of identity through data, cognitive and value resources, digital culture and reserves of human and technical matter of systems and society.

Problem of identity and social innovation remains lack of sufficient resources, experience and reliable digital environment for improvement of digital identity and real models of different organizations, economic and social knowledge levels, because of both society and economic informational environment continue to be transformed under influence of many systemic and non-systemic factors and attempts at various types of management, knowledge and values.

Development of science, economics and society offer models and architecture of digitalization that identifies subsets with a numerical code and signal, which primarily relates to the communicative nature, computerization and characteristics of subjects, machines and develops respectively, above all, own identity in a communicative aspect within information techno-economical and socio-economical systems and technologies. From the point of view of philosophical sense of self-determination, this is not enough to adequately represent substance of information unit simultaneously in all dimensions of humans and the Being, for example in economic, social and cultural way of life, work and participation in markets and society.

For markets and society, education and science, digital identity is a long-standing issue, because it predetermines few new core problems and challenges of thinking and learning, research and creativity, innovation and practices with data and knowledge. An issue is not only critical design thinking of creating a digital identity, but what is possible and what is being done next with it by cost and value: what, where, when, how, and why it is used, or it poses unnecessary what it develops and what evolves with its framework, how far and behind the digital identity is significant or important with its presence and behavior in the dimensions of being, whom and what attracts or distances from itself and the environment of existence.

Digital identity is quality form of representation of digital unity and diversity of subjects by inner and outer face of data. The content of it is increasingly necessary to relate to wishes and lifestyle of subject, machines and people, and provision and support of it. Digital identity facilitates redefinition of identity by itself, diversifies and accelerates patterns of presentation and sharing, change, or work with it, because it is a kind of primordial with data, which is provided for orientation in the external and internal fields of subject, machines and people.

Economic uncertainty causes, more or less, active or passive demand, in the simplest or easiest way of data, model of imitation and simulation, market and world understanding and worldview.

Personalization of marketing and social messages, brands, advertisements and information expands, diversifies and accelerates its dynamics, efficiency and effectiveness through varying degrees of innovation and consumer practices. But in such dynamic models and their interactions, there are no features of economic identity that facilitate identification and expand communications and markets with an interesting and new cost design of information unit that is useful for economic identity and its relation to environment of growth or insecurity.

Due to the dynamics of economic and social life (growth or shocks), innovation or continuous innovation, there is a need to form, build and periodically maintain new digital economic literacy, knowledge and skills to develop economic individual and social identity.

Research, modernization and development of data economics models, systems and software applications, simulations and choices of solutions are cross related to the reliability of information, for example on the diversity and types of data and innovation management, because they are basis for ensuring to a higher degree of realism and quick cost orientation with the help of digital economic identity of subject, machines and people. But this requires not only digital economic literacy starting from primary school, but also developing and maintaining it on a professional level with new determinants and development of it in communication and navigation technologies by network smart skills and unbelievable digital culture.

In the area of the Digital Agenda of the European Union and concept of creating a single information space, there is a need not only for the technical information definition of digital identity, but also for its development as an economic and social digital identity in order to achieve the objectives of the EU's strategy for sustainable and smart growth and knowledge-based innovation and inclusion, and to build a Union of Innovation. [4] In this sense, computer, communication and information competences and identities predetermine basic forms of existence and improvement of digital identity with new issues and directions of realization in the digital markets, economic and social life.

Common economy, unified territorial connectivity and mobility of citizens are basis of cultural economic identity and for development of it. But economic and market situations are fundamentally changing – advertising companies overlook customers' preferences and value of quality experience. Customers are naturally willing to expect real-time customized messages

and links to companies that deal with products, services and brands that do not fall short of their expectations and interests. In this context, economic and social identity give a certain profile, mood and image of economic and social environment, and markets within specific personalization of digitalization.

Identity research, such as the customer's targeting of cross messages, meaningful market offerings with integrity and customer-friendliness, even associate client profiles across the Internet and social networks. In this sense, consumer identity with new types of experience in consumption and trade is a reliable objective economic basis for overcoming the risk and crisis prerequisites for uncertainty and economic hardship. But it requires surveys because it can often change its preferences and participation in the consumption of goods and services. This is often case, for example, survey method for consumer demands and determination of certain user identity features for specific products and services. On the other hand, the subject and people sometimes consciously allow themselves to be cheated or deceived, perhaps to enjoy the knowledge or challenge of self-consciousness and its authority "Ego" and “Above Ego”.

An interesting contemporary challenge is creation, for example, of an investment profile based on intelligent management of economic identity, support and development by subjects in social networks and digital markets, because dynamics of information change requires correspondingly quick, adequate and correct evaluations, decisions and actions that are not only related to specific information objects, but they are based on cost and values of economic self-determination, possibilities and purpose of subject to be included in systems and networks. In this context arise the role and importance of economic identity and capacity of it to present and enhance competencies, experience and cognitive resources of personality and digitalization.

Formation of an economic and social identity of subject, team, group and organization in changing media environment requires digital, media and multicultural literacy, innovation thinking, adaptability and complexity management, organized thinking and effective communication. It is hampered by information burden, emergence of new technical and technological opportunities for presentations and media channels, dynamic transformation and impact to new identity and digital markets. This has a wide social and economic cost context, for example in the nature of relations and development of media, business organizations, markets, administration, culture and education. Philosophy of structural, functional and dynamic models of intra-individual and intra-group phenomena and mechanisms predetermines substantial meaning and importance of roles, effects and effectiveness of information-cognitive management in the presentation and management of economical identity and digital personalization of it.

Philosophy of society and social innovations implies free and smart development of data and knowledge, a new kind of culture within digital thinking and skills, digital personalization, personalism and innovation management to solve different issues and challenges from dynamic of transformations, internal and external financial and economic phenomena and identity, as well as ensuring growth on basis of digital systems and virtual technologies in the social and economic life, digital markets and European Union of Innovation. But such type of information and innovation management is also of a risky nature for which it is necessary to combine them within full value, crisis management and smart digital reliability of skills.

Uncertainty in the economic and social systems depends on basic and practical reliability of data and philosophy of technical, economic, social, political, educational, scientific and cultural knowledge and systems of organization and society. In such relations of interdependence and relativism of data, relations, connections and systems, data and knowledge increase scientific, social and economical values in the dynamic of change while increasing intelligence of economical thinking, technical devices, systems and networks. Such value requires in economic relations smart economic identity that understands values and aims to cultivate self-perfection with people and systems of economic and social life.

A huge challenge for successful and effective solutions of digital management is high race of thinking speed, design and movement of electronic digital form and information signal. New types of exposures, risks and prospects for improving human and technical nature (systems and networks) and digital identity of it will emerge by digital space of virtual world.

Information is not uniformly produced and distributed in the objective and subjective world and aspects of ideas, knowledge and ideals. This is a source-base of essential contradiction and specific information space and time. In the substance of such relation, the information and its reliability are an increasingly important, all-rounder, fast-acting and valuable factor in any conditions that, with the help of technical devices, systems and technologies, and affect not only localized and subjective (conscious or unconscious) systematically on relationships and

communications between objects of themselves, and objects and subjects. Without reliability of information, we are fueling hopelessness and uncertainty.

Economics and commercialization of data and social relations increase the risks of crisis preconditions and situations of social life and uncertainty in society. For this reason, the reliability economy is useful, for example, as a management tool for innovation and financial engineering. And reliability is becoming more and more intelligent, for example, especially when an information reliability assessment is combined with an innovative indicator of measuring the innovation of an enterprise and even a national economy, as in the European Union.

Over-commercialization of business, capital and society definitely leads to dehumanisation of social relations and a rapid economic and social crisis or accelerated to the likelihood of similarities depending on the magnitude and power of systemic egotism of businessmen, traders, economic and financial elite. Research for highly reliable applications in communication, computer and navigation systems and technologies is one of directions in solving personal, organizational and social problems of work and life.

Techno-economical and socio-economical systems accelerate and expand diversity on basis of data, knowledge, accumulated experience and innovations, which requires smart design of architectural access and reliability of information. Like any system, they have data structural and functional constraints and resources that over time require maintenance, upgrading and reassessment of safety and efficiency, as well as a review of value and asset management. This is impossible without qualified specialists, experts and engineers who successfully combine competitive solutions in line with requirements of the future of techno-economic and social systems, technologies and expanding of smart reliability in societies, diverse market environment and in conditions of sustainable growth or economic uncertainty.

Econometric assessments of goods need to be linked to risk and reliability assessment of data and smart digital skills and management, as well as to standard national and European indicators of economic identity, innovation and growth, for example, for small and medium-sized businesses and organization by social innovations and inclusive actions.

The Mind is life, but not always the life and work flows entirely through knowledge and rational lessons. Economic identity and digital personalization help to reveal various types of risks, contradictions, crisis predispositions and uncertainty. They are a contemporary core of any issues, substantial problems and uncertainties in postmodern socio-economic life, which requires digital, media and multicultural literacy, critical and innovatory thinking, adaptability and management of new management skills within smart digital complexity, organization behavior and effective communication, innovations and discoveries of scientific and educational systems, and culture.

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IN WORK AT RISK OF POVERTY ASSESSMENT IN EASTERN EUROPEAN COUNTRIES

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Annotation

The article analyzes changes in the risk of in work poverty and its determinants in Eastern European countries. The growing disposable income of the population in these countries and the population employment do not ensure the minimum subsistence needs of some workers. Having completed EUROSTAT data analysis of eight Eastern European countries of the period 2005–2017, it has been found that the growing income inequality has the most significant impact on the growth of in work at risk of poverty. The increasing of households work intensity and upper secondary and post-secondary educated workers reduces the risk of in work poverty, but this does not compensate for the effect of rising income inequality. A low-wage "floor" employment regime with low compensatory social policies and weaker than in the "old" EU countries bargaining power of workers support the current level of risk of in work poverty in Eastern European countries.

Key words: *In work at risk of poverty, employment, household work intensity, income inequality.*

Introduction

Poverty reduction is one of the newest challenges to the countries seeking welfare of the population. Although it is normal to believe that poverty is the most common characteristic of developing countries, however, in the last decade the number of the poor has been growing in many EU countries, as well as in generally recognized welfare countries such as Denmark and Sweden. Other significant changes in EU countries showed the opposite tendency in 2005–2017: disposable income per capita and employment increased by 25% and 1.4 percentage points respectively[1]. This tendency raises doubts about a proposition, which has been undisputable for a long time, that the working man may not get poorer because of growing employment in the "killing" of poverty (Berkel and Moller 2002). As the research shows, the growing employment and wages, as well as other incomes do not always help to meet the most important needs of the population, therefore it is important to identify the causes of this phenomenon and possible consequences not only for the population, but also for the country's economy. In work at risk of poverty analysis and results of the research would help to shape the social-economic policy, reducing the population living in poverty and social exclusion.

As a scientific problem, in work at risk of poverty has been initiated relatively recently – in the last decade of the 20th century in sociology, social policy and economic research, usually in conjunction with the social exclusion of the population. Many researchers explain the nature of in work at risk of poverty in two ways – as low employment or low-wage problem (Andress and Lohmann 2008; Lohmann 2010; Crettazz 2011; Fraser, Gutiérrez and Peña-Casa 2011; Halleröd, Ekbrand and Bengtsson 2015). The resident working status is a labile boundary between the poor, who works at some point (often at a part-time job or on a temporary work contract), and the employee, who because of low wages cannot emerge from poverty. However, the discussion takes place on a theoretical level – empirical research results often highlight the impact of the lack of employment on in work at risk of poverty (Marx, Vanhille and Verbist 2012; Halleröd, Ekbrand and Bengtsson 2015), but so far most research has been conducted by analyzing the situation of in work at risk of poverty in the most developed countries of Europe (Belgium, Germany, Sweden, Finland), where wages and disposable income are even a few times higher than in Eastern European countries. Therefore, as recent research (Cantillon and Marx 2003; McKnight, Stewart, Himmelweit and Palillo 2016) shows, low wages, and in particular income inequality, remain an important dimension of poverty causes analysis and evaluation.

Most of the research on this issue is performed in order to determine the impact of structural factors (population, households, labor market, welfare regimes, etc.) on the risk of in work poverty. Although comparative studies of countries have been carried out, however, due to significant differences between the countries, it is difficult to assess the research results

[1] According to the Eurostat data.

unequivocally. In addition, they include a limited time horizon. According to some of the first pioneers, Andress and Lohmann (2008), of the research on this issue, it is necessary to assess the in work at risk of poverty changes with regard to the long-term structural changes in the wage and income inequality, rising global economic countries interdependence and welfare state policies. Therefore, macro-level studies covering countries with similar trends in socio-economic processes and their groups are important. This is especially true for the countries of Eastern Europe, whose starting position after the admission to the European Union in 2004 and the subsequent social-economics development are similar, however, there is little research on how these rapid changes could affect the in work at risk of poverty.

The aim of the article is to assess the impact of changes in employment, income inequality and work intensity of households and other determinants on the in work at risk of poverty in the countries of Eastern Europe. The comparative and panel data regression analysis methods were used to assess changes in work at risk of poverty throughout the Eastern European group of countries for the period from 2005 to 2017. In this study, data have been collected from the following sources: EUROSTAT (EU-SILC) database.

1 The concepts of poverty and in work at risk of poverty

Although there is a debate concerning the concept and methods of poverty, however, it is generally accepted that the most important factor in defining poverty is low income. Setting the poverty line, indicating the lowest income, the recipients of which are not considered at risk of poverty, is possible for the assessment of poverty as an absolute or relative index (Townsend 1974; Sen 1983; Atkinson 1989; Glennerster et al. 2004; Crettaz and Bonoli 2010). In terms of the relative poverty, the poverty is seen as a phenomenon of the economic inequality of the population, while the absolute poverty estimates a value of the necessary goods and services basket per capita. Although the absolute poverty reflects the essence of poverty more accurately, however, due to the complexity of calculation and the calculation methodology applied in different countries, studies most often analyze the relative poverty. The concept of the relative poverty refers to the measurement of the standard of the individual living, as defined in relation to the general population distribution of available economic resources or, in other words, with the average living standards in the country (Alcock 2006; Bradshaw 2007). This fact is important when comparing the level of poverty in the countries of different levels of development. The use of the relative poverty for the measurement of poverty in developing countries leads to the fact that the low poverty rate is obtained due to the low average income and consumption expenditure, which is not sufficient to meet personal needs of the population. This results in the reduction of the poor population in the country. It is obvious that the method for the measurement of poverty leads to different results of the evaluation, however, for the purpose of comparability the ratio of poverty is most frequently analyzed and evaluated in research.

Although the definition of in work poverty is a common subject of a scientific debate, but in the most common sense low wages or other income are considered the main cause of in work poverty. However, non-individual employee income should be assessed, but at the household level because an individual's situation also depends on the income of the other household members (Lewandowski, Kaminska 2014). As the reduction of in work poverty risk is affected not only by wages, but also by other household income, such as self-employment earnings, private income from investment and property, transfers between households and all social transfers received in cash including old-age pensions, therefore, in the context of this study, it is expedient to consider disposable income. As the EUROSTAT indicates, the total disposable income of a household is calculated by adding together the personal income received by all of household members plus income received at household level[2].

Who are in work at risk of poverty and how are they described in the scientific literature? In order to determine the level of poverty, the risk of poverty threshold, which often varies from 40% to 60% of disposable income media, is selected, however, there is more discussion about the status of employees. Many authors believe that such a status is acquired by employees who work more than 6 or 7 months per year. Other researchers consider full-time work as the most important criterion (Maitre et al. 2012). In this study, in work at risk of poverty rate is defined the same as in EUROSTAT statistics: the percentage of persons in the total population who declared to be at work (employed or self-employed) who are at risk of poverty (i.e. with an equivalised disposable income below the risk of poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers)). This indicator covers the population aged 18 to 59 years living in private households who declared to be at work (excluding those with less than 7 months declared in the calendar of activities) when broken

[2] http://ec.europa.eu/eurostat/cache/metadata/en/ilc_esms.htm

down by work intensity of the household. The in work at risk of poverty rate indicates to what extent employment helps persons to overcome the risk of poverty. Reducing the in work poverty risk may require different policies from those used to reduce the overall at risk of poverty rate because in work poverty is not caused by a lack of access to the labor market, but, among other reasons, by the market's inability to pay sufficiently high wages.

In work at risk of poverty analysis is complicated by the fact that this phenomenon can be examined at two levels – at the individual's labor market status and the disposable household's income (adjusted for household size) (Marx, Nolan 2012). The growth of disposable income or its constituent parts should reduce in work at the risk of poverty; however, this inverse dependence can lead to distortions of income inequality (Palacios, Rodriguez and Peña-Casas 2009). If the rising disposable income supplements only those budgets of the population or their families who receive more than the median income, then this change does not reduce the risk of in work poverty. Assessment of this impact is complicated because of the characteristics of the methodology of calculation (the increase in disposable income median) the rising incomes may further increase the risk of in work poverty. On the other hand, the median income can change not only for revenue growth, but also because of the growing (declining) income recipients, for example, population migration. Considering these aspects, it is necessary to include personal income dispersion indicators – the Gini index and/or decile ratio indicators – into the macro-level of in work at risk of poverty assessment models. As the Gini index reflects the inequality of households' equivalised disposable income, the inequality of personal income is accurately characterized by the decile ratios of income. In order to avoid the disadvantages of disposable income at the macro level, it is appropriate to consider the effect of compensation of employees**.** This indicator is defined as the total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during an accounting period. In particular, it also includes social contributions paid by the employer.

A number of researchers (Nolan and Marx 2000; Peña-Casas and Latta 2004; Andress and Lohman 2008; Marx, Nolan 2012) also note that low income is not the only cause of in work poverty. It usually increases the risk of poverty, along with other factors, or through certain mechanisms related to the lack of employment in the labor market and/or a poor household structure (one employee, many dependents, etc.) (Crettaz and Bonoli 2010). Furthermore, the empirical studies carried out in OECD countries (Marx and Verbist 1998; Peña-Casas and Latta 2004; Andress and Lohmann 2008; Halleröd, Ekbrand and Bengtsson 2015) show that because of social policy favorable to workers in these countries and income from other sources, low-income workers do not suffer poverty, while their employment-related income is not sufficient. In the most recent investigations, the risk of in work poverty is also more often associated with inadequate (or low-intensity) employment and adverse situation in the labor market. In particular, they emphasize households with many children, single and self-employed population (Andress and Lohman 2008; Crettaz 2011; Halleröd, Ekbrand and Bengtsson 2015). In recent years, there have been studies which examine the impact of household composition, income, work intensity and other factors on the risk of in work poverty at the structural level (Lewandowski, Kaminska 2014; McKnight, Stewart, Himmelweit, Palillo 2016). However, rapid changes in Eastern European countries require new multi-level studies that could measure the impact of these changes on the risk of in work poverty.

Having summarized the risk of in work poverty studies, the following factors can be identified that conditionally can be divided into several groups:

– Population and household-level socio-demographic, labor market and economic factors, such as disposable income (wages and salaries, social security income, etc.) (Peña-Casas and Latta 2004), the total employment of the population and employment of women (Lancker 2012; Halleröd, Ekbrand and Bengtsson 2015), self-employment of the population (Crettaz and Bonoli 2010), education of the population, duration of the working activity, minimum wage-earning population share, households "composition" – size, the number of employed persons and dependants (Andress and Lohman 2008; Max, Nolan 2012; Lewandowski, Kaminska 2014; McKnight, Stewart, Himmelweit, Palillo 2016), the emergence of new households.

– The job quality reflecting factors, such as the ability to work part-time, fixed-term and different than permanent contracts share, high qualification requiring (or not requiring) work share, a "long day or week" working hours, precarious work share (Palacios, Rodriguez, Peña-Casas 2009; Kalleberg 2011; McKnight, Stewart, Himmelweit, Palillo 2016). They are formed by the dominant business structure, technological level and innovation of enterprises, requirements for the workplace and compliance with their traditions, the ratio of the population in public and business sectors and other conditions.

– Macro-economic factors, such as the level of development of the country or individual regions, economic growth, income inequality (Cantillon and Marx 2003), regional disparities

(Halleröd, Ekbrand and Bengtsson 2015), their internal and external lines of convergence (divergence); globalization determined factors, such as population migration, foreign investment share and integration of the national holding into the global holding, openness of the labor market in the countries, the level of technological advancement and development.

– Institutional factors, such as the redistribution of the labor market and the income policy, welfare regimes and the impact of the ensuring bodies (Lohmann and Marx 2008; Crettaz 2011); the bargaining power of workers (McKnight, Stewart, Himmelweit, Palillo 2016) and the trade union density. These factors are indicated by many researchers. They basically reflect the efforts of the state and institutions supported by the state to ensure the well-being of the population by reducing the risk of in work poverty.

Many of these factors are characterized by the complex effects, as well as different combinations of these factors in various countries. If the first two groups include the factors to be considered endogenous, some of which can be directly adjusted (as the minimum wage or factors affecting the quality of the work place), to adjust the macro-economic factors is more complicated because they are the result of long-term processes of functioning. Institutional factors can be described as adjusting or compensating effect of other factors on the risk of in work poverty. As Gautie and Ponthieux (2016) state, the double-level (individual and household) construction of the in work at risk of poverty category makes it quite difficult to analyze, since the same individual activity in labor market may or may not result in poverty, depending on the household structure and income. A significant difference in the household structure also limits the scope of cross-country comparisons of the investigated phenomenon. Therefore, the panel data analysis carried out in this study makes it possible to assess the impact of multi-level factors on the risk of in work poverty.

2 Descriptive statistics: changes in working poverty and its determinants in Eastern European countries

Eastern European countries have been chosen for investigation: the Czech Republic, Estonia, Latvia, Lithuania, Poland, Slovakia, Slovenia and Hungary have a number of socio-economic similarities, which are important for the assessment of in work at risk of poverty. These countries, as having similar labor market trajectories, which are characterized by the 'business-friendly' free market regulations market employment regime with low compensatory social policies, were distinguished by Halleröd, Ekbrand and Bengtsson (2015). By area and population the majority of them are small countries (with the exception of Poland), which joined the European Union in 2004. More than a decade they are characterized by the deterioration in the demographic situation due to the ageing of the population and high emigration, a declining population (with the exception of Slovakia), faster than the "old" EU countries' economic growth and relatively small, but every year growing population income. In 2005–2017, the structure of households changed little in these countries: like in the European Union the number of households with more than three members decreased, whereas single households increased.

Disposable income per capita in these countries throughout the analysis period was 2-3 times lower than the average in the EU (27). Income differences among the countries declined: the coefficient of variation decreased from 36% (in 2004) to 17% (in 2017). The fastest growth of disposable income was in Latvia and Lithuania (7.52% and 7.19% on average each year), the slowest was in Slovenia (2.52%). The largest share of income consisted of compensation of employees (70%–92% in 2017), which also increased each year.

In work poverty risk rate in many Eastern European countries is lower than the EU (27) average, but even in six countries it grew each year. Only in Poland and Slovakia this indicator decreased each year by 1.86 and 2.68 percentage points respectively (see Figure 1). In addition, in work poverty risk declining differences among the countries have been identified – during the period of analysis the variation of this indication went from 38% to 27%. Compared to the "old" EU countries, in Eastern Europe the poverty is more often experienced by part-time workers. However, in many countries (with the exception of the Czech Republic, Slovakia and Slovenia) this rate is higher than the EU average and among full-time workers.

The following differences are significant for the assessment of the 2008–2009 crisis in the financial markets and determining the impact of the recession on the population incomes and the risk of poverty: disposable income of the population in Eastern European countries declined in 2009, while the risk of in work poverty grew the most in 2011. Therefore, it is likely that after the crisis the growing income filled more the "pockets" of higher income people.

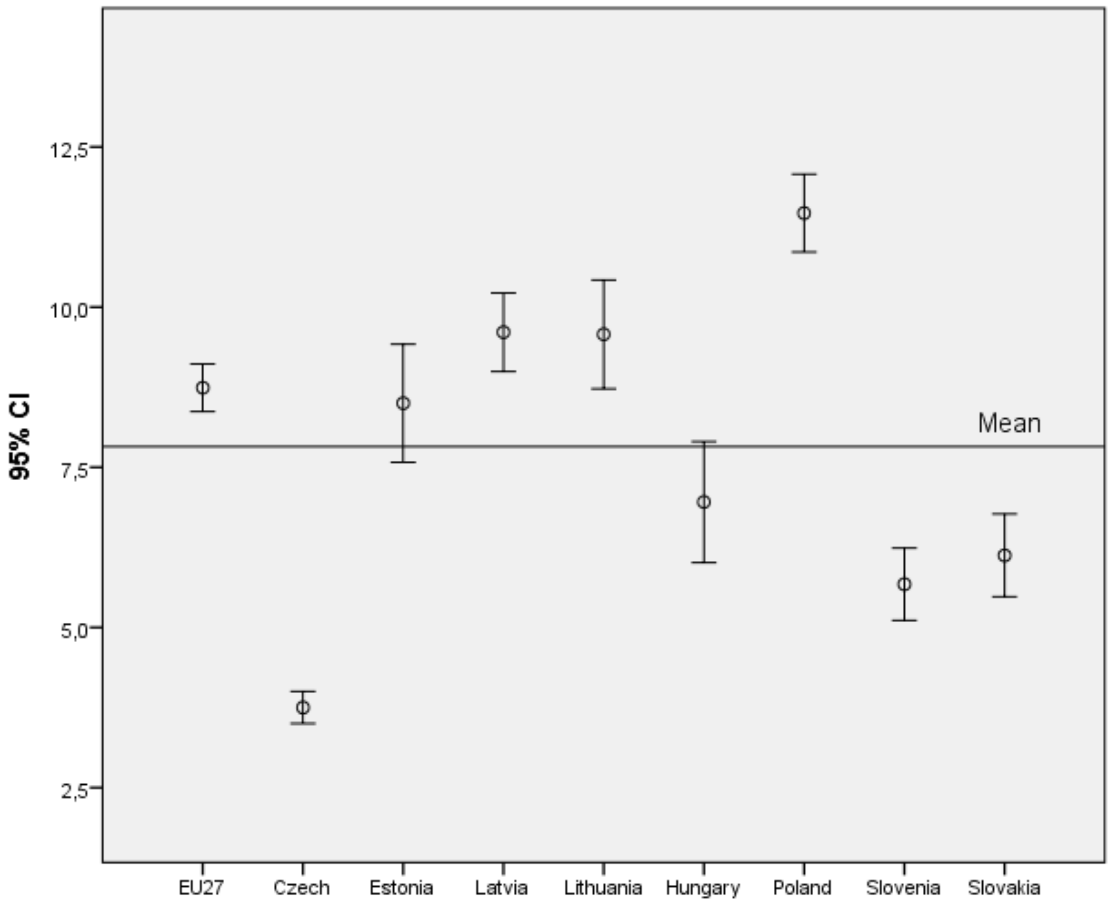

Fig. 1. The estimates and 95%-confidence intervals for the in work at risk of poverty rate in Eastern European countries and EU 27 in 2005–2017 in percentage of total population
Source: EUROSTAT data from https://ec.europa.eu/eurostat/data/database

During the analysis period employment increased in all EU countries (approximately by 6 percentage points over the entire analysis period), but the growth rate was higher in Eastern Europe (by 13.5 percentage points on average) (see Figure 2). Employment grew faster in Hungary (by 17 percentage points over the entire analysis period), whereas in Slovenia it remained unchanged. Active population employment differences between the countries decreased. Among the working age (active) population women's employment grew more rapidly than that of men. A reverse tendency was observed only in Estonia and Poland. Unlike the average in all EU countries (27), youth (15–24 years of age) employment grew in almost all Eastern European countries, with the exception of Slovakia and Slovenia. Part-time employment throughout Europe grew by nearly 3 percentage points, however, in Eastern European countries, this change was just 0.4–2.7 percentage points, while in Latvia, Lithuania and Poland, the number of part-time workers decreased. Temporary work contracts of employees changed differently: in Latvia, Lithuania and Slovenia, they increased, whereas in other Eastern European countries, they decreased. Having assessed employment according to this indicator, significant differences between the countries have been determined. For example, in 2016, in Poland and Slovenia, 22% and 15% of the workforce had fixed-term work contracts, while in Lithuania, they amounted to only 1.7% of all contracts. Nearly all of the Eastern European countries fell in the very low and low work intensity (0–0.45) of the households. Different tendencies are characteristic to the self-employed working age population: the total number of such workers in all the countries increased, but in Lithuania and Hungary, it decreased. However, self-employed workforce share is not as significant as in the "old" EU countries. Since many of the countries in this group are faced with decreasing population trends, in particular at the working age, despite the increasing employment the decline in the number of employees remains the main problem of the labor market.

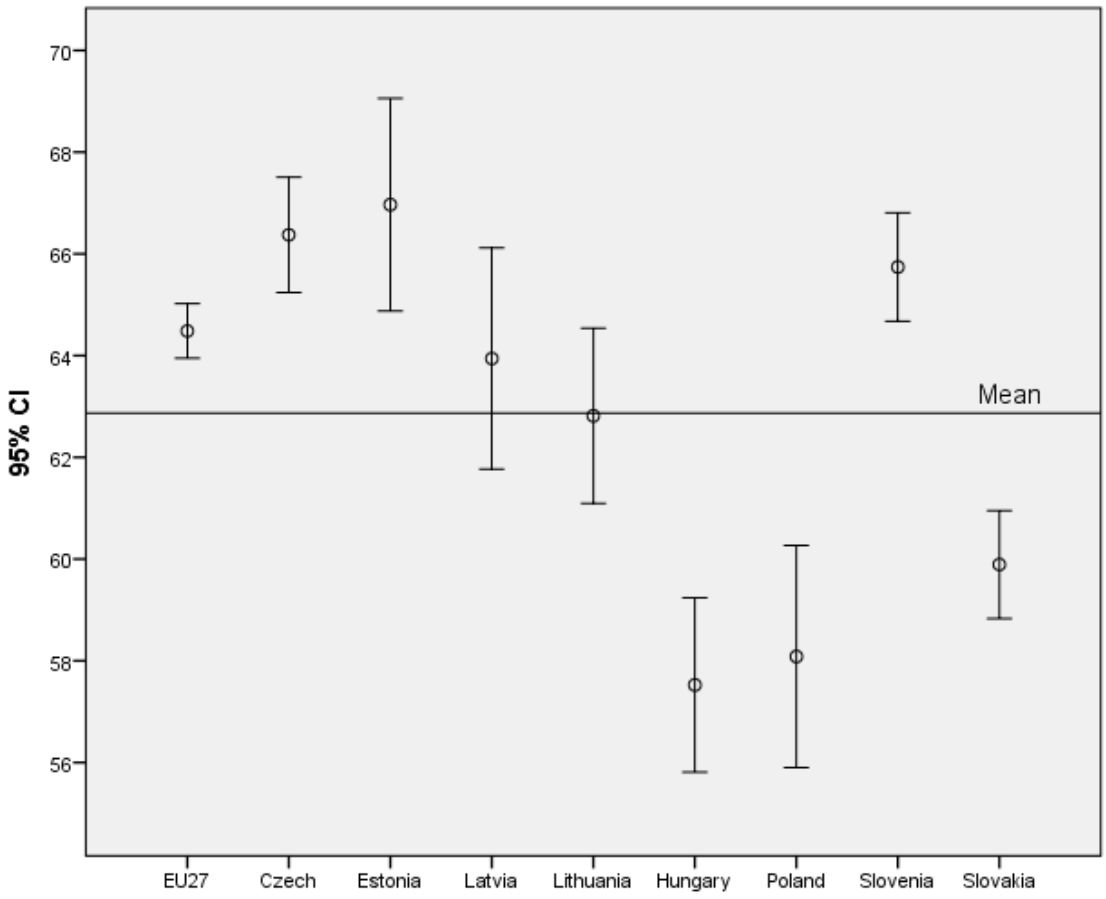

Fig. 2. The estimates and 95%-confidence intervals for the total employment (from 20 to 64 years) changes in Eastern European countries and EU 27 in 2005–2017 in percentage
Source: EUROSTAT data from https://ec.europa.eu/eurostat/data/database

Changes in the working time of employees are characterized by the cyclical nature: during the economic crisis of 2009, the number of persons employed up to one year and in 2010 the number of employed up to two years decreased in the whole group of countries. From 2012 in all countries, employment up to 24 months increased annually. The overall structure of persons occupied under the working time during the analysis period developed a little: employees working for more than 5 years on average make 58%, up to 2 years – 9%, up to 1 year – 14% (EUROSTAT data EU-SILC survey [ilc_iw05] and [ilc_iw07]). In the Eastern European countries (with the exception of Poland and Lithuania) poverty has increased the most among those working under temporary job contracts. The situation is similar with the part-time job employees. It should be noted that in some countries (Slovenia, Hungary, Estonia) poverty has even been an increased for workers employed on a permanent employment contract and full-time work. However, in Eastern European countries, there are relatively few part-time and temporary contract employees, so it can be assumed that these in work at risk of poverty changes are not significant as the women in work at risk of poverty changes for example. However, the in work at risk of poverty rate among working women in the Eastern European countries have changed in different directions (see Figure 3), making it difficult to present a general trend for the whole group of countries.

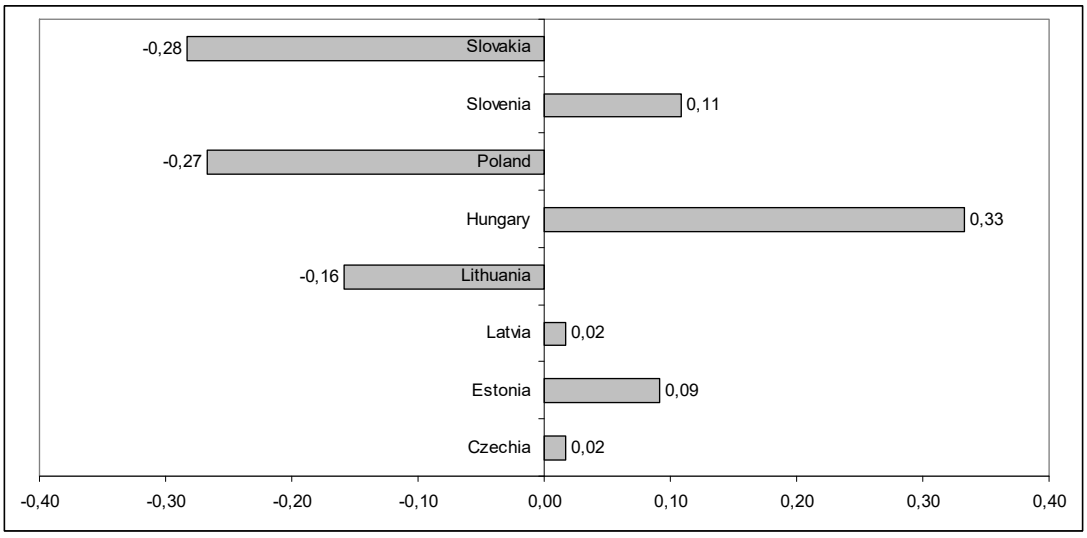

Fig. 3. In work at risk of poverty rate of women annual changes in Eastern European countries in 2005 - 2017.
Source: EUROSTAT data from https://ec.europa.eu/eurostat/data/database

The qualitative parameters of the employed population, such as education, position, length of employment, etc., are important factors in the assessment of in work at the risk of poverty. Tendencies in the workforce education changes were similar in all Eastern European countries: the number of employees with the lowest and secondary level education (according to the ISCED 2011 classification) decreased and the number of employees with the highest (tertiary) level of education increased. This partly contrasts with the changes in their positions: only in Lithuania, Latvia and Estonia, employment in elementary occupations dropped, however, the total number of such workers increased by almost 150 thousand in the whole group of countries. Thus, it can be assumed that the number of employees with higher education, but employed in elementary occupations increased. This could affect the in work at risk of poverty rate changes in these countries (see Figure 4). Poverty of less than primary, primary and lower secondary educated employees has grown in only three countries. Upper secondary and post-secondary non-tertiary educated employees - in five countries. And the highest at risk of poverty changes touched tertiary educated employees - only in Slovakia and Poland has the poverty of these employees decreased. This shows that in Eastern European countries, education is less likely to protect employees from poverty.

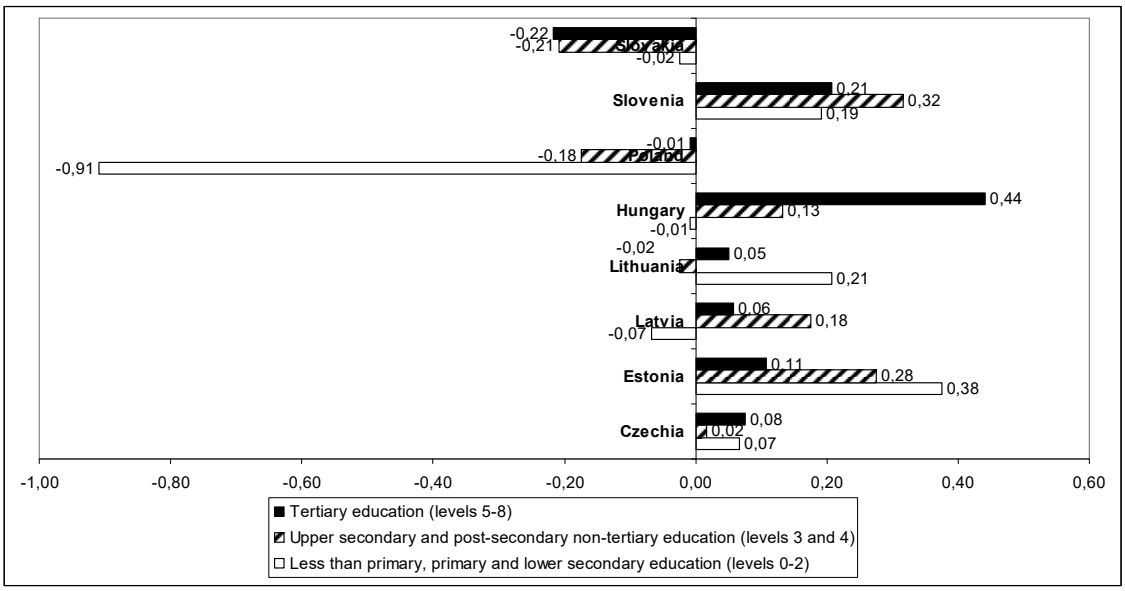

Fig. 4. Annual changes of in work at risk of poverty rate in Eastern European countries by educational attainment level in 2005 - 2017.
Source: EUROSTAT data from https://ec.europa.eu/eurostat/data/database

At household level, many studies (Andress and Lohman 2008; Max, Nolan 2012; Lewandowski, Kaminska 2014; McKnight, Stewart, Himmelweit, Palillo 2016) emphasize the impact of population composition and work intensity on the in work at risk of poverty rate. According to Eurostat data, in almost all Eastern European countries (excluding Poland and Hungary), the in work at risk of poverty has increased of single person households (see Figure 5). Even more increased in work at risk of poverty risk of single person with dependent children. As Europe becomes more and more a lonely society, it is obvious that it can be a serious problem. The declining level of in work at risk of poverty is typical for households with at least two persons working, but in Estonia, Latvia and Slovenia, the number of employed people in such households has increased. The most unfavorable situation was going Slovenia and Estonia, where all types of households in work or risk of poverty increased. In Poland, on the contrary, the situation in all types of households improved.

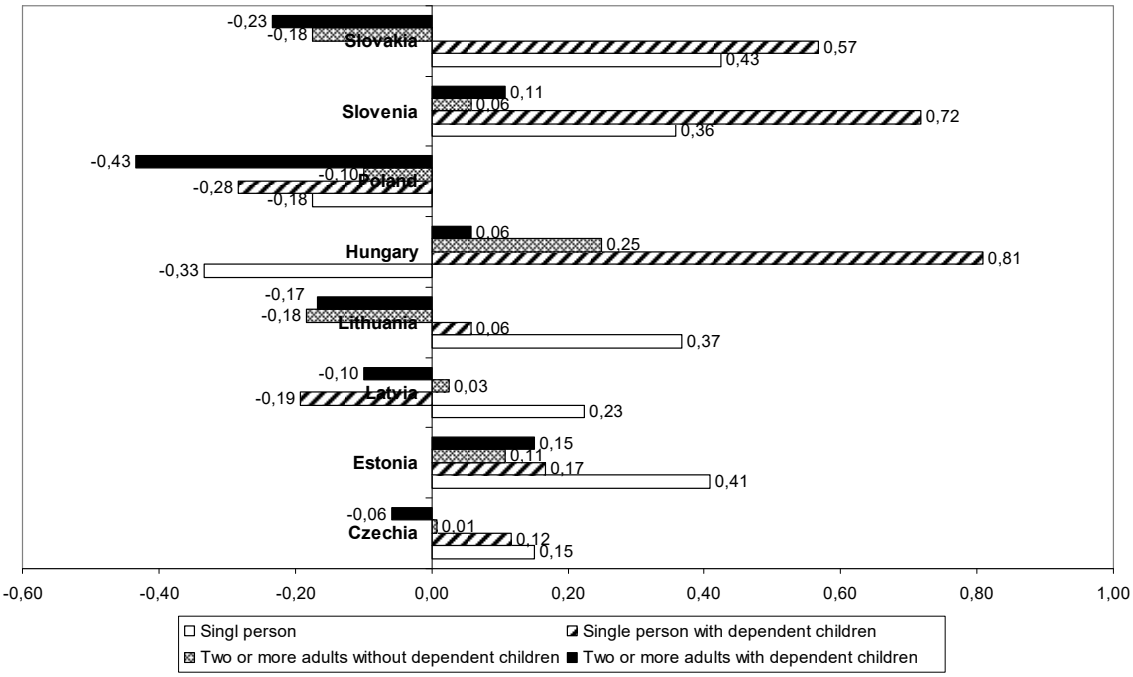

Fig. 5. Annual changes of in work at risk of poverty rate by household type in Eastern European countries in 2005 – 2017
Source: EUROSTAT data from https://ec.europa.eu/eurostat/data/database

The work intensity of households is the ratio of the total number of months that all working-age household members have worked during the income reference year and the total number of months the same household members theoretically could have worked in the same period (Eurostat Statistic Explained, 2018). In Eastern European countries (except for Poland and Slovakia) working-age household residents are spending more and more time at work. At the same time in the last 13 years a negative tendency of in work at risk of poverty growth has emerged in high-intensity households (see Fig.6). Hence, greater efforts by employees do not help to get out of poverty. Conversely, as the researchers found in the "old" EU countries, in work at risk of poverty in low work intensity households in Lithuania, Latvia, Estonia and Czech Republic declined every year. This could be due to a decrease in the number of dependents in households, as well as to rising of non-working income.

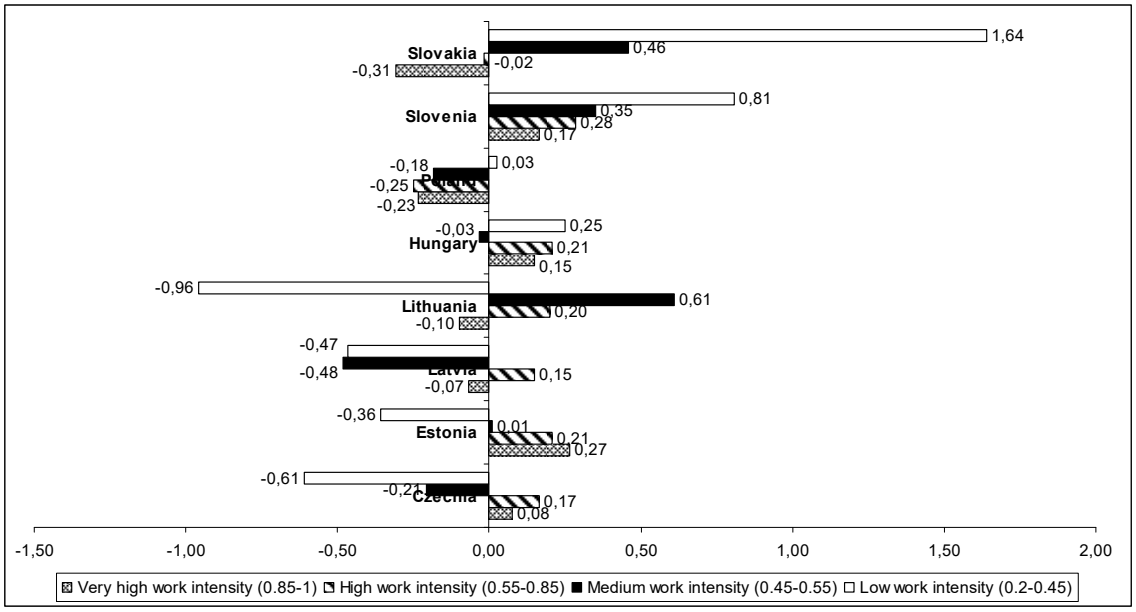

Fig. 6. Annual changes of in work at risk of poverty rate by household work intensity in Eastern European countries in 2005 – 2017
Source: EUROSTAT data from https://ec.europa.eu/eurostat/data/database

In work at risk of poverty rate shows inequalities in income among employees, therefore changes in the income inequality of all the country's population are important when assessing this indicator. The problem of income inequality becomes more acute in many European countries, however, in Eastern European countries, it is worst: as EUROSTAT data show, in 2014, low-wage workers in these countries stood at 21.3% on average, while across the EU this rate was only 17.2%. The first decile of employees' income in these countries still remains 3-10 times lower than in the "old" EU countries. In case of fast emigration of the population, the concentration of the low wage "floor" increases the median disposable income in accordance with the assumption that low-income residents emigrate more often. Thus, when the median disposable income increases, the number of in work at risk of poverty may grow even if disposable income grows. However, this effect resulting from emigration and the risk of in work poverty calculation methodology can occur only at a high level of inequality (dispersion) of emigration, wages and other income. Assessing the income inequality according to the Gini coefficient, in 2005–2017, income convergence occurred between "old" and "new" EU countries: the income inequality increased in the "old" countries where income inequality was lower, while in Eastern European countries, where income inequality was higher, it decreased in almost all the countries (with the exception of Lithuania). The differences in income inequality between the Eastern European countries themselves are high. For example, in Lithuania the inequality of income of the population measured by quintile ratio (80 /20) in 2017 was twice as high as in Slovenia, Slovakia or Czech Republic.

Two correlation matrices were established to identify the interaction between changes of in work at risk of poverty rate and income inequality. The results shows stronger interaction between changes of in work at risk of poverty rate and income inequality measured by quintile income ratios (see Fig. 7) compared to changes of income inequality measured by Gini coefficient. Excluding the effect of other factors, it can be assumed that in work at risk of poverty grows more when the difference between the share of population receiving the highest and lowest income increases.

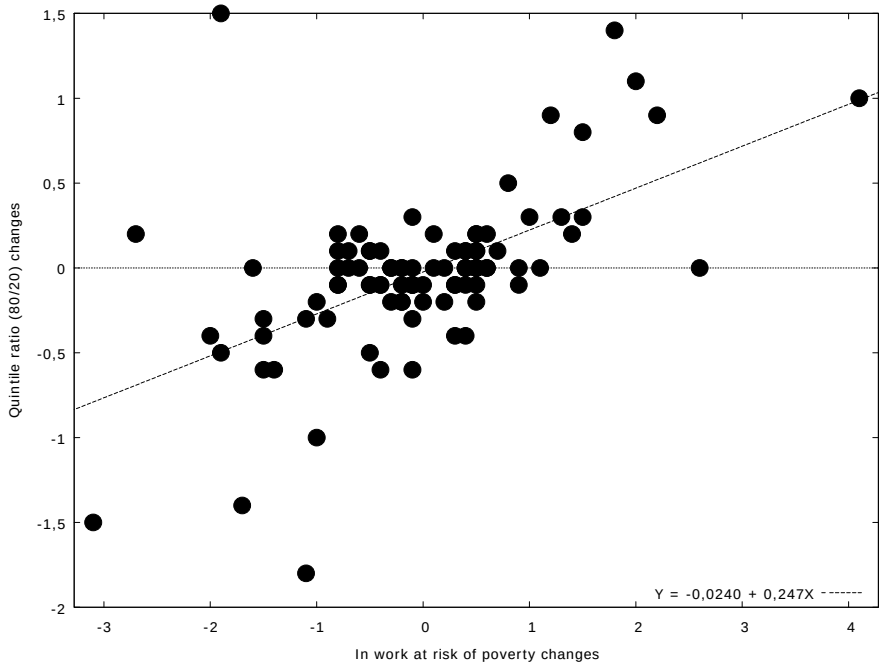

Fig. 7. Quintile ratio (80 /20) changes versus in work at risk of poverty ratio changes (with least squares fit) in Eastern Europe countries.

Major has declined differences have been identified in analyzing the interaction between the levels of education of the population and in work at risk of poverty. The majority of the population has acquired upper secondary and post-secondary non-tertiary education in all Eastern European countries. Although their situation has deteriorated during the period analysed they but this part of the population also have the lowest levels of in work at risk of poverty. Unfortunately, the share of this level of education has fallen in all countries. As shown in the correlation matrix (see Fig. 8), the risk of in work poverty increased as the upper secondary and post-secondary non-tertiary education employed decreased. The share of people who have acquired tertiary education in all analyzed countries has grown, but this has not become a prerequisite for lower levels of working poverty.

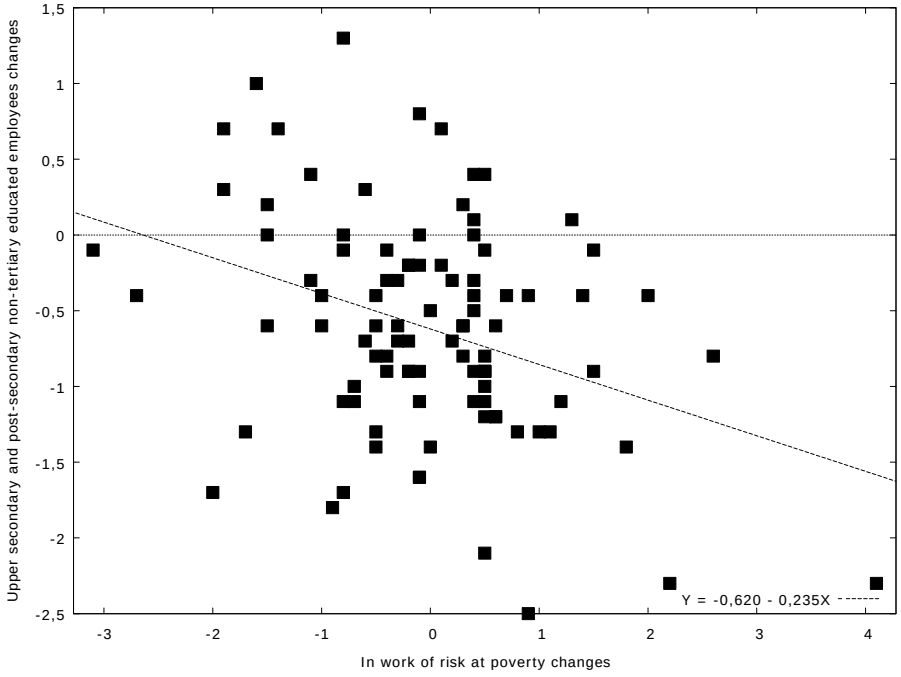

Fig. 8. Upper secondary and post-secondary non-tertiary educated employees ratio changes versus in work at risk of poverty ratio changes (with least squares fit) in Eastern Europe countries.

The interaction between households work intensity and in work at risk of poverty rate is complicated due to different directions of interaction, determined by static and dynamic conditions. In work at risk of poverty in households with low work intensity was always higher than with medium-to-high work intensity in Eastern European countries. Despite the fact that the share of households with very low and low work intensity has decreased every year during the analyzed period, in work at risk of poverty rate has increased in many of these countries (see Fig. 9). Therefore, it can be assumed that other factors, such as income inequality and changes in education, have had a greater impact on in work at risk of poverty than the changes in the work intensity of their households.

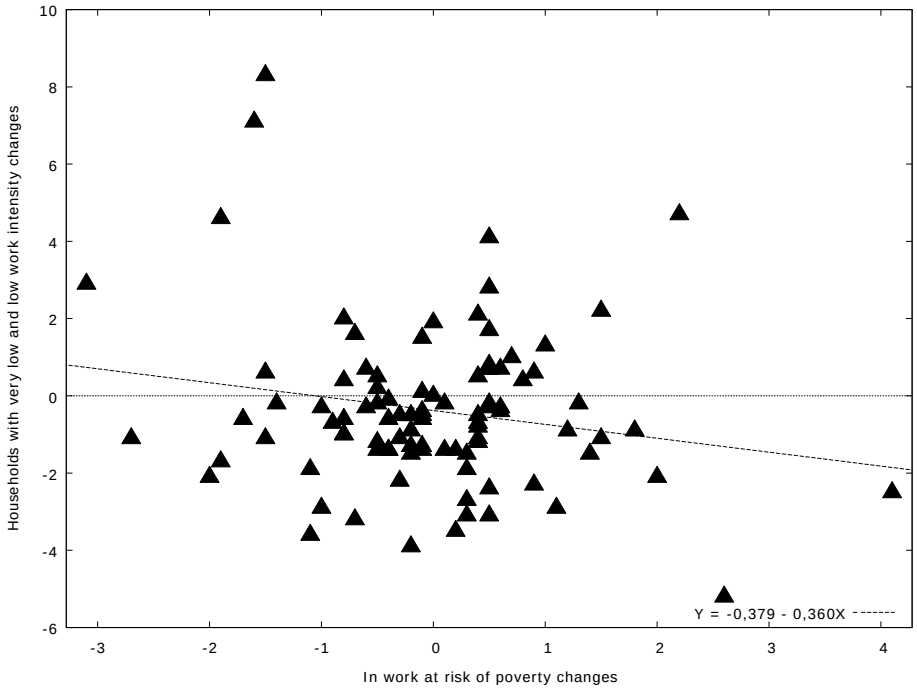

Fig. 9. Households with very low and low work intensity ratio changes versus in work at risk of poverty ratio changes (with least squares fit) in Eastern Europe countries.

Significant interactions between in work at risk of poverty and other factors identified by other authors, such as the increased employment of women, self-employed, part-time and temporary employed, has not been identified in this study.

Conclusions

According to Halleröd, Ekbrand and Bengtsson (2015), the authors of the study on the risk of in work poverty, which included Eastern European countries, after three years of panel data analysis they could not set significant determinants of poverty due to the impact of heterogeneity and transitional period of these countries. Having completed the panel data analysis of the dynamic changes in the poverty risk factors for a longer period of time (13 years) in this study, the interaction has been identified, the interpretation of which is attributable to the differences among Eastern and other European countries and greater similarities among the Eastern European countries. Most of the research highlights the problem of unemployment as the most important reason for the risk of in work poverty; however, unemployment in Eastern European countries during the post-crisis period is lower and declining faster than in the “old” EU countries. This shows that significant interaction between the growing risks of in work poverty and declining unemployment appears to be relatively small. They also have fewer households where all members are unemployed; however, social support for them is significantly lower than in other EU countries. If social support income per capita (as well as disposable income) is 2 to 3 times higher in “old” EU countries than in Eastern Europe, then the differences between the unemployment benefits are even greater. For example, in 2014, the average unemployment benefit per capita was 50.47 PPS in Poland, 72.91 PPS in Lithuania, 74.16 PPS in Hungary, while the average in EU (27) countries was 392.85 PPS. Consequently, in spite of the low-wage, residents are forced to take lower quality or even temporary work (it is shown by the growing elementary occupations in many EU countries), because, otherwise, they simply could not survive. This is confirmed by the identified positive effects of increasing unemployment, particularly for women and youth, and decreasing the number of low intensity

households on the risk of in work poverty. Although the decline in the population with the lowest level of education reduces the risk of in work poverty, however, the growing income inequality makes a greater impact. It is necessary to take into account the fact that in Eastern European countries collective bargaining coverage is just 10%–35%, when in the "old" EU countries, this figure reaches 50%–98%. Proportion of employees in unions is 10%–17% and in some of the "old" EU countries, this figure amounts to more than 70%. Thus, the workers' bargaining power in Eastern European countries is significantly lower. Therefore, the positive effects of increasing the population's employment for the reduction of the risk of in work poverty in these countries are questionable – more people come into the labor market, however, that does not significantly improve their financial situation. The results of the research also reveal that income inequality makes the biggest impact on the risk of in work poverty changes. On average, earned income of every fifth resident of Eastern European countries is the minimum, and the growth of income more often affects residents who receive average and higher than minimum income. Many EU countries are characterized by high emigration to the "old" EU countries which may also have a positive or negative impact on the risk of in work poverty in those countries depending on the income received by the migrant workers in the native country. However, there are not enough data to determine the impact of emigration, therefore, in this study, such an analysis was not performed.

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FUNDING OF POLITICAL PARTIES: PROBLEMATIC ASPECTS

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Annotation
The article, seeking an answer to the question of the role of political parties in the life of each modern democratic state and society, focuses on one of the key issues of the existence of each political party - their funding. Having established that state support in trying to protect these political entities from the potential influence of external individual donors, based on the experience of foreign countries it is necessary to provide insights into the possible models of such financing, their advantages and disadvantages. The article also reviews recent attempts to change the funding model of political parties in the Republic of Lithuania and the reasons for such attempts, and presents arguments that justify the possible influence of such inspirations on political processes in the country.
Key words: *Political party, democracy, pluralism*.

1. Political parties are one of the main pillars of modern state democracy

It is known that one of the most important elements of the form of state (besides the form of state governance and the form of state structure (territorial arrangement)) is the political regime, characterized, among other things, by political pluralism, characterized by the presence of various political parties and organizations that are competing for leadership of the society, all political parties have equal legal opportunities, and opposition parties offering alternative solutions to government policies, and so on.[3] Thus, a modern democratic state is inconceivable without political parties, which enable all layers of society to participate in the competition for political power and formation of state institutions. In other words, political parties are an element of the functioning of a democratic state, and an effective democracy is the result of a multi-party system and the activities of political parties.[4] Namely political parties and their members, who have won democratic, free and periodic elections, not only participate in the governance of the state, but also ensure the continuous establishment and functioning of the highest institutions of power, participate in the decision-making and implementation of the state governance. This is one of the preconditions for the functioning of the democratic regime in the rule of law. Therefore, it is declared that democracy, pluralism and political parties are the three pillars that lay the foundation of modern democratic state and authority building.[5] In one of its rulings, the Constitutional Court of the Republic of Lithuania (hereinafter - the Constitutional Court) has emphasized that political parties are such unions whose establishment goals, purpose and activities are inseparable from the pursuit of political power. Political parties are pursuing this goal *inter alia* participating in elections to political representative institutions.[6]

It is also noteworthy that in democratic countries, each political party first and foremost strives to create the strongest social base, i.e. to attract the widest possible range of social groups and strata, which will form the majority of its electorate in the forthcoming elections. Thus, a political party seeks to express the interests of the majority of society. Seeking this goal it defines the direction of socio-economic policy and then chooses the political means to implement it.[7] In general, for elections to be possible at least, there must of be at least two alternatives (the principle of political pluralism), so a multi-party system must be guaranteed. To this end, the freedom and equality of opportunity of all political parties in their establishment and operation must be guaranteed, as well as the right to form and functioning the opposition must be guaranteed.[8]

[3] Jarašiūnas, E. Lietuvos valstybė kaip konstitucinės teisės institutas. In: *Lietuvos konstitucinė teisė.* Textbook. Second edition. Vilnius: Registrų centras, 2007, p. 235-236.
[4] Šileikis, E. Alternatyvi konstitucinė teisė. Vilnius: Teisinės informacijos centas, 2003, p. 289.
[5] Čelkis P.; Kalinauskas, G.; Petrylaitė, D.; Varaška, M. Politinį partijos ir organizacijos, kiti politiniai susivienijimai. In: *Lyginamoji konstitucinė teisė*. Textbook. Mykolo Romerio universitetas. Vilnius: Registrų centras, 2016, p. 335.
[6] Ruling of the Constitutional Court of the Republic of Lithuania on 9 November 2010. <http://lrkt.lt/lt/teismo-aktai/paieska/135/ta184/content>
[7] Vaitiekienė, E. Politinės partijos ir politinės organizacijos. In: *Lietuvos konstitucinė teisė*. Textbook. Second edition. Vilnius: Registrų centras, 2007, p. 383.
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In order for political parties to function smoothly, freely and independently, the state must create the necessary legal environment for their activities. It is therefore important to emphasize the importance of the ongoing legislative process, which sets out their working principles and establishes legal safeguards. We will try to cover this in the other sections of this article.

2. Funding of Political Parties: Finding the Right Model

Seeking for the system of parties to function properly, political parties must be given some legal guarantees. In order for political parties to ensure their day-to-day operations, to compete with each other and to implement their ideas, they must have the financial means and therefore the issue of funding of political parties is of concern to all countries: "even those countries which do not regulate the activities of political parties by special laws seek to legally define the limits and procedures for financing political parties in order to prevent political corruption and to ensure the legitimacy of receipt and use of political party funds."[9] Thus, as mentioned above, the subject of political party financing is relevant in virtually all countries with modern democracy. It therefore can be said that one of the most important issues for political parties is their funding, which, "with a closer look, can reasonably be regarded as an essential systemic aspect of the legal regulation of their activities".[10]

The basis of state (public) political parties funding can be regarded as their constitutional establishment (in Western Europe starting around 1950 and in Central and Eastern Europe after 1990). There are some similarities and differences.

Regarding the model of financing of political parties in the Republic of Lithuania, first of all it has to be noted, that the Constitution of the Republic of Lithuania which was adopted on 25 October 1992 as well as other Central and Eastern European countries constitutions adopted at the end of XX century, known as post-totalitarian or "new democracies" such as 1991 constitutions of Bulgaria, Romania, Slovenia, year constitutions of Estonia, Czech Republic, Slovakia, 1997 constitutions of Poland and others regulate, among other things, political pluralism.[11] It is noteworthy that the Constitution of the Republic of Lithuania confines itself to establishing the guarantee of freedom of establishment of parties (Parts 1 and 2 of Article 35) and imposing significant restrictions on their activities, however, financing relationships of parties are not literally reflected or directly regulated, although their origins are nevertheless covered (in an ambiguous way) by the constitutional principles of a democratic state and by the blanket reference "activities are regulated by law" (Part 3 of Article 35).[12] It should be noted that this provision “does not confer on the legislature unlimited discretion<...>; the diversity of equal political parties that determine the multiparty system is a constitutional value and its constitutional aspects are the basis of the parties' legal institutionalization”.[13] In other words, the Constitution provides regulation of the activities of parties, including the financial sources (funds), but does not directly state the legal basis for the use or accounting of those sources and certain funds.[14] In this respect, the situation is different when comparing the aforementioned constitutional provision of the Republic of Lithuania with, for example, the constitutional provisions of Poland, Hungary or Germany, since the aforementioned constitutions refer directly to party finances, thus highlighting their importance and one or another principle or procedural basis of their administration.

For example, the Constitution of the Republic of Poland of 1997 part 2 of Article 11 provides that the financing of political parties is public.[15] This means that political parties cannot keep their funding classified. Constitution of the Republic of Hungary of 2011 part 4 of Article VIII states that the detailed rules for the operation and financing of political parties are laid down in the Basic Law.[16] The Basic Law of the Federal Republic of Germany part 1 of Article 21 stipulates among other things, that political parties must publicly account for the sources of their funds and their use, as well as for assets.[17] The constitutional recognition of democracy of

[9] Vaitiekienė, E. Politinės partijos ir politinės organizacijos. In: *Lietuvos konstitucinė teisė*. Textbook. Second edition. Vilnius: Registrų centras, 2007, p. 378.
[10] Šileikis, E. Partijų finansavimo teisės sistemos įžvalgos. Monograph. Vilnius: LMPA, p. 47.
[11] Jarašiūnas, E. Nuo pirmosios iki naujausių konstitucijų: keletas minčių apie konstitucinio reguliavimo raidą. In: *Šiuolaikinė konstitucija: studijos apie užsienio šalių konstitucinį reguliavimą*. Collective monograph. Mykolo Romerio universitetas. Vilnius, 2005, p. 29.
[12] Šileikis, E. Partijų finansavimo teisės sistemos įžvalgos. Monograph. Vilnius: LMPA, p. 98.
[13] Šileikis, E. Alternatyvi konstitucinė teisė. Second revised and supplemented edition. Vilnius: Teisinės informacijos centas. Vilnius, 2005, p. 301.
[14] Šileikis, E. Partijų finansavimo teisės sistemos įžvalgos. Monograph. Vilnius: LMPA, p. 98-99.
[15] Staugaitytė, V. Lenkijos Respublikos Konstitucija. In: Pasaulio valstybių konstitucijos. Volume II. Mykolo Romerio universitetas. 2016, p. 571.
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[17] Goldmer, Y.; Juškevičiūtė-Vilienė, A.; Kavalnė, S.; Vainiutė, M. 1949 m. gegužės 23 d. Vokietijos Federacinės Respublikos Pagrindinis Įstatymas. In: Pasaulio valstybių konstitucijos. Volume III. Mykolo Romerio universitetas. Mykolo Romerio universitetas, 2016, p. 1293.

parties and the constitutional political function of parties are listed there as one of the most important features of German parliamentarism.[18]

The first European country to adopt the direct financing of political parties from the state budget was the Federal Republic of Germany which provided some support from the state budget in 1959. Legislation governing public funding was adopted in 1967. Later, other European countries began to finance the activities of political parties: Austria in 1963, France in 1965, Sweden in 1966, Finland in 1967, Denmark in 1969, Norway in 1970, Italy in 1974, Spain in 1977. It is stated that, out of all democratic countries in Europe, only Switzerland does not allocate funding from the state budget to political parties, which is one of the reasons why its political system is criticized for its transparency.[19]

Political parties are funded from the state budget in most European democratic countries. The aim is to stimulate and develop competition between political parties, to ensure the implementation and institutionalization of their principle of equal opportunities, i.e. to become a stable and predictable multi-party system leading to an effective political system[20]. On the other hand, essentially taking the position that a political party is a voluntary civil society organization, thus it should itself finance its members and the party activities - otherwise the role of the political party as a mediator between society and the state is distorted by state funding[21]. However, since 1970 this type of financing is used in most Western European countries, and this type of financing is most debatable, but the models for funding vary greatly from country to country.

It should be noted that in most democratic European countries, the funding of political parties from the state budget is divided into direct state funding of political parties (state budget allocations) and indirect funding of state political parties (e.g. free access to the media, support for parliament activities of political parties, tax breaks, etc.). It is stated that state funding is understood as the most effective way to free political parties from the influence of external donors. However, there is a risk that political parties will replace one affiliation with another: a political party may become dependent on public funding - its interest in public support may overshadow the interest in gaining support from social groups. Since political parties are by their very nature and character social associations thus the state cannot “over-state” them.[22] In assessing state funding for political parties, it should be noted that this allows parties to remain independent of the influence of private entities, reduces the risk of political corruption, and makes funding for political parties more transparent. The main negative aspect is the reluctance of state residents (taxpayers) to support parties that do not reflect their views and interests. With state support alone, the biggest difficulty is to form and establish new parties that do not yet have the political support of the population.[23]

It has already been mentioned that state financial support may vary considerably from one country to another. The scientific literature distinguishes the following classification of public funding of political parties based on the relative size of state financial support of the budgets of political parties. It is pointed out that the following models of public financing of political parties exist in Western Europe: a high level system of state control (France, Spain and Italy; characterized by the fact that political parties have become quasi-state organizations, that is, dependent on state and taxpayers, for example, in Spain, 98% of the income of political parties comes from state financial support); a mixed system (part-financing of political parties, which usually accounts for about 50% of their income, such as in Turkey, Greece, Belgium, Austria, Switzerland, Germany, where political parties are financed in proportion to their income from private sources); a system of private financing with very little public support; as an example, the United Kingdom, which has almost no public funding for political parties).[24]

When assessing the financing of political parties through state budget allocations, the first question to be asked is whether all established and functioning political parties in a democratic state should be financed. There is a broad consensus that “there is a need to establish a model for financing political parties in the form of government budget allocations that prevents the privilege or discrimination of some political parties, in other words, ensures equal opportunities of their operation, with particular emphasis on their participation in elections".[25]

[18] Katz , A. Staatsrecht: Grundkurss im öffentlichen Recht, 12., überarbeitete Auflage. Heidelberg, 1994, S. 159-160.
[19] Miškinis, A.; Ulevičiūtė, G. Lietuvos politinių partijų finansavimo šaltinių analizė. Business systems and economics. Mykolas Romeris University. Vol. 3 (1), 2013, p. 88.
[20] Masnevaitė, E. Valstybinis politinių partijų finansavimas Lietuvoje. Teisė. Vilniaus universitetas, 2009 (70), p. 119.
[21] Čelkis P.; Kalinauskas, G.; Petrylaitė, D.; Varaška, M. Politinį partijos ir organizacijos, kiti politiniai susivienijimai. In: *Lyginamoji konstitucinė teisė*. Textbook. Mykolo Romerio universitetas. Vilnius: Registrų centras, 2016, p. 340.
[22] Masnevaitė, E. Valstybinis politinių partijų finansavimas Lietuvoje. Teisė. Vilniaus universitetas, 2009 (70), p.131-132.
[23] Miškinis, A.; Ulevičiūtė, G. Lietuvos politinių partijų finansavimo šaltinių analizė. Business systems and economics. Mykolas Romeris University. Vol. 3 (1), 2013, p. 87-88.
[24] By: Masnevaitė, E. Politinių partijų ir politinių kampanijų finansavimo teisinis reguliavimas Lietuvoje. Doctoral dissertation. Socialiniai mokslai, teisė (01S), Vilnius: Vilniaus universitetas, 2010, p. 117.
[25] Ibid., P. 118.

From the comparative point of view, the following models of direct state funding of political parties in the form of state budget allocations are distinguished: (1) support for all political parties in the country; (2) only political parties represented in the state legislature are supported; 3) not only political parties represented in parliament but also those that fulfill other conditions are supported. It should be noted that according to such criteria, most of the aforementioned countries would be placed in the third group. On the basis of eligibility for a state budget allocation, the following criteria can be distinguished: 1) the number of mandates received in parliament (less frequently in other elected institutions); 2) the number of valid electoral votes received, irrespective of whether the political party has won seats in parliament (less frequently in other elected institutions); and 3) applying mixed method, which takes into account both aforementioned methods.[26]

In all countries where there is a form of direct state funding of political parties, the prerequisite is results of participation in the relevant elections. Its positive results varies depending on the policy of the state's party system, but in all cases there is a criterion for qualifying for a state budget allocation. It distinguishes two groups of countries, the first consisting of those countries which do not require significant voter support for political parties to qualify for a state budget allocation (e.g. Denmark, Austria, Bulgaria, Hungary) and the second one those which seeking party system functionality, supports large and medium-sized political parties, and accordingly calls for stronger voter support (e.g. Greece, Poland, Belgium, Czech Republic, Slovakia).[27]

In this context, it should be noted that The Council of Europe addressed this relevant issue and issued “Guidelines on the Financing of Political Parties and Election Campaigns”. The purpose of the Guidelines is to set out different options and alternatives, legal principles and methods for financing of political parties and to enable countries to choose the most appropriate legal regulation for the financing of political parties.

3. Trends in the Legal Regulation of the Financing of Political Parties in the Republic of Lithuania

The Constitutional Court has held that, under Part 3 of Article 35 of the Constitution, the legislator must regulate *inter alia* the establishment and operation of political parties. In so doing, the legislature under the Constitution, *inter alia* Part 3 of Article 35 thereof may lay down *inter alia* the sources, ways and procedures for controlling the financing of political parties. It has already been mentioned that the Constitution does not directly identify election campaigns and their participants, *inter alia* sources, ways and basis of funding of political parties, but as stated by the Constitutional Court, the principles relating thereto derive from the Constitution, *inter alia* its objective of an open civil society, as enshrined in its preamble, and directly enshrined in Articles 35, 44, 83, 113, 114, 141 (*expressis verbis* indicated) of the political goal of parties and the specifics of its implementation.[28]

As it is known, the model of financing of political parties established at the level of legislation has changed many times in Lithuania since 1990 and undergone several stages of development,[29] and the current model, following the submission of Project of Amending of Articles 2 and 21 No. XIII-2266 of I-606 Republic of Lithuania Law on Political Parties again is being proposed to be changed.

Before analyzing the current and possible future legal regulation regarding the financing of political parties, it is necessary to take into consideration the already established constitutional doctrine on this issue. The Constitutional Court has emphasized that, under the Constitution, the legislator may establish such a model of regulation of relations regarding the sources, ways of financing of political parties, which involves allocating state budget funds (appropriations) to political parties which candidates have received significant voter approval in the relevant elections, however, such regulation must not allow access to the state budget funds (appropriation) such as to create preconditions for denying or distorting the nature of political parties as public (non-governmental) organizations origins, adversely affecting the free development of a multiparty system, hinder the conditions under which the mentioned funds may be obtained by political parties which do not meet the conditions, as well as to fulfill one's political aspirations, and violate the principles of responsible management and rational management of state property. Consequently, according to the Constitutional Court, the legislator, while regulating with the establishment and operation of political parties, *inter alia,*

[26] Ibid., p. 125.
[27] Masnevaitė, E. Politinių partijų ir politinių kampanijų finansavimo teisinis reguliavimas Lietuvoje. Doctoral dissertation. Socialiniai mokslai, teisė (01S), Vilnius: Vilniaus universitetas, 2010, p. 121.
[28] Ruling of the Constitutional Court of the Republic of Lithuania on 22 March 2012. <http://lrkt.lt/lt/teismo-aktai/paieska/135/ta110/content>
[29] See more: Šileikis, E. Partijų finansavimo teisės sistemos įžvalgos. Monograph. Vilnius: LMPA, p. 273-309.

and the ways of their funding, related relationships, under the Constitution *inter alia* may establish that not all established and functioning political parties, but only those which candidates receive appropriate (sufficient) voter approval in the elections to the public authorities, are eligible for targeted state budget funds.[30]

Till 1 January 2012 state budget allocations were one of the sources of Lithuanian political parties. By prohibiting receiving funding from legal entities and by limiting donations from natural persons, public funding has become a major source of funding for political parties. Thus, at present, the state ensures not only the participation of political parties in political campaigns, but also their functioning between elections. Therefore, proper legal regulation of this issue is very important.

Recent attempts have been made to change the existing legal regulation of the financing of political parties. For example, members of the Seimas submitted Project of Amending of Articles 2 and 21 No. Nr. XIIIP-226 of I-606 Republic of Lithuania Law on Political Parties, which seeks, inter alia, to modify the current model of state funding of political parties.[31] The explanatory memorandum to this project states: “Now, state budget allocations to parties are based on the results of past elections, regardless of how parties dealt with state and society issues. The only criteria for allocating state budget allocations to political parties are the valid results of the Seimas, municipal council elections, elections to the European Parliament (re-election, new elections and re-voting). <....>. 'It is therefore proposed that the funding system for political parties to be fundamentally modified so that the allocation of state budget appropriations is based on the intended funding objectives. The main purpose of this funding is to ensure the efficient operation and transparency of all political parties involved in state governance. Therefore, the main criterion for allocating funding to political parties should be their parliamentary activities and their work in self-governance. Under the proposed legal regulation, allocations from the state budget are distributed among political parties in proportion to their membership in the Seimas of the Republic of Lithuania. <...>”.

Thus, Article 2 of the submitted project seeks to replace Article 21 of Republic of Lithuania Law on Political Parties by providing that "two-thirds of the state budget appropriation for political parties should be distributed for political parties in proportion to the number of their members elected to Seimas of the Republic of Lithuania and one third of the appropriation for political parties in proportion to the number of their members elected as members of the municipal councils.” In other words, under the envisaged legal regulation, the state budget allocations to political parties would not be based on electoral votes, but on the actual representation of political parties in the Seimas and municipalities, independent of the electoral votes cast for the candidates in those elections (according to the number of mandates received). It should be mentioned that currently the state budget allocations for the activities of political parties are allocated according to the results of the last elections.

When analyzing the proposed project, one of the assessment criteria could be identification of the main features characteristic to the present model of state financing of political parties in Lithuania. According to the aforementioned classification of individual countries, taking into account the influence of the state on the financial status of political parties, Lithuanian case can be considered as intermediate, i.e. the actual situation balances between a high level of state control and mixed systems, even though according to legal regulation of political parties it should apparently be categorized as a mixed system. The adoption of the proposed project would not change the situation, as it seeks to establish other criteria for financing political parties from the state budget.

Evaluating the existing regulation according to the form of direct state budget financing of political parties, the Lithuanian case is currently classified as the third model, i.e. currently not only political parties represented in the parliament are supported but also those that meet other conditions. Adopting the proposed project would place the model in the second category mentioned above, i.e. only those political parties represented in the parliament and self-governing institutions would be supported. In this context, the question arises: why the existing provision of the law, according to which state budget allocations are distributed based on results of the elections to the European Parliament is to be abandoned. Thus, it is not clear why, out of the three elections in the country, the results of which determine the allocation of state budget allocations to political parties, only the results of the Seimas elections and municipal council elections are taken into account.

[30] Lietuvos Respublikos Ruling of the Constitutional Court of the Republic of Lithuania of 12 March 2012. <http://lrkt.lt/lt/teismo-aktai/paieska/135/ta110/content>

[31] https://e-seimas.lrs.lt/portal/legalAct/lt/TAP/076eab70633511e8b7d2b2d2ca774092?positionInSearchResults=17&searchModelUUID=2675cb5e-4125-4a76-b8f8-01ebb655d830

In addition, the different proportions of state budget allocations according to mandates (two-thirds and one-third respectively) received at the Seimas of the Republic of Lithuania and municipal councils also raise questions. It seems that, in order to strengthen democracy, the distribution of proportions from the municipal level could be even reversed. Without debating on this aspect, it would be more correct to set equal proportions.

It is to be welcomed that the adoption of proposed project would also entail budget allocation procedure changes for allocating appropriations, changing the existing proportions (currently it comprises of 60% of the votes cast in the Seimas elections and 19% in municipal council elections; the changes would be as follows - 67% and 33%, so the influence of municipal council election results would greatly increase).

The second model described above, i.e. the number of valid electoral votes received, is currently applied in Lithuania on the basis of eligibility for a state budget allocation. Thus, the state budget allocation is distributed to those political parties that have received at least 3% of the total votes cast for the candidates of the political parties in Seimas elections, municipal council elections, and European Parliament elections that result in these state budget allocations. In this context it should be emphasized that the legislator cannot facilitate the formation of a one-party system. The statutory right of one political party, which has received the largest number of votes in the Seimas elections, to receive allocations from the state budget would essentially create unconstitutional preconditions for the formation of a one-party system. Therefore, it is stated that "it is possible to understand and justify the fact that parties receiving state funding do not receive the largest number of votes, but at least 3%.[32] It is noted that the positive aspect of the established legal regulation in this regard is that the state budget allocation is granted taking into account the number of valid votes cast by candidates or lists nominated by political parties or their coalitions both in multi-member and single-member constituencies of Seimas elections and it is calimed that, there is no distortion in the amount of voter support shown to political parties.[33]

In answering the question to which group of countries would Lithuania belong to in terms of results of participation in elections, the case of Lithuania would be attributable to a group that requires stronger voter support for political parties to qualify for a state budget allocation.

In addition, a further assessment of the current and projected legal regulation presumes that voter support for political parties is more reflected in the current situation, i.e. votes cast by voters instead of won mandates, since different mandates require different numbers of votes in municipal council elections; whereas, in a single-member Seimas elections constituencies, the mandate of a constituency by repeated voting may be won by a very small majority.

In the context of this and other attempts to change the existing legal regulation, it must also be emphasized that, when state provides funding to political parties, it must carefully consider the possible criteria for allocating funds and ensure that all political parties having a big number and few members, long-standing and newly formed would have equal access to political activities. Thus, it is the task of the state to ensure that political parties receive sufficient funding while remaining independent and free from influence when making decisions.[34]

In this context, it is important to mention that a very important constitutional principle of equality must be ensured in the legislative process, therefore it is worth recalling once again the doctrine formed by the Constitutional Court on this issue. Thus, while interpreting the constitutional principle of equality of persons, the Constitutional Court in its ruling on 28 February 1996 stated that this principle is applicable not only to natural persons but also to legal persons[35]. The Constitutional Court has repeatedly emphasized that the principle of equality of persons entrenched in Article 29 of the Constitution must be construed inseparably from other provisions of the Constitution, *inter alia* from the provisions establishing the rights and freedoms of the individual, as well as from the constitutional principle of the rule of law, which is a universal principle underpinning the entire Lithuanian legal system and the Constitution itself.[36] Violation of the constitutional principle of equality of a person is at the same time a violation of the constitutional imperatives of justice and a harmonious society, and thus of the constitutional state under the rule of law.[37] The Constitutional Court noted several times that the Constitution

[32] Šileikis, E. Alternatyvi konstitucinė teisė. Second revised and supplemented edition. Vilnius: Teisinės informacijos centas. Vilnius, 2005, p. 302.
[33] Masnevaitė, E. Politinių partijų ir politinių kampanijų finansavimo teisinis reguliavimas Lietuvoje. Doctoral dissertation. Socialiniai mokslai, teisė (01S), Vilnius: Vilniaus universitetas, 2010, p. 125.
[34] Miškinis, A.; Ulevičiūtė, G. Lietuvos politinių partijų finansavimo šaltinių analizė. Business systems and economics. Mykolas Romeris University. Vol. 3 (1), 2013, p. 20th
[35] <http://www.lrkt.lt/lt/teismo-aktai/paieska/135/ta404/content>
[36] Ruling of the Constitutional Court of the Republic of Lithuania of 9 November 2010. <http://www.lrkt.lt/lt/teismo-aktai/paieska/135/ta404/content>
[37] Ruling of the Constitutional Court of the Republic of Lithuania of 30 April 213 . <http://www.lrkt.lt/lt/teismo-aktai/paieska/135/ta84/content>

does not protect or defend such rights acquired by a person, which, by their content, are privileges, since the protection and defense of privileges would mean that the constitutional principles of equality of persons and justice are violated.[38] The Constitutional Court has emphasized that the constitutional principle of equality of persons is violated if certain persons or groups of persons are treated differently, although differences between them of such kind and of such scope objectively justify such unequal treatment. Differentiated legal regulation is applied for certain groups of persons with the same characteristics and is not in itself considered discriminatory if it pursues positive, socially important objectives or if the imposition of certain restrictions or conditions is connected with the characteristics of the peculiarities of regulated public relations. It has been repeatedly noted in the acts of the Constitutional Court, that when assessing whether different regulation is reasonably established, it is necessary to take into account specific legal circumstances; first of all, differences in the legal position of persons and objects subject to different legal regulation.[39]

The following principles are set out for the financing of political parties from the budget: equality, freedom and transparency. The principle of equality means that all political parties must have equal access to all sources of funding regulated by law, as this would create equal conditions for their activities. The principle of freedom is perceived as an opportunity for parties to raise funds from various sources according to their potential. Implementing and abiding the principle of transparency is essential to reduce the chances of corruption and to prevent speculation on this subject.[40]

In a broader interpretation of the principle of equality, it has to be emphasized, that such distribution of budget allocations when each party or candidate receives the same amount of money, regardless of popularity or seats in parliament, is called “strictly proportional”. Such order is criticized for making it difficult for new parties to access state funding and engage in political activities. Under this regulation, state funding is properly distributed to existing parties, but new parties are not able to obtain budget allocations and establish themselves in the political arena. Some countries (Hungary, Czech Republic and Germany) combine the principles of proportionality and equality in the allocation of budget appropriations. The principle of equality means that all political parties must have equal access to all sources of funding laid out by the law, which would ensure equal conditions for their activities[41].

Thus, it is likely that the adoption of the proposed project would result in a narrower spectrum of political parties funded from the state budget. Especially when considering the project from the point of view of the principle of equality, it is expected that fewer political parties would have access to state funding, which would limit party pluralism and reduce the ability of political parties to establish themselves in the political arena.

Thus, it can be said that each country can and should choose such model of financing political parties that best reflects the established political traditions and creates the appropriate preconditions for the further development of democracy. Finally, it remains to be hoped that the legislature, knowing what important changes are likely to happen when making one or another decision on the financing of political parties, will choose the best option that has been carefully considered, because, as already mentioned, possible changes in existing legal regulation can have a significant impact on the further development of political parties, society and the state as a whole.

Conclusions

1. Political parties are a necessary attribute of every democratic country; they enable all sectors of society to participate in the competitive struggle for political power and to form state law institutions.

2. The issue of political party financing is a matter of common concern to all countries: there are different models of political parties financing. Most countries have access to allocations from the state budget, but the criteria that determine the level of allocations are not the same and depend on the political traditions, financial capacity, etc. in each country.

3. The legal status of political parties, including their funding has changed many times in the Republic of Lithuania since 1990. Recently new attempts have been made to change the existing funding model, but it is necessary to ascertain the merits of such proposals over the current regulatory framework before undertaking any reform. It is important to realize that

[38] Ruling of the Constitutional Court of the Republic of Lithuania of 5 October 2016. <http://www.lrkt.lt/lt/teismo-aktai/paieska/135/ta1642/content >

[39] Ruling of the Constitutional Court of the Republic of Lithuania of 27 October 2016. <http://www.lrkt.lt/lt/teismo-aktai/paieska/135/ta1647/content>

[40] Pečkys, V. Politinių partijų finansavimas: aktualijos ir problemos. Socialinių mokslų studijos. 2011, 3 (2), p. 455.

[41] Miškinis, A.; Ulevičiūtė, G. Lietuvos politinių partijų finansavimo šaltinių analizė. Business systems and economics. Mykolas Romeris University. Vol. 3 (1), 2013, p. 89.

changes can have a significant impact on the further development of political parties, society and the state as well as the development of democracy.

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MASTER BUDGET FORMATION IN PRIVATE COMPANIES

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Annotation

The formation of the master budget is the thrust of this paper. A master budget is a tool for the company performance of the budgetary control in corporate organizations and to achieve coordination of various functions of the business in the organization. The study seeks to show the importance of the budgetary process in the selected private company. Also, this study is noteworthy to heads of companies and chartered accountants as such a study could aid them towards the efficient formation of their budgeting plan for the next years. The results indicated that the selected company should expect positive results at the end of the accounting year. However, managers of the company should have attention in the financial sources because it will be needed to cover the cash deficiency.

Key words: *Master Budget formation, Sales Budget, Production Budget, Cash Budget, Budgeted Financial Statement.*

Introduction

Modern business organizations are increasingly appreciating the importance of budgeting and budgetary control in the achievement of goals and objectives. Budgeting involves the setting of targets and monitoring of performance against those targets. For an organization to be successful, it must plan its financial activities well in advance through the institution of effective budgeting and budgetary control measures (James Nwoye Obi, 2015). Thus, Budgeting is the tactical implementation of a business plan. To understand the importance of a master budget for a company, the first answer should be, why your business needs a budget? The company needs to understand where going your business and what you need to achieve the goals. The budgetary process establishes goals and policies, formulates limits, enumerates resource needs, examines specific requirements, provides flexibility, incorporates assumptions, and considers constraints. The budget process used by a company should suit its needs, be consistent with its organizational structure, and take into account human resources (Saeed et al., 2016). The budgeting process allows the company management to predict what will happen in a month, six months or a year. And if during the planning process it appears that after a while the situation deteriorates, there is the urgent need to look for solutions to improve its operation (Nazarova et al., 2016). The process of budgeting involves setting strategic goals and objectives and developing forecasts for revenues, costs, production, cash flows and other important factors (Bonner 2008; Bierman 2010). According to researchers, we notice, that the main bottom line of budget is to draft a budget of your business is that it will help you figure out how much money you have, how much you need to spend, and how much you need to bring in to meet business goals. A budget should be created before you sign an agreement of a loan or invest in a new building or before you decide to bring your production to a new market. Thus, budgets can help you minimize risk to your business. The budget can be useful for information to adjust your plans or expectations going forward. The master budget can be updated with actual expenditures and revenues each month so that you know you're on target.

The research object: Budget formation in a private company.

The aim of the article: to examine the framework of budgeting and to prepare the master budget in a private company.

The research methods: literature analysis, systematic analysis, qualitative content analysis, company financial primary data, data visualization.

Literature Review

Budgeting is a feature of business management, i.e. the process of specific actions that must be performed in the foreseeable future (Nazarova et al., 2016). A budget is an annual financial statement of the individuals, organizations, and government as a whole which shows the estimated revenue and the proposed expenditure for the coming year and also presents a report on the performance of the previous year (Lucey, 2000). The budget is one of the most important management methods in most companies in the world, that is the reason why the benefit of the practice of this method formation and application is not questionable (Shcherbina, Tamulevičienė, 2016). Several authors have defined the term budget from various perspectives and experiences. Budgeting entails the establishment of goals by the management of an organization and designing a process that serves as a framework within which an organization

effectively articulates overall planned activities (Isaac, Lawal, Okoli, 2015). Budget is a predetermined statement of management policy during a given period which provides a standard for comparison with the result actually achieved (Brown and Howard, 2002). The budget is a comprehensive and co-ordinated plan expressed in financial terms for the operations and resources of an enterprise and for some specific period in the future (Pandey, 2001). On their part define a budget as a financial and/or quantitative statement prepared and approved prior to being pursued during that period for the purpose of attaining a given objective (Buyers and Holmes, 2000). Budgets are an important tool of profit planning and budgets as a tool of planning are closely related to the border system of planning in an organization (Khan and Jain, 1998). Budget as a financial or quantitative statement of a plan to be pursued for achieving a given objective (Aseshemic, 1997). A budget is based on past experience plus changes in light of the current environment (Shim et al 2012). According to M. Robinson (2009), the budgeting process can help considers the case for reformulating fiscal policy in terms of accrual rather than cash aggregates as well. He notices the accrual budgeting system. After analysis of the literature review, we notice, that the budget helps to evaluate organizational plans, while at the same time performing two vital management functions namely: The formulation of a comprehensive future plan of action; It compares actual result with predetermined plan, thus, planning and control (which are two primary functions of management) are also essential features of the budgeting process. A budget can be used to indicate some of the following: The funds needed for labor and/or materials; For a new business, total start-up costs; Your costs of operations; The revenues necessary to support the business; A realistic estimate of expected profits.

Methodology

Master budget is the sum total of all the divisional budgets that are prepared by all the divisions. It also includes the financial planning, cash-flow forecast, and budgeted profit and loss account and balance sheet of the organization. Normally the master budget is prepared for a year. Sometimes, it may be misunderstood that the master budget is one large budget of the organization. However, it is not the case. Master Budget is a summary of the divisional budget. It is a continuous financial plan (Sizer 2003, Ackaha and etc., 2014). The components of the budget are presented in Figure 1.

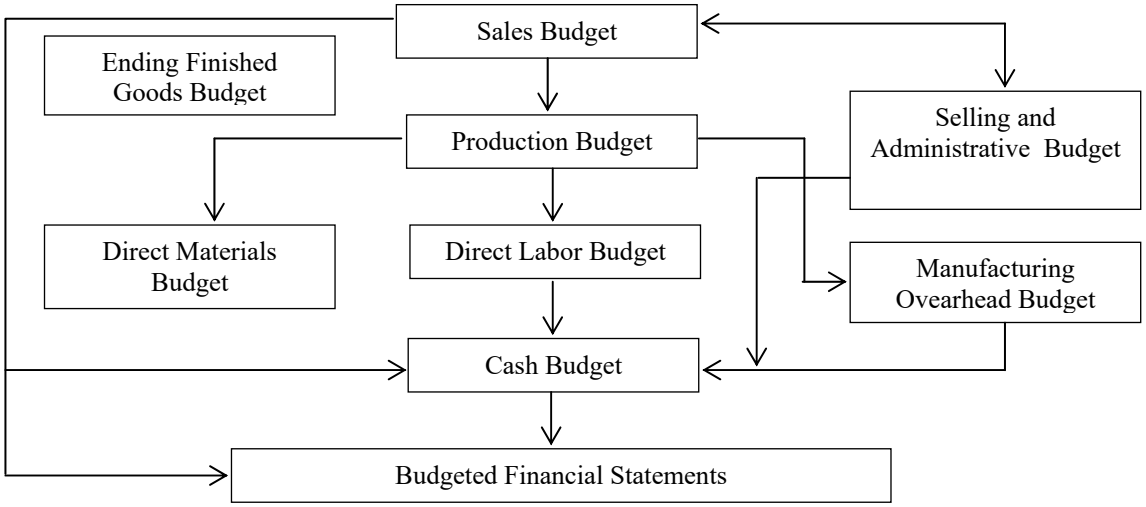

Fig. 1. The Components of Master Budget
Sources: Nazarova et al., 2016; Shcherbina, Tamulevičienė, 2016; Rakos, Man, 2016; Raghunandan et al., 2012; Ackaha et.al. 2014; Appiah-Mensah Kwame et.al. 2007; Arora, 2006.

The sales budget is the foundation of the master budget. This plan is very difficult to come by because the demands for the company product to market customers are not just to be determined, this is due to the nature of competition in the market. First and foremost, the number of units to be sold and price per unit are derived. On the basis of that, the value of sales is calculated. All the procurements, staff requirements and administration costs are based on the sales. The factors to be considered in sales forecasting are: Past sales; Reports by salesmen company conditions; Business conditions; Market demand estimation; Production capacity or an infrastructure facility; Current supply facility; Industry analysis; Market demand and production capacity are determined with the help of Marketing division and production division respectively. **The production budget** is mainly based on the sales budget. It includes

the quantity of production, cost of production calculated, and manufacturing operations. Their primary function is to provide management with expenditure on production and the amount of output to be determined in the year. The factors to be considered in production budget forecasting are: Inventory at the beginning of the year; Inventory to be maintained at the end of the year; Number of units manufactured; Buffer stock to be maintained throughout the year. If the company is not having a manufacturing unit, we require a number of units to purchase instead of the production budget. The production budget is divided into further three parts: *Direct material budget; Direct labor budget and Manufacturing overhead budget.* **Direct material budget** is a phase in the accounting budget that deals with preparations of a plan to estimate the quantity of raw materials and components required for the production demanded by the production department. It enables the procurement department in planning for their purchases. It assists the procurement officer in the preparations of the procurement budget. It brings facts for raw material control. **Direct labor budget** is a budget prepared to show a number of labor workers to be used in the production of the company, in order to achieve its budget target. It does also include the cost of labor required for production. **Manufacturing overhead budget.** The factory overhead budget is normally prepared to estimate the cost of overheads, and its mainly prepared by the production managers of the organization. **Selling and Administration Budget.** For simplicity sake, selling and administration budgets have been combined. In practice, a separate budget has been prepared: the sales manager prepares the selling budget and the administrative manager prepares that of the administration. They are the selling and administration costs expected to be incurred during the budget period. **The cash budget** is the estimation of cash receipts and payments for a future period. The objective of the cash budget is to ensure that sufficient cash is available at all times to meet the level of operations that are outlined in the various budgets. On the basis of the sales and production budget, it is derived that what is the expected receipts and what are the expected payment. Receipt and payment cycle of the customer and supplier need to be analyzed. At this stage, the organization decides whether the external borrowing is required or not. On the basis of the above budgets, the **budgeted income statement** is prepared. The budgeted income statement works best when presented for all of the budget periods at once so that you can compare the results for the various periods and spot anomalies that may require additional investigation. **The budgeted balance sheet** is prepared once the Budgeted Income Statement is prepared. The budgeted balance sheet indicates the following: A balanced budget is achieved when the estimated revenue equals the proposed expenditure in a given year. In given words, a balanced budget is where an organization proposes in expenditure equal to the revenue. That's amount to be received by the organization is the same as what to intend to spend (Colville, 1989; Arora, 2006; Appiah-Mensah Kwame et.al. 2007; Raghunandan et al., 2012; Cox, 2013; Ackaha et.al., 2014; Rustamova et al., 2014; Rakos, Man, 2016; Hoffman, Reese, 2019).

Results of Master Budget Formation

Master Budget was practically applied in the JSC "Snaige" (*company*). Company is preparing a budget at the end of the accounting year (Table 1).

Table 1

The Sales Budget

Components	1 quarter	2 quarter	3 quarter	4 quarter	Annual
Budgeted sales in thousand units	39.70	54.61	58.76	50.84	*203.91*
Selling price per unit, euros	191.06	191.06	191.06	191.06	*191.06*
Total budgeted sales, thousand euro	***7,585***	***10,433***	***11,226***	***9,714***	***38,958***

After analyzing of financial data of the company, we notice, that budgeted sales for the next accounting years have to be 204 thousand units. The selling price should to be not to less than 191 euros (average value) per unit. Sales volume is calculated based on the 2017-2018 sales results. The sales price is based on a margin of 11,5 percent multiplied by the estimated production cost of 171,4 euro (Table 8). Budgeted sales equal 38,958 thousand euros. According to by company accounting policy all sales are on account 50 % collected in the quarter of sale, 35 % collected in the quarter following the sale, 15 % uncollectible (Table 2).

Table 2

Expected Cash Collections

Components	1 quarter	2 quarter	3 quarter	4 quarter	Annual
Accounts receivable				5,356	*5,356*
1 quarter sales, thousand euro					
50 % x 7585	3,792				*3,792*
35 % x 7585		2,655			*2,655*
2 quarter sales, thousand euro					
50 % x 10433		5,217			*5217*
35 % x 10433			3,652		*3652*
3 quarter sales, thousand euro					
50 % x 11226			5,613		*5,613*
35 % x 11226				3,929	*3,929*
4 quarter sales, thousand euro					
50 % x 9714				4,857	*4,857*
Total cash collections, thousand euro	***3,792***	***7,871***	***9,264***	***14,142***	***35,070***

The company will have been expected 35,070 thousand euro cash collections at the end of the accounting year. The management at the company expects, that ending inventory to be equal to 20 % of the following quarter's budgeted sales in units. In 1 quarter, 7.9 thousand units were on hand (Table 3).

Table 3

The Production Budget

Components	1 quarter	2 quarter	3 quarter	4 quarter	Annual
Budgeted Sales, thousand units	40	55	59	51	204
Add: Desired ending inventory	10.9	11.8	10.2	10.9	10.9
Total Needs	***51***	***66***	***69***	***62***	***215***
Less: Beginning inventory	7.9	10.9	11.8	10.2	7.9
Total Reguired production, thousand units	***43***	***55***	***57***	***52***	***207***

The Production Budget consists of three parts: Direct Materials Budget; Direct Labor Budget; Manufacturing Overhead Budget. At the company, 5 pounds (assumed value) of material is required per unit of product. Management of the company would like materials on hand at the end of each quarter to 10% of the following quarter's production. On 1 of the quarter, 21 pounds of materials are on hand. Material cost per pound is calculated by the primer cost of production materials divide required production thousand units (Table 4).

Table 4

The Direct Materials Budget

Components	1 quarter	2 quarter	3 quarter	4 quarter	Annual
Reguired production, thousand units	43	55	57	52	207
Materials per unit (pounds)	5	5	5	5	5
Production needs	213	277	286	258	1,035
Add: Desired ending inventory	28	29	26	27	27
Total needed	***241***	***306***	***312***	***285***	***1,062***
Less: Beginning inventory	21	28	29	26	21
Materials to be purchased, thousand units	***220***	***278***	***283***	***260***	***1,041***
Material cost, euro per pound	23	32	35	28.0	29.4
Total direct materials, thousand euro	***4,959***	***8,932***	***9,894***	***7,271***	***30,603***

The company should expect a 24,9 thousand euro cash disbursement at the end of the accounting year (Table 5). 60 % of a month's purchases are paid for in the month of purchase;

20 % is paid in the following quarter. The 1 of quarter accounts payable balance was being 1,502 thousand euros.

Table 5

Expected Cash Disbursement For Materials

Components	1 quarter	2 quarter	3 quarter	4 quarter	Annual
Accounts payable - 01, January	1,502				*1,502*
April purchases					
60 % x 4959	2,976				*2,976*
60 % x 8932		992	1,786		*2,778*
60 % x 9894		5,359	5,936	1,979	*13,274*
60 % x 7271				4,362	*4,362*
Total Cash disbursements, thousand euro	***4,477***	***6,351***	***7,723***	***6,341***	***24,892***

Results show, that each unit of the product will have to be required 12 hours (assumed value) of direct labor. The Company has a “no layoff” policy so all employees will be paid for 40 hours of work each week. In exchange for the “no layoff” policy, workers agree to a wage rate of 1,5 euro per hour regardless of the hours worked (assumed no overtime pay). For the 1 quarter, the direct labor workforce will be paid for a minimum of 480 hours per quarter (Table 6).

Table 6

The Direct Labor Budget

Components	1 quarter	2 quarter	3 quarter	4 quarter	Annual
Reguired production, thousand units	43	55	57	52	207
Director labor per unit	12	12	12	12	12
Labor hours required	***513***	***665***	***686***	***619***	***2,483***
Guaranteed labor hours	480	480	480	480	
Labor hours paid	**513**	**665**	**686**	**619**	***2,484***
Hourly wage rate, euro/hour	1.4	1.5	1.5	1.5	1.5
Total direct labor cost, thousand euro	***738***	***1,002***	***1,032***	***960***	***3,724***

Based on direct labor hours, the manufacturing overhead had been included in units of the product. The variable manufacturing overhead rate is being 1 euro per direct labor hour. Fixed manufacturing overhead is being 5,433 euros per quarter and it had been included 1,378 euro of noncash costs (primarily depreciation of fixed assets). The Company plans cash disbursements for manufacturing expenses of 6,539 thousand euros (Table 7).

Table 7

Manufacturing Overhead Budget

Components	1 quarter	2 quarter	3 quarter	4 quarter	Annual
Budgeted of Direct Labor hours (DLH)	513	665	686	619	***2,484***
Variable manufacturing overhead (mfg. OH) rate, euro/hour	1.0	1.0	1.0	1.0	1.0
Variable mfg. OH costs, euro	***513***	***665***	***686***	***619***	***2,484***
Fixed mfg. OH costs	1,358	1,358	1,358	1,358	5,433
Total mfg. OH ***costs:***	***1,871***	***2,023***	***2,044***	***1,978***	***7,916***
Less: noncash costs	344	344	344	344	1,378
Cash disbursements for manufacturing, thousand euro	***1,526***	***1,679***	***1,700***	***1,633***	***6,539***

The ending finished goods inventory budget is being 1876 thousand euro and the primary cost of the unit product was determined 171.41 euros for a unit. (Table 8).

Table 8

Ending Finished Goods Inventory Budget

Production costs per unit	Quantity	Cost, euro	Total
Direct materials budgeting	5.0	29.4	147.0
Direct labor per unit	12	1.5	18.0
Manufacturing overhead	2	3.2	6.4
		Prime cost, euro/unit	***171.4***
Budgeted finished goods inventory			
Ending inventory in thousand units			10.95
Unit product cost, euro			171.41
Ending finished goods inventory, thousand euro			**1876.5**

At Company the selling and administrative expenses budget is divided into variable and fixed components. The variable selling and administrative expenses are being 0,8-1,2 per unit sold. Fixed selling and administrative expenses are being 399 thousand euro quarters. The company will have to pay 806 thousand euro selling and administrative expense at the end of the accounting year (Table 9).

Table 9

Selling and Administrative Expense Budget

Components	1 quarter	2 quarter	3 quarter	4 quarter	Annual
Budgeted sales, thousand units	40	55	59	51	**204**
Variable S & A rate, euro/hour	1.0	1.1	1.2	0.8	1.03
Variable expenses, thousand euro	***41.1***	***59.5***	***71.3***	***40.4***	***210.7***
Fixed S & A expenses	399	399	399	399	1,595
Total S & A expenses, thousand euro	***440***	***458***	***470***	***439***	***1,806***
Less: Noncash expenses					
Cash S & A expenses, thousand euro	**440**	**458**	**470**	**439**	***1,806***

On 1 January, the cash balance has been 392 euros. The company was being maintained a loan of credit for 9,932 thousand euros. In every quarter they are paying a cash interest of 145 euros. However, the company is received a cash interest of 650 in every quarter. The company should focus expected that prepayments are received cash of 11,100 thousand euros at years. The ending cash balance is being 3,272 thousand euros (Table 10).

Table 10

The Cash Budget

Components	1 quarter	2 quarter	3 quarter	4 quarter	Annual
Beginning cash balance	392	473	686	431	392
Add: Cash collections	3,792	7,871	9,264	14,142	35,070
Total cash available	***4,184***	***8,344***	***9,950***	***14,573***	***35,462***
Less: Cash disbursements					
Expected cash disbursement for materials	*4,477*	*6,351*	*7,723*	*6,341*	***24,892***
Direct labor budget	*738*	*1,002*	*1,032*	*960*	***3,732***
Manufacturing overhead budget	*1,526*	*1,679*	*1,700*	*1,633*	***6,538***
Selling and administrative expense	*440*	*458*	*470*	*439*	***1,807***
Purchases					
Total disbursements	***7,181***	***9,490***	***10,925***	***9,373***	***36,969***
Excess (deficiency)	**-2,997**	**-1,146**	**-974**	**5,200**	**84**
Financing:					
Borrowing	-2,483	-2,483	-2,483	-2,483	-9,932
Prepayments received	5,700	2,500	2,900		**11,100**
Interest paid	-145	-145	-145	-145	-580
Interest received	650	650	650	650	2,600
Total financing	***3,722***	***522***	***922***	***-1,978***	***3,188***
Ending cash balance	**725**	**102**	**50**	**3,272**	**3,272**

After the ending of budgeting reports, it can be noticed, that the company should expect 1,620 thousand euros of income profit in the next year. Also, the company should be expected that it will have been earned 4,006 thousand euros gross margin and also it will have been earned 2,200 thousand euros operating income (Table 11).

Table 11

The Budgeted Income Statement

Sales	38,958
Cost of goods sold	34,952
Gross margin, thousand euro	**4,006**
Selling and administrative expenses	1806
Operating income, thousand euro	**2,200**
Interest expense	580
Net income, thousand euro	**1,620**

After the ending of the budgeting income statement, it can be noticed, that the shareholders of the company will be earned 1,210 thousand euros of retained earnings in the next years. It will be less than was a plan to earn because of the company last year, it incurred a loss of 410 thousand euros. Another data of the Balance statement (fixed assets, common stock, other payable, etc.) was taken from the financial data of companies at the end of 2018 years (Table 12).

Table 12

The Budgeted Balance Sheet

Current assets	Thousand euro
Cash	3,272
Accounts receivable	1,457
Raw materials inventory	805
Finished goods inventory	1,876
Total current assets:	***7,410***
Fixed assets	
Intangible assets	16,618
Tangible assets	1,604
Total fixed assets:	***18,222***
TOTAL ASSETS	**25,632**
Accounts payable	2,908
Other payable	9,630
Common stock	11,884
Retained earnings	1,210
TOTAL LIABILITIES AND EQUITIES	**25,632**

After analysis of the budgeting process, we notice that the master budget is an important fact for the company, for-profit what they can expect next year. Also, the master budget can inform about cash which the company plans to expect get from customers and at the same time she can control her cash disbursement to suppliers, workers, and other payables.

Conclusions

Analysis of the scientific literature, we indicate that most of the authors examining the issues of budget preparation in companies introduce a budget as an important tool of profit planning; it is helping to the formulation of a comprehensive plan of action: to control the disbursement expenses; control revenues necessary to support the business; to determine financial sources, etc. Basically a master budget is divided into two parts: operational budget and financial budget. The most commonly mentioned elements for the operational budget are sales, production, direct material cost, direct labor cost, manufacturing overhead cost, cost of goods sold and selling and administrative expenses budgets. The most common suggestions for the financial budget are cash budget, budget balance sheet, and budget income statement.

After the formation of the master budget to the “Snaige” company, it was found that the company will have been expected to sell 204 thousand units of product and it will be earned 38,958 thousand euros of turnover. Also, the company should expect cash collections of 35,070 thousand euros from customers. To achieve these sales results the company would need to buy 1,041 thousand units of required materials. It would cost about 30,603 thousand euros and it would need to pay approximately 24,892 thousand euros. After an analysis of direct materials purchasing, we indicate, that another cost would include the salary of workers 3,724 thousand euros, the manufacturing overhead 6,539 thousand euros, selling and administrative expenses 1,806 thousand euros. It is important to note that the company last year incurred a loss and this budgeting process shows the way to earn a profit of 1,210 thousand euros. The most important budgeting process is the result of the cash budget. This budget indicates that the company would need to search financing sources and it would need to prepare new agreements conditions to customers for prepayment received. Another way to cover cash deficiency is would be borrowing from financial institutions.

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IMPACT OF INFLUENCERS ON A CONSUMER DECISION TO PURCHASE

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Annotation

The paper analyzes the impact of influencers on consumer behavior. The research aim – to investigate whether influencers impact consumers' purchasing decisions. The research problem – the impact of influencers on consumer purchasing decision to buy Coca-Cola products. The object of the research – consumer behavior (on the Internet). The quantitative research method used for the research – online questionnaire survey. 330 respondents were interviewed. The conceptual aspect of online consumer behavior was analyzed. The research was limited to analyzing the impact of influencers as one of today's most effective promotional tools on consumer purchasing decisions. Consumers are found to be interested in influencers' promoted Coca-Cola products, but influencers only initiate the consumer's purchasing decision, and the company is recommended to use complex promotional tools for its final goals' realization.

Key words: *marketing, promotional tool, influencers, consumer behavior*.

Introduction

Relevance of the topic Today's consumers are increasingly relying on social networks to make decisions about purchasing certain products as compared to traditional promotional tools. There could not be denied one of the most obvious benefits of reaching out a broader consumer audience through traditional promotion however it is just one-way communication that does not create consumer loyalty and does not generate the necessary communication process – an essential benefit of social network marketing. In terms of popularity, social media advertising is the cheapest form of advertising available today. Keeping in mind that consumers are increasingly exploring social networks, it is useful for businesses to choose the appropriate promotional format to reach the widest possible audience of consumers. The most intriguing tool for marketing on social networks today is marketing utilizing influencers' opinion. Not only do influencers communicate with potential customers, but they also influence their needs. Company-driven influencers marketing helps to share positive messages about their brand products on social networks. This process is observed to cause *snowballs* effect when the influencers reach a large number of consumers-followers with their posts, and the latter continue to share some information with their followers. In this way, the message posted by the company becomes widely visible. Therefore, it is important to find out the benefits to businesses of influencers and how strongly it influences consumers' decision to purchase a product.

Research problems. In the national context, research is largely limited to the study of consumer behavior in the online space: the application of consumer models to online marketing (Juščius, Viskantaitė, 2010); determined trends of internet marketing and their effectiveness evaluation criteria (Juščius, Baranskaitė, 2015); identified the influence of internet marketing tools on sales of retail merchandise (Liesionis et al., 2016). However, there is a lack of research to substantiate the impact of influencers on consumer behavior in a national context. Foreign scholars have experience in this field: opinion leadership was researched in a computerized environment (Lyons, Henderson, 2005), marketing of social media influencers (Harmeling et al., 2017; Isosuo, 2016; Woods, 2016), characteristics of fashion influencers (Zietek, 2016)); the rise of social media influencer marketing on lifestyle branding (Glucksman, 2017), *Instagram* influencers' advertising (De Veirman et al., 2017; Evans et al., 2017), how influencers' marketing influences purchase intentions (Johansen, Guldvik, 2017).

Research problem. What is the impact of influencers on consumers' buying decision to purchase *Coca-Cola* products?

The object of the research. Consumer behavior (on the Internet).

The research aim. To explore the impact of influencers on consumer purchasing decisions.

The tasks of the research:

1. To conceptualize consumer's behavior - on the Internet.
2. To analyze the tools of e-marketing promotion.
3. Investigate the impact of influencers on *Coca-Cola* products to consumers.

Research methodology

Research methods. In order to scientifically substantiate the research problem, the analysis, synthesis and generalization of scientific literature sources was performed; empirical research was conducted based on quantitative research methods – online survey (testing), statistical analysis, graphic data processing. Data analysis was based on the methodology of Kardelis (2017). In the case of this research, the respondents answered the research questions online, expressed their knowledge of the experience and submitted them for the processing of the research results.

Rationale and procedures of the research. In order to more accurately determine the impact of influencers on consumer's behavior and the factors that influence a consumer's purchasing decision, the survey was conducted on social media online by submitting an electronic survey form to the survey participants. Respondents – *Coca-Cola* product consumers potentially impacted by influencers. Survey was posted online and on one of the authors' social networks *Facebook* time line in May 11 - 19, 2019.

The research instrument. The survey questionnaire was structured around the following logical sequence: questions of a general nature (forming the profile of the respondents), questions revealing the impact of influencers as the special promotional tool on consumers.

The research sample. The generic population was calculated on the basis of one major *Coca-Cola Lithuania* influencers' case. Based on the last *Coca-Cola* product's promotional post on *Instargam* by Orijus Gasanovas likes of this post reached 1890 in May 10, 2019. The survey sample was calculated from a sample size calculator provided by *apklausos.lt* with a probability of 95 percent, a margin of error of 5 percent, and a population of 1,890 people. It was estimated that 319 people would be eligible for the survey and 330 were interviewed, so the results of the study are valid.

The research ethics. The ethics of the research include the commonly accepted items (sample size, sample selection, data collection, generalization, etc.) that led to consideration of alternatives to the whole research process, anticipating its strengths and weaknesses, and selecting the most appropriate research course. The research followed the ethical principles of study: protection, secrecy (anonymity and confidentiality), benevolence, universality, significance, respect for personal dignity, justice, and the right to receive accurate information. Respondents were utilized for the research based on the principle of voluntarism implied by the ethics of empirical social research (Bell et al., 2018).

Specifics of the consumer behavior on the Internet

Business goals are easier to be achieved by defining consumer expectations. According to Kotler and Armstrong (2018), companies that take a closer look at consumer behavior, needs, and hobbies gain an advantage in the competitive battle. Consumer behavior is integral to finding, purchasing, consuming, and forming opinion for products that meet individual needs. Comparing traditional consumers that make conservative purchasing decisions to electronic consumers, the latter are much more open to change and more inclined to try new opportunities (Belingher, Calin, 2011).

Juščius and Viskantaitė (2010) present one of the most intricate models of decision making on the Internet. This process includes, delivery, purchase stage, environment characteristics, and perceived risk factors (Figure 1).

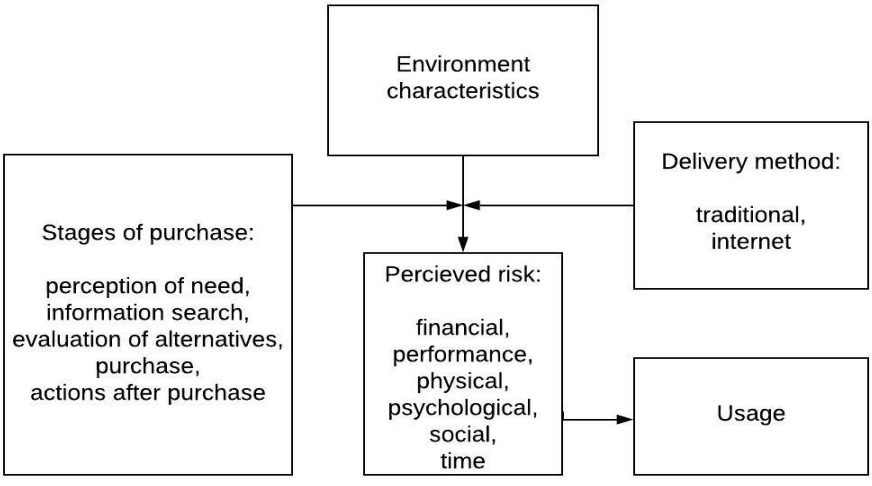

Fig. 1. The model of decision making on the Internet (Juščius, Viskantaitė, 2010)

The above presented environment characteristics of decision-making process on the Internet (internal and external factors of consumer's behavior) stages of purchase making decisions and product delivery, influences consumer's perceived risk, which initiates consumers behavior.

Electronic marketing promotional tool

Sponsorship is an element of the marketing mix that informs the consumer about the product itself. According to Kotler and Armstrong (2018), promotion is a communicative part of marketing that includes four main ways of reaching out a contact audience: advertising, public relations, personal selling, and sales promotion.

In the twenty-first century, information and communication has gained a particular significance. Internet has made it possible for companies to stay competitive by providing their customers convenient, quick and cheaper way to shop (Juščius, Baranskaitė, 2015). According to Bakanauskas (2012), the popularity of this form of marketing was determined by being interactive and being able to communicate directly with people from all over the world. Juščius and Baranskaitė (2015) distinguish electronic marketing and invasive marketing, as well as social network marketing and blogs as one of the most effective means of promoting sales.

E-mail marketing is widely used in segments of business to business (B2B) and business to consumer (B2C) (Glucksman, 2017).

Invasive marketing in form of pop-ups is used when advertising that a product to the person visiting a site. This type of marketing generates higher-than-average click rates, even though majority of clicks are accidental (Juščius, Baranskaitė, 2015).

Social network marketing is treated as innovative electronic tool that emerged in the last decade. Studies have shown that social network marketing is around 20-30 %. more effective than other forms of online advertising, and as many as 83 % consumers trust the recommendations of real people (Černikovaitė, 2018). According to Jezukevičiūtė and Davidavičienė (2014), social networks is an expression of communication in virtual space, which makes it easy for a consumer to read and share information. According to statistics, the most active users use social networks daily and follow at least one influencer on *Instagram* (87 %), on *Youtube* (65 %) and on *Facebook* (58 %) (Černikovaitė, 2018). Active users – are those who use social networks and get involved in various discussions and communicate among themselves.

Blogging is the type of electronic marketing that allows sharing relevant and useful content with potential customers. In this way, companies are able to develop two-way communication, to create their own expert image and strengthen loyal relations (Lesionis et al. 2016). The blog is an Internet site similar to diary where bloggers create content in the text and form the consumers' opinion using photos and videos.

The following features of the types of e-marketing discussed above are: e-mail marketing is free but associated with spam, considering EU Opt out legal model, e-mail cannot be sent without the recipient's consent, and the sender's server address may be blocked in the future by anti-virus software; invasive marketing – intrusive and risky; blogs build customer loyalty and initiate informal communication with the customer; social network marketing – effective, free and allowing consumers to control content (Juščius, Baranskaitė, 2015). It is undisputed that influencers create a connection between consumers and brands: improve brand image (94 %), improve brand awareness (92 %), reach new consumers (88%), improve sales (77 %), and manage a reputation (68 %) (Černikovaitė, 2018).

Thus, these tools enable companies to reach consumers with different expectations for the product. However, in order to stay as close as possible to the consumer, one has to choose not one e-marketing tool, but a combination of several.

Influencer as a promotional tool

Influencers as marketing mix promotional component, are based on the belief that certain persons can effectively persuade consumers to make a purchase. Instead of allocating funds to other, more conventional, promotional activities, companies are use influencers to save on the one hand, and on the other to focus on gaining new market share (Woods, 2016).

Influencer concept originated from Elihu Katz, a US and Israeli scholar sociologist theory of two communication stream stages which claims, that most people choose their position based on the opinion of the influencer. Anyone who creates quality content attractively writes and takes photos to inspire others in the social space which influences consumer opinion and purchasing decisions can become an influencer (Černikovaitė, 2018).

Influencers began after emergence of social networks on the Internet, when traditional information means (newspapers and magazines) lost their popularity (Brown, Hayes, 2008; Byrne et al., 2017). Initially, companies were focused on traditional journalism, because

journalists could express their opinion in the press, which helped to form consumers opinions (Lyons, Henderson, 2005). Influencers always were an economically effective tool for companies with small budgets to reach the general public (Byrne et al. 2017).

Today influencers are seen as the type of e-marketing that helps companies find individuals who can influence consumer needs the most and capable of conveying messages sent by products to a wide range of consumers (Byrne et al., 2017). Zietek (2016) describes influencers as leaders who influence the judgment and perception of others, helping to build brand awareness and increase sales of products.

The essential functions of an influencer are: communication with the followers, product recommendations, including advertising in messages, information dissemination, opinion formation and information sharing (Abidin, 2016; De Veirman et al., 2017). However, the key factor behind the current popularity of contemporary influencers is Para social relationship. It can be regarded as a personal relationship between an influencer and a follower. The followers of this artificial relationship are more likely to believe in opinion of influencer (Abidin, 2016), because the special relationship gives the illusion of live communication. Sometimes followers discovering some similarities with an influencer and begin to identify with him or her. According to Abidin (2016), micro-stars, known as the influencers create communicative intimacy by sharing their everyday experiences (Fig. 3). Influencer differs from the real star by the fact that an influencer is more a public person, thus making him or her more accessible to the ordinary consumer since various life details are shared on the Internet.

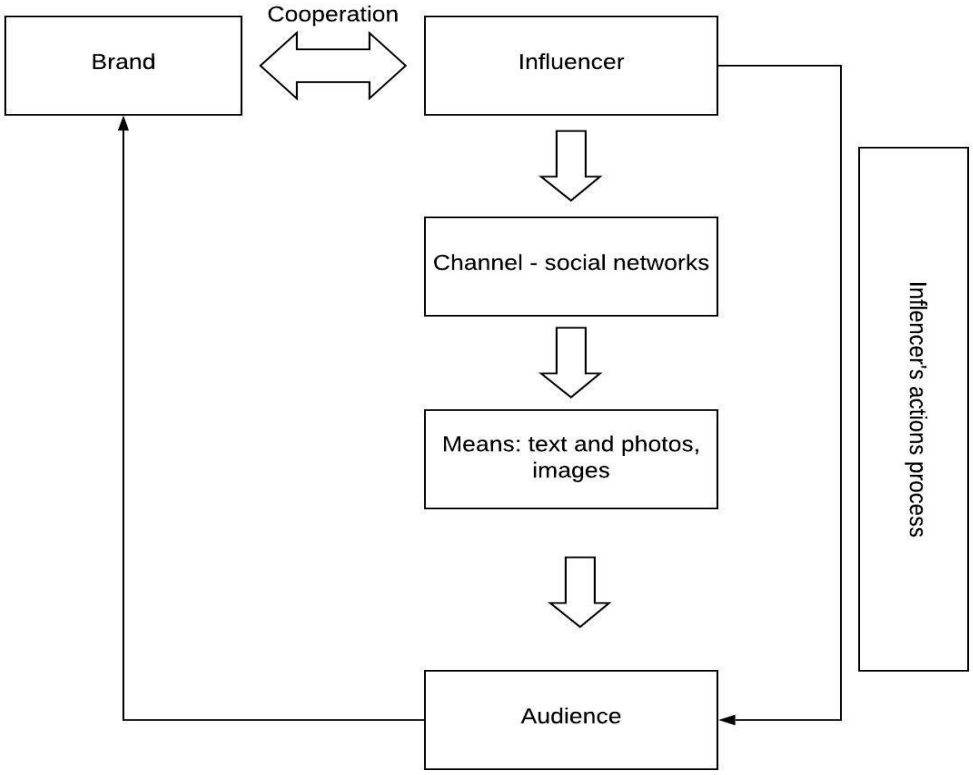

Fig. 2. Process of influencers impact (based on Abidin, 2016; Byrne et al. 2017; De Veirman et al., 2017)

Figure 3 shows that an influencer increases brand awareness in the social space. Comments and shares of such post will be visible to all followers of the influencer on the social space. In this way, the information of the brand is spread to a broad audience. For example, a survey conducted by *Nielsen* 2015 on trust of advertising, showed that 66 % of consumers trust the opinions of others on the Internet, thus placing influencers' marketing as the third most reliable advertising format. In an effort to control the flow of messages, companies have begun giving detailed instructions to influencers on the use of hashtags, the timing of posts, and even certain words to be used in their posts. Occasionally, influencers use the same texts to promote different products. Sometimes influencers promote a product without even trying it, thus abusing the trust of followers. Businesses use influencers show consumers that influencers use those products themselves. This means that brands need to be extremely careful in their choice of influencers.

The research results

In order to determine how influencers impact purchasing decision of *Coca-Cola* products 330 respondents were interviewed, of which 61 % women 39 % men. Respondents were divided into three groups according to age: 16 - 23 yrs., 24 - 29 yrs. and 30 - 39 yrs. The majority of respondents in the first age group were interviewed - 55.5 %, while in other groups - 42.4 %. The third age group was represented by a small group 7 % of respondents. It responds to the realities of social space users. The research instrument was placed on *Facebook* social space, whose users age represents the first two age groups of the survey respondents discussed above.

The identified social status of the respondents (students, employees, pupils) says a lot about the behavior of specific users and the factors that influence it. Analysis of data revealed that, despite the social status of respondents, advertising by influencers initiates decision to purchase, although respondents are self-reliant before making that decision.

It was found that the most popular social network among respondents also validating previous research results is *Instagram*, followed by *Facebook* and *YouTube*. It is these social networks where influencers work in. *Instagram* is more popular among the youngest respondents (16-23 yr. old, students and pupils) who participated in the survey. *Facebook* social networkers tend to be chosen by 24-29 yr. old respondents, mostly students or / and employees.

Accounts followed by users have a significant impact on the entire process of influencing their behavior. Influencers, who are followed by respondents, if they are not relatives or friends, are likely to be individuals who are not afraid to present their thoughts and suggestions in public, and are likely to inspire respondents with their work and speeches. The research found that 16 - 23-year-old group members tend to follow influencers, friends, acquaintances and stars, while respondents of 24 - 29 age group, usually follow influencers first and friend, acquaintances and brands second. The oldest respondents (aged 30-39 yr.) noted that they follow friends and acquaintances first, and stars second). Therefore, it can be stated that 16 - 23 yr. and 24 - 29 yr. age representatives are more likely to be interested in the content that influencers post on social networks, while the oldest 30 - 39 yr. old are not interested on influencers' posts or those posts do not reach them.

Because today's user can access any content he or she is interested in, regardless of where the influencer is based, the aim was to identify whether Lithuanian or foreign influencers promoting *Coca-Cola* products were more actively followed. It was found that 65.5 % of respondents follow the influencers of Lithuania. There are two possible assumptions for this indicator: the content of the national influencers is up to world standards or respondents have limited foreign language knowledge.

By the way, it was identified that from 1 to 3 and from 4 to 6 influencers are followed only by 9 % while from 7 to 8 - 38% and 9 or more - even 44% respondents, representing the youngest age group (16-23 yr.). There is a slight difference in the number of influencers according to the gender: women tend to follow 9 and more influencers, while men tend to follow 7 to 8 influencers. Meanwhile, the oldest respondents (30-39 yr.) indicated that only 1 to 3 influencers are followed regardless of the gender.

In order to determine the basis on which respondents follow one or another number of influencers, it was found that the majority of respondents (84.6 %) an important factor is influencers recommendations and their broadcasted content. Observation of another person is also an important phenomenon, which undoubtedly shapes the behavior of the user when he or she identifies with the influencer, assuming that if he or she behaves in the same way as his or her influencer, he or she will be similar person. 84.2 % of respondents believe in this transformation. Both factors are crucial for women regardless of age, while men are interested in following the influencers lives, reading the content and agreeing /disagreeing with their thoughts and ideas, but for the latter recommendations of influencers are not relevant.

What concerns influencers advertising *Coca-Cola* products in the social space, it was identified that 97 % of respondents directly perceived some influencers content as *Coca-Cola* products promotion. The remaining 3 % of respondents are likely simply did not understand the promotional action taken at some point, as it is common for influencers to present products indirectly e.g. *Coca-Cola* product may be placed in the corner of a photo uploaded by the influencer.

The product promoted by the influencer seemed undoubtedly more attractive to 39.7 % of respondents while for 47.9 % of respondents it was significant for decision making. The representatives of the most matured group of respondents (30-39 yr.), who probably have a well-formed opinion based on personal experience with regard to the products they are interested in, completely did not agree with this.

Analysis of the survey data showed that influencers' advertising impacted purchasing decision only for 38.5 % of respondents. On the other hand, a big part of them (25 %), represented by 30-39 yr. old age group notes that this has only partially helped with the decision to purchase the product. Thus, it can't be said that influencers have a definitive and continuing influence on consumer decisions.

As most survey participants agree, in absolute or in principle, that influencers promoted products are more attractive, though it has been found that this does not necessarily initiate a consumer decision to buy the product, and it was relevant to find out whether respondents were essentially seeking for product reviews. It was found that 67.3 % of respondents do not really do that. No significant changes were found neither according to age or nor according to gender.

In order to find out whether respondents are not disturbed by frequent product promotions on influencers accounts followers were asked whether or not because of this they decide to unfollow influencers. This was not confirmed by 58,2 % of followers. According to the obtained data, the most annoyed by ads were 16-23-year-old and 30 - 39-year-old respondents. It is likely that the first group of respondents constantly want to try something new, while those over 30 years have their own purchasing habits and tend to have personal opinions based on internal factors of consumer behavior.

Because influencers represent different niches (e.g. Beata Nicolson – cooking, Andrius Tapinas – economics, Rūta Meilutytė – swimming, Orijus Gasanovas – travel experiences), they all use different strategies for consumer impact. One of the most popular strategies is frequent testimonials and reviews, although more disrupting is advertising. However, the research found that the latter on influencers accounts partly (39.7 %) or wholly (41.8 %) builds trust among respondents. According to gender and age 16 – 23 yr. olds trust advertising by influencers the most regardless of the sex, while in 24 - 29 yr. old group women trust influencers advertising the most. It once gains reaffirm that 30-39 yr. olds trust influencers advertising the least. It therefore can be undeniably claimed that trust of influencers depends on age and environment in which the respondent resides. The younger the age, the more likely the respondent trusts the advertising of influencers.

Y and *Z* generations expressed confidence in influencers has shown that influencers form a right public opinion (51.5 %). It is surprising that even when the influencer is paid for advertising (in Lithuania, influencers with less than 30,000 followers on one platform sometimes work in exchange for products and services or receive 50-150 Eur per post; influencers with 30.000–80.000 followers on average earn between 200 Eur and 500 Eur per post, while those with over 80,000 followers can earn 500 Eur - 1,200 Eur per post, so it's likely that such promotion is not always honest, and 39.4 %. respondents doubt the credibility of advertised product. It is interesting to note that potentially dishonest product advertising would be most disappointing for 16-23-year-old age group respondents. This is explained by the fact that their decision to buy the product is strongly impacted by influencers. Meanwhile the fact the influencers are paid for their recommendations do not worry respondents in the 30s and 39s because, in particular, members of this group do not trust influencers.

Because different social networks allow different type of content to be posted, there was decided to find out what form of content respondents find most appealing and eye-catching. Analysis of research data showed that the most effective advertising formats are the following: videos (89 %) and photos with descriptions (53 %) posted on *Instagram*, *Facebook* and *YouTube*. According to age range 16 - 23 yr. old respondents indicated that photos with descriptions, videos and catching captions were the most effective forms for them, while 24 - 29 yr. old respondents said that photos with descriptions, videos and long texts are more effective for them. However, 30 - 39 yr. old respondents indicated that long texts, photos with descriptions and videos were the most effective forms for them. From the answers of the survey it can be concluded that influencers impact consumers in the right way, followers notice influencers ads, which leads to the fact that regardless of the form of advertising the influencer chooses, influencers' promotion still will be noticed.

Considering the impact of influencers on consumer purchasing decisions based on the research findings discussed above, it was researched how that would work in the case of *Coca-Cola* products. It was found that influencers would initiate consumer decision either to buy or at least search and possibly then to buy *Coca-Cola* products for 49 % of respondents and that would have at least a minimal impact on purchasing decision, but respondents before buying *Coca-Cola* products tend to find out about the products themselves. Analyzing the data according to age and sex of respondents, it was observed that 16-23 yr. old women respondents do not generally agree that influencers recommendations influence them to buy *Coca-Cola* products, but claim that that had influence for purchasing decisions for the people in their family and friends. Most categorical and skeptical of influencers' impact on buying *Coca-Cola* products remain for 30-39 yr. old age group, while this group does not deny the fact that

they see the impact of influencers regarding making purchasing decisions to buy and consume *Coca-Cola* products for their immediate family and friends.

Conclusions

After analyzing the scientific literature on consumer behavior on the Internet, it can be emphasized that consumer behavior is a behavior related to many its modeling factors, while the consumer is looking for products to meet his or her needs. The concept of online consumer behavior combines information search, product selection, consumption, satisfaction or dissatisfaction with a purchased item and many other factors.

All means of the e-marketing sponsorship complex are important, but this research is limited to influencers. It is increasingly being used as a tool for a promotional mix. Influencers have become a modern-day phenomenon as individuals can influence the general public using only just social networks and their possibilities. This process is based on the theory that certain persons can persuade a consumer to make a purchasing decision. The main goal of influencers is to increase sales of promoted products. Typically, influencers' impact on brand is determined by two key parameters - *like's* and comments. Each influencers' direct impact on sales is measured by giving their promotional product a unique discount code.

Coca-Cola consumer behavior research has shown that products promoted by influencers become more attractive and product ads are more effective. Consumers are more likely to follow national influencers and they like the content they create. Also, users have emphasized two of the most effective forms of advertising by influencers, which are photos with descriptions and videos. It does not seem to be important for users that influencers are paid for product recommendations.

According to the results of the research, in order to find out the unquestionable impact of influencers on product sales for a particular company, it would be appropriate to apply this tool of promotion for a longer period (it has been proven that short-term campaigns do not bring much benefit) or to consider integrating other marketing tools seeking effectiveness of promotional goals. It should be noted that influencers usually represent different niches and companies should select only those that are most influential to consumers in regards of the business and bear in mind that this is a cost-saving tool.

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LABOR FORCE TRENDS IN 2019: MANAGERS AND EMPLOYEES' APPROACH

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Annotation

It is important for the long-term success of the company that the right people do the right job at the right time. Company goals and strategies are meaningful only if they are implemented by talented and skilled people. The article presents the theoretical challenges of labor force planning and analyzes trends of the labor force of Šiauliai region in 2019. It has been established that in 2019 the supply of professional employees in Šiauliai region will increase; the most valued features of employees will be considered such as: responsibility, positivity, engagement, teamwork ability; next year employees expect to be more appreciated and more motivated; salaries indicators will grow. The article is practically significant for leaders responsible for survival of companies in competitive turbulent business environment.

Key words: *labor force, human resource management, need for specialists, employee's skills, changes.*

Introduction

Topic relevance. Due to globalization, the business environment is constantly changing: competition is increasing, international economic cooperation is expanding, technological progress is accelerating and the formation of economic, political and industrial associations is growing as well as needs of the society are growing globally.

These are the problems that business executives make to realize the biggest asset of an organization is human resources – reliable and competent employees, whose personal qualities and competencies meet the needs and values of the company.

Employees' skills and competence are one of the most important factors that can influence not only the effective work of a company, but also influence the whole complex of activities and an image of a company.

Profound research done in the US has shown that human resource planning is one of the most important areas for improvement. Many of the interviewed leaders identified the following major obstacles to successful human resource planning: failure to reconcile human resource planning with the business planning cycle, the tendency to see the labor force anticipation process as short-term activity, the reluctance / inability of department managers to engage in the human resource management process, and the unwillingness to use HR managers' already formed strategy (Vėževičiūtė, 2017).

Thus, an effective human resource planning policy can help prevent rapid personnel change by ensuring that employees feel valued, for example, by defining their career in a particular enterprise.

Research problem. Human resource planning makes a significant contribution to the strategic management process of the company, as it clearly identifies concrete means and ways to achieve the expected results from the planning process.

In order to ensure that the company has the right amount (in time of need) the necessary staff to help it achieve long-term success, contribute to its competitiveness and survive in a changing environment, HR management peculiarities are increasingly analyzed in the scientific literature (Blades, 2018; Gibbings, 2018; Hitman, Valintine, 2018; Mitsakis, 2017; Winn, 2017). Nevertheless, labor force trends research at both global and national level is scarce and fragmented.

In this research it is focused on the question whether labor force trends are adequately perceived by managers and employees?

Research object: Labor force trends.

Research aim: Investigate labor force trends from the point of view of managers and employees.

Research objectives:

1. Define conceptual workforce planning challenges.
2. Investigate labor force trends in Šiauliai region.

Research methodology

Research methods In order to scientifically justify the research problem, the analysis, synthesis and generalization of scientific literature sources were carried out; empirical research was done based on qualitative and quantitative methods – focus group survey (interview),

written survey (test) (prepared authors' questionnaire), statistical data analysis, and graphical data processing method. The data analysis was based on the Krueger and Casey (2015) methodology. The method of structural analysis was used for data analysis. At this stage, it is acquainted with the data several times by reading full transcripts, notes written during the interview and the summary written immediately after the interview. Data is analyzed based on words, context, internal consistency, frequency and extensiveness, comment intensity, accuracy of responses, and *great ideas* criteria. Logical analysis was utilized to summarize and compare the results of theoretical and empirical research and formulate conclusions.

Rationale and procedures of the research. The analysis of labor force trends is based on the analysis of theoretical and practical discourse: analysis of trends in Lithuanian labor market and EU markets and analysis of labor trends in companies of Šiauliai region.

The initial idea of labor force planning guidelines in Šiauliai region was formulated in September 2018 at Šiauliai Region Companies Managers' and HR managers meeting. In order to clarify this idea and to clarify the guidelines for labor force planning in October 2008, two focus groups meetings (leaders and HR managers) were organized.

Research instruments. The qualitative survey of the focus groups (interview) was applied in order to anticipate the research areas of Šiauliai region labor force trends. Focus group methodologists Bell, Bryman and Harley (2018), Krueger and Casey (2015) believe that the optimum number of people in the focus group is 6-8, and it is also recommended to invite to focus groups experienced, best-informed informants. Research used a quantitative survey of the respondents (questionnaire). The questionnaire analyses 5 areas: employee' demand trends, the most desired employee' characteristics, employee evaluation systems, pay rise trends, and employee' motivation principles. Investigation period covers November and December of2018. The survey instrument (questionnaire) was placed in JSC *Personnel management systems* website and e-mailed to enterprises.

The research sample: A representative probabilistic sampling of the cluster is used to select respondents (Gaižauskaitė, Mikėnė, 2014). The choice of company for the research was determined by the nature of the activity (at least one respondent per activity), life span, number of employees (at least 25 employees). The focus group study was attended by leaders of various regional trade, manufacturing, logistics, services and HR selection companies with over 5 years of experience, with an average annual labor force number of at least 15 employees, human resource managers and their delegated individuals, and other responsible persons directly involved with human resource planning processes (10 enterprise leaders, 6 HR managers). *Questionnaire surveys* sample was made by not probability convenient selection. Sample – Šiauliai region top leaders (87) and employees (256) (random selection from different enterprises).

Research ethics. The ethics of the research include the commonly accepted subjects of this study (sample size, sample selection, data collection, generalization, etc.) that led to consideration of alternatives to the whole study process, anticipating their strengths and weaknesses, and selecting the most appropriate research course. The research followed the ethical principles of study: protection, secrecy (anonymity and confidentiality), benevolence, universality, significance, respect for personal dignity, justice, and the right to receive accurate information. The leaders and employees of the companies were focused on the research considering the principle of volunteering, which is provided by the ethics of empirical social research (Bell, etc., 2018; Novelskaitė, Pučėtaitė, 2012).

Labor Force Planning Challenges

Due to constant global development, changes and disturbances that will influence our businesses, human resource managers will have further transform themselves. Human resource managers will need to be aware of the current path and be ready to help their organizations to adapt and flourish.

Globalization, digital disruptions, major demographic changes and technological advances have an impact on all jobs. It is necessary to prepare for many new challenges: the transition from the use of machinery to working with workers, the transfer of people to new roles, the promotion of lifelong learning for a sustainable career.

Human resource planning, also known as labor force planning, is generally perceived as a process that determines the need of a company's human resources and ensures that it has the right number of qualified staff. Professionals consider human resource planning as a system where the company is provided with staff both inside (already working staff) and from outside (those who will be hunted or recruited in the future).

Poor human resource planning leads to negative consequences:

1. Despite efforts of modern technologies companies to find the right person to take the important position of a middle manager, this place has remained empty for almost half a year. Of course, the productivity of this sector has clearly decreased.

2. In another enterprise, due to the unexpected reduction in workload in a specific production sphere, only nine months ago employees were forced to take unpaid leave.

3. In another enterprise, thanks to the huge efforts of a talented marketing manager, the company's profits increased. However, this valuable employee has already reported leaving current position because he does not see any real career prospects (Vėževičiūtė, 2017).

The fundamental mistake of leaders planning their labor force is that they usually focus on short-term goals and do not coordinate that with long-term planning strategies. This complicates labor force planning in the event of one or another management crisis.

Ideally, unit managers and the human resources department work together *to do company-oriented planning* based on close co-operation between HR managers and other unit managers, where HR managers advise the managers of the enterprise or its departments on how to integrate human resource management issues into corporate governance policies. Leaders, in turn, provide HR managers their own business planning strategy.

It is rational to evaluate the following significant factors in the cooperative process:

- production and sales forecasts;
- the impact of technological innovations on the performance of work tasks;
- the impact of training, work research, internal changes in the organization, new motivation on the productivity of the enterprise, productivity and changes of employees' flexibility;
- changes in work practices (i.e. purchasing services of employment agencies or enterprises providing staff rental services, opportunities for enterprise splitting and mergers and their impact on the number of employees, replacement, etc.);
- the issuance of new legislation on labor relations (taxation of salaries or changes thereto, new requirements for the safety and health of workers);
- changes in government policies (investment promotion, regional or trade grants, etc.) (Vėževičiūtė, 2017).

Considering above mentioned factors, the managers of the enterprise should continue to set the profile of the number of employees of a company: to evaluate their number and gender, skills, flexibility, experience and foresee their possibilities in the enterprise.

In 1998 McKinsey scientists have announced that the most important resources for the next 20 years will be talented people. They claimed that the success of an enterprise would depend on its ability to attract and retain talent. And they were right. After twenty years, the basic principles are still applied. Finding the right employee is not as great as it is significant (Jackson, Jackson, 2018).

When choosing the right employee, keep in mind that more than 80 percent of them want to learn and grow. This responsibility lies with the administration, not with the labor force. Hence, all levels of management should be in tune with the goals of their departments, units and business to make the employee mentoring in the company appropriate (Blades, 2018).

It was found that most of the business and other skills are usually acquired in the classroom. The approach to the classic form and possibilities of the development process has changed at the end of 2018. It is believed that classroom learning should take about one third of the overall development process. However, on the other hand, every self-improving individual has different needs that are constantly evolving, so mentoring is best expressed in the classroom. The strangest thing is that, although 72 percent of the senior managers of the companies decide and choose the forms of training for the employees, it was found that only 25 percent of them are involved in the development process themselves, thus forming an objective opinion on the effectiveness of the form of learning (Blades, 2018).

According to Craig (2018), *company culture is a reflection of leadership, so leaders should honestly accept truth how they are assessed by employees, because without constant self-assessment and professionalism, leaders are easy to become not leaders but champions* (Blades, 2018).

On the other hand, toxic culture causes frustration, stress, anxiety, fatigue, staff change, and even health problems. A true leader does not tolerate any person's interests being violated in an enterprise. More than anyone else, leaders need to understand that their personal style of communication must match the communication needs of their employees. For example, when talking energetically and confidently, a leader may appear to be a threat to employees who tend to have more moderate communication because that would be an aggressive entrance in their psychological safety zone. So, one of the main reasons for the enterprise's success or failure is communication.

The global survey of Towers Watson has revealed that enterprises with perfect communication show a four-fold increase in engagement as well as is noticed 47 percent higher return on shareholders. However, it continues to be an area where many leaders and enterprises are trying to keep up. Workplaces are filled with unprecedented five generations

with different expectations and different communication approach. The concept of the team will change in the nearest future. Leaders will continue to have the ability to go beyond technical competence and communicative skills: to inspire people to do the best they can; helping them navigate inevitable changes; increase productivity; promote innovations; ensure their safety, health and the need to be happy (Jackson, Jackson, 2018).

Therefore, it makes sense to initiate the breakthroughs of creativity in the enterprise. As a rule, not many employees in a team walk an extra mile for the company and tend to work faster than others. It is worth investing in those employees who clearly demonstrate that they are not afraid of innovations.

Because if something intrigues people, they feel the need to explore it. And when they are interested enough, they like the intrigue. Following this principle, hired people are enabled to actively and enthusiastically learn and exchange. By initiating interest in the proposal, program or initiative, leaders can uniquely secure the indivisible attention of employees, enabling development of active learning and anticipated changes. (Jackson, Jackson, 2018).

Today's career is smooth, flexible, organic and adaptable. This means that a human resource specialist needs to have perspective thinking, learn continuously, and be ready think out of the box at traditional human resource management functions. It is no longer enough to know the traditional disciplines of human resources. In the future, we are talking about a multi capacity which is familiar with project management, change management, process improvement (l*ean* and six sigma), behavioral economics, design thinking. Therefore, when evaluating the perspective, the human resource specialist should look for the optimal future scenario in terms of potential changes and risks, assessing the enterprise's internal and external environment. Based on such scenarios, the human resource specialist would have an opportunity to assess the employed potential, adapt the existing skills base and competences base, and assess whether it is time to introduce change (Gibbings, 2018).

According to Blades (2018), a talented leader hires not only those who are acceptable to him, i.e. a similar type of person, as this gives the company more potential. Such leaders, noticing the employee's efforts or progressiveness, will allow for a regular statement of employee's critical opinion, because it is important for him/her that changes would be initiated not only by those who occupy the highest positions in the enterprise. In the case of promising insights, leaders should personally thank the employee.

The role of human resource managers in time of transformation is usually two-fold. The first is the main activity. The second is redesign and new search for your business / activity model to achieve the transformational goals.

Human resource managers are responsible for the largest assets and risks of the organization its people. Managing people and organizations during the transformation period will be much more than moral management. Here are just a few things that will be needed to be assessed.

- *Generation gaps* (for many years age and work time were inseparable, so now HR managers will have to think about new ways to attract, engage and assess people to keep the most valuable);
- *Team players* (when *cooperation* becomes the name of the game, human resource managers have to create a culture of cooperation and build the necessary mechanisms; in order to achieve new transformational goals, they will have to work together in different functional groups (innovative recruitment processes, new contract signing procedures, induction systems for accelerating the matching of people and culture);
- *Talent gaps* (HR managers play an important role in the organization of organizational talent management strategies);
- *Differences in opinions* (this is another area where human resource management is important. Research shows that diversity of opinions has enormous benefits in terms of effective decision-making, innovation and survival) (Hitman, Valintine, 2018).

Summarizing the company's Human Resource planning errors, have consequences: insufficient number of employees in the company cause a decline in business volume and specialization, affecting the number of orders received by the company and the number of potential customers; excessive staffing causes huge extra costs; existing legislation and the Labor Code provide for a large number of employee protection measures, such as redundancy in payments, termination benefits, a minimum period before the employee should be informed of the future dismissal. As a result, company leaders have to consider the number of human resources, thus preserving business productivity and competitiveness.

Research results

Analyzing Šiauliai region labor force trends research (Labor Market Forecast, 2018, 2019), it is noted that, in terms of labor force compatibility, all the experts in the focus group

research stressed that it is very important to have a good understanding of following key areas in today's market environment: employee' demand trends, identify the most desirable characteristics of employees, find out employee' evaluation systems, salary trends and employee' motivation principles.

The results of the research revealed that supply of professional staff will increase. In comparison to the previous year, the labor market in Šiauliai region in 2019 remains more active (Labor Market Forecast, 2019). Although the season of work and employee' hunting traditionally starts in autumn, both employees and employers are active throughout the year. Employers are trying to find the right specialists in ever-decreasing Lithuania, while employees are looking for the better job offers.

Šiauliai region labor force survey revealed that 42 percent of the population of enterprises expect an increase in the employees' demand. Even 41 percent of employees are planning and 29 percent of employees consider to change job in the next 12 months (see Figures 1 and 2).

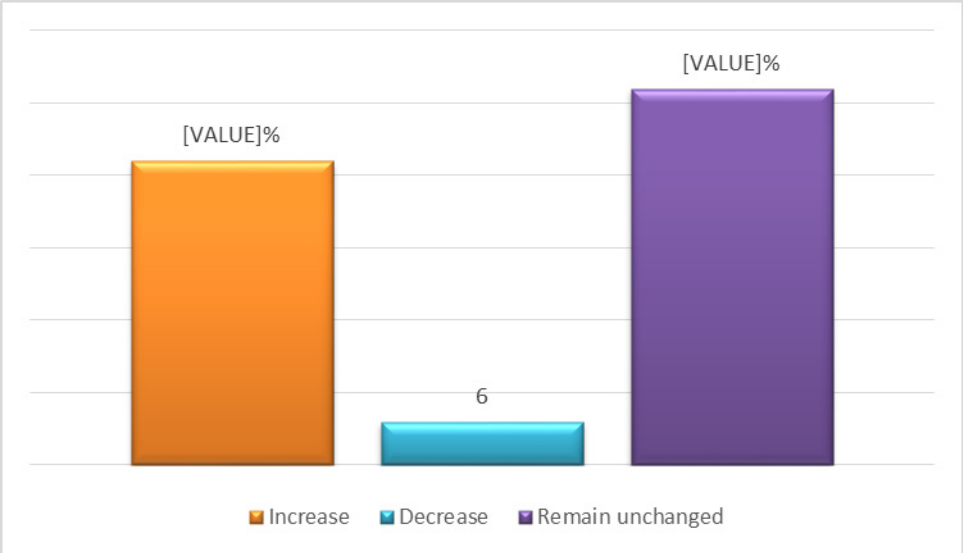

Fig. 1. Assessment results of demand for new employees in 2019 (management opinion), %

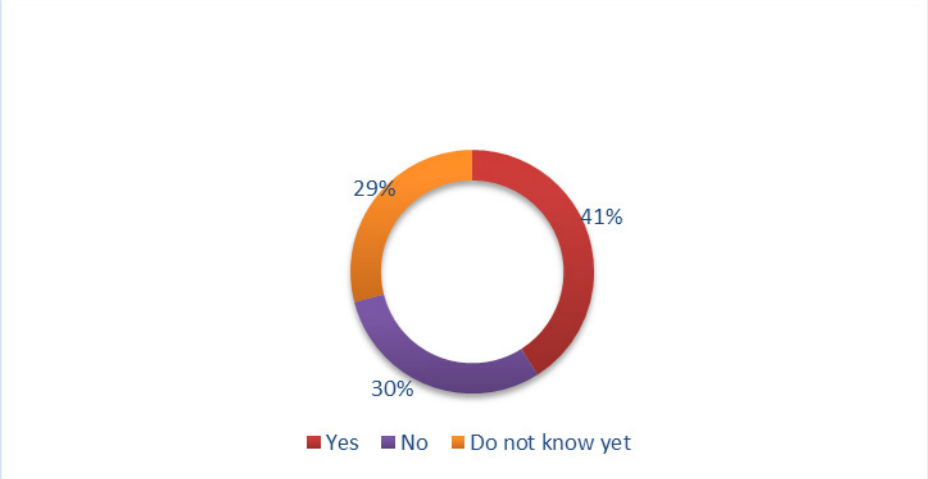

Fig. 2. Assessment results of employees planning to change job in the next 12 months (employee' approach), %

According to the survey participants, both employers and employees value the same *the most significant characteristics of the employees* such as, *responsibility and ability to work in a team.* But employers will continue to expect employees to have *more positivity* and *involvement in the enterprise's activities.* Meanwhile, employees still pay close attention to their own *productivity, emotional resistance, critical thinking* and *communication* improvement. Employees still expect to create a more proactive, courageous employee image while the personal qualities of the candidate become more and more important for the employers (see Figure 3.4).

According to employers, 2019 year will be economically stable, but will demand more investments, not only related to geopolitics, but also to technologies. Employers in big cities are increasingly preparing for the advent of artificial intelligence, robotization, and digitalization,

without changing the number of employees in companies, increasing wages and investing in enterprise technologies and equipment. Employers emphasize the importance of employees' competencies and life-long professional development, which is also the most important factor in sustaining technological advancement in the labor market. It is important to note that in a changing and flexible working environment, competences are limited and must be constantly reinforced with additional knowledge and skills. Despite the already existing specific professional knowledge, effective work and teamwork skills (Labor Market Forecast, 2019) are also very important for the employee.

When choosing new employees, employers noted that the most important factor for them: professional skills – 76.6 percent; qualification and education – 48.5%; knowledge of foreign languages – 6.6%; computer literacy – 11.5%; working experience – 57.3%; experience gained abroad – 1.2%; personal attributes, motivation – 76.4% (Labor Market Forecast, 2018).

Fig. 3. Results of key labor force assessment (managers' approach), %

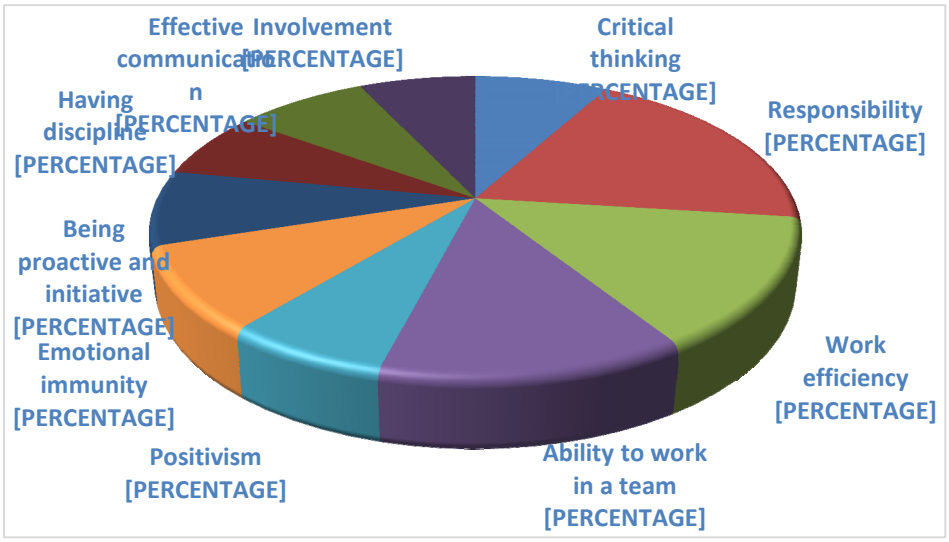

Fig. 4. Assessment results of employee' qualities desired by employer (employee' approach), %

Research revealed *that this year employees felt safer and next year expect to be even more appreciated.* It was noted that employees no longer worry about their workplace as few years ago. Labor market survey data showed that 66 percent of employees feel valued, their ideas and suggestions are applied in companies. But 34 percent employees say that their work and suggestions are not taken seriously. Leaders revealed that 81 percent of them have implemented individual employee evaluation systems. Although only 36 percent of the enterprise leaders in the survey stated that they have clear evaluation criteria systems for

employees. It is important to note that 19 percent leaders do not even consider the need for employee' assessment systems (see Figure 5, Figure 6).

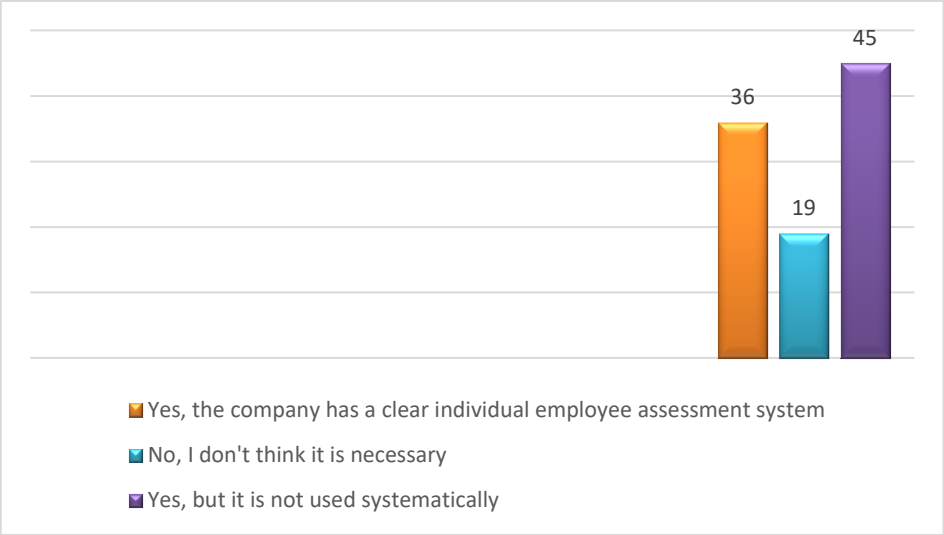

Fig. 5. Results of leaders' approach to employees' assessment systems used in companies, %

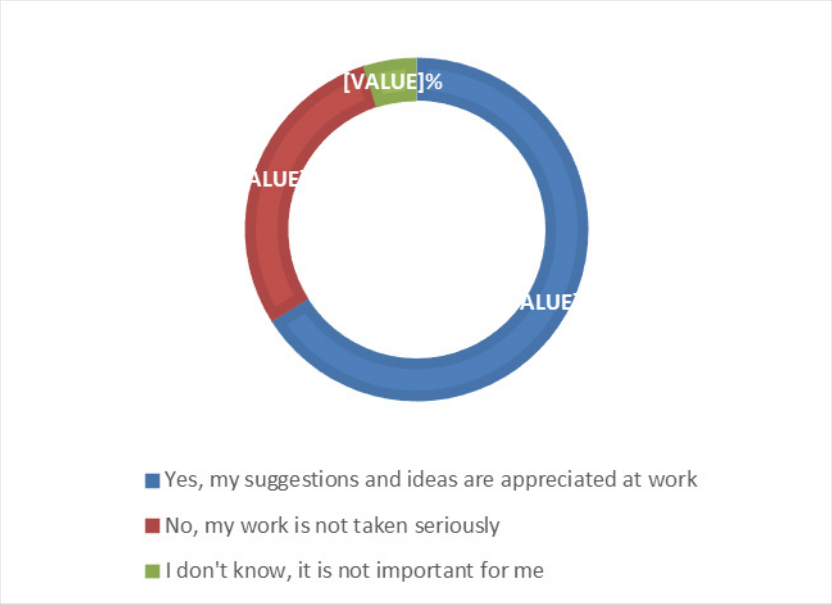

Fig. 6. Results of whether employees feel appreciated at workplace (employees' approach), %

Questionnaire survey data showed that *salary indicators will rise in 2019.* Research revealed that 55 percent of employers claimed that the wages of employees in their companies have increased in the last year. Employers continue to expect their increase. 45 percent of employers are convinced that salaries in their companies will remain unchanged. But 47 percent employees are not satisfied with the salary, saying that it does not match the workload and the level of responsibility. Employers will have to continue to look for suitable instruments to properly assess employees for their work (see Figure 7, Figure 8).

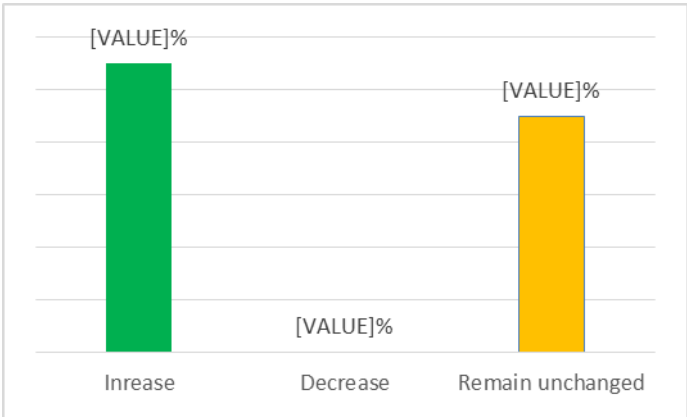

Fig. 7. Assessment results of trends in salary increases in 2019 (managers' approach), %

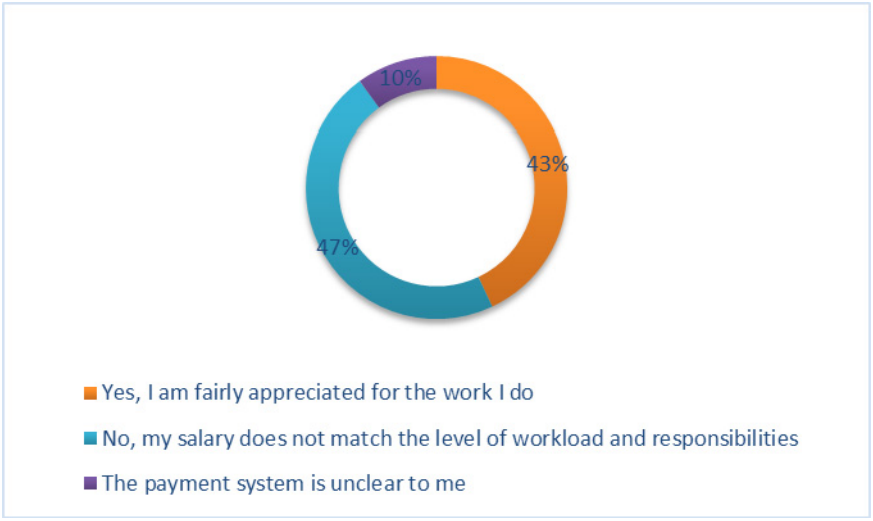

Fig. 8. Results of assessment of payment for work system (employee' approach), %

Finding the proper employee is often a difficult task. However, keeping the employee in the company is no less significant task.

The results of the labor market survey have shown that in the future, salary remains one of the most important criteria for maintaining and motivating employees. Even 77 percent employers and 28 percent employees emphasize the importance of payment seeking for employee engagement. Both employers and employees believe that, without pay, the biggest motivators are *self-realization, working conditions* and *microclimate* (see Figures 9, 10).

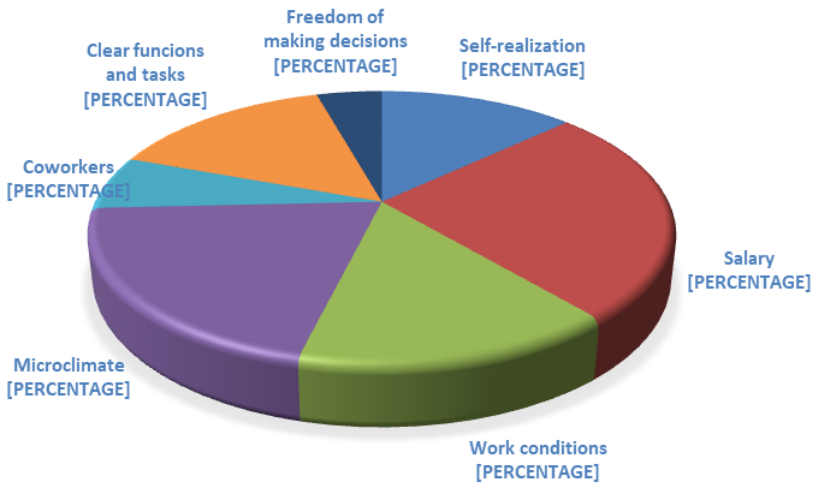

Fig. 9. Results of employee' engagement and motivation assessment (managers' approach), %

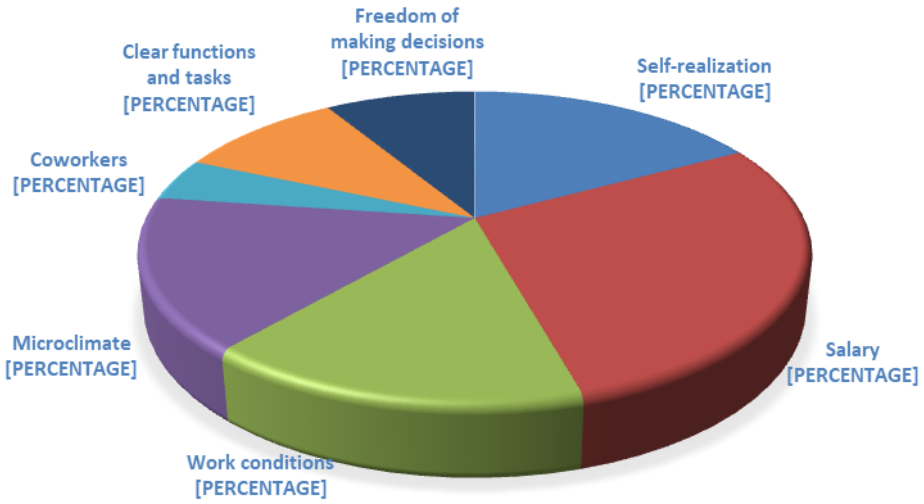

Fig. 10. Results of work motivation (employee' approach), %

According to the research, the forecast for the coming year is positive because employers are planning to create new jobs for new professional and competent employees. The need to apply the latest employee' assessment systems, more flexible working conditions and more interesting means for employee' involvement will continue. The attitude of employers and employees towards future perspectives remains positive.

Conclusions

Considering the issues of labor force planning, a clear picture of the current human resource situation should be created and a logical schedule for its supplementation is foreseen. Actions such as training, (re-) qualification, reduction of staff or optimization of the use of the labor force will help to avoid surprises and work together to achieve a common goal. However, this is not a one-day solution, but a long-term process of human resource planning that requires constant review of data and an overview of the current situation and new future forecasts.

The following essential labor force trends of Šiauliai region was distilled in 2019: In Šiauliai region *supply of professional staff will increase*; the most desirable features of employees will remain such as: *responsibility, positivity, engagement, teamwork ability*; this year employees felt safer and expect next year to be even more appreciated; salary indicators will rise; employees continue to expect a clearer motivational system.

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MATHEMATICAL MODELS FOR DETERMINING THE MARKETING ACTIVITIES RATING OF STATES

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Annotation

The export and import indicators of interconnected states group are considered. The rating estimation model of states marketing activity is based on these indicators is offered. The technique is completely implemented by the use of software Mathcad. Some variants of the states' interaction with competing environment are considered. Programs listings implement algorithms for each variant are given. Methods: The calculation method is based on computation of import matrix eigenvector with its eigenvalue equal to unit. The states arranged set is lines and columns of an import matrix. Results: The matrix eigenvector is a calculation result. The eigenvector values in decreasing order are arranged. On this vector values the state rating is determined. Conclusions: The developed analysis algorithms of states' marketing activity can be used in planning of logistics interaction between the states. Also they can be used in priorities of export activity determining for each separate state.

Key words: *import, export, marketing, the state, an interstate turnover, a rating, a matrix, a vector, a population, a system of equations, an eigenvalue, an eigenvector.*

Introduction

The task of rating the members of a collective system, including divergent relations of organizations and states, becomes relevant in connection with the development of HRM (Human resource management) technology [1].

Aspects of marketing activities based on mathematical criteria considered in the scientific papers [2-5].

A promising direction for quantifying the behavior of a collective system is the method for analyzing the matrix of pairwise comparisons [6–8]. The methodology described in this article can be considered as a special case of the analysis of such tasks in relation to international marketing.

In state marketing activity and international marketing a great value have parameters that could be measured. They can be used as an instrument of goods promoting at the international level [9–11]. Each measured parameter is represented in a digital form. In the ratio on the same parameter of other states it determines a competitiveness character in the selected countries group.

It is necessary to notice the usage of mathematical methods and models is actually both in the firm activity level and in the macroeconomic level. In macroeconomic it is actually in planning and in economic activities aspects analysis of separate regions and all country as a whole [12].

Results and discussion

The marketing activity indicators of states group can be calculated on mathematical model [13-16] with recalculation of outcomes per capita. The square matrix **A** and the vector population **Z** (million) are used as the model input data. Each i-th column of the matrix **A** represents the percentage ratio between an import volume and an interstate turnover. For example, for *i=2* the column

$$[0.4 \quad 0.2 \quad 0.1 \quad 0.3]^T$$

covers 4 states, and import of the 2nd state with the first state constitutes 40 %, the 2nd state with the 3rd state – 10 %, the 2nd state with the 4th state – 30 %, and the internal turnover of the 2nd state constitutes 20 %.

If a vector of the export activity income is defined as a vector **X** then for it equality is valid:

$$\mathbf{A \cdot X = X} \quad (1)$$

Really, if we take, for example the 2nd state for it we will receive equality:

$$a_{21}x_1 + a_{22}x_2 + \ldots\ldots + a_{2m}x_m = x_2 \quad (2)$$

As defined **A** the coefficient a_{21} represents the 1st state import from the 2nd state, but it is export of the 2nd state to the first state. Thus, the left part equality (2) represents the total export of the 2nd state which could be equal x_2 by vector **X** definition.

According to the matrix **A** eigenvalue definition:

$$\mathbf{A \cdot X = \lambda X} \quad (3)$$

and given the fact that the columns sum of the matrix **A** is always equal to unit we receive the matrix **A** eigenvalues will be equal 0 or 1. The equality (3) turns in (1) at $\lambda = 1$. Thus, the system (1) has the nontrivial decision being the matrix **A** eigenvector at its eigenvalue $\lambda = 1$. The received eigenvector **X** represents the proportions of the states balanced budget. The vector **Y** values

$$y_i = x_i/z_i$$

represent the proportions of the states' marketing activity. If as base to take the maximum value of the vector **Y**, and the vector **Y** is renormalized on this value then all values y_i will be in a range from 0 to 1. Value y_i=1 corresponds to the state with the maximum marketing activity.

The software Mathcad solution for 5 states with arbitrarily taken the matrix **A** and the vector **Z** is presented:

$$\text{ORIGIN} := 1$$

$$A := \begin{pmatrix} 0.2 & 0.1 & 0.1 & 0.3 & 0 \\ 0.4 & 0.2 & 0.4 & 0.1 & 0.3 \\ 0.3 & 0.3 & 0 & 0.2 & 0.2 \\ 0.1 & 0.2 & 0.3 & 0.3 & 0.1 \\ 0 & 0.2 & 0.2 & 0.1 & 0.4 \end{pmatrix} \qquad Z := \begin{pmatrix} 1.5 \\ 1.3 \\ 0.9 \\ 0.8 \\ 1.1 \end{pmatrix} \qquad m := \text{cols}(A)$$

$$X := \text{eigenvec}(A, 1) \qquad Y := \frac{\overrightarrow{X}}{Z} \qquad C := \max(Y)$$

$$i := 1..\, m \qquad Y_i := \frac{Y_i}{C} \qquad Y = \begin{pmatrix} 0.349 \\ 0.785 \\ 0.854 \\ 1 \\ 0.663 \end{pmatrix}$$

Model [3] shortage is the impossibility to calculate marketing activity of the states closed group. The matrix **A** in this model is specified so that no matter how many states we have not taken all of states of the world will be included in it on a chain. But the data on import of all countries of the world receive almost impossible.

We modify model (3) so that it was possible to consider only the closed group of the countries consisting from *m* of countries. On the formula (3) we will specify the matrix **A** column as the percentage ratio of the import of these *m* countries. An additional *m+1* element of this column will contain given country import to all remaining countries which are not entering in these *m* countries.

Under this definition the sum of the matrix **A** column will be equal 1 also. We add *(m+1)*-th column of the matrix **A** for export accounting. For the *i-th* country from *m* countries group we specify export $b_{i,\, m+1}$ from this country to all countries, not entering into *m* countries group. This column values we present in absolute units. Only for the *(m+1)*-th column of the matrix **A** it is impossible to set an internal trade turnover $b_{m+1,\, m+1}$ of the countries which are not entering into *m* countries group. The coefficient $b_{m+1,\, m+1}$ gets a value of 0 because we are not interested in total marketing activity of these countries.

We receive the column $a_{i,\,m+1}$ values from $b_{i,\,m+1}$ renormalized *it*:

$$a_{i,m+1} = \frac{b_{i,m+1}}{\sum_j b_{j,m+1}}$$

After such the matrix **A** definition we receive the equations system (1) in which x_i (*i=1 … m)* determines balanced budget of *m* countries group.

The software Mathcad solution for the closed group of 4 states is presented below. The matrix **A** and the vector **Z** have arbitrary values.

$$\text{ORIGIN} := 1$$

$$A := \begin{pmatrix} 0.2 & 0.1 & 0.1 & 0.3 & 0 \\ 0.4 & 0.2 & 0.4 & 0.1 & 0.3 \\ 0.3 & 0.3 & 0 & 0.2 & 0.2 \\ 0.1 & 0.2 & 0.3 & 0.3 & 0.1 \\ 0 & 0.2 & 0.2 & 0.1 & 0 \end{pmatrix} \qquad Z := \begin{pmatrix} 1.5 \\ 1.3 \\ 0.9 \\ 0.8 \\ 1.1 \end{pmatrix} \qquad m := \text{cols}(A)$$

$$i := 1 .. m - 1 \qquad C_j := \sum_{j=1}^{m} A_{j,\,m} \qquad A_{i,m} := \frac{A_{i,\,m}}{C} \tag{4}$$

$$X := \text{eigenvec}(A, 1) \qquad Y := \frac{\overrightarrow{X}}{Z} \qquad YY_i := Y_i \qquad C := \max(YY)$$

$$\alpha_i := \frac{YY_i}{C} \qquad \alpha = \begin{pmatrix} 0.349 \\ 0.785 \\ 0.854 \\ 1 \end{pmatrix}$$

The received vector **Y** values describe marketing activity of *m* countries group in competing environment of all remaining countries.

The reduced model allows receiving coefficients y_i of marketing activity of the state taking into account an internal trade turnover. The marketing activity without an internal trade turnover is interesting for the complete analysis. The international marketing activity can be calculated, if the internal trade turnover is ignored in the matrix **A**. The coefficient $a_{ii}=0$ gets a value of 0. The software Mathcad solution of such task is presented below:

$$\text{ORIGIN} := 1$$

$$A := \begin{pmatrix} 0 & 0.1 & 0.1 & 0.3 & 0 \\ 0.4 & 0 & 0.4 & 0.1 & 0.3 \\ 0.3 & 0.3 & 0 & 0.2 & 0.2 \\ 0.1 & 0.2 & 0.3 & 0 & 0.1 \\ 0 & 0.2 & 0.2 & 0.1 & 0 \end{pmatrix} \qquad Z := \begin{pmatrix} 1.5 \\ 1.3 \\ 0.9 \\ 0.8 \\ 1.1 \end{pmatrix} \qquad m := \text{cols}(A)$$

$$i := 1 .. m \qquad C_i := \sum_{j=1}^{m} A_{j,\,i} \qquad j := 1 .. m \qquad A_{i,\,j} := \frac{A_{i,\,j}}{C_j}$$

$$X := \text{eigenvec}(A, 1) \qquad Y := \frac{\overrightarrow{X}}{Z} \qquad i := 1 .. m - 1 \qquad YY_i := Y_i \tag{5}$$

$$C := \max(YY) \qquad \beta_i := \frac{YY_i}{C} \qquad \beta = \begin{pmatrix} 0.327 \\ 0.735 \\ 1 \\ 0.819 \end{pmatrix}$$

In above example as the matrix **A** are taken the same values when calculation of coefficients taking into account internal marketing. The comparative analysis of the resulting y_i on this and previous models allows specifying for the *i-th* state what marketing in it - interior or international - dominates. So, for example, in our examples for the *i=3* states it has turned out that *α3=0.854* taking into account internal marketing and *β3=1* only at the expense of international marketing. As *β2* is larger than *α2* in the third state the external economic marketing activity dominates but not interstate activity.

The reduced two models give not a complete picture of marketing activity of the state as very often the state is a part of the union from the several states. In this context important information is the estimation of marketing activity in the union.

Let's assume this is the group of *m* states representing some economic system. In the columns of the matrix **A** as before we specify import of the country to other countries. As the column includes a closed set of the countries the sum of its elements will be equal *bi* <1. To a value 1 b_i is supplemented by the countries which are not entering into the union. As export and import should be balanced for the closed group of *m* countries the equations system is fair:

$$\sum_{j=1}^{m} a_{ij} x_j = b_i x_i, i = 1..m \tag{6}$$

In the equations system (6) we make a change of variables:

$y_i = b_i x_i$

and after a designation $a_{ij} = a_{ij} b_j$ we receive the system (1) at which as before the columns sum of a matrix **A** is equal 1. The software Mathcad solution for five states with similar data models (4, 5) is given below:

$$\text{ORIGIN} := 1$$

$$A := \begin{pmatrix} 0.2 & 0.1 & 0.1 & 0.3 \\ 0.4 & 0.2 & 0.4 & 0.1 \\ 0.3 & 0.3 & 0 & 0.2 \\ 0.1 & 0.2 & 0.3 & 0.3 \end{pmatrix} \qquad Z := \begin{pmatrix} 1.5 \\ 1.3 \\ 0.9 \\ 0.8 \end{pmatrix} \qquad m := \text{cols}(A) \qquad i := 1..m$$

$$b_i := \sum_{j=1}^{m} A_{j,i} \qquad j := 1..m \qquad A_{i,j} := \frac{A_{i,j}}{b_j}$$

$$X := \text{eigenvec}(A, 1) \qquad X_j := \frac{X_j}{b_j \cdot Z_j} \qquad d := \max(X) \tag{7}$$

$$\gamma_j := \frac{X_j}{d} \qquad \gamma = \begin{pmatrix} 0.346 \\ 0.762 \\ 0.852 \\ 1 \end{pmatrix}$$

The comparative analysis *α2=0.785* from model (4) and *γ2=0.762* from model (7) shows that marketing activity of the 2nd state in the union of five countries is less effective.

By analogy to model (5) for a closed set of *m* countries it is possible to specify marketing activity without an interstate turnover. For this purpose after recalculation

$Aij = Aij / b_i$

in model (7) the diagonal elements of a matrix **A** must be set to zero values.

The software Mathcad solution is given below

$$ORIGIN := 1$$

$$A := \begin{pmatrix} 0.2 & 0.1 & 0.1 & 0.3 \\ 0.4 & 0.2 & 0.4 & 0.1 \\ 0.3 & 0.3 & 0 & 0.2 \\ 0.1 & 0.2 & 0.3 & 0.3 \end{pmatrix} \qquad Z := \begin{pmatrix} 1.5 \\ 1.3 \\ 0.9 \\ 0.8 \end{pmatrix} \qquad m := cols(A) \qquad i := 1 .. m$$

$$b_i := \sum_{j=1}^{m} A_{j,i} \qquad j := 1 .. m \qquad A_{i,j} := \frac{A_{i,j}}{b_j} \qquad A_{i,i} := 0 \qquad (8)$$

$$C_j := \sum_{j=1}^{m} A_{j,i} \qquad A_{i,j} := \frac{A_{i,j}}{C_j} \qquad X := eigenvec(A, 1)$$

$$X_j := \frac{X_j}{b_j \cdot Z_j} \qquad d := max(X) \qquad \delta_j := \frac{X_j}{d} \qquad \delta = \begin{pmatrix} 0.325 \\ 0.671 \\ 1 \\ 0.783 \end{pmatrix}$$

If to calculate marketing activity on the models (4, 5, 7, 8) for the same countries the comparative analysis *α, β, γ, δ* for separately taken country gives a chance to reveal the weakest of marketing activity of the state. If α_i it will appear the least value it means that in the state the interstate marketing activity connected with the competing environment of the union of *m* countries is insufficient. If it will appear the least β_i it means that the international marketing activity concerning the competing union *of m* countries is insufficient. If the least γ_i it means marketing activity connected with the union of the countries is insufficient. If it will appear the least δ_i it means international marketing activity among *m* countries entering into the union is insufficient.

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EFFECT OF RISK CAPITAL ON COUNTRY'S COMPETITIVENESS: THEORETICAL ASPECTS

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Annotation

The article analyses the theoretical aspects of the impact of venture capital on country's competitiveness. Many scientists have proven that investment in technology, science and innovation are means of achieving national prosperity and a high level of competitiveness. Qualitative factors of economic growth prevail in the country as a result of the continuous development of R&D and acquiring results of R&D. Innovative businesses need a favorable way of financing. Most start-ups do not meet the eligibility criteria for loans and thus lack the capital to start a business. Venture capital is a vital alternative form of business financing to traditional financing, helping companies to develop their business. Venture capital investments provide not only financial but also intellectual capital to innovative and promising companies, thus positively affecting the country's competitiveness.

Key words: *venture capital, innovation, technology, scientific research, national competitiveness*.

Foreword

Venture capital is a frequent subject of scientific evaluation. M. Pece, O. E.O. Simona, F. Salicteanuc (2015) highlights the impact of venture capital investments on innovation. According to the authors, it has been empirically proven (OECD, 2006) that venture capital can only guarantee progress in an economy of high-level innovation and proper regulation. According to J.Markard and B.Truffer (2008), larger companies or their branches operating exclusively in the field of innovation are the main group capable of generating and disseminating technological innovation. It was determined that venture capital investment promotes technological progress and has a positive impact not only on companies' development but also on the economy as a whole (Schofer, Leitinger, 2002). This article from a theoretical point of view analyses venture capital and its potential impact on a country's competitiveness, exposing the need of venture capital for innovation, technological and scientific progress.

The aim of the research - to analyze from a theoretical point of view the impact of venture capital on a country's competitiveness.

Research objectives:

1. After analysing empirical studies, summarise the importance of venture capital investments for a national economy.
2. To present the links between venture capital and innovation, technology and scientific research.
3. To systematize conceptual statements about the concept of country's competitiveness and its determinants.

Methodology of research. Comparative and systematic analysis of scientific literature.

The significance of venture capital investment in the national economy: analysis of empirical research

The article considers venture capital as a type of private capital focused on start-ups. Venture capital funds start-up, early stage or expansion stage companies. These are mostly innovative companies because their financing is too risky for traditional financial institutions (European Venture Capital Association *EVCA*). An active venture capital market can boost economic growth by introducing new services and products created by innovation and leading entrepreneurs. Regarding the concept of venture capital, it is worth to take into account the place of venture capital in the context of investment. The development of the capital market and its favorable conditions encourage venture capital investment in the country.

S. R Jansma, J.F. Gosselt, M. Jong (2018) carried out a research based on a survey of 24 founders of technology companies about their experiences with innovation development processes. Many respondents argued that often promising technologies and patents cannot be further developed due to lack of funding. Venture capital funds that finance the activities of such

companies can help here. Venture capitalists are active investors who not only provide financing but also spend a lot of time advising and monitoring capabilities of start-ups to manage their portfolios. In addition, respondents identified the government as an important party which has interests and which on the one hand allocates the financial resources needed for technology (subsidies), but on the other hand it acts as a guardian that can prevent heads of technology companies to operate according to their own rules.

Venture capital has become an instrument of investment in scientific research in Israel which has contributed to the development of the national high-tech industry and economic growth (Zhang, Zhang, Wang, Huang, 2013). The rapid development of the venture capital market in Israel has shown that technological advancements play a catalytic role in venture capital area, which means that a high level of scientific, technological and scientific research development contributes to the development of Israeli venture capital, and in turn, venture capital development fosters technological advancement, corporate value growth and GDP growth. This creates a good circle of venture capital and technological progress.

It is also important to understand the peculiarities of venture capital funds and what determines their distribution. C. Mayer, K. Schoors, and Y. Yafeh (2003) analyzed about 500 venture capital funds in Germany, Israel, Japan and the United Kingdom, which have grown particularly rapidly over five years and have made significant investments in companies. The main objective of choosing these countries for the research was to assess bank-oriented financial systems (Germany and Japan) and financial market-oriented systems (the United Kingdom), which determine the sources of venture capital funds and the prevailing nature of companies financing in different systems of venture capital funds. Venture capital funds are found to have different investment policies, depending on the prevailing financial system in a country. Banks are the main sources of venture capital funds in both Germany and Japan, which are dominated by a banking-oriented financial system, while in the UK, pension funds investments are the most important source for venture capital funds. Private investors and large private corporations invest in venture capital funds in Israel. It is interesting to note that venture capital funds, which receive funds from banks, pension funds, insurance companies, generally invest in later stage companies, that is, they do not invest in start-ups but in advanced companies, whereas individual investors and companies, through venture capital funds, are investing in information technology and telecommunications, computer programmes, and electronics areas start-up companies. This shows that finances of banks, insurance companies and pension funds are associated with lower risk. In addition, these authors have found that banks and pension funds invest regionally and individual investors invest globally.

The relationship between venture capital investment and national competitiveness has been studied by P. Schofer and R. Leitinger (2002). The researchers analyzed the venture capital environment in Central and Eastern European countries and compared the results with selected Western European countries. The empirical assessment was based on the data of *IMD World Competitiveness Center's* criteria distinguished in the yearbook - economic, legal, social, and entrepreneurial. The study showed that there are considerable differences between regions and that one region lags relatively far behind the other in the venture capital sector. Central and Eastern European countries are lagging behind mostly in socio-economic area compared with EU average and the legal and entrepreneurial environment is quite close to European standards. The survey data were compared with the EU average to find the best performing countries. The range was set from 0 to 20 points. Top-ranked countries with the highest score (Table 1). 10 points are given when the criterion reaches 100% of the European average. If it is above average, more points are given (up to 20 points). If the criterion is worse than average, one point will be less for every 10% of the lower level (lowest 0 points).

Table 1

Scheme of Criteria Measurement

		Percentage of the European Average	
		The more the better (e.g. GDP per capita	**The less the better (e.g. corporate tax rates)**
Max	**20 points**	**200 %**	**0 %**
	17.5 points	**175 %**	**25 %**
	15 points	**150 %**	**50 %**
	12.5 points	**125 %**	**75 %**
	10 points	**100 %**	**100 %**
	7.5 points	**75 %**	**125 %**
	5 points	**50 %**	**150 %**
	2.5 points	**25 %**	**175 %**
Min.	**0 points**	**0 %**	**200 %**

Source: P. Schofer, R. Leitinger (2002)

Let's suppose that the GDP per capita of country X is EUR 13,338 and the average GDP per capita of the European Union is EUR 25,196. According to Table 1, since country X's GDP per capita is 52.94% of the European average, country X receives 5.3 points. The weight of each measured criterion is equal. This allows for a neutral evaluation of each criterion.

It has been noted that start-ups in some EU countries find it much more difficult to receive venture capital than their US counterparts. Companies expanding in the EU find it even more difficult to expand and remain independent than US companies. In addition, there is an additional difficulty because venture capital is usually concentrated in a few places (and usually in the country's capital), although there are exceptions, such as the United Kingdom, where it is available from several places, partly due to support from regional development funds.

The EU Commission has taken the initiative of start-ups and expanding companies to create a pan-European venture capital fund to create more investment opportunities. This fund complements other financial instruments under the EU Program for Enterprise Competitiveness and SMEs, Horizon 2020 and InnovFin to facilitate access to guarantees, loans and equity for SMEs through local financial institutions in the member states (Seventh Economic, Social and Territorial Cohesion Report, 2017).

Venture capital funds are designed to promote / develop venture capital market, grow new venture capitalists, and thus to give wider access to capital for new prospective companies, that have limited access to business finance means offered by banks. The information in Figure 1 shows the availability of venture capital by area in different regions and countries during 2006-2017.

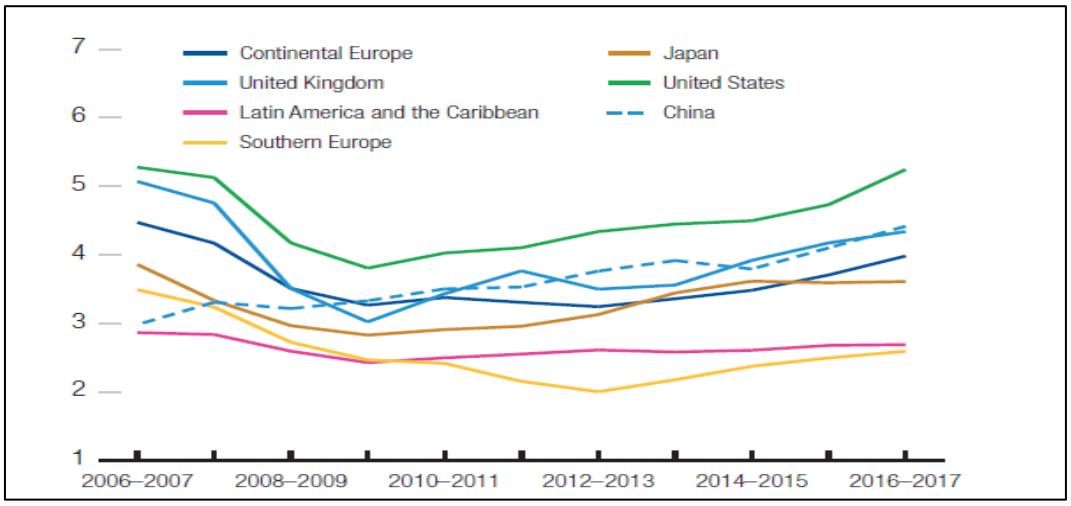

Fig. 1. Venture Capital Availability by Area During 2006-2017.
Source: World Competitiveness Yearbook 2017-2018.

As shown in Figure 1, the availability of venture capital was affected by the financial crisis (2008) and its aftermath. This led to a decade-long stagnation in non-financial assets investment. Maintaining stability is essential to promote access to venture capital. Venture capital investment in the financial system is one of the key factors without which economic growth is impossible.

The links between venture capital and the components of the knowledge economy are analyzed below. The article defines this as innovation, technology and scientific research because these areas are considered affecting venture capital.

Linking venture capital to innovation, technology and scientific research

Several researchers have demonstrated the link between venture capital and innovation, technological breakthroughs and R&D levels. Some empirical studies are analyzing the impact of venture capital on technological development, potential for new patent inventions, scientific research and experimental development. Other studies - the impact of venture capital as a specific investment and financing tool on innovative business and the outbreak of innovation (Cibulskienė, Padgureckienė, 2014).

Innovation is considered as an indicator of a country's ability to generate high added value in the leading countries and as a guarantee of economic growth. Innovation is considered one of the key factors:

- accelerating development of the economy,
- influencing development of high-tech industries,
- increasing the productivity of companies,

- contributing to competitiveness by reducing business costs,
- expanding product diversity in the global marketplace.

Scientists believe that there is a strong link between economic growth and innovation. The originator of this concept is J. Schumpeter, who in 1911 distinguished innovation as an important factor driving economic change (Bazhal, 2016). He claimed that technological innovation was necessary to encourage companies to develop new products and processes. J. Schumpeter's statements have become an essential basis for other scholars' works. R.M. Solow (1956) presented a model of economic growth. In this model, long-term economic growth depends on capital, labor and technological development. P.M. Romer (1990), a proponent of neoclassical growth theory, proved that long-term technological change is the engine of economic growth. This author has distinguished a new factor in the production functions - human capital and knowledge - an endogenous variable, leading to greater opportunities for higher education and profit. As a result, countries that accumulate more human capital are growing faster.

Countries with high innovation performance are generally countries with advanced economies and rising GDP per capita. According to T. Paas (2004), GDP per capita indicator (sometimes utilized to purchasing power parity) is the most widely used measure of standard of living and economic development. However, K. Kels (2016) states that GDP does not cover many aspects that can influence living standards. Other factors are also being assessed on the basis of these discussions. According to the author, it is important that these indicators can also be influenced by state policies. In most cases, however, these measures promote intermediate results but fail to achieve maximum national prosperity.

Technologies and technological development is one potential source of innovation. The term 'knowledge economy', which is often used in scientific literature, implies that economic activity depends on the level of knowledge available as well as its application to stimulate economic growth, on the ability of businesses to continually learn and update their knowledge base, and ultimately on scientific institutions' ability to carry out scientific and technological development and conduct both fundamental and applied scientific research. In the global world in the context of global economic competition and the rapidly evolving information society, in order to remain competitive businesses have to cope with extremely rapid demand and supply dynamics, extremely rapid technological development and as well as rapid change of knowledge (Kraujelytė, Petrauskas, 2007).

The role of long term technological progress is often analyzed in contemporary economic literature. The effectiveness of technological progress is determined by the quality of innovation and scientific research and by increasing capital efficiency (Gurgul, Lach, 2012). In addition, the results in these areas depend on the financial wealth concentrated in the country, since only rich countries can bring positive changes by funding scientific research. This is also supported by T. Paas (2004), who claims that countries can develop competitive and sustainable economic growth by increasing productivity and specializing in products and services where they are more productive and innovative. Foreign direct investment and joint ventures, on the other hand, help to integrate the national economy into the international production system and enable technological development.

Empirical studies on the increasing influence of **research and development** (R&D) and the impact of knowledge on productivity are carried out internationally, in industry sectors and at company level. Almost all studies that analyze this field assume that factors of production equally benefit innovation (Kristkova, Gardebroek, Dijk, Meijl, 2017). Studies in different countries and regions confirm this. E. Barajas, E. Huergo, L. Moreno (2012) conducted a study of Spanish companies that participated in R&D cooperation programmes during 1995-2005. The researchers assessed the relationship between R&D collaborative programmes, generating knowledge and economic results of a company. The results of empirical analysis confirmed that the technological capabilities of companies are positively related to productivity. A. Young (2013), Z. Dong, Y. Guoa, L. Wangb, J. Dai (2013), Y. Dissou, L. Karnizova, Q. Sun (2012), by examining the impact of external factors on productivity in the US, China, and Canada, have proven their crucial influence on technological change. Z. S. Kristkova, C. Gardebroek, M. Dijk, H. Meijl (2017) investigated the internal factors driving technical change in eleven member countries of Organization for Economic Cooperation and Development (OECD) from 1987 to 2007 and proved their impact on development of scientific research and R&D.

D. Comin (2004) claims that the R&D activities of small companies demonstrate that the use of new technologies increase economic growth and the standard of living. J. Fagerberg (1988) found a significant correlation between GDP per capita and technological progress, measured by R&D expenditures and number of patent applications. The study has proven that countries focused more on technologically advanced sectors to achieve better GDP growth rates than other countries. According to H. Gurgul, L. Lach, (2012) the number of patent

applications is often used to measure country's competitiveness and is considered a good indicator of technological progress. High number of patents and proper patent law can encourage investors to invest more in R&D.

The promotion of consortium between businesses, universities, scientific research centers and public actors in Europe has gained a promising role necessary for the further development of science and technology policy. Such studies have been supported by the European framework programmes (Amoroso, Coad, Grassano, 2017). A. Kraujelytė, R. Petrauskas (2007) state that new requirements are imposed on scientific institutions such as universities and scientific research institutes because the importance of scientific knowledge for the innovation process and entrepreneurship is recognised.

Mostly in developing countries, innovation and technology are problematic areas characterized by poor business models, political instability and governance, low educational attainment, insufficiently trained human resources, lack of world-class scientific research in universities, insufficiently or inadequately developed physical infrastructure and lack of technology (Ndesaulwa, Kikula , 2016).

Based on S. Sener, E. Saridogan (2011) following mechanism for interaction between knowledge economy subjects is presented which would lead to effective economic policy in the following areas:

(1) development of policy for scientific technological innovation,
2) development of the infrastructure of scientific technological innovation,
3) scientific development,
4) technological development,
5) development of innovation,
6) increasing productivity, costs and product diversity,
7) enhancing global competitiveness
8) increasing revenue from economic factors and utilities functions,
9) generating revenue from economic factors,
10) economic growth, development and prosperity.

Such mechanism demonstrates the growth of innovation, technology and research policies, their impact on global competitiveness and national prosperity.

Recently, there has been an increasing focus on increasing the national competitiveness, reviewing policies aimed at territorial integration in the context of innovation, and proposing strategies for countries seeking to reduce inter-regional disparities.

National competitiveness and its determinants

Definitions of abstract concepts such as “competitiveness” are never right or wrong. They can only be seen as conceptual tools in terms of their ability to know the specific issues they propose to address. As a result, there is often disagreement not over the definition itself, but over the issue that needs be studied and its implications (Kels, 2016).

The term "competitiveness" became prominent in the public debate in the 1980s, when the US was dominated by fears over Japan's nearly unstoppable economic growth, and competitiveness was linked to lower labor costs and policies that helped companies gain market share in the global market. At that time, this term was understood as a "game" whereby a country can improve its competitiveness at the expense of the other (Delgado, Ketels, Porter, Stern, 2012).

Although controversial and quite debatable the concept of country’s competitiveness is a frequent subject of scientific research. Krugman (1994, 1995) described competitiveness as a way of expressing productivity, which also shows magnitude of technological progress. On the other hand, the scientist considered this definition to be "incorrect, dangerous" and inappropriate for assessing the level of the national economy. According to M.E. Porter (2004), “the most intuitive definition of competitiveness is the share of domestic products in global markets. This makes competitiveness a zero-value game because one country's revenue is the expense of the other countries.” T. Paas (2004), T. Siudek, and A. Zawojska (2014) claim that it is not enough to explain the concept of competitiveness as productivity of a country, but it is also necessary to determine the competitiveness of economy and individual companies. It is not possible to measure the level of competitiveness on the basis of a single indicator, thus a set of variables describing the various aspects of competitiveness must be used. For this reason, efforts are being made to develop benchmarking for countries with different historical and political contexts and levels of economic development. R. D. Atkinson (2013) describes competitiveness as the ability of a region to create more value added in exports than in imports.

S. Marginean (2006) interprets the concept of competitiveness at the microeconomic and macroeconomic levels. The interpretation at the microeconomic level is based on the fact that wealth is not created primarily by countries, but by companies. From a broad perspective, a

country's competitiveness can be assessed using macroeconomic indicators. At the macroeconomic level, at least three ways of increasing competitiveness can be identified: efficiency, ability to create wellbeing and ability sell to external markets. According to M.E. Porter (2004), stable political, legal and social institutions and sound macroeconomic policy create the potential for national prosperity. He argues that microeconomic efficiency creates macroeconomic competitiveness. In other words prosperity is achieved first of all at the microeconomic level - the ability of companies to produce valuable goods and services using effective methods, and the ability of manufacturers to compete for market share, profits and export possibilities. This ability can be measured by market share, performance results, price ratio, cost of competitiveness or multiple factors.

Often competitiveness is interpreted at different levels of aggregation or otherwise known as objects of competitiveness. According to D.G. McFetridge (1995), M.E. Porter (1998) these are levels of company, industry, and country. The authors note that each level uses different competitiveness measures or indicators. T. Siudek, A. Zawojska (2014), V. Tomas (2011) offer a wider variety of levels to assess national competitiveness: supranational, national, regional, local, industrial, sector, as well as individual companies. I. Travkina, M. Tvaronavičienė (2010) claims that the country's competitiveness can be analyzed in different areas - technology, economy, policy, society and ecology, as well as in time perspective - the short, medium and long time span.

Other definitions and models have emerged from classical and modern economic theory to be applied at international, national, country, and municipal levels. The most famous at global level are: Global Competitiveness Report prepared by the World Economic Forum and Global Competitiveness Yearbook produced by the International Institute for Human Resources Development (Ochoa, Lara, Parra, 2017).

World Economic Forum is an organization that each year presents a Country Competitiveness Report that is used to measure the world economic development. She **defines competitiveness as a set of institutional, political factors that determine a country's level of productivity.** A competitive economy must be productive as it leads to growth, higher income levels which is closely linked to public welfare (World Economic Forum, 2016).

Another organization that does extensive research in this area is the IMD Center for Global Competitiveness, ranking the competitiveness of countries in 3 major groups: knowledge, technology and smart future. They are further subdivided into 340 criteria. The criteria are based on extensive research, using economic literature, international, national and regional sources, and by interviewing the business community. It is worth mentioning that the criteria are regularly updated and can be valuable in many areas (methodology and principles of World Competitiveness Centre, 2017).

It can be concluded that there is a wide variety of views on what constitutes a country's competitiveness and there are different sets of factors used to evaluate it. Therefore, it is important to understand factors that determine the chain of these events. Competitiveness indexes are used to assess country's competitiveness. Each index has its own components, and each of them has indicators and weighting coefficients. The World Economic Forum assesses countries in the world according to **Common Competitiveness Index** (CCI). Table 2 shows that CCI is calculated by taking into account the assessments of respondents from all countries, the key macroeconomic indicators and the three sub-indexes: key requirements, productivity (effectiveness) drivers, innovativeness and business intelligence.

Table 2

Common Sub-indexes of the Competitiveness Index and Assessed Areas

<table>
<tr><th>Sub-index of essential requirements</th><th>Sub-index of factors driving performance (efficiency)</th><th>Sub-index for innovation and business intelligence</th></tr>
<tr><td>1. Institutional environment</td><td>5. Higher education and vocational training</td><td>11. Level of business development</td></tr>
<tr><td>2. Infrastructure</td><td>6. Product and service market efficiency</td><td rowspan="5">12. Innovation</td></tr>
<tr><td>3. Macro-economic environment.</td><td>7. Labor market effectiveness</td></tr>
<tr><td rowspan="3">4. Health and initial education</td><td>8. Financial market expansion</td></tr>
<tr><td>9. Technological progress</td></tr>
<tr><td>10. Market size</td></tr>
</table>

Source: World Economic Forum data, 2016

When calculating CCI following indicators are considered: GDP in billion Eur, annual rate of change in inflation, percent, population with university education, quality of education, technological application, use of ITC, export rate, percent from GDP, innovation capacity, quality of scientific research institutions, company expenditure for scientific research and

expansion, university-industry scientific research and expansion cooperation, number of patent applications, etc. Innovation is considered to be a more complex area for assessing competitiveness, since the innovation policy of innovative countries is based on world-class companies and scientific research institutions.

The general state of country innovation system is reflected by **Summary Innovation Index***, SII.* National SII data are presented in the European Innovation Scoreboard, published annually since 2001. Table 3 shows the values of the indicators used to calculate the EU Summary Innovation Index.

This indicator is considered to be one of the most informative, showing the level of innovation in different countries. As the European Commission provides data on all EU countries, its data allows for comparative countries analysis to determine which factors have the biggest impact on achieving a high level of innovation in a country.

Table 3

Indicators calculated for assessing SII

Summary Innovation Index
1. ***Economic Effects***
• Employment in medium and high technology sector, percent from the workforce
• Employment in knowledge intensive industries, percent from the workforce
• Export of medium and high technology products, percent from total exports
• Export of knowledge intensive services, percent from total export of services
• Sales of new products on the market, percent from turnover
1. Education
• Participation in lifelong learning / 100 inhabitants (age 25-64)
• Level of youth education achievement, number of persons having secondary education / 1000 inhabitants (age 17-19)
3. Financial contribution
• Public R&D expenditure, percent from GDP
• Venture capital, percent from GDP
• Private lending
• Broadband Internet access in companies, percentage from the number of companies
4. Operation of companies
4.1 ***Corporate investment***
• Business sector R&D expenditure, percent from GDP
• Expenditure for information technology, percent from GDP
• Expenditure for innovation (not R&D), percent from turnover
4.2. ***Cooperation***
• Local innovation of small and medium-size companies, percent from the number of companies
• Cooperation of innovative small and medium-size companies with other companies, percent from the number of companies
• Renewal of companies (number of small and medium-size companies entering the market and number of liquidated), percent from the number of companies
• Public-private sector collaborative publications / 1 million inhabitants

Source: Vveinhardt, Kuklytė (2016)

According to this index, the EU countries are grouped into four groups: *Innovation Leaders, Innovation Followers, Moderate Innovators, Modest Innovators*.

Technological Achievement Index (TAI) helps to understand how a country develops and disseminates technology and what are human capabilities needed to participate in expansion of technological innovation. Following data is used for its implementation:

1. Technology creation

1.1. Patents for inhabitants (for million of people);

1.2. Revenue from royalties and license fees.

2. Dissemination of new innovations

2.1. Internet users (for thousand of people)

2.2. High-tech exports (percentage of manufactured exports)

3. Dissemination of old innovations

3.1. Electricity consumption (kWh per capita)

3.2. Number of mobile and landline phones (for thousand of people)

4. Human Skills

4.1. Proportion of engineering, manufacturing and construction science students out of all students

4.2. Average level of education in years (Ali, Kiani, Bashir, 2014).

A review of the scientific literature shows that there is much debate on the "right" definition of competitiveness, as the term is used to address different issues: macroeconomic sustainability, productivity or living standards. Each definition has validity as to the purpose for

which it was created (Kels, 2016). It has been clarified that the analysis of definitions of competitiveness may also be related to aggregation levels.

Analysis of scientific literature and empirical studies suggests that the factors determining a country's competitiveness are: macroeconomic, institutional and technological environment, labour market, financial market, venture capital, education, and innovation. In order to determine whether venture capital has an impact on a country's competitiveness, it is necessary to determine the criteria determining the country's competitiveness and to analyze whether there is a relationship between the latter and venture capital. Analyzed indexes - general competitiveness, cumulative innovation and technological achievement - would help measure the impact of venture capital on countries' competitiveness.

Conclusions

1. The analyzed abundance of empirical studies in the field of venture capital shows the importance of the latter for the national economy. Start-up and expansion companies need capital, which can be provided by venture capital investments. Venture capital investment promotes the development of new sectors, companies that receive it are are more innovative, generate new products and their businesses are more profitable. The added value of venture capital investment in the economy is a cornerstone of national competitiveness. Corporate venture capital financing determines the country's industrial and technological development as well as the economy.

2. A competitive economy must be productive as it leads to growth, higher income levels which is closely linked to public welfare. Scientific research, new technologies and innovation are the backbone of the knowledge economy as well as an effective way of ensuring country's competitiveness. It was determined that the development of the venture capital sector is driven by rapid technological development. As a result, venture capital has become appropriately linked to the financing of innovative inventions. The components of the knowledge economy, such as innovation, technology and scientific research, are directly related to venture capital and enables to analyze the impact of these areas not only on economic growth but also on the competitiveness of countries. Scientific and technological developments are shaping the motivating policy of science and the economic force aimed to ensure economic growth and development. Successful linking of innovation, technology and R&D levels requires that business has access to appropriate sources of finance, such as venture capital.

3. Competitiveness is a complex and multifaceted phenomenon. This concept is often described as a way of measuring whether a country is doing everything in its power to achieve continuous prosperity of its inhabitants. After summarizing and systematizing the conceptual statements, following factors determining the country's competitiveness were distinguished: macroeconomic, institutional, and technological environment, labor market, financial market, venture capital, education, and innovation. In order to assess the impact of venture capital on country's competitiveness, the criteria determining the country's competitiveness must be established.

National competitiveness is the ability of a country to achieve a high rate of economic growth, ensure steady growth in real wages and salaries, and promote internal market companies in a global market, which is comprised of high-quality clusters that improve the quality of products and services which create workplaces in future. It can be concluded that innovation, technology and scientific research are needed to create a competitive advantage. CCI, SII and TAI presented in the article help to assess the impact of venture capital on countries' competitiveness.

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THE USE OF CLOUD COMPUTING IN STUDIES

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Annotation

The article reviews the use of functions of services based on cloud computing principles in studies, analyzes the solutions of possibilities for their use in the study process. The conducted comparative analysis of college students' surveys in 2013 and 2018 on cloud computing and the use of its services is presented.

Key words: *cloud computing, SaaS, SOA, Google Apps for Education, GAFE, software, information technology.*

Introduction

The article "Cloud Computing Solutions in Studies and Business", presented five years ago, dealt with the conception of cloud computing, discussed the use of cloud computing in studies and reviewed functions of the most popular services based on the principles of cloud computing. At that time, Lithuanian educational institutions were introduced to the latest technologies for education, which would reduce the costs of IT installation and updating, allow to discover new ways of communication, create new possibilities for collaboration and solution of activity processes, improve flexibility and mobility of the study process. Today, most educational institutions have already chosen such technologies. One of such solutions in the education sector is *Google Apps for Education* (GAFE), which is free for these institutions. According to Victor Alhadeff, the founder of Egghead Software and CEO of Boost eLearning, *Google Apps for Education* is a cloud based on the suite of applications, enabling teachers and students to communicate, collaborate, and create (Victor Alhadeff, 2015). Cloud computing services became an integral part of the academic society and its solutions became relevant to the study process. It is a fast, effective and simple way to reach educational services, enabling students to acquire the latest knowledge and skills required for the 21st century (Kosta Andreev Garov, Lambri Yovkov Yovkov, Liliyana Ivanova Rusenova, 2018). Based on the conclusion of the study conducted by the scientists of the USA in 2015, *Google Apps for Education* (GAFE) is a useful tool for colleges to achieve learning outcomes (Maury Elizabeth Brown, Daniel L. Hocutt, 2015).

The aim of the article is to analyze the use of cloud computing services in studies.

The research object: cloud computing services.

Research objectives:

1. To review functions of services based on cloud computing principles, used at the college.
2. To find out knowledge of cloud computing and the use of its services among students of Šiauliai State College.
3. To compare the research results with the results of the study conducted five years ago.
4. To provide proposals for application of cloud computing solutions in the study process.

Research methods: the analysis of scientific literature and sources, comparative and graphical data analysis.

The use of functions of services based on cloud computing principles at the college

Cloud computing is the delivery of on-demand computing services ranging from applications to storage and processing over the Internet (Steve Ranger, 2018). Cloud computing technology has already penetrated not only to people's everyday life and business but also integrated into educational institutions, starting with technology infrastructure and finishing with information exchange and the use of numerous applications and resources. By 2022, 62 percent of all organizations will run 100 percent of their IT in the cloud. (David Politis, 2015). By 2020, *Google Apps for Education* services will be used by more than 110 million users (Victor Alhadeff, 2015). According to McKendrick (Forbes analyst), in 2030, "clouds" will be a tool that will not only facilitate communication with the surrounding world but will also be the means for collecting, processing, computing and performing functions that are difficult to understand or imagine today.

According to the data of The Lithuanian Department of Statistics, in 2018, the Internet for learning purposes was used by 58,7 percent of 16- to 24-year-olds and 26,4 percent of 25- to 34-year-olds in Lithuania. The use for educational purposes includes online learning (studies, courses), the use of teaching material directly on the Internet, communication with teachers or other online learners on webpages of educational institutions and the like for learning purposes.

Cloud technologies used in the college's study process include the virtual learning environment *Moodle* and *Google Apps* services. In the *Moodle* system, 50 distance study courses for subject studies, consultations, practices, activities of students' scientific society and other activities have been prepared. Looking for ways to ensure high quality of services and more opportunities for learning, the educational institution chose free *Google Apps* service. Such solution for the college is also beneficial and viable due to budget constraints and students' mobility. The technology chosen – cloud computing services *SaaS* (*Software as a Service*) and its delivery method *SOA* (*Service-Oriented Architecture*)[42] – provide the organization with a possibility to use software exiting in the cloud computing infrastructure, which can be accessed from various devices with a remote login and there is no need to bother about software installation, maintenance, updates and licenses. Based on the research conducted by the company *BetterCloud*, 91 percent of *Google Apps* users state that *SaaS* service is useful and they spend 80 percent of all of their working time, using this service (Scott Solomon, 2016).

From 2014, the free GAFE service is delivered to the college, providing unlimited capacity email *Gmail*, data storage *Google Drive*, administration interface for managing user environment and the possibility to use *Google* office apps suite, website and calendar designing tools, chat system and other apps[43] not just on a standard computer but also on a tablet or smartphone. The advantages of private and hybrid cloud computing are used to create a controlled and secure system of using cloud computing at the college.

The company *Google* offers intuitive applications and platforms for mobile devices. Every year, learning and communication based on the advantages of affordable and entrenching mobile technologies is increasing. According to the data of The Lithuanian Department of Statistics, in 2018, smartphones were used by 97,5 percent of the population aged 16-24 and 95,4 percent of 25- to 34-year-olds.

The usefulness of GAFE services must be assessed considering how they allow creation and not how students jointly manage technologies (Maury Elizabeth Brown, Daniel L. Hocutt, 2015). In the study process, the resources of *Google Apps* service help to perform such functions as organisation of joint academic activities, hosting of various information, communication, the use of online surveys, teamwork, assurance of a flexible learning environment, the use of web applications, planning of accounting and other activities (see Figure 1).

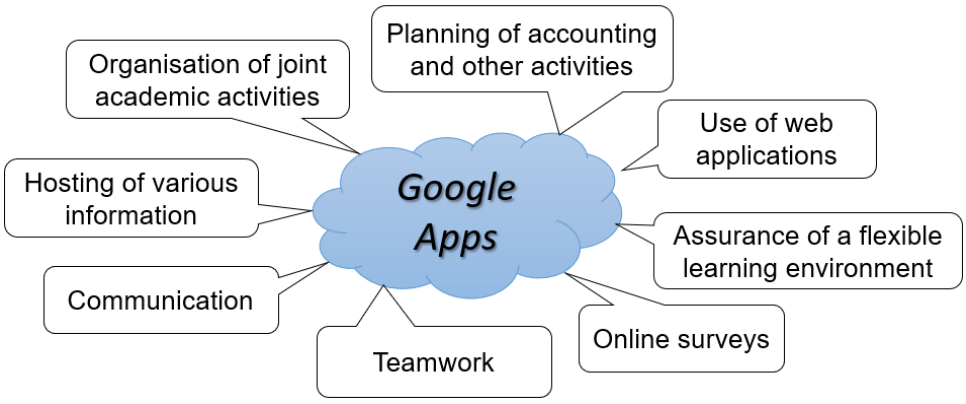

Fig.1. Features of *Google Apps* services in the study process

Reviewing the functions of *Google Apps* services in the study process, it was sought to find out what services tools can be used in every function (see Table 1).

[42] Retrieved from: <https://slideplayer.com/slide/5765502/>
[43] Retrieved from: <https://edu.google.com/products/gsuite-for-education/?modal_active=none>

Table 1

Tools of *Google Apps* services in the functions of the study process

Organisation of joint academic activities	Assurance of the flexible learning environment	Team work	Use of web applications
• Email *Gmail* • *Google* Drive • Groups • Google Calendar; • *Google* office apps • Chat system *Hangout* • *Hangout Meet* • *Google* Sites • *Google+* • and other	• Email *Gmail* • *Google* Drive • *Classroom* • *Hangout Meet* • Chat system *Hangout* • *Google+* • and other	• *Google* Docs • *Google* Sheets • *Google* Slides • *Teamwork Projects* • Chat system *Hangout* • *Hangout Meet*	• *Google* Docs • *Google* Sheets • *Google* Slides • *Google* Forms • *Google* Drawings • *Google* My Maps • *Google* Sites • *Lucidchart* • *Sketchboard* • *Asana* • *Translator* • *Photos* • *Keep* • *Google Trends* • *Google Analytics* • *Think with Google* • *Google Scholar* • and other
Hosting of various information	**Communication**	**Use of online surveys**	**Planning of accounting and other activities**
• *Google* Drive • *Google Classroom* • *Google+* • *Dropbox*	• Email *Gmail* • Chat system *Hangout* • *Hangout Meet* • Groups • *Asana* • *Google+* • and other	• *Google* Forms	• *Google* Calendar • *Google* Forms • *Google Classroom* • *Google+*

After finding out what services tools can be used for each function of the study process, GAFE services tools used in the college were reviewed.

Organization of joint academic activities. Web-based technology facilitates access to digital information resources and software at the educational institution, makes it easier to establish relations, helps to perform such functions as collaboration, file hosting, and access to the computer environment. Organising joint academic activities, various *Google Apps* services, such as information search, email, chat system, social networks, internet hard drive service, web applications and other can be employed.

The educational institution, using *Google Apps*, has registered its domain with which the organization' email box is created. *Google* organisation's members are given personal email boxes, while departments, faculties, divisions, centres and student groups are provided with shared e-mail boxes. Email service *Google Gmail* that has a convenient mail organization system, virus scanning tool, integrated *spam* protection, link to other parts of the *Google* system and operates not only on regular computers but also on *Android, iPhone, BlackBerry* devices is used in all study process activities.

Other *Google Apps* services, such as cloud storage *Google* Drive, *Google* office applications, are also used to organize the college's academic activities. For example, the electronic data sheets system for presentation of college students' marks and information is installed in the *Google* Sheets environment.

Various information search is performed using the long-known *Google* search tool, which helps to find reliable information related to study activities.

Hosting of various information. In cloud computing, all user data and the applications the user needs are stored in data storages, otherwise called internet drives. According to the data of the Lithuanian Department of Statistics, in 2018, online data storages were used by 58 percent of 16- to 24-year-old and by 48,6 percent of 25- to 34-year-old residents.

Cloud data storage service *Google* Drive provided by *Google Apps* enables the college community to store any types of files, share them with other users or access from other computers and mobile devices. To use this internet drive, a user account *gmail.com* is required, which is provided to the members of the college community as soon as they become its member.

Using *Google* Drive service, teachers upload teaching material of the delivered subject in a variety of formats (*MS Office, Google doc*, video, audio, links, etc.) and share it for a fixed or indefinite period, while students can view it without downloading it. Students use *Google* Drive not only for hosting their works but also for submitting individual, project or other accounting works to the teacher. It is convenient to use this service, having turned on the web and desktop interface, synchronising files between the user's computer desktop and the cloud.

Most of the teachers host their teaching materials and tasks in the learning environment *Google Classroom*. This software tool allowing to create, solve, analyze, present, communicate – exchange information, opinions, discuss and the like – is partly an alternative to *Moodle* system tools. *Google Classroom* is defined as GAFE tool helping teachers to quickly create and organize tasks, provide feedback effectively and communicate easily within a group.[44]

Communication. Members of the college community use *Google Apps* service providing the possibility to communicate with each other by messages, emails, create documents and share them, share videos, collaborate to write blogs, comment and more. The main communication tool used by college members is email *Gmail*. This tool enables students to consult, exchange information and solve various other problems. Other communication services tools are integrated into the applications and they are used in creative processes, when teachers give their comments, and students give their feedback.

Online surveys. The use of *Google* Forms allows not only to create digital tasks, tests, surveys, registration forms to various events (workshops, conferences, etc.) but also to assess group works. This tool allows both quick development of various forms and handy presentation and later, generalisation of the results of the forms. The obtained data is exported in various formats and more exhaustive data analyses are performed. Accounting often includes tests that not only show the student his overall result upon completion but also the result of every separate question. Online surveys integrated into the teaching/learning process allow the teacher to get feedback more quickly and enable the student to evaluate the delivered subject. *Google* Forms in the college are used to conduct online teacher and student surveys, for example, to analyse the assessment of the implementation of the study programme and monitoring of students' self-study time.

Assurance of the flexible learning environment. *Google* services provided at the college ensure the flexible learning environment: information, teaching materials and other resources are available online from anywhere, anytime. This allows optimizing time, reducing costs, and ensures the possibility to learn independently. Students and teachers use *Google Apps* services both in college laboratories, faculty libraries, the Self-Study Centre and using computers and mobile devices at home.

The use of online applications. *Google Apps* office applications suite hosted on the online drive is employed creating documents, spreadsheets, presentations, drawings, and surveys. Work with applications is done using a web browser, there is no need to install them on your computer. For example, monitoring students' intermediate accountings, distributing hours of various planned courses, *Google* spreadsheets are used, allowing collecting data and seeing results quickly and conveniently. *Google* Docs tool collects and combines information related to studies, e.g., the demand for software or hardware, ebooks, etc.

Additional applications of *Google* Drive suite are used to perform various tasks: creation of schemes, models, UML, mind maps (*Lucidchart*), websites (*Google* Sites), maps (*Google* My Maps), drawing (*Sketchboard*), video editing, organisation of teamwork and projects (*Asana*), translation (*Translator*), photo hosting (*Photos*), information search in articles, journals for professionals (*Google Scholar*), etc. Students also use a number of additional apps (*Google Apps*)[45] for mobile devices and tablets.

Teamwork. This activity is applied when teamwork (group work) is performed. Students' creative tasks are carried out not only individually but also collectively. The use of *Google* Docs, *Google* Sheets and other applications of the office suite allows the group of persons to work with one document at the same time. This is widely applied preparing new study programmes or updating existing study programmes, preparing self-evaluation reports of study programmes, in students' group assignments, when in shared documents every member of the group can see which places of the document are edited by others and discuss each change using the correspondence application.

Planning of accounting and other activities. The main tool for this activity *Google* Calendar is intended for time planning and monitoring of involvement. The calendar shows the entire agenda providing the possibility to know what is planned. Sharing your calendar with other persons makes it easy to plan a common agenda, monitor and organize meetings, inviting guests to events, and send messages by email or to the mobile phone.

In summary, it can be stated that free functions of cloud computing services GAFE are used in the college's study process as additional functions of the study process, which help to organize joint academic activities, communicate and collaborate, ensure the flexible learning environment, plan accounting and other activities, host various information, and improve creation skills.

[44] Access over the Internet 2019-02-10: <https://edu.google.com/products/classroom/?modal_active=none>
[45] Access over the Internet 2019-02-10: <https://get.google.com/apptips/apps/#!/all>

Analysis of college students' knowledge of cloud computing and the use of its services

In order to find out knowledge of students studying at Šiauliai State College about cloud computing and the use of its services and to compare with the analogous study conducted in 2013, the study was carried out, choosing students of Šiauliai State College as respondents. The study sample consists of 144 full-time (85%) and part-time (15%) college students studying in all years of study: 60 students of informatics sciences and 84 students of other sciences (engineering, social, health sciences, business and public management). During the study conducted in September-December 2018, the questionnaire analogous to the one given in 2013 was presented, seeking to find out whether students know and use cloud computing services and to identify the demand for cloud computing in the study process. The selected survey tool was GAFE tool *Google* Forms. The survey created in it was given to college students and upon exporting of the results, data analysis was performed.

The study revealed that in 2018, unlike in 2013, cloud computing services were known and used (66 percent). Only 13 percent of respondents do not know and do not use cloud computing services and 28 percent know about these services but do not use them (see Figure 2). The conducted survey demonstrated that the word combination "cloud computing" was becoming increasingly known and understandable over the years (increased by 46 percent).

The comparison of survey results of students studying informatics sciences and other sciences (engineering, social, health sciences, business and public management) of 2013 and 2018 showed that the assumption that students whose specialty is directly related to IT are aware of cloud computing and use its services is not valid. The results show that responses about knowledge and use of cloud computing are distributed equally (see Figure 2). To confirm the assumption, a correlation analysis, calculating the Chi-square criterion, was performed. The established statistical relationship (p=0,34) between variables confirmed the assumption.

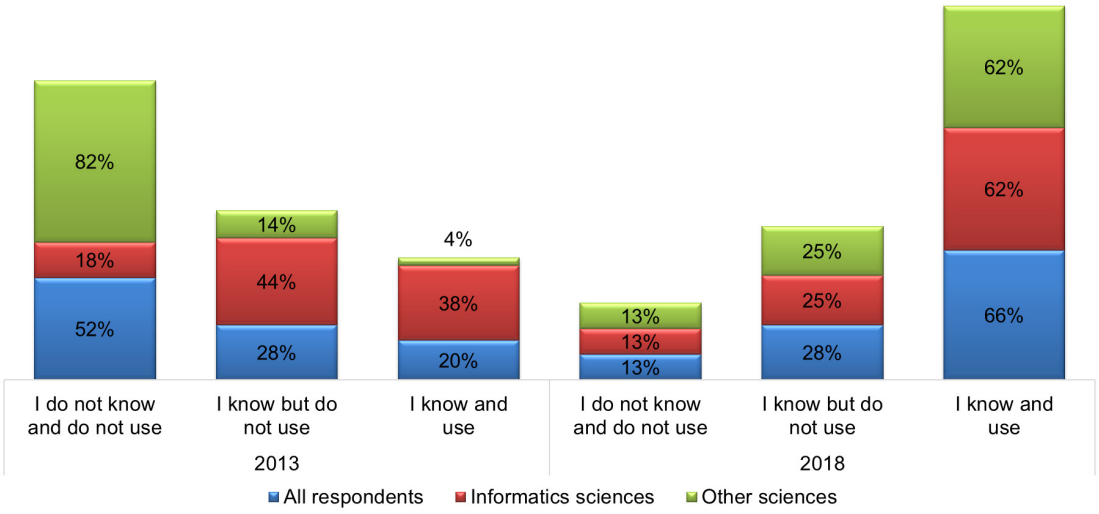

Fig. 2. The level of students' knowledge and use of cloud computing in 2013 and 2018

However, analyzing the responses of the respondents representing separate fields of science (informatics and engineering and other sciences), to validate the assumption that knowledge and use of cloud computing is not dependent on the specialty, the statistical relationship was identified (p=0,037). If the assumption is not confirmed, it is concluded that knowledge of cloud computing and its use still depend on the chosen field of science. Based on the obtained results, it can be stated that knowledge and use of cloud computing is greater among students studying informatics and engineering sciences. Here you can envisage links with the areas of exact sciences where cloud computing services are used in technological processes. Compared with the data of the survey conducted in 2013, there is a considerable change between informatics, engineering and other fields of science (see Figure 3). The percentage of responses of respondents representing other sciences about knowledge and use of cloud computing particularly distinguishes itself (from 3 percent to 66 percent). "Salesforce" experts state that after 10 or 15 years, "clouds" will be perceived even by that person who totally avoids communication with technologies.

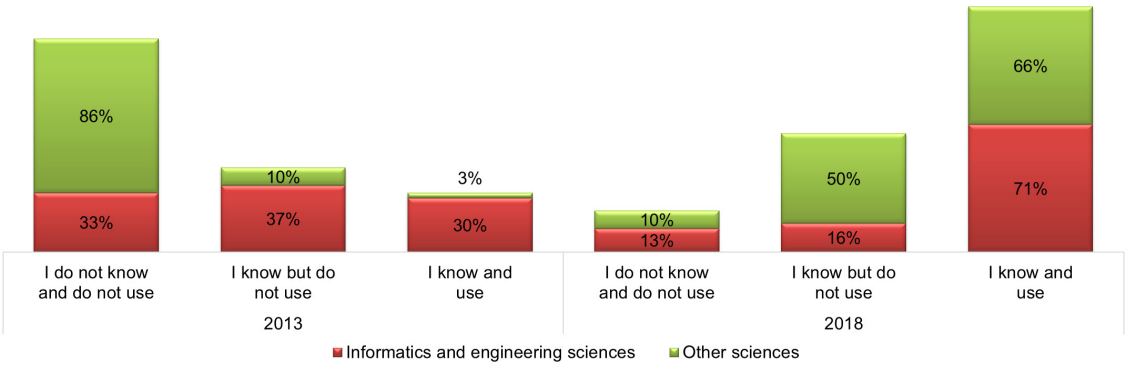

Fig. 3. The level of students' knowledge and use of cloud computing in 2013 and 2018 with regard to the fields of science

Based on statistical calculations, it was found that knowledge of cloud computing and its use did not depend either on the mode of study (full-time, part-time) or on the year of study or gender.

During the research, students were asked what cloud computing services they were using. Answering the questions in the questionnaire, students name the following services: email (100 percent), information search (71 percent), social networking (46 percent), interactions in chat systems (36 percent), online drive service (56 percent), web applications (e.g., *Google* Docs, spreadsheets, presentations, etc.) (55 percent). However, 13 percent of respondents do not know and do not use cloud computing services, maybe they still do not know that the said services are based on the cloud computing technology.

The comparison with the data of the survey conducted in 2013 shows that communication in social networks decreased by 33%; in chat systems, by 32%. Such results suggest that the services that require interactive communication have reduced because students use other means of communication, e.g., *Facebook, Instagram, Snapchat* and others. There is an increase in the use of services of the internet drive (by 24 percent) and web applications (by 27 percent) (see Figure 4). It is likely that this was influenced by simple use, intelligent constraints and easy-to-use interface of GAFE functions.

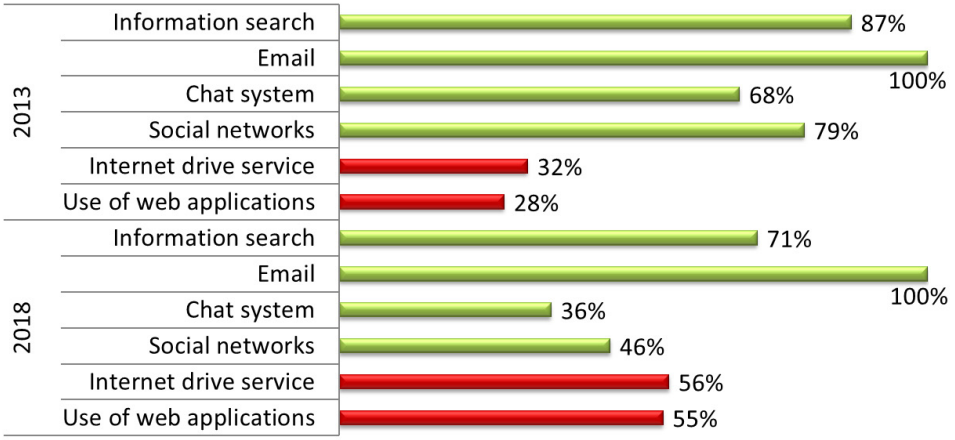

Fig. 4. The use of cloud computing services in 2013 and 2018

It was sought to find out in the research what study activity based on cloud computing technology was most significant for students. The questionnaire included the same functions of *Google Apps* services in the study process as five years ago.

Based on the data of the study conducted at the college, all study process activities presented in the questionnaire are relevant and significant for students (see Table 2). In the first place, students distinguish uploading of various information (18 percent). Here links with the advantages of cloud computing provided by Miller M. (2008) can be envisaged: unlimited memory, increased data security and universal access to data. Students find teamwork in the study process activities, planning of accounting and other activities and communication with students equally important (15 percent). Students indicate the provision of the flexible learning environment as the least acceptable activity.

Table 2

Study activities based on cloud computing technology

Activity	2013, percent	2018, percent
Organization of joint academic activities	8	9
Teamwork	14	15
Planning of accounting and other activities	10	15
Communication	17	15
Online surveys	10	8
Assurance of the flexible learning environment	10	7
Uploading of various information	16	18
Use of web applications	15	13

Comparing with the results of the survey conducted in 2013, it can be seen that students' opinion about the significance of study activities based on cloud computing technology is similar: there is an increase or decrease by 1-5 percent.

Summarizing the research conducted at the college, it can be stated that college students know and perceive the concept of cloud computing and its provided functions. GAFE services used at the college, integrated into the study process, are a useful and appropriate teaching technology. After five years, functions of GAFE services as an integral part of the study process are accessible and useful to students.

Cloud computing solutions for the study process

Various learning tools integrated into the study process, containing cloud computing functions, are useful and innovative (Gutiérrez-Carreón, G., Daradoumis, T., & Jorba, J., 2015).

GAFE offers a number of tools and functions ensuring successful functioning of the institution. Reviewing GAFE services in the study process, it was noticed that some services or their functions were not used at the college. The decision to use one or another service or their separate functions should be influenced by easy, simple and fast receipt of its result.

One of such tools is *Google* Calendar, which can be used to create and review the plan of college events, to organize meetings. Entering the event or meeting in the calendar, you can not only specify the time, place and description of the event but also send messages to the invitees by email or to the mobile phone. Event guests can inform about their attendance by email or the calendar itself.

Students and teachers find the time planning service useful. Planning lectures and accountings, you can enter lectures in the calendar by adding their descriptions. The teacher can set up a schedule for his subject, specifying the lectures and their time. The schedule of lecture topics would provide students with the opportunity to see what subject will be analysed on that day. Calendars of students' groups can also be created by providing the schedule for completion of accounting tasks. This would enable to control students' accounting, foreseeing their number per week.

Google Gmail service is long known and used at the college, but most college members do not use mail management tools, which would facilitate and speed up their work with letters. Using labels and colours to identify them, filtering and other settings, every user can create a comfortable environment in the mailbox. In 2018, the mail service was supplemented with a new additional email "snooze" function, which allows to postpone mail viewing for a specified time, two-step authentication tools for mail protection and tools for detecting *phishing* attacks execution letters. For better integration of email, calendar, tasks and contacts, a side toolbar is embedded in the mail service, allowing to see both the content of the email and involvement in the calendar simultaneously.

The tool *Google* Sites allows to take advantage of the institution's intranet. Using this tool, college members could create webpages for hosting college information.

The communication platform *Google Hangout* developed by the company includes messaging, video chat, SMS and VOIP functions. All members of the college community can correspond, use voice and video calls, talk to one person or involve all friends and participate in group conversations. The video conferencing support system integrated into the service, allowing connection of up to 15 users at the same time, can be used organizing department meetings, project participants' meetings, seminars, consultations for students or other similar activities.

Google tools offered for marketing management, such as *Google Trends* for tracking search changes locally and globally, *Consumer Barometer*, which provides survey data from around the world, *Google Alerts* watching for changes of selected words on the web and sending messages about the observed changes by email, *Google Digital Garage*, which allows to acquire digital marketing knowledge and skills, *Google Analytics* allowing to analyze

attractiveness and functionality of webpages by watching website visitors' flows and behaviour, can be included in the studies of respective subjects. Students studying subjects related to marketing could be introduced to the tool designed for that *Think with Google*, which would help to gain insights into the most relevant industrial processes. To improve skills of students studying informatics sciences, tools *TensorFlow* and *App Engine* could be used.

Google Apps also provide other useful applications that could be applied in the study process. The tool *Sketchboard*, designed for drawing sketches, schemes and generating ideas, provides a possibility to use web application commands in real time. It is proposed to use *Teamwork Projects* tool for team project work. *Gantter* application can be used for project planning. *Pixlr* application is offered for editing photos. The use of note taking and reminder application *Keep* helps the user to keep a variety of documents, images for reminding in one place, and if there is no time, the user can use his voice to record the reminder.

GAFE provides quite a number of tools that are suitable for implementation of the study process, but it lacks the tools to assess learners' learning outcomes. *Google Apps* service is useful in some cases but is not always ideal (Scott Solomon, 2016).

Conclusions

Functions of free cloud computing services *The Google Apps for Education* are used in the process of college studies as additional functions of the study process, which help to organize joint academic activities, communicate and collaborate, ensure the flexible learning environment, plan accountings and other activities, host various information and improve creation skills.

The survey conducted at the college identified that cloud computing services are known and used by students. 66 percent of respondents know and use cloud computing services, 28 percent know about these services but do not use them and only 13 percent do not know and do not use them.

The use of *Google Apps for Education* services is increasing every year. Compared with the results of the same study conducted in 2013, the share of students who know what cloud computing is and who use it increased by 46 percent; while of those who do not know about it and do not use it, decreased by 39 percent.

Google provides quite a number of services suitable for implementation of the study process activities. Using these services, shortcomings were noticed, but most of these shortcomings are related to unawareness of tools of provided services and the inability to use them.

The article presents *Google Apps* solutions that are likely to increase the effectiveness of the study process and help to implement innovations in higher education.

Recommendations

The teachers of the subject Information Technologies should deliver broader presentations on functions and new solutions of cloud computing *Google Apps* services and practically familiarize the college's academic staff and students with them in workshops and trainings.

Additional research could help to find out how *Google Apps for Education* services are used by students with hearing or visual impairments.

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ISSUES AND PROSPECTS OF TOURISM DEVELOPMENT IN LATVIA IN THE CONTEXT OF THE EUROPEAN INTEGRATION

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Annotation

The research provides an analytic overview of the main trends and prospects of tourism development in Latvia in the context of its integration into the common tourism market of the European Union. The purpose of this study - to identify the development problems of tourism in Latvia as a factor of regional competitiveness. The basic tendencies of forming and development of the tourism industry in Latvia and Europe, public policy in the field of tourism development are considered. Direct and overall contribution of the impact of tourism on the state's economy is shown. The basic issues of tourism business development in Latvia and factors impeding and developing the tourism sector in Latvia, such as: the level of prices on the international market, level of welfare of the population, safety of travel, geographical and territorial location of the country, climate, environment and other, are investigated. Based on the research findings, proposals to improve Latvian tourism are made.

Key words: *Latvia, tourism, problems, prospects, European integration*

Introduction

Tourism is an important industry in most countries around the world. In the world market, tourism takes a leading position in the export of services that indicates the competitiveness and dynamic development of this industry.

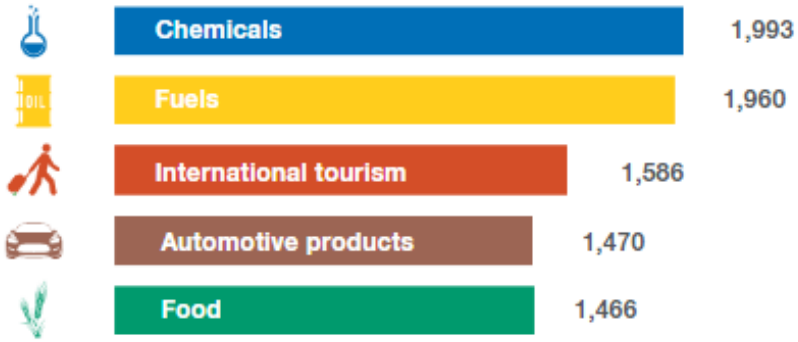

Fig.1. Income from exports by category.
Source: World Tourism Organization UNWTO (2018)

Tourism is the world's third largest export category after chemicals and fuels, and ahead of automotive products and food. All over the world, tourism has been assigned a special importance, since this area is a priority in the share of GDP of states. In many countries and regions, tourism is the main source of income. As to the number of employees, the tourism industry has also become one of the largest in the world: it employs more than 260 million people, that is, every 10th job holder. On a global scale, income from tourist trips makes up more than $ 500 billion annually. The greatest profits are received by the countries of Western Europe and the USA.

The accession of Latvia to the European Union has opened up great opportunities for the state, including in the tourism sector. According to the statistical figures of the Central Statistical Bureau of Latvia and based on the indicators of the Association of Latvian Travel Agents, as well as the European Travel Commission, until recently has been a positive trend in the development of the tourism industry in Latvia.

According to the World Travel & Tourism Council, the contribution of Latvia's tourism industry to the country's GDP amounted to 665.6 million euros or 2.9% of the total GDP in 2013. However, in recent years, expenditure by foreign tourists in Latvia has declined, although the number of tourists has increased. The stay of tourists in Latvia is relatively short - only a quarter of tourists stay in the country for more than one day. A decrease in Latvia's international

competitiveness in tourism is also reflected by decrease in its Travel and Tourism Competitiveness Index score: in 2017, Latvia ranked 54th out of 136 countries, compared to 48th in 2013.(Kā attīstīt tūrismu Latvija?,2018).

A problem of competitiveness of regional economy is rather pressing in today s world. A great deal in economic and social life of both the region and the country as a whole depends on the successful solution to this problem.

Nowadays, the study of regional tourism policy isrelevant due to:

- priority tasks of domestic and inbound tourism development, requiring effective implementation of the tourism potential of the country;
- ensuring the integration of interests of the state and its regions in the development of tourism;
- prevention and overcoming of socio-economic contradictions between the traditional economy and the tourism function in the development of regions.

The purpose of this study: to identify the development problems of tourism in Latvia as a factor of regional competitiveness.

The objectives of this study are:

1. To show the importance of tourism sector in the EU and Latvia;
2. To identify the factors hindering and developing the tourism industry in Latvia;
3. To develop proposals for improving the state policy in the field of tourism.

The formulation of these objectives determined the **subject** of the study of this work. The subject of the study is an analysis of trends in tourism development in Latvia in the context of its integration into the EU. The **object** of the research is the tourism industry in Latvia.

Research methodology

As the basis of scientific research is used the process approach to the analysis of socioeconomicdevelopment of tourism industry of Latvia in modern conditions in the EU integration. The studies are based on the methodology of system analysis, involving the structural-functional approach of allocating objects in the system of structural elements and defining their roles (functions) in the system. We used scientific methods, such as systemic and situational approach, structure and comparative analysis.

Results and discussion

The theoretical and methodological foundations of the concept of competitiveness of a region and a country are considered in the works of many authors: W.Steinle (1992), P.Cheshire and I.Gordon (1998), M.Storper (1995, 1997), R.Camagni (2004), M.Porter (2008), I.Judrupa and M.Shenfelde (2011), etc. The concept of regional competitiveness is based on how efficiently the available resources are used in the region. According to M. Porter, the only thing that the concept of competitiveness at the regional level can be based on is the productivity of the use of resources (Porter, 1987).

The relevance of tourism as a factor of regional competitiveness and the subject area of the state's regional policy is determined by the fact that its development issues require state regulation and are solved at the national and regional level, based on the goals and objectives of the state at this stage of society development, which, in fact, determine sstate's tourism policy. A number of works by both foreign and Latvian authors such as Saarinen, J. (2007), Goeldner, C.R. and Ritchie, J.R.B., (2012), Mason, P. (2003), Lickorish, L.J. and Jenkins, C. L. (1997), Dobrica Z. J. (2016), Bērziņa, I. (2012), Klepers, A.(2013), Ziemele, A. (2017) and others are devoted to theoretical basis of tourism and national state policy development. The situation becomes complicated by the fact that tourism as a subject area of research is not represented byspecial, stand-alone science. The question is raised about the differences in approaches to tourism from the point of view of theoretical science and applied research (Ritchie, Lorn&Seldjan, 2008). Moreover, formation of tourism as a science is one of the debate issues within scientific research topics in this area. The science of tourism uses many theoretical methods, concepts, patterns that are valid in other sciences like economics, management, marketing, sociology, psychology, etc. Today, the science of tourism has a non-systemic nature, it combines diverse knowledge from a variety of sciences. Conversely, the subject matter of any branch science (tourism economics, tourism management, tourism marketing, tourism history, tourism psychology, etc.) is associated with a specific subject area of tourism research.

Taking into account current targets in the development of national tourism, the regional aspect of the national tourism policy should be emphasized. Only through the useof the state

regional policy toolsconditionsfor the realization of tourism potentialare created, since tourist destinations are dynamic systems and need to be managed to maintain their competitiveness (Christian, 2016).

Tourism Development in Europe

Europe is positioning itself as the most visited region in the world, where more than half of international tourists arrives. In 2018, the number of arrivals increased by 35.5 million, reaching a total of 710 million visits. As the result, tourism has become one of the main factors of economic recovery after the crisis in Europe (+ 5%) (Fig. 2).

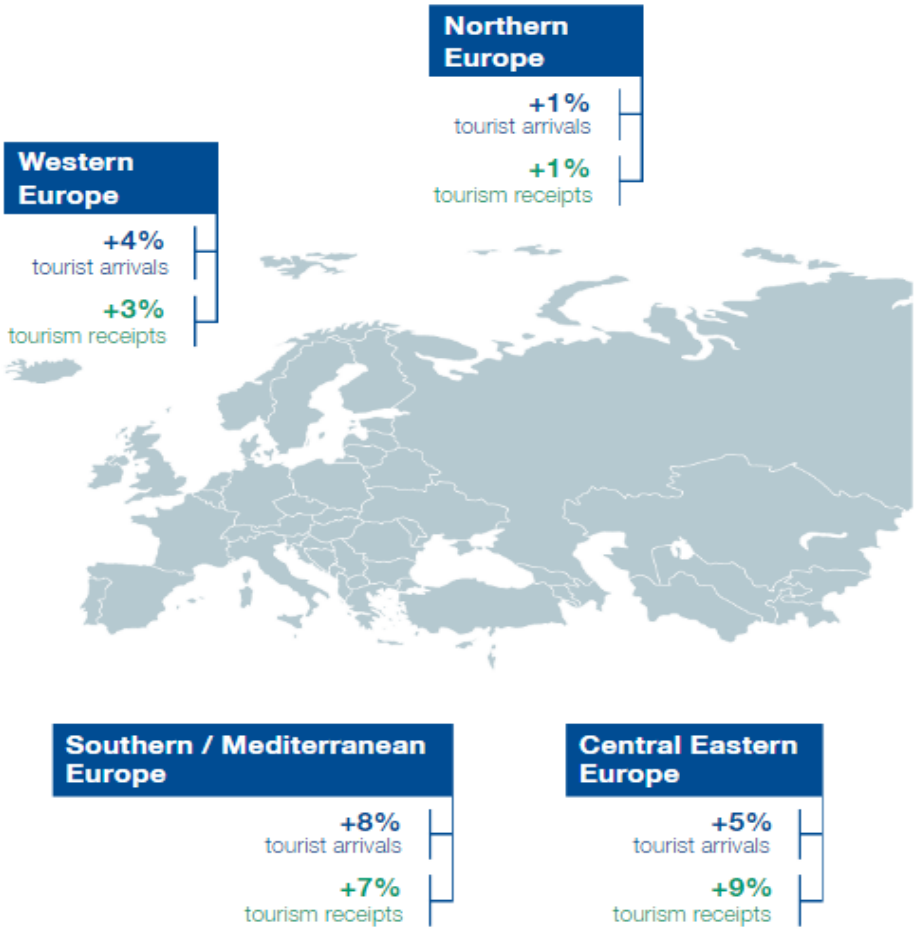

Fig. 0. Arrival of foreign tourists, 2018, %
Source: World Tourism Organization UNWTO (2019)

The growth was driven by the Southern and Mediterranean Europe (+8%), while Northern Europe showed more modest result (+1%). Regarding arrivals to Central and Eastern Europe (+5%) and Western Europe (+4%), was observed average result in both subregions.

Travel and tourism are an important economic activity in most countries around the world; through annual studies the direct contribution of the tourism sector to the GDP of countries is calculated. The World Travel & Tourism Council admits that the contribution to tourism has both direct and indirect impacts, as shown by its annual studies (Fig. 3, 4).

The direct contribution of travel and tourism is characterized by such sectors as hotels, airlines, airports, travel agencies and recreation areas, which are directly involved in tourism. The direct contribution of travel and tourism to GDP reflects the internal expenses of residents and non-residents.

The total contribution of the tourism sector is calculated taking into account the indirect impact on the economy, which includes such areas as jobs, investment costs, marketing and promotion of tourism, management, procurement of goods by sector, security services, IT services, catering services and other services that serve the tourism industry.

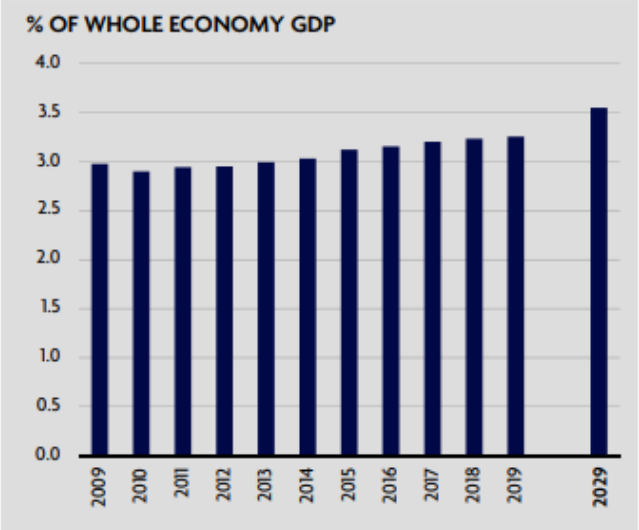

Fig. 3. World: direct contribution of travel & tourism to GDP
Source: WTTC Travel & Tourism Economic impact (2019)

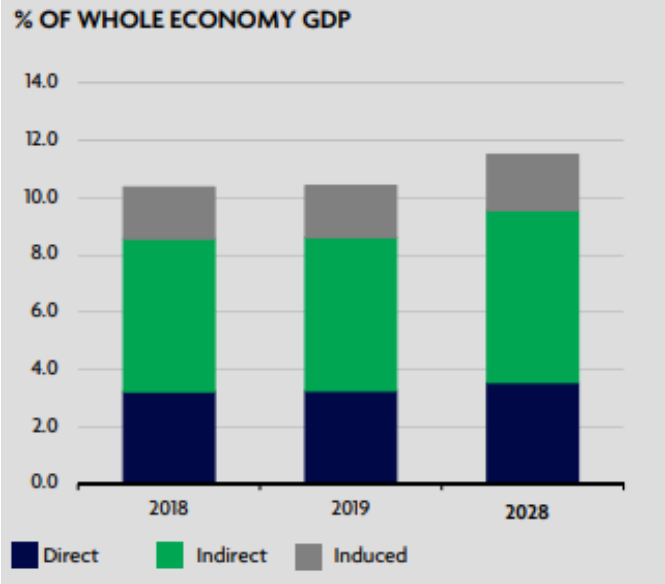

Fig. 4. World:total contribution of travel & tourism to GDP
Source: WTTC Travel & Tourism Economic impact (2019)

The direct contribution of Travel & Tourism to GDP in 2018 was USD2,750.7bn (3.2% of GDP). This is forecast to rise by 3.6% to USD 2,849.2bn in 2019. This primarily reflects the economic activity generated by industries such as hotels, travel agents, airlines and other passenger transportation. The direct contribution of Travel & Tourism to GDP is expected to grow by 3.6% pa to USD 4,065.0bn (3.5% of GDP) by 2029. The total contribution of Travel & Tourism to GDP is three times greater than its direct contribution. (WTTC Travel & Tourism Economic impact, 2019)

The Tourism Industry in Latvia

For Latvia, tourism is a very important sector, since it not only shapes the image of the state, but also develops the national economy directly. As of 2017, tourism accounted for 17% of all services rendered in the country, providing jobs not only for tour operators but also for hotels, restaurants, transport industry, ferry lines, airlines and airports.

Despite all the above facts, according to the studies of *The Travel & Tourism Competitiveness Index Ranking 2019* Latvia ranks only 53rd in the competitiveness in the travel and tourism industry among 140 countries. For comparison, Estonia ranks 46th, while Lithuania ranks 59th (The Travel & Tourism Competitiveness Index Ranking, 2019).

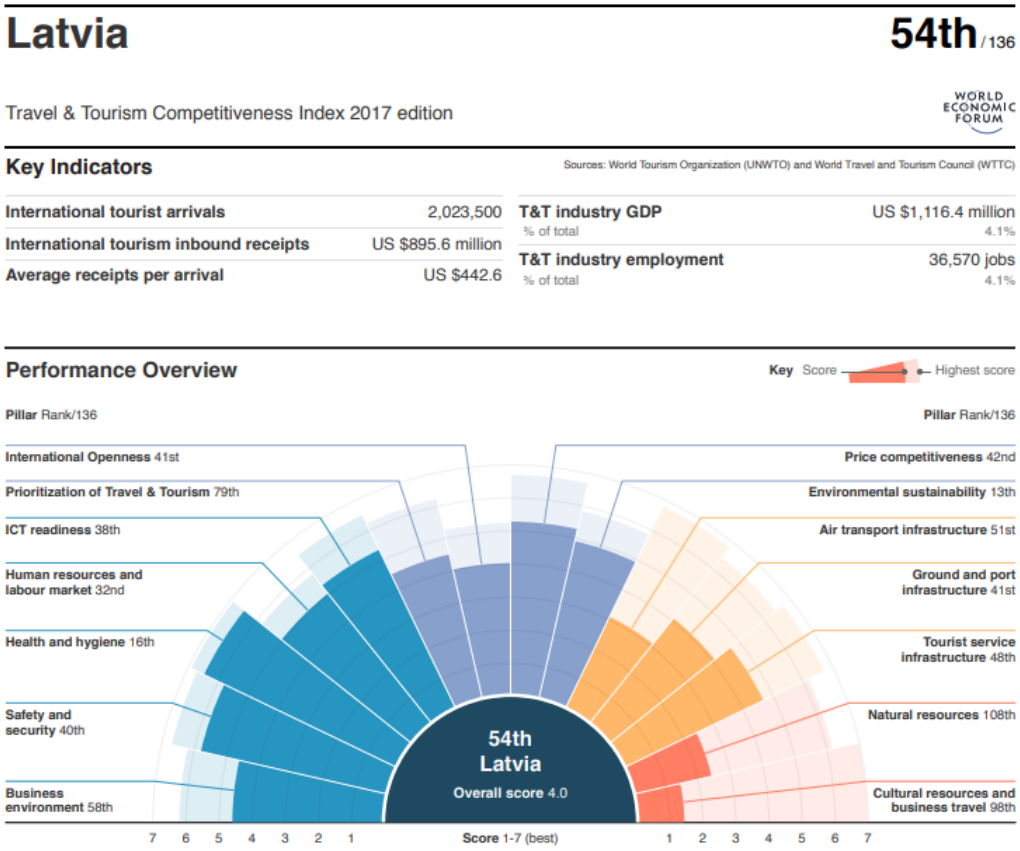

Fig. 5. Ranking of Latvia's competitiveness in the tourism industry
Source: The Travel & Tourism Competitiveness Index Ranking (2019)

In its statistical studies, *Eurostat* shows the impact of the tourism industry on various sectors in the EU.

According to the forecasts of the *World Travel & Tourism Council*, significance of the tourism industry for the Latvian economy will increase in importance.

According to the Central Statistical Bureau of Latvia, foreign visitors crossed the border of Latvia more than 44.6 million times in the post-crisis period from 2011-2018.In hotels and other places of accommodation, more than 11.6 million foreign guests were served, who in turn spent 23.3 million nights on the territory of the country (table 1):

Table 1

Dynamics of visits to Latvia by foreign guests in the post-crisis period (2011 - 2018)

Years/ Indicators	Number of border crossings by foreign guests		Number of people serviced in hotels and other places of accommodation for foreign guests		Number of people, who spent nights in hotels and other places of accommodation for foreign guests	
	thousand peoples	%	peoples	%	peoples	%
2011	5 538	100	1 063 294	100	2 257 021	100
2012	5 569	100.6	1 096 274	103.1	2 429 093	107.6
2013	5 822	104.5	1 249 814	114.0	2 639 434	108.7
2014	6 246	107.3	1 431 038	114.5	2 875 934	109.0
2015	6 842	109.5	1 474 765	103.1	2 873 885	99.9
2016	6 797	99.3	1 573 632	106.7	3 044 532	105.9
2017	7 726	113.7	1 778 973	113.0	3 406 527	111.9
2018	7 775	100.6	1 925 397	108.2	3 742 966	109.9

Source: CSB of Latvia

In 2018, 1.9 million multi-day tourists visited Latvia, which is 0.2% less than in 2017, spending 516.7 million euros or 3.2% less. The total number of nights spent decreased by 11.3% compared to the previous year, reaching 7.9 million nights. The average length of stay was 4.0 nights, which is 0.5 days less than in 2017. Compared to 2017, last year the number of guests from neighboring countries increased slightly: by 5.3% from Lithuania and by 5.2% from Estonia. At the same time, despite anti-Russian sanctions, the number of guests from Russia increased by 7.3%. and from Belarus by 4.7%. The growth of travelers increased: by 10.1%

from the USA, by 15.8% from Denmark, by 16.5% from France, by 18.8% from Poland, by 15.6% from Sweden, by 8.7% from Germany, by 13.5% from the United Kingdom, and from Italy by 5.2%. The number of tourists from Norway and Finland slightly decreased -by 5.6% and by 0.3% (Tourism in Latvia 2019).

In 2018, according to the Central Statistical Bureau, the number of tourists served in hotels has increased for all the major tourism markets represented in Latvia, with the exception of Norway and Finland. In 2018, 75.7% of all foreign tourists served in Latvian hotels gave preference to Riga hotels, and an increase compared to the last year was 9.9%. The majority of guests were from France (23.4%), Poland (21.2%), the USA (16.5%), the United Kingdom (16.0%), Germany (7.9%), Russia (7.4%) (Tourism in Latvia 2019).

Factors hindering and developing the tourism industry in Latvia

Any area of activity operating on the territory of the country depends on the geographic location of the state, economic and social environment. *All these factors can have both developmental and retarding effect on the tourism industry.*

- **Price level in the international market**

Prices for services affect the availability and choice of consumers of a particular recreation area. To date, there is a huge selection of offers available to travelers, so it is very important to trace and control price policy in the country.

The price level in the international market affects not only the choice of travelers, but also has an impact on the consumption of services and goods by Latvians.

R*iga turned out to be one of the most expensive cities in the post-Soviet area.* Among the most expensive cities in the world for tourists and business travelers, Riga visibly overtakes not only the capital of Estonia, Belarus, Lithuania and Poland, but also, for example, German Stuttgart and RussianSt.Petersburg. This is evidenced by the results of a study by the consulting company *Mercer Human Resource Consulting.*

Assessing expensiveness of cities, *Mercer Human Resource Consulting* took into account the cost of renting accommodation and buying food, transportation, meals, clothing, household goods and entertainment.

In the list of the most expensive cities compiled by *Mercer,* Riga ranked the 111th in 2019, Tallinn ranked the 140th, and Vilnius - the 152nd. (Cost of living city ranking, 2019).

- **Welfare level of population**

The level of welfare of the population directly affects consumption of goods and services, influences demography and emigration. These factors have an impact also on the tourism industry. A negative dynamics of demography and emigration exist in Latvia.

The welfare level of the population directly depends on the level of income, GDP per capita. According to the public statistics of Eurostat, GDP per capita varies in a very wide range in the EU countries - from poor to rich countries (Fig. 6). Latvia's GDP per capita is 11,600 euros a year, while the average GDP per capita in the EU and the euro area is 25,700 and 28,600 euros, respectively.

The income level of Latvian inhabitants is 29% of the EU average:

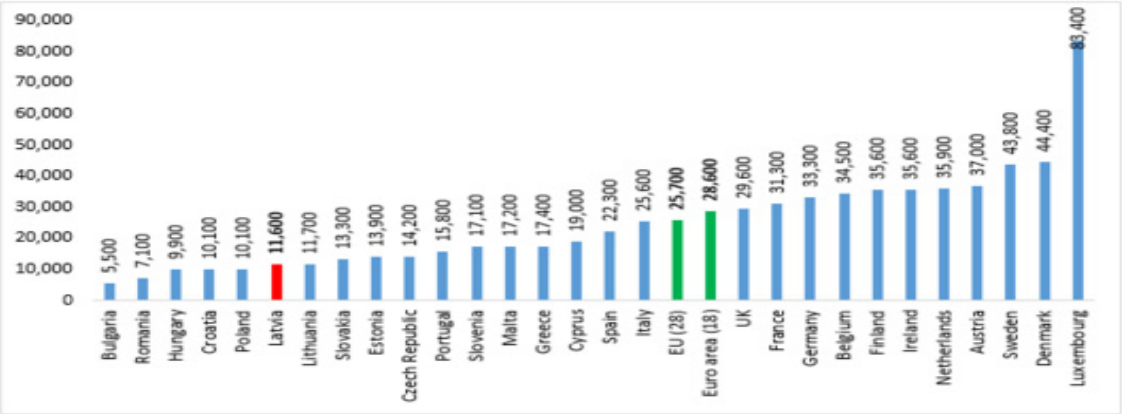

Fig. 6. GDP per capita in the EU
Source: Eurostat

- **Attractiveness for investors**

Investors face a number of serious problems that hamper the flow of investment. First of all, this is a shortage of skilled labor, insufficient level of education, inadequate skills of workers to the requirements of employers. Apart from that, investors stressed the insufficient effectiveness of the judicial and the tax systems.

According to the *executive director of the Foreign Investors' Council in Latvia Girts Greiskalns,* it is necessary to reduce labor taxes in order to increase labor productivity in Latvia. The remaining taxes roughly correspond to the average in Europe. (Dojkin, 2015).

The total amount of investments gradually decreasing in Latvia, new investors do not emerge, and the old ones decide to reduce their presence.

According to the results of the survey conducted by *SEB Banka* (Baltic Business Outlook, 2015), business in Latvia over the past few years has also reduced the willingness to invest its business (Fig. 7). While in 2013, 54% of businessmen in the Baltic countries were ready to invest in their business, then, in 2014 only 37% of entrepreneurs had such plans, and this year, only 28% of Latvian entrepreneurs are ready to implement investment projects.

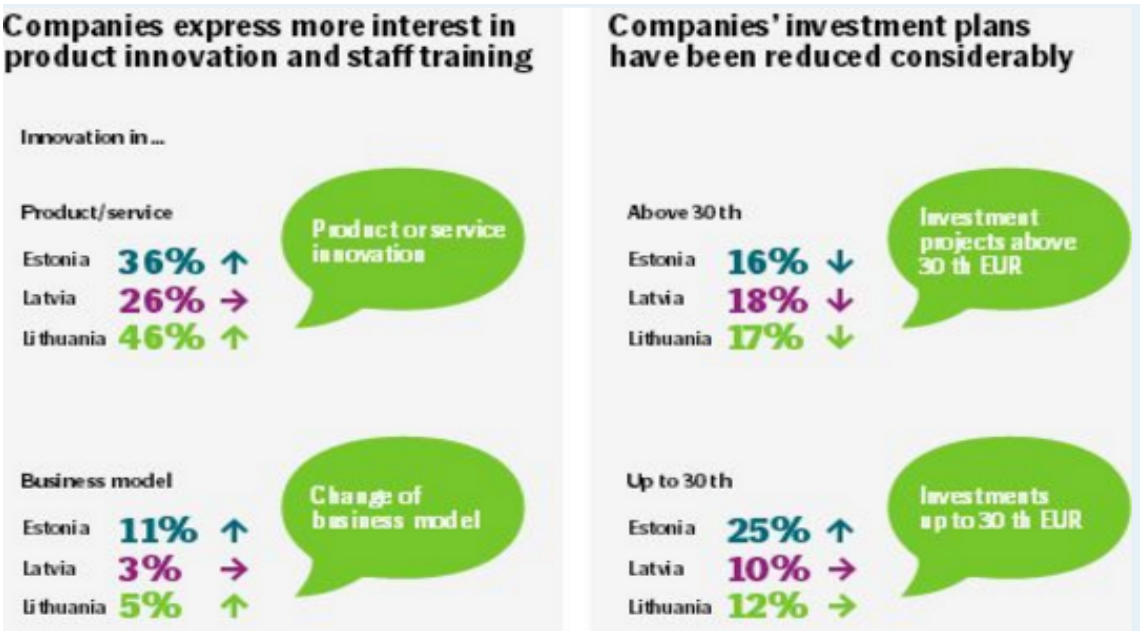

Fig. 7. Readiness of entrepreneursin the Baltic countries to invest in their business
Source: SEB Banka

Safety of travel

Often, as an indicator for safe travel we view remoteness or proximity of the state to the "hot spots", criminogenic atmosphere in the country, tolerant attitude of citizens to visitors. *Latvia, like any other EU country, is considered a safe zone for travelers.*

Latvians have moderate mentality, and Latvia has a great advantage as the European country with its multilingualism. Knowledge of English and Russian is common in Latvia.

The negative factor of safety for travelers in Latvia and Riga is the arrival points of tourists: the bus station and the railway station. Unpleasantness of these places can be felt especially in the evenings: untidiness, a large number of suspicious subjects, weak security. All these factors have a negative impact on the first impression of new arriving tourists and on their perception of security in the future.

Territorial and geographical location of the country, climate, ecology and historical and cultural heritage of the state. Factors that have a developmental impact on tourism:

Territorial and geographical location of the country

Latvia is located on the border of the CIS countries and Western Europe. In the north it borders with Estonia, in the east with Russia, in the south with Belarus and Lithuania, in the west it is washed by the Baltic Sea, which gives direct access to the Scandinavian countries. Due to its geographical location, Latvia has the advantages of quick access, the railway and bus services to Russia are well developed. Air traffic with major European capitals is also well developed.

Climate

Latvia is located in a temperate climatic zone, weather conditions are shaped by the Atlantic air masses, the Baltic Sea and the Baltic Gulf. There are clearly expressed four moderate seasons are throughout the year in Latvia, very favourable for physical and psychological health.

Ecology

Lack of industrial enterprises and congested highways favorably affects the overall natural and ecological state, including the atmosphere of cities. This makes the country suitable for ecological tourism.

In 2010, the *Center for Environmental Law and Policy* of Yale University, together with the *Center for the International Earth Science Information Network* of Columbia University, compiled an EPI for a visual rating of the most successful countries in achieving "The Millennium Development Goals 2015".

*EPI (Environmental Performance Index)*is a methodology for enumerating and statistical initialization of the country's environmental indicators, taking into account its green policy. In 2012, according to the assessment of green longevity, Latvia occupied an honorable second place, immediately after Switzerland with an estimate of 70.37, while based on calculations for 2018 Latvia got an estimate of 66.12 and fell to the 37th place among 180 countries (Fig. 8).

EPI relies on an assessment system based on two factors: ecological rationality and *Ecosystem Vitality.*

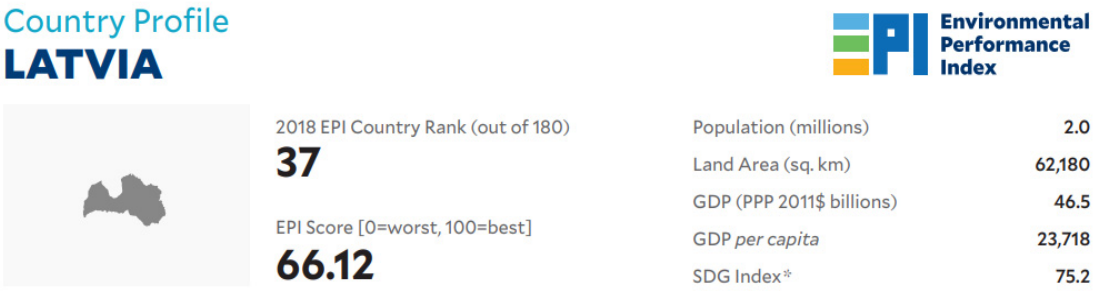

Fig. 8. Environmental Performance Indexfor 2018
Source: Environmental Performance Index (2018)

The ecosystem vitality consists of points assessing increase in natural resources, impeccable environmental conditions and biodiversity. In addition, *Environmental Health* reflects such complex issues as unsanitary water sources, air pollution and diseases.

Historical and cultural heritage of the state

Latvia is divided into several historical and cultural regions that have many natural parks, various monuments of architecture and sights with long traditions of cultural ties and with diverse national and religious composition of the population.

The cultural heritage of Latvia includes 3,364 monuments of architecture, 2,495 archaeological monuments, 2,414 monuments of art, 44 territorial and town-planning monuments, as well as 111 historical monuments. They form the whole of the Latvian heritage of architecture, archaeology (including underwater), monumental, sacred and applied art, science and technology. The list of cultural monuments of national importance in Latvia includes 1,248 monuments of architecture, 1,481 archaeological monuments, 2,243 art monuments, 39 territorial and town-planning monuments and 109 historical monuments. (Latvia. Properties inscribed on the World Heritage List, 2019).

Conclusions

Tourism occupies one of the most important places in the economy of Latvia. Geography of international tourism in Latvia is diverse, and Riga in turn has a good tourism market in the tourism and recreational industry of the world. Latvia is rich in its natural objects and sights of both historical and cultural as well as religious character. Now, the infrastructure of Latvia has been developing and represents a system that fully operates on the international tourism market and is able to provide a tourist product to its consumers - tourists who have visited the country. The Ministry of Economics plans to allocate more than 20 million euros to the development of Latvian tourism in the upcoming years.

In European tourism industry, competition has significantly increased recently, which determines the need to differentiate tourist products and services and effectively position a final destination of travel in the tourism market. Creation of a new image of Latvian tourism outlines a future direction in which it is necessary to create Latvian tourist products using available tourism resources and creating added value for them.

The emergence of and opportunity for developing new types of tourist activity in Latvia will be determined by the following factors (Truchet, Piguet, Aubert & Callois, 2016):

- the nature of and commitment to the national tourism strategy by the government and the tourism industry;
- the ability of local community to meet expectations of international visitors with respect to service and quality of tourism services;
- the nature, distribution, quality and location of landmarks, especially in relation to the main centers of accommodation and services, transport hubs;
- transport accessibility and mobility in the region;
- further development of image of the region within territorial marketing strategies.

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