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Turinys / Contents

EDITORIAL

"Vadyba / Journal of Management" published by the Lithuanian Business University of Applied Sciences is a peer-reviewed journal that provides an international forum for researchers of Social Sciences, Economics and Management. The Journal is published since 2002, and is operated by an internationally oriented editorial board leading by Prof. Valentinas Navickas, Kaunas University of Technology (Lithuania) and serves as a platform for both scholars and managers with practical experience and send some messages to policy decision makers as well. It has been positively evaluated by foreign scientists and the number of international scholars publication is constantly increasing.

The editors invite manuscripts to any field of management and social sciences with test or extending theories and papers on practices and developments in related topics. Only those articles are accepted for publication, which meet the strict requirements set by the Editorial Board and enhance the reputation of journal, with their originalty contributions to the current body of international academic knowledge.

The present issue in hand is the 35st. This issue has been prepared jointly by Lithuania Business University of Applied Sciences and Szent István University (Hungary). Authors of these articles represent various Lithuanian and foreign countries scientists, members of different educational and business institutions, such as University of Tetova (North Macedonia), University of Warsaw, Warsaw Management School (Poland), University of Alexander Dubcek in Trencin (Slovakia), Purdue University Northwest (USA), Multimedia University (Malaysia), Stradins University, Baltic International Academy, Liepaja University, Riga Technical University (Latvia), International School of Management (Germany), TH Köln – University of Applied Sciences (Germany), LCC International University, Klaipeda University, Strategic Self-management Institute, Lithuania Business University of Applied Sciences, Kaunas University of Technology, Strategic Self-Management Institute (Lithuania), Szent István University (Hungary) and other institutions.

The papers published in this edition cover domains such as Management, Law and Technology. Some papers represent the area of behavior economics, such as consumer or employee behavior: Katalin Tari analyzes the behavior of Hungarian and American consumers in the field of online commerce, Farheen Naz and Robert Magda in their paper examine purchasing behavior of Indian consumers towards products made with environmentally friendly technology. Some hot topic as national and business culture (Barczyk et al.), motivation and job satisfaction(Kleina and Štāle; Borisov, Vinogradov and also Kontautiene, human and knowledge management (Solomatina, Jeyakumar Nathan et al.) also represent the interest of researchers in this area.

The 4th industrial revolution is coming, the using of ITC is increasing. We can get information about the results and benefit of the progress from different area, Audrone Ispiryan and Algirdas Giedraitis give some examples from the Lithuanian agriculture, Dailidiene et al. share the experience of Smart Environment Change Management Integration in the Egypt Universities, Fontanari et al. give very detailed summary and analyzis of Internet of Things and Customer Benefits.

However, Editorial cannot review all of the researches, therefore we encourage familiarizing with them in the Journal, which currently is under the indexing process with Scopus. It feels good to the editorial board that most of the articles are in international co-operation, which will continue to be welcomed.

Finally let us express our appreciation and warmest thanks to all of authors, editors, reviewers for their contribution.

The Editorial board invite scientists form different part of the world to share their research ideas and result by actively publishing in the Vadyba / Journal of Management.

Prof. Dr. Maria Fekete Farkas and assoc. prof. Sergej Vinogradov
members of Editorial Board

Social sciences

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ORGANIZATIONAL AND NATIONAL CULTURE: IMPLICATIONS FOR EXPANDING HIGH IMPACT ENTREPRENEURSHIP IN LITHUANIA

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[1]Purdue University Northwest, [2]University of Warsaw

Abstract

National culture plays a strong role in fostering entrepreneurial organizations. When a country's cultural values are aligned with organizational culture, entrepreneurs can be highly successful. Lithuania's score of 51.2% and ranking of 29 on the Global Entrepreneurship and Development Index suggests that high impact entrepreneurship in the country can be enhanced. National culture is assessed using Hofstede's Six Dimensional Model. According to the model, Lithuania is low on power distance, low to moderate on individualism, very low on masculinity, and moderate on uncertainty avoidance. Its culture is very long term oriented with respect to time and highly restrained. Recommendations for structuring organizational culture that fosters high impact entrepreneurship and aligns with Lithuania's national values and traditions are proposed.
Keywords: Global entrepreneurship and development index; high-impact entrepreneurship; national culture; organizational culture.

Introduction

This paper discusses national and organizational culture and suggests how they can be successfully managed to develop high impact entrepreneurship in Lithuania. High impact entrepreneurship is fundamentally related to innovation and ambition to grow a business. It is contrasted with small business whose owners simply copy what others are doing. Entrepreneurs do not duplicate, they innovate.

High impact entrepreneurship is important because it helps improve a country's economy and people's lives (Acs, Szerb, Lloyd, 2017). It encompasses a subset of firms that grow rapidly (Henrekson and Sanandaji, 2014). According to the World Economic Forum, high impact entrepreneurs are individuals who launch and grow companies that have above average impacts on wealth and job creation. Their companies improve the standard of living of the societies and communities in which they operate. As a group, high impact entrepreneurs are quite distinguishable. They have companies that grow faster, create more jobs, contribute more to society, and revolutionize industries to a greater extent than their peers (Lontoh, 2017). The success of high impact entrepreneurs depends on a cultural environment and institutional structure with the necessary capital and new opportunities that accrue from knowledge spillover (Stenholm, Acs, and Wuebker, 2013). Their activities, indeed all entrepreneurial interests, are deeply embedded in cultural norms and values (Granovetter, 1983).

Entrepreneurship in Lithuania will be discussed using the United States as a point of reference. The reason for this perspective is that the USA is ranked #1 on the Global Economic and Development Index (GEDI). As a nation it has a high rate of new business start-ups and it breeds a constant flow of high impact entrepreneurial firms – the kinds that create value and stimulate growth by bringing new ideas to market. The USA has evolved a multi-dimensional system for culturally and economically nurturing high-impact entrepreneurship. It is a system that, with the right human resource and development policies, might be cultivated in many other countries as well (Schramm, 2004).

This paper is organized into three sections. The first describes national culture as viewed through the lens of Hofstede's Six-Dimension (6-D) Model. That section analyzes the culture of Lithuania using the scores from the model along with comparison scores for the USA. The second section describes the GEDI and details Lithuania's rank and score along with those of the USA and the top ten global entrepreneurship countries for comparison. The third section describes organizational culture and presents a set of recommendations for the development of high impact entrepreneurship in Lithuania.

Lithuania's National Culture

In General

Culture can be defined as the shared beliefs, values, identities, motives, and interpretations that result from common experiences of the majority members of a society, which are transmitted across generations (House, Hanges, Javidan, Dorfman, and Gupta, 2004).

Though culture scholars do not agree on the precise meaning of culture, there is general agreement that culture works at different levels, the most fundamental being the national level (Nazarian, Atkinson, and Foroudi, 2017). Hofstede, Hofstede, and Minkov (2010) believe national culture is at the heart of the primary socialization process in early childhood. It gives people their beliefs and values.

Hofstede's Six Cultural Dimensions

Geert Hofstede developed the most well-known taxonomy of national culture. In a landmark study beginning in the 1960's he analyzed data from 88,000 employees at IBM who worked in 72 countries and spoke 20 languages (Hofstede, 2001; Kirkman, Lowe, and Gibson, 2006).

Initially, Hofstede identified four cultural dimensions: power distance, individualism, masculinity, and uncertainty avoidance. He stated that power distance is a measure of the degree to which societal members expect power to be shared. When a culture has high power distance, people expect those with power to be treated differently than those without power. It is prominent and acceptable to differentiate people on the basis of status. When a culture has low power distance, differentiating people on the basis of status is not expected, nor desirable. Individualism is a measure of the extent to which people are concerned with personal interests. This is distinguished from collectivism, which refers to the extent that people identify with a group. In collectivist cultures people expect group members to protect them. Masculinity is a measure of the degree to which people value achievement, assertiveness, competition, and the acquisition of success or material goods. This is contrasted with femininity, which is associated with the degree to which people value a concern for others and nurturing relationships. Uncertainty avoidance relates to the way society deals with an unknown future. The question is should we try to control the future or just let it happen? Essentially it is a measure of a culture's collective tolerance for ambiguity. High uncertainty avoidance cultures have people who develop clear rules and regulations to help reduce the uncertainty of the future. They are more comfortable in having an assurance of what is likely to happen in the future. Low uncertainty cultures have people who do not consider ambiguity and change as threats.

Hofstede and Bond (1988) later identified a fifth cultural dimension – long term orientation. It refers to the extent to which members of a society reward and encourage future-oriented behavior such as planning, delaying gratification, or investing for the future. It relates to a culture's preference for tradition, perseverance, thrift, and a long run view of time (Robbins and Coulter, 2012). Long term orientation was originally called Confucian Dynamism, which evolved from a view that "Asian values" were unique to a specific part of the world. However, that view was later found to be false. Those values can be found in other parts of the world.

Further research uncovered a sixth dimension of national culture called indulgence/restraint (Minkov, 2013; Minkov and Hofstede, 2011). This dimension measures the degree to which a society permits or suppresses the expression of human desires. Indulgence/restraint refers to the extent to which people attempt to keep their impulses and desires under control, based on the way they were socialized – the way they were raised. With indulgent cultures, people have very weak control, whereas with restrained cultures, people have relatively strong control over their desires.

Lithuania's National Culture Using the 6-D Model

Based on the national culture research conducted by Hofstede (detailed at www.hofstede-insights.com), Lithuania can be described using the six dimensions described above. Those dimensions make up what is known as the 6-D Model. The model provides an overview of the deep drivers of Lithuanian culture as it relates to others around the world. Figure 1 presents a graphical plot of the scores for Lithuania on all six cultural dimensions. It also presents the scores for the USA to serve as a comparison. The graphical data show that Lithuanian culture is low on power distance, moderate on individualism, very low on masculinity, moderate on uncertainty avoidance, very high on long term orientation, and very low on indulgence.

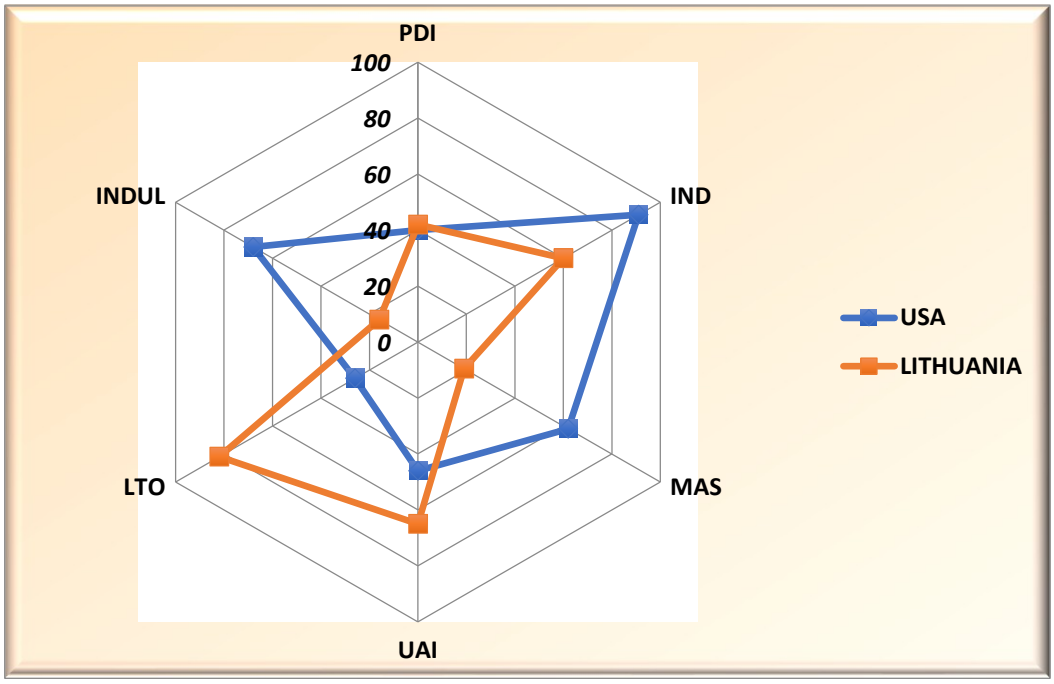

Figure 1. Graph of Six Cultural Dimension Scores for Lithuania and the USA

Power Distance (PDI)

Lithuania's PDI score of 42 indicates that it is a country whose people value decentralized power and decision making along with equality. The younger generation of workers dislikes control and formal supervision. They prefer a teamwork environment with an open management style. The older generation, however, has a sense of loyalty and deference towards authority and status. This is similar to other Baltic countries which experienced Russian and Soviet dominance. It is interesting that even during the Communist era Lithuanians showed a preference for teamwork and work units where employees met to make plans and discuss ideas. The dislike for power holders is due to their apparent disrespect of workers and their ideas. Workplace suggestions formulated by employees were rarely implemented. Related to the fact that Lithuania has a high score for individualism, the culture, as a whole, has an aversion to being controlled and told what to do. Lithuania values equality and it encourages worker involvement, which is important to fostering creativity and innovation – elements important for the development of high impact entrepreneurship

The United States' PDI score of 40 is almost identical to that of Lithuania. As a nation, its people question authority and individuals expect to participate in decisions that affect them. Leaders and managers are viewed as equals. In American culture, leaders must earn the respect of their followers; it is not gained as an entitlement by right of their office. One of the most salient aspects of power distance is the extent to which people can exert power over other individuals. Power is the degree to which a person is able to influence other people's behavior and ideas. In the USA, power relationships need to be participative, democratic, and consultative. Like Lithuania, America's PDI score indicates that its culture has a strong belief in equality for its people.

Individualism (IND)

With a high score of 60, Lithuania is a moderately individualist society that remained so even during the Soviet occupation. The nuclear family ideal is strong and family members regularly keep in touch with one another, while respecting each other's space. Children are taught to take responsibility for their actions. They are viewed and treated as young adults at an early age. Individualism has increased since the country's independence in 1990 for a number of reasons. National wealth has increased because people depend less on traditional agriculture and more on modern technology, coupled with more urban living, more social mobility, better education, and a larger middle class. Lithuania's new generation of workers is more focused on individual performance than on that of the group. While there is a hesitancy to open up and speak freely, Lithuanians converse directly without understatement or exaggeration, clearly representing an aspect of individualism. They are tolerant of others and their actions provided that they are not annoyed by them. In Lithuanian culture, what you do and how you choose to live your life is clearly your business.

The IND score for the USA is 91, indicating that it is one of the most individualistic cultures in the world. The society is loosely-knit and the expectation is that people take care of themselves and those closest to them. Individuals do not rely much on authorities for support. Americans view hierarchy as a matter of convenience, as reflected in a low power distance score. Managers as well as employees expect to be consulted on decisions and believe that information should be communicated frequently and shared. In business, communication is informal, direct, and somewhat participative. At the workplace, Americans interact with people about whom they know very little, but they are comfortable approaching them in order to obtain the information they need. In many workplaces employees are groomed to show self-reliance and initiative. Hiring and promotion decisions are based on merit or what one has the potential to do.

Masculinity (MAS)

Lithuania's MAS score of 19 indicates that it is a feminine oriented society. In countries that value feminine ideals, people are concerned with caring for others. Success is defined by liking what one does and having a good quality of life. Standing out from the crowd is not considered important or admirable. Lithuanians tend to feel awkward about getting and giving praise, arguing that they could have done better or have achieved nothing really worthy of praise or of note. They are modest people who communicate softly and in a diplomatic tone so as to be inoffensive. In Lithuanian culture conflict is perceived as threatening because it might endanger everyone's well-being, which is associated with a feminine culture. While Lithuanians are considered relatively reserved, they are tolerant of the culture of other countries. This may be due in part to their long experience of interaction with other nationalities (www.hofstede-insights.com/country/lithuania/) .

With an MAS score of 62, the USA is a country that values masculine ideals. Americans show their masculine drive individually, given that the USA is one of the most individualistic cultures in the world. Behaviors while in school, at work or play are based on the value that people should be the best they can be. The culture espouses a winner take all mentality. Americans display and talk freely about their successes and achievement. Being successful is not as important as showing one's success. American employees have a "can-do" attitude, which serves to create dynamism in society. It is believed that there is always a better way in which to do things. Americans live in order to work. They desire monetary rewards to attain a higher societal status. They believe that some conflict is beneficial – bringing out the best in people as it is one's life goal to be "the winner." With this cultural composition, there is much polarization and America is considered to be a litigious society. This attitude and behavior seems to undermine the American ideal of liberty and justice for all. Rising inequality is threatening democracy because an enlarging gap in economic classes is driving power distance up and individualism down (www.hofstede-insights.com).

Uncertainty Avoidance (UAI)

Lithuania scores 65 on the UAI dimension. As a nation, the people tend to avoid uncertainty. They worry about the world around them for which society provides legitimate outlets. In high uncertainty avoidance cultures managers have to provide precise answers to questions about work raised by subordinates. Lithuanian managers have risen in rank because they know everything and are able to lead, unlike the situation in low uncertainty avoidance cultures. Knowing all the answers takes people's discomfort with uncertainty away. With the moderate level of uncertainty avoidance found in Lithuania, people are reluctant to take risks. Consequently, they rely on bureaucracy. They have an emotional reliance on rules and regulations, which may not be followed, but reduce uncertainty. In sum, this cultural characteristic tends to somewhat inhibit high impact entrepreneurship.

The USA scores 46 on uncertainty avoidance, which is relatively low on this cultural dimension. Americans have a fair degree of acceptance for innovative products and ideas. They try new things that are different, regardless of whether it is technology, business practice, or food. Americans generally have tolerance for ideas or opinions from anyone and allow their free expression. As a group they do not have many rules to deal with uncertainty. However, the events of 9/11 have instilled fear in American society resulting in governmental efforts to monitor people using bureaus such as the National Security Agency (NSA) and other security offices. The USA's low UAI score, which entails a cultural tendency to minimize rules, allows high impact entrepreneurship to flourish.

Long Term Orientation (LTO)

Lithuania's high score of 82 on this dimension of national culture indicates that its people are long term oriented and extremely pragmatic. As such, they believe that truth depends on time, situations, and context. People in Lithuania adapt traditions easily to situations and conditions that have changed. They have a strong propensity to invest and save. They believe in perseverance, thriftiness, and the achievement of results. As a pragmatic culture, Lithuanians foster modern education and technology to forge the path for the future.

On long term orientation, the USA's score is quite low at 26, which makes Americans very short term oriented. This contrasts sharply with Lithuania. As a group, Americans tend to analyze new information to verify that it is truthful. The national culture of the USA is not pragmatic, rather it is normative. However, this is different from being practical; Americans have a "can-do" mentality. They also have strong opinions on what is good and evil. Businesses in the USA measure their financial and organizational performance on a short-term basis. Profit and loss statements, for example, are issued quarterly and individuals in the workplace strive for quick results, resulting in products and services that are not of the highest quality.

Indulgence (INDUL)

With a score of 16, Lithuania is low on the indulgence dimension. Its culture is one of restraint. Societies with a low score on INDUL tend to be pessimistic and cynical. They do not have a strong emphasis on leisure time. People in restrained cultures tend to control the gratification of their desires. They perceive that social norms control and restrain them. They believe that "indulging themselves is somewhat wrong" (www.hofstede-insights.com/country-comparison/lithuania, p. 5). While restraint may have its place, it may stifle the indulgent thought necessary to maintain high impact entrepreneurship.

The INDUL score of 68 for the USA is in stark contrast to Lithuania. Simply put, people in the USA tend to have relatively weak control over their impulses. Culturally, Americans are indulgent people. They value working hard and playing hard. This manifests itself in some apparent contradictions. The USA has spent time and effort to wage a war against drugs. Despite their efforts, the drug addiction problem in America is higher than in many other wealthy countries. Additionally, the USA tends to be a prudish society – one excessively concerned with sexual propriety. However, it is home to well-known televangelists that have been exposed because of their unacceptable immoral behaviors.

This poses a question – does indulgence as a cultural dimension affect entrepreneurship? Of the top ten GEDI ranked nations, the mean INDUL score is 67 (Median = 68, Range = 48-71). Based on these data, which include the USA, indulgent cultures tend to be associated with well-developed, higher-impact entrepreneurship.

Lithuania: Global Entrepreneurship and Development Index Score

The GEDI's primary purpose is to measure a country's success in producing high quality and high impact entrepreneurial enterprises. The Index is comprehensive and goes beyond simply measuring the start-ups or self-employment in a country. Rather it measures the potential impact of the entrepreneurship that is occurring in countries. It does this by examining three aspects of high-quality entrepreneurship: attitudes, activity, and aspiration. Attitudes measure things that relate to the national perception of the value of entrepreneurship to the economic success of a country. The activity dimension measures the level of start-ups in a country's technology sector. Aspiration measures the activities of entrepreneurs in a country to introduce new products into the market and expand their enterprises. The GEDI includes a score and a rank for most countries on these combined dimensions to show what is believed to be true entrepreneurial success (Rarick and Han, 2015).

GEDI scores and rank data for Lithuania and the USA are shown in Table 1. The data indicate that of the 137 nations included in the 2018 GEDI, Lithuania ranks #29. Its GEDI score is 51.2%, which is 1.6 percentage points higher than it was in 2017. The USA ranks #1 on the Index with a GEDI score of 84%, which is 0.6 percentage points higher than in 2017.

Table 1. GEDI ranks and scores for Lithuania and the USA

Countries	GEDI rank 2018	GEDI rank 2017	GEDI score 2018	GEDI score 2017
Lithuania	29	28	51.2%	49.6%
USA	1	1	84.0%	83.4%
Europe – region			49.1%	46.9%
North America - region			63.0%	61.5%

Table 2 provides a summary of the GEDI and six cultural dimension scores for Lithuania and the top ten entrepreneurially-oriented countries in the world. The data for Lithuania contrasts sharply on some of the six dimensions.

Table 2. Cultural Dimension Scores for Lithuania and the Top Ten GEDI Countries

Country	GEI Rank	GEI Score	PDI	IND	MAS	UAI	LTO	INDUL
United States	1	83.6	40	91	62	46	26	68
Switzerland	2	80.4	34	68	70	58	74	66
Canada	3	79.2	39	80	52	48	36	68
United Kingdom	4	77.8	35	89	66	35	51	69
Australia	5	75.5	36	90	61	51	21	71
Denmark	6	74.3	18	74	16	23	35	70
Iceland	7	74.2	30	60	10	50	28	67
Ireland	8	73.7	20	70	68	35	24	65
Sweden	9	73.1	31	71	5	29	53	78
France	10	68.5	68	71	43	86	63	48
Lithuania	**29**	**51.2**	**42**	**60**	**19**	**65**	**82**	**16**

A number of facts explain the process and effects of entrepreneurship. One of those is national culture (Cacciotti and Hayton, 2017). A relatively recent study by Rarick and Han (2015) analyzed the relationship between Hofstede's cultural dimensions and entrepreneurial mindset. Those researchers found that individualism and uncertainty avoidance were strong predictors of entrepreneurial activity in top ranking GEDI countries. Power distance was also found to be a moderate predictor of entrepreneurial success in top ranking GEDI countries.

The data summarized in Table 2 indicate that low power distance cultures are associated with high impact entrepreneurship. This is a trend except for France whose PDI score is 68. Status and power differentials are neither expected nor desirable in low power distance cultures. High impact entrepreneurship countries also have cultures that are high on individualism where people care most about themselves and those closest to them. They value people's rights and responsibilities and expect societal members to care for themselves. Lithuania is not entirely individualistic. Its IND score is 60, which means that the country has some collectivistic characteristics. The top ranked GEDI countries had IND scores ranging between 70 and 91. The exception to this is Iceland, whose score is 60 – the same as Lithuania's. These data are consistent with Rarick and Han's (2015) findings that culture may "play an important part in the entrepreneurial success of a country" (p. 124). According to Rarick and Han (2015), countries high in individualism and low in

power distance seem to have an edge in fostering high impact entrepreneurship. People from nations with those cultural dimensions take responsibility for themselves. They also have systems in place that allow social mobility and the sharing of resources and power.

According to the data in Table 2, low to moderate uncertainty avoidance (UAI) is a characteristic of high impact entrepreneurship prevalent among the top ten ranked GEDI countries. France is an exception to this generalization. It's UAI score is 86, higher than Lithuania's score of 65. Low uncertainty cultures do not view change and ambiguity as threats, but rather as opportunities. Rules and regulations to manage the uncertainty of change are unnecessary, which offers entrepreneurs an environment conducive for innovation and business. Finally, indulgent cultures appear to be closely aligned with high impact entrepreneurship. Except for France, with an INDUL score of 48, most top ranking GEDI countries have cultures that value expressing, rather than restraining, their impulses and desires. Lithuania is a very restrained culture with an INDUL score of 16.

Based on the data in Table 2, it appears that some of Lithuania's cultural dimension scores run counter to the direction of scores for the top 10 countries on the GEDI listing. Notwithstanding this situation, Lithuania has opportunities to cultivate its high impact entrepreneurship. Focusing on the GEDI scores for the European Union countries, it can be seen that the United Kingdom and France are among the top 10 ranking countries, 4th and 10th, respectively. Lithuania ranks in 29th, with Germany being in 15th, Spain in 34th, and Italy in 42nd place. While the UK, France, and Germany are well-developed and balanced over the three GEDI dimensions – attitudes, activity, and aspiration – Lithuania, Spain, and Italy show less entrepreneurial efficiency. It is thought that the somewhat weak economies of several EU countries over the last ten years may be due to their low level of entrepreneurship. Among other things, Europe is struggling to develop its own cadre of billion dollar companies (Acs, Szerb, Lloyd, 2017). A better understanding of culture may be the answer to this problem.

The section that follows focuses on how organizational culture can be effectively structured to complement Lithuania's national culture so as to foster high impact entrepreneurship.

Cultivating High Impact Entrepreneurship in Lithuania Using Organizational Culture

Organizational Culture: Can it Drive Entrepreneurship?

There is an abundance of research establishing the relationship between organizational culture and performance (Rousseau, 1990; Kotter and Heskett, 1992; Marcoulides and Heck, 1993; Ogbonna and Harris, 2000; Ehtesham, Muhammad, and Muhammad, 2011; and Ahmad, 2012). Other research has established a relationship between organizational culture and entrepreneurship (Cherchem, 2017; Abdullah, Musa, and Azis, 2017; Engelen, Flatten, Thalmann, and Brettel, 2014) as well as profitability (Martins and Lopes, 2016). In his 1991 text, Hofstede suggests that workplace behavior is a continuation of behavior learned earlier in life. Thus, cultural values strongly affect all who are involved in organizations. While those values may be invisible, they are likely important factors that must be considered when attempting to improve entrepreneurial performance and profitability.

What is Organizational Culture?

There are about as many definitions of organizational culture as there are people who study it. At least fifty different definitions are cited in the literature (Verbeke, Volgering, and Hessels, 1998). The various definitions of organizational culture relate strongly to the structural paradigm of the people who have studied it. In this paper organizational culture is defined as the "shared social knowledge within an organization regarding the rules, norms, and values that shape the attitudes and behaviors of its employees" (O'Reilly, Chatman, and Caldwell, 1991, cited in Colquitt, Lepine, and Wesson, 2013, p. 518).

This definition implies, first, that culture is social knowledge held by organizational members. Workers learn about aspects of their company's culture through other workers. This transfer of knowledge could be through networking, simple observation, or explicit communication. The knowledge transferred is shared, which means that workers understand and have some degree of agreement on what the culture is. Second, this definition tells workers what the norms, values, and rules are within the workplace. Examples might be describing (1) what behaviors are appropriate or inappropriate and (2) how a person should act or dress at work. Some organizational cultures may even dictate how workers should act when they are not at work. Third, organizational culture shapes and reinforces certain attitudes and behaviors by exerting a system of control over workers (O'Reilly and Chatman, 1996). Individual goals and values tend to grow over time to match those of the organization for

which one works, perhaps related to the amount of time workers spend at their jobs

.

Recommendations for Organizational Culture

Lithuania's cultural dimensions appear to be thwarting the development of high impact entrepreneurship. From a cultural standpoint the country is focused in a direction inconsistent with nations having higher GEDI scores and ranks. Specifically, Lithuania's scores on individualism, masculinity, long term orientation, and indulgence run counter to those of the top ranking GEDI countries in the world. The remainder of this paper addresses how organizational culture can be structured to better align with Lithuania's national culture so as to foster high-impact entrepreneurship.

Entrepreneurs in Lithuania should develop organizational cultures that begin with an understanding of their national culture and culminate in designs that foster high impact entrepreneurship. Two of Lithuania's cultural dimensions (power distance and uncertainty avoidance) are focused in the direction of the GEDI's top 10 ranking countries. As such, they require no intervention from the standpoint of organizational culture. The remaining four dimensions of Lithuania's national culture (individualism, masculinity, long term orientation, and indulgence-restraint) are pointed in a direction opposite to the direction of the top 10 GEDI countries. The paragraphs that follow describe a series of recommendations to address those four specific cultural dimensions.

Individualism

To attenuate the effect of a low to mid-range score for individualism in Lithuania, entrepreneurs should take steps to:

a. Foster employee independence and an environment where they are expected to defend their own interests and ideas. This will create an atmosphere of healthy competition that serves to foster innovation.
b. Implement procedures and policies that enhance individual initiative. In so doing, employees will not feel threatened if they develop new and different ideas. Their sense of empowerment will be increased as they share their creative thoughts for the benefit of the enterprise. When innovations result from those ideas, they will experience the joy of accomplishment.
c. Enhance communication channels between managers and employees. This will help foster involvement in workplace activities and contribute to creativity and idea generation.
d. Endorse modern management ideas and strive to keep managers current – technologically and administratively.
e. Promote individuals within the organization based on market value with a long term perspective. Engage in a moderate amount of external staffing to enhance the generation of new entrepreneurial ideas.

Masculinity-Femininity

To attenuate the effect of a very low score for masculinity in Lithuania, entrepreneurs should take steps to:

a. Increase the meaning of work as a central life interest. This would positively impact the ideas generated by workers and increase productivity and innovation. Overall, this would result in enhanced entrepreneurial behavior.
b. Resolve organizational conflict by allowing the strongest interests to prevail. This would minimize the need to compromise both idea generation and risk aversion – important components for the stimulation of high impact entrepreneurship.
c. Reward assertive and competitive behaviors in the workplace, especially those that facilitate entrepreneurial decision making. Yielding attitudes and soft approaches to product and service development should be minimized in place of more forceful actions.
d. Develop organizational policies that protect infrastructural and corporate interests over employee interests.

Long Term Orientation

To attenuate the effect of a very high long term orientation, Lithuanian entrepreneurs should take steps to:

a. Develop strategic policies and practices that focus on the bottom line position of their enterprises. This will help managers focus their strategies in a direction that results in high impact entrepreneurship.
b. Formulate compensation and incentive policies that reward merit and performance. Encourage workers to develop skills and abilities that foster entrepreneurial growth.

Indulgence

To attenuate the effect of a restrained culture in Lithuania, entrepreneurs should take steps to:

a. Hire employees and develop partnerships with individuals having more extroverted personalities. Extroverts are usually more socially-oriented and have well-developed networks of friends that can benefit the enterprise and stimulate entrepreneurial thinking.
b. Develop more enlightened views of gender roles. This harvests the intellectual capital sometimes minimized or excluded when entrepreneurs/managers build glass walls or ceilings along the lines of gender.
c. Minimize the psychological importance of thrift. Indulgence and spending behavior are values that foster entrepreneurship.
d. Foster indulgence in thought to encourage innovation and creative thinking. Today's entrepreneurs should understand the things that satisfy peoples' need to enjoy life and have fun. Responding with products and services that satisfy those needs typically results in high-impact entrepreneurship.

Conclusions and Limitations

This paper aimed to illuminate some of the cultural values of Lithuania. Using the data collected by Geert Hofstede, it was found that Lithuanians were low in power distance, very low on masculinity, and moderate on individualism as well as uncertainty avoidance. They were very high on long term orientation and very low on indulgence. The mix on these cultural dimensions is interesting and provides a likely interpretation for Lithuania's positioning on the Global Entrepreneurship and Development Index. While the country ranks 29 among the 137 nations represented in the Index, there is room for improvement in the area of entrepreneurship. Its score is 51.2% compared to a score of 84% for the USA – a country ranked #1 on the GEDI. This paper combines the concept of cultural values with global entrepreneurial position and argues that the power of organizational culture can be harnessed to create high-impact entrepreneurship in Lithuania. Focused recommendations on how entrepreneurs can design the culture of their enterprises are highlighted. Adopting the human resource and business practices that these recommendations entail can potentially result in increased creativity and innovation, more satisfied workers, increased employment, and improved profitability. As such, a cultural approach to enhancing Lithuania's level and quality of entrepreneurship seems to be an economic and financial imperative.

This study summarizes findings and provides a set of recommendations that have some possible limitations. First, the data collected by Hofstede to generate the cultural dimensions are relatively old. Even with the replication studies that have been conducted, the data may not capture recent changes in the workplace and political environments. They may not take into account employment-related changes such as the current emphasis on empowerment, cooperation, and knowledge sharing. Second, the Hofstede data were collected from matched samples in a single organization – IBM. In developing his cultural dimension scores Hofstede made a questionable assumption that each nation consists of a uniform national culture and that data from a segment of IBM employees is representative of that supposed national uniformity. Notwithstanding these limitations, it is appropriate to point out that national cultural differences have remained fairly stable over time (Beugelsdijk, Maseland, and van Hoorn, 2015). As such, the conclusions in this paper rest on solid ground. The recommendations to enhance high impact entrepreneurship by structuring organizational culture to align with Lithuania's national culture also rest on a foundation that is both theoretically solid and practically efficient.

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GENDER GAP IN ENTERPRISE OWNERSHIP IN DEVELOPING AND DEVELOPED COUNTRIES

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Abstract
There have been few researches focusing on the role of women in business and their influence on both economics and entrepreneurship fields. In this paper, we aim to investigate the role played by women, in three different countries, Hungary, Lithuania and Tunisia, with three different cultures and economic background. We focus on their contribution to the field of creative business ventures. Females witnessed a slower pace in their paths of business ownership not only with regards to the type of business owned, but also to the size of it as well as the performance rating of it.
Several factors are possibly responsible for the gap in lower labour productivity of female-managed firms relative to male-managed firms: fewer female than male managed firms protect themselves from crime and power outages, have their own websites, and are (co-)owned by foreigners. In addition, in the manufacturing sector, female-managed firms are less capitalized and have lower labour cost than male-managed firms. Those results indicate a need to recognize the diversity that exists among transition countries and developing countries, reflecting different inheritances from different indicators such as the characteristics of the enterprise, performance level and ownership.
It is a fact, that entrepreneurship support services, such as government provision of information, training and funding, differs between male and female. In Tunisia, a developing country characterized by high level of unemployment, particularly of women, the existing support services are inadequate for promoting female entrepreneurship. In Hungary, on an average 31% of the companies have women leaders or have women with authority to sign in the name of the company. However, in small and medium-sized companies, the numbers change drastically.
In Lithuania, women enter the labour market with a higher level of education than men do, but this does not adequately determine their position as it is noticed that women hold less prestigious and less well-paid jobs. They also occupy lower positions compared to men, as they tend to be recruited in less well-paid sectors.
Our results suggest that there are important differences in the experiences of women in these countries compared to the male ones as we notice gender differences in labour productivity in the manufacturing sector. The results reveal a sizable unconditional gap between the two genders based on the female management which is more strongly associated with labour productivity than female participation in ownership, which has been the focus of most recent studies. Our data is extracted from the 2013 wave of Enterprise Surveys published by World Bank Group.
KEY WORDS: woman entrepreneurship; performance, ownership, productivity, developed economy, developing economy.

Introduction

When discussing entrepreneurship, it is important to acknowledge the complexity of this multidimensional phenomenon that was placed in the limelight in these past few decades with the major changes in the global economy. With the steadily emergence of women entrepreneurs, and their rise within corporate ranks in recent years, they are described as the innovative engines for growth, prosperity, welfare and the fresh rising stars of the economy especially in developing countries. The untapped resource has been ignored for too long and overlooked for various reasons, however this changed with women being labelled as “the way forward” that is essential for growth and development (Vossenberg, 2013).

The hype over entrepreneurship in previous decades, especially in the research domain, believed in the assumption that an entrepreneur is “male”. Researchers even suggested that entrepreneurship is a manner of which men demonstrate their "maleness". This has been sustained through historical and traditional realities of which women’s liberty was restricted in the domestic domain, and thus they have been deprived access to the basic resources of entrepreneurial such as access to capital, business and technical education as well as prior management experience (Stevenson, 1986).

Growing number of initiatives and resources made available to sponsor and stimulate women’s participation in the economy with the aim of enhancing women’s social status and ensure equity among society members. Women’ vulnerable professional status have long been linked to other forms of domestic and structural oppressions which ignited efforts to deal with this epidemic and decrease barriers and ensure equal opportunities to participate in financial markets such as providing capital needed to establish small businesses (Dutt, Grabe & Castro, 2016). However, business owned and managed by women are still scarce compared to men, women’s profit are considerably less with slower growing businesses with higher chances of failure, and women tend to be more necessity entrepreneurs (Vossenberg, 2013). According to the GEM Women’s Report 2012, an estimated 126 million women were starting or running new businesses and an estimated 98 million were running established businesses (Brush, Duffy & Kelley, 2012). Despite being viewed as having the prerequisite abilities when it comes to cooperating, nurturing, adapting, and persuading; women still lack representation in top management corporate with only three women listed among the CEOs of the world’s 500 largest corporations in 2000. Reaching the ranks of upper management is not the only struggle faced by women as

they still have to hold their position and exert their power in an environment that takes it lightly (Winn, 2004).

When discussing entrepreneur and business inventors they are often characterized as strong leaders that manages to stir the business ship into the right directions and keeps the order among the crew in order to establish ventures with growth potential. Usually leadership research highlights the predominant influence of men in leadership roles and accentuate male characteristics such as confidence, aggression, and self -direction as prerequisite for a successful leader. When researching the female leader, women are often characterized as sensitive, warm, gentle, exhibit great verbal communication skills and display concern for others. These traits and behaviours are considered to be relations-oriented leadership style and are viewed as suitable for particularly female-dominated organizations, however, they fail to have any success outside this setting (McGowan, Cooper, Durkin & O'Kane, 2015).

Although we are witnessing efforts that support and encourage women in strengthening their roles in various society fields and proving their worth and capacities especially in professional and managerial occupations, today the gender gap in entrepreneurship remains significant as we are witnessing still that women are less likely to start new businesses than men. This is true across various societies with female entrepreneurship being a cross-cultural phenomenon characterized with culture specific aspects (Minniti, Arenius, 2003). In fact, the environment is a key variable when an individual decides to start a business or create his own enterprise (Boulouta, 2013). Compared to men, it is evident that women command a smaller share of both business ownership and self-employment with a tendency to perceive women's business ad underperforming due to the fact that their business ventures tends to be more on the small side in terms of employment, sales, profitability and market share. This is due to several factors such as home based business, part-time basis, lower levels of funding and limited business networks (Marlow, Henry & Carter, 2009).

Women often finds it harder to go up the professional success ladder than men, as it is often more difficult for them to balance their work and their expected home roles. As a consequence, women struggle with this huge disadvantage in the corporate world and leads them to be trapped in low paid, part-time employment and absent at the most senior levels of management in business. This led women to consider self-employed or business owners that enable them to accommodate both their work and home duties (Walker, Wang & Redmond, 2008). Apart from familial obligations as both roles of wife and mother can increase the guilt and stress feelings among women, which may alter the capacity to climb the career ladder. Women are faced with various other disadvantage that accentuate the inequity witnessed by females in their daily work reality as lack of mentoring, lack of managerial experience, exclusion from informal networks, as well as male stereotyping constitutes crucial barriers to advancement and growth within the corporate setting (Winn, 2004).

The engagement of women in the professional sector is often dictated, and affected by culture as their occupational choice is generally predetermined through social and cultural norms of the society of which they belong to, whether it is a collectivist or individualist culture that can shape the institutional limitations and the specific role expectations set for women. This consequently influence their engagement in the business sector. Within collectivistic cultures (like the Tunisian), women in general have predefined gender role related mainly to home issued and family care in the first place and are less expected to be seen in business or in leadership roles as they can be easily distracted with family and motherhood responsibilities which result in a confirmative and less productive society. In contrast to individualistic cultures (like the Hungarian and the Lithuanian) with laws and programs in favour of and encourages business development and innovation by women specifically individual business that promotes risk taking and independent thinking (Bullough, Renko & Abdelzaher, 2017). Business ownership by women throughout the years were generally related to a business inheritance from a father or husband with few cases of which a woman managed to start a business on her own and in some cases, if married, with her husband's consent (Stevenson, 1986).

With great attention and efforts dedicated to provide equal opportunities for women to express themselves in the professional field and to establish their own financial mark in the global economy, we still are not nearly close to that goal which makes us wonder what can be the reasons for the gender gap that is existing in entrepreneurship, and what makes it more difficult for women to hold important seats among their fellow men.

With a scarce resource of literature and research on women entrepreneurs and their role as leaders and innovative managers, information and knowledge about women as business owners or entrepreneurs needs to be more investigated and examined.

This article aims to add to the existing literature on the presence of women as influential individuals in the global economy. We will be examining the economical profile of three culturally different countries: Hungary, Lithuania, and Tunisia in order to compare the prevalence of women's contribution to the economic growth through focusing on their entrepreneurial characteristics.

Data and Methods

This paper attempts to answer the following questions: when examining the economic picture of these three culturally and economically different countries, is there any contrast in females' presence and contribution with regards to the growth and development in the business sector compared to men. Also, are there any differences in the performance level of female owned or managed businesses compared to male owned or managed ones.

We chose for this comparison three different countries with different economical categories: Hungary and Lithuania representing two developed countries with what is called economies in transition, compared to Tunisia a developing country with a swinging economy.

Table 1. Economic profile of Tunisia, Lithuania and Hungary in 2018

	GDP growth	Population	GDP per capita
Tunisia	2.50%	11.5 million	3.465$
Lithuania	3.40%	2.8 million	19,143$
Hungary	4.90%	9.8 million	14.264$

Source: World Economic Outlook Database, 2018 and World Bank, 2018

This paper based on World Bank firm-data of Enterprise Surveys, 2013, which use a consistent methodology and recent data resources and provides data from over 135.000 firms. A female-managed firm is defined as firms where the top manager is female, while male-managed firms are described as firms where the top manager is male. The Enterprise Surveys are nationally representative and employ the same basic questionnaire and methodology across countries thus, licensed to compare the performance of enterprises owned by females with those owned by males between the three studied countries.

Results and discussion

Our results reveal the characteristics of male and female entrepreneurs in Tunisia, Lithuania and Hungary. It will examine the similarities and differences between the two regarding the size of firms, the years of experiences as well as inspecting the barriers and challenges they face. As we notice in Table 2, female-managed or -owned business are limited in the service sector, providing a great gap between females and males presence in the manufacturing sector which is ruled by men in all three countries. This leads us to conclude that women contribution is restricted in certain domains and regulated so that even when they are encouraged to be innovated, they are still facing control over their choices in favour of men. Results suggest that women are directed towards sectors which are characterized by having small initial investments and lower growth and we notice women are more involved in the manufacturing services.

Table 2. Percentage of firms with female participation in the manufacturing and service sector by country, %

	Hungary		Lithuania		Tunisia	
	Manufacturing	Service	Manufacturing	Service	Manufacturing	Service
Female participation in ownership	56.6	43.8	42.3	33.9	49.5	49.6
Majority female ownership	11.6	10.0	13.4	17.4	2.3	2.9
Female top manager	21.3	20.1	12.2	23.8	7.4	9.3
Proportion of permanent female full-time workers	57.1	42.8	46.9	35.9	29.6	31.2

Source: Enterprise Surveys, 2013, own calculation

Based on Figure 1, we observe that in both Lithuania female-managed enterprises had lower annual sales growth compared to men in contrast with Tunisia where males have lower real annual sales growth compared to female-managed companies. We also found, that majority female-managed firms had a really low to almost non existing annual labor productivity growth than male-managed enterprises across the three countries. However, we found that, female-managed enterprises were more likely to have higher employment growth than majority male-managed in both Hungary and Lithuania while no difference in noted in Tunisia. Lithuania having the highest percentage of 9.3% of annual employment growth.

As we mentioned earlier in the literature review women tend to be employed in small, low-capitalized or even home-based enterprises. The proportion of women operating non-traditional businesses in manufacturing and service sectors is small and these businesses have been dominated by men (Julio M. Rosa, 2016), Table 2 supports this view.

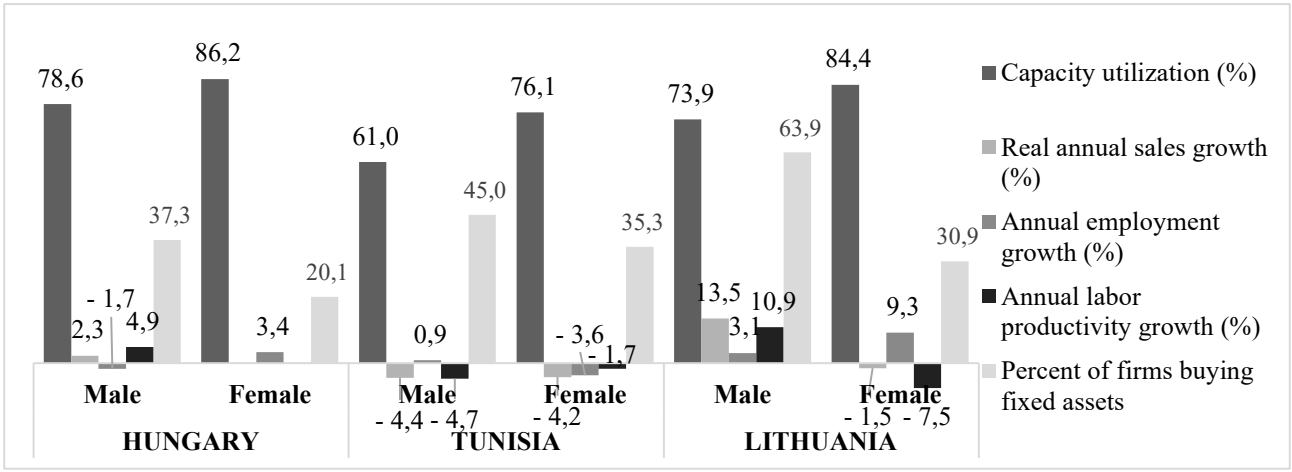

Fig. 1. Performance indicators of female and male managed firms by country
Source: Enterprise Surveys, 2013, own calculation

Figure 2 demonstrates that Lithuanian medium-sized firms have the highest percent in regards with majority female ownership (22.9 %) while the Tunisian firms are still behind with the lowest percentage (1.3%). This is an expected result since woman ownership witnessed a remarkable evolution in developed countries due to the existence of numerous support programs for entrepreneurship in Europe (Amin, Mohammad, 2014).It is also notable that the high percentage of firms with a female manager is only restricted to firms with small sizes. This is an additional proof of the long way that is still along head for women and the necessity of more encouragement and efforts from both policy makers and society organisation to boost and ensure equity for both gender and guarantee equal opportunities in all aspects of economy for both genders.

As it is indicated in Figure 3, Tunisian male top managers have more advanced leadership experience compared to females. While Hungarian and Lithuanian male as well female managers have approximately equal year of experiences in their fields. This indicates that the supervision and guidance is ensured for both genders in these countries and equal opportunities for recruitment is provided evenly.

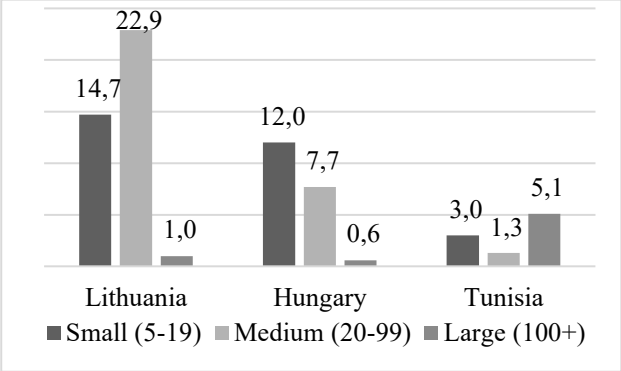

Fig. 2. Percentage of firms with majority female ownership in different firm sizes by country
Source: Enterprise Surveys, 2013, own calculation

This leads us to deduce that in an environment with proper regulation, assistance and support for both gender leads to equal contribution and matching success as well as involvement in the growth of economy in any given country.

Numerous factors contribute in the gender gap that we notice in several aspects across the three countries as women face numerous challenges in the managerial and entrepreneurship process. This guide us to proceed to the analysis of the biggest obstacles encountered through management procedure. With the help of the data, it is interesting to see how the same obstacles that may encounter a managerial path are more or less developed in the three countries studied, moreover, these results clearly illustrate these variances as demonstrated in Figure 4.

Results also suggest, as noted in Figure.4, that the capacity utilization's percentage which indicate the comparison between the current output with the maximum output possible using the current inputs is higher among females in Hungary contrasted with Tunisian and Lithuanian females. Meanwhile, there is no distinction between female or male managed firms in Tunisia and Lithuania. It is worth to note also that male managed firms; with fixed assets such as machinery, equipment …etc, are dominating the business. Their percentage is significantly higher and even doubled in some cases in contrast to female managed firms. This is clearly seen among the tripartite countries.

It is visible that, regardless of whether the manager is a female or a male, Hungary and Lithuania have been facing a severe high tax rate, which complicating the growing process and the validation of the business but still it is slightly more significant in case of female top managers. Corruption is much more controlled in case of female top managers, one of the relevant aspects of women's entrepreneurship, a bottom line, that it is an important source of sustainable economic growth. However, under the World Bank's Enterprise Survey, about 5-8 per cent were reported to be managers and 11-16.7. Among the female owners, about 25-43 per cent were reported to own 50 per cent and above share of the firm.

This rational connection between the giant concept of entrepreneurship leading to ownership and leadership mechanism. One of the main virtues of entrepreneurship on the economy is the creation of new jobs, an element that can be considered as a major contribution to the economy. Inadequately educated workforce was not considered an obstacle for Hungarian female top managers, although 4.4% of male-managed forms reported this to be an obstacle. Psychological effects are often taken into account as a main reason for the absence of women in the economy field as researchers focused on this topic. Yet, many others argued that external circumstances are rather more important when investigating this instead of internal ones, as they can be more formative in explaining in business creation ventures and proper managerial strategies.

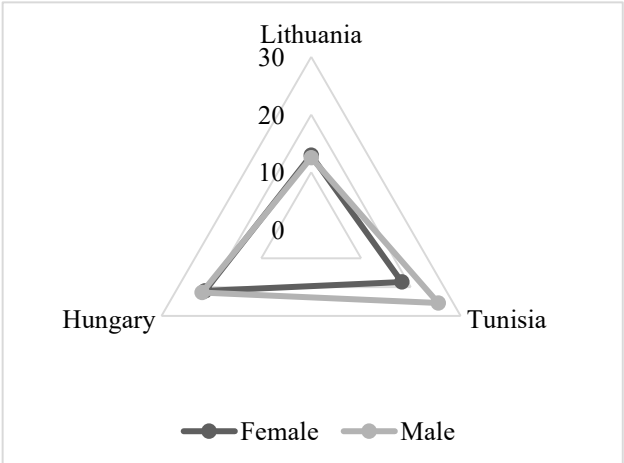

Fig. 3. Years of the top manager's experience working in the firm's sector
Source: Enterprise Surveys, 2013, own calculation

This led to adopting a more comprehensive behavioural approach which suggest taking into account both the individual as well as the environmental factors when dealing with entrepreneurship (Bear, Rahman, & Post, 2010). Findings in Fig.4 suggest that in Tunisia for

example, the environmental factors are have a great influence on the economic picture of the country where the biggest obstacles facing Tunisian female entrepreneurs with 41.5 % of their difficulties being pollical obstacles which can be attributed to the turbulent political times lived by the country since 2011 with the so called 'Freedom and Pride revolution'. While inequalities with regards to education is the main obstacle for women entrepreneurship in both Hungary and Lithuania. Results suggest also no differences for both genders in Tunisia with access to finance their projects with even more difficulties faced by males in finding an appropriate budget for their business.

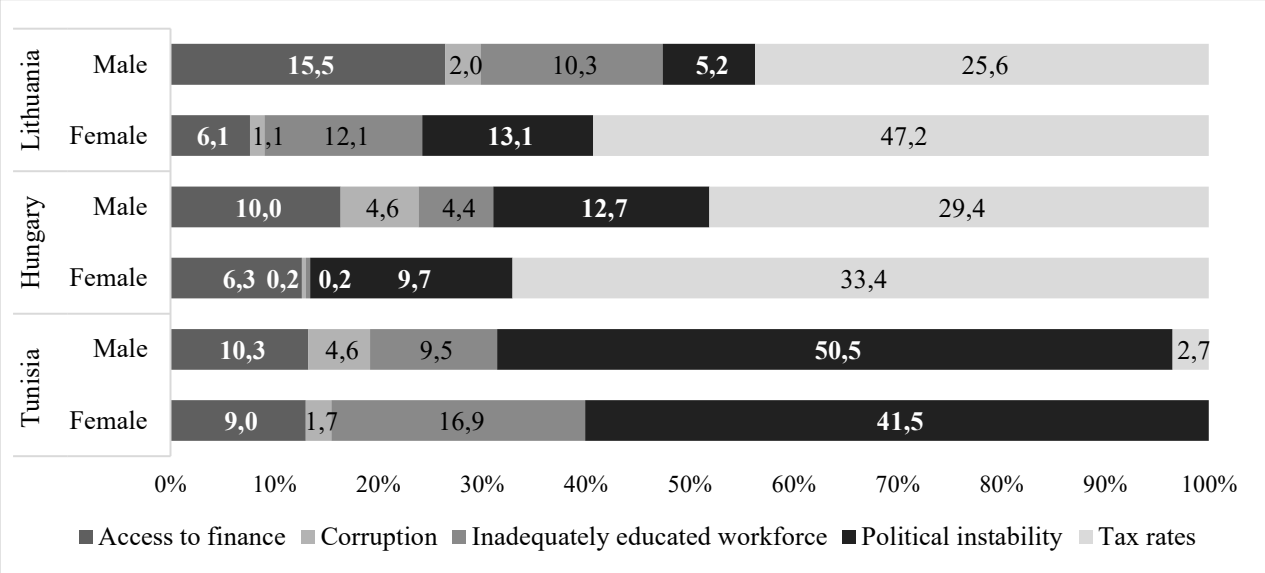

Fig. 4. The biggest obstacles for male and female managed firms by country
Source: Enterprise Surveys, 2013, own calculation

Conclusion

Our aim through this paper was to investigate the characteristics of female managed firms vs. male managed ones in three countries Lithuania, Tunisia and Hungary. Entrepreneurs are regarded as highly motivated, risk taking and innovative individuals who seize opportunities to reach success. Many become entrepreneurs because they do not like to work in traditional work environments. Female entrepreneurs are considered to be good net workers, they tend to have an open mind, are full of energy, and can share power.

Our findings on gender impact on business performance are diverse. On one hand an evidence of performance differences between majority female-managed and majority male-managed businesses yet on the other hand, no performance differences were observed. These results were explained in the literature by various factors that covers performance indicators such as sales, profits, employment, experience, sales growth and employment growth.

All entrepreneurs face obstacles and barriers when starting or managing their enterprises, However, these barriers are magnified when women, in particular in developing country, think of owning of managing their own businesses. Women may not have received the experience and training to make them successful that their male counterparts have had. More research interest in this topic is needed so that we can come up with adequate solutions to encourage and motivate women to be more involved in the economic world as well as changing the society perceptions on them being adequate to take on major responsibilities and trusting them to create profitable business. Even with the increase in women's participation in labor market, we are still witnessing a limited number of female-owned and managed firms. The challenges specific to women's entrepreneurship are yet to be properly explained or justified with the lack of reliable and up to date data. One of main determinants for female entrepreneurship is the availability of financing as generally we find that female entrepreneurs have a smaller amount of start-up capital with fewer opportunities compared to men in finding external financing (Lotti, 2007). Certain researchers chose to focus on personality characteristics that explains this disparity such as fear of failure, risk attitudes, self-confidence, or the willingness to compete. They reported in their findings that women scored differently with regards to these traits yet this approach provide only modest explanation for the gender gap. Others asserted that personal variables other than personality characteristics influence entrepreneurial decision-making such as age, the labour market status, or the level of human capital (Caliendo, Fossen, Kritikos, & Wetter, 2015). The gender gap is widely linked to motivation as researchers differentiated women's motives to start or run a business and those of men. When describing women's motivation, it is apparent that their engagement in entrepreneurial activity is driven by pure survival need or out of necessity rather than opportunity and the absence of jobs or any other options for income (Vossenberg, 2013).

Other than comparing women entrepreneurs with men entrepreneurs, it is significant to compare women entrepreneurs across countries with different economic and cultural background as we attempted to achieve with this paper as it was suggested in previous studies that women in low income countries start businesses out of

necessity mainly due to the lack of employment in the formal labor market, while women in high-income countries tend to start businesses in high-paying fields even with the availability of other job options or yet as a personal life-style choice due to their high-educational achievements), whereas women in middle-income countries is more favourable to employment rather than self-employment (Minniti, 2009).

Although research on the gender gap is increasing in recent years, various questions are still unanswered until today which lead us to conduct this comparison. Whether it is proper funding, economic rules and regulations or even social expectations and norms, women intending to have their own business face more than one constraint around the globe. The goal of this article is to shed the light on the phenomenon, accentuate its importance and relevance, and guide future researches to dive into it more through different perspectives in order to determine the reasons behind this gap so that we can one day see it narrowing down until it disappears.

Our recommendations for future researchers in this field is to adopt an integrative view on this phenomenon and include not only the intrapersonal factors but also the interpersonal as well as socio-demographic aspects that help accentuate and maintain this inequality in different societies as various understudied areas of female entrepreneurship that may help understand and reduce the gender gap is the attitudes adopted by different institutions within societies that either constraint or empower women's entrepreneurial achievements.

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MOTIVATIONAL FACTORS OF EMPLOYEES IN LATVIAN LABOR MARKET

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Abstract
Achieving the goals of the organization requires internally motivated employees that are in line with the values and specifics of the organization and that act in its interest. Successful organization management is based on professional and motivated employees who are actively involved in achieving an organization's goals.
Types of employee motivation systems vary between different countries, taking into account the inhabitants culture and habits. Also, it varies between companies, taking into account the company's financial situation, values, employee specialization, and educational level. Motivation measures are also implemented on an individual basis, based on the values and needs of the specific employee. The aim of the article is to find out employee's motivational factors and the importance of salary in the Latvian labor market. Research results are based on quantitative and qualitative methods, in order to compare the results with the motivation theories of Alexander Maslow, John Stacey Adam, Nadler and Louler, David Mcclelland and John Atkinson. Also, to explore the types of motivational factors and the connection between theories and research results.
KEYWORDS: human resource management, motivation, motivating factors, organization management, Latvia

Introduction

Research object: Latvian labor market.

Research subject: employees motivational factors.

The aim of the article: to find out employee's motivational factors and salary importance in the Latvian labor market.

Research methodology: theoretical analysis of motivation theories, analysis and comparison of research results carried out by different researchers and research companies.

Successful organization management is based on professional and motivated employees who are actively involved in achieving an organization's goals.

Employee activity in an organization depends on three factors: their skills and abilities, which include the ability to perform the job tasks, resources that include materials, equipment and information, and motivation or interest in the job. (Lursoft 2015, Createst 2016) Employee inspiration to do his work is influenced by internal and external factors. An internally motivated employee is interested in the work process, as a result of which the employee performs the task for the sake of the process, not for achieving any external rewards (salary, recognition or other bonuses). (Dāvidsone 2008) External motivation is a dynamic process that, through the use of psychological, social, economic and legal methods and tools, contributes the ability to continually drive an employee to achieve organization goals. (Vīksna 1999)

The human resources management department is responsible for developing an effective employee motivation strategy in an organization. To compile the strategy, human resources management department specialists need to superintend motivation theories and use them in practice, as well as analyze the situation in the country, the company, and each person individually, by precisely identifying the influencing external factors which increase employee interest in work.

Situation in labor market of Latvia

Svetlana Saksonova in the e-book "Forms of Business. Business Accounting and Productivity Basics" indicates that the best stimulus in a market economy is wages. (Saksonova 2010)

Janis Gredzens, Executive Director of the Spring Valley Organizational Development Center, in an interview with Diena shares his experience and states that security and stability, such as having a fixed salary and no drastic changes in the workplace, are the most important motivational factors for employees in Latvia. (Skreija 2017)

Based on the leading online recruitment company CV-Online Latvia survey conducted in June 2017, in which participated 1524 respondents, it shows that 25% of employees desire to show better performance is driven by a competitive basic salary. Almost a quarter or 24% of respondents choose direct manager recognition and achievement awards as the most important factor that affects their work incentive at work.

Every fifth respondent (20% of respondents) is motivated by the microclimate in a company and the sense of belonging, but 18% of respondents noted that professional development opportunities are the factor that stimulates them to achieve higher results. 13% of respondents stated - good working conditions and environment motivate them to achieve higher results at work, see Fig. 1. (CV Online 2017)

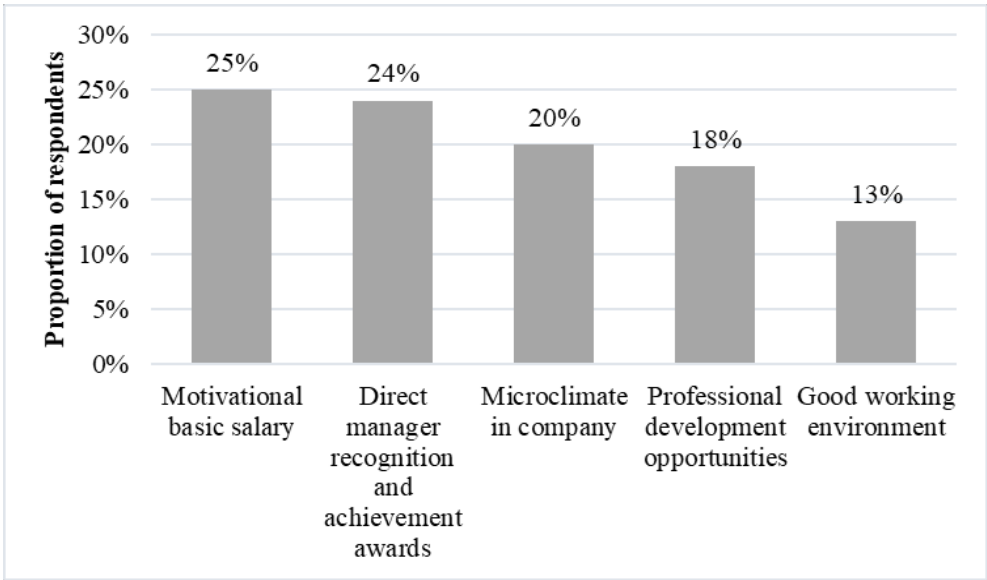

Fig. 1. Factors influencing productivity and motivation (CV-Online Latvia 2017)

According to CV-Online Latvia's survey, health insurance is the most valued additional benefit in the Latvian labor market - 37% of employees noted it as the most important as it can be seen in Fig. 2. (CV-Online Latvia 2017)

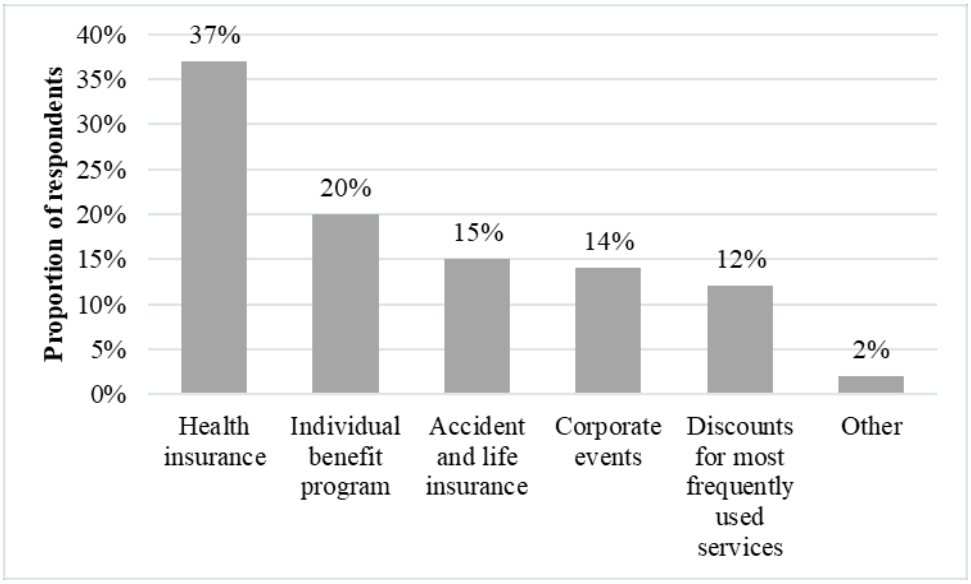

Fig. 2. Most appreciated additional benefits among employees in Latvia (CV-Online Latvia 2017)

Respondents of a survey 2016-2017 about the commitment of Latvian workers conducted by social and media research company Kantar TNS have identified five key criteria for choosing an employer. Based on the results of this survey, a competitive salary is the main criterion for both experienced workers and young people - 56% of labor market participants and 51% of young people have included it among the top five criteria. The most distinctive proportion of votes is presented for the factor "safe and stable work". 40% of the labor market participants have indicated this factor as one of the most important factors, while only one fourth or 25% of young people have chosen it as one of the top five factors (Fig. 3). (Veihmane 2018, Lāce 2018).

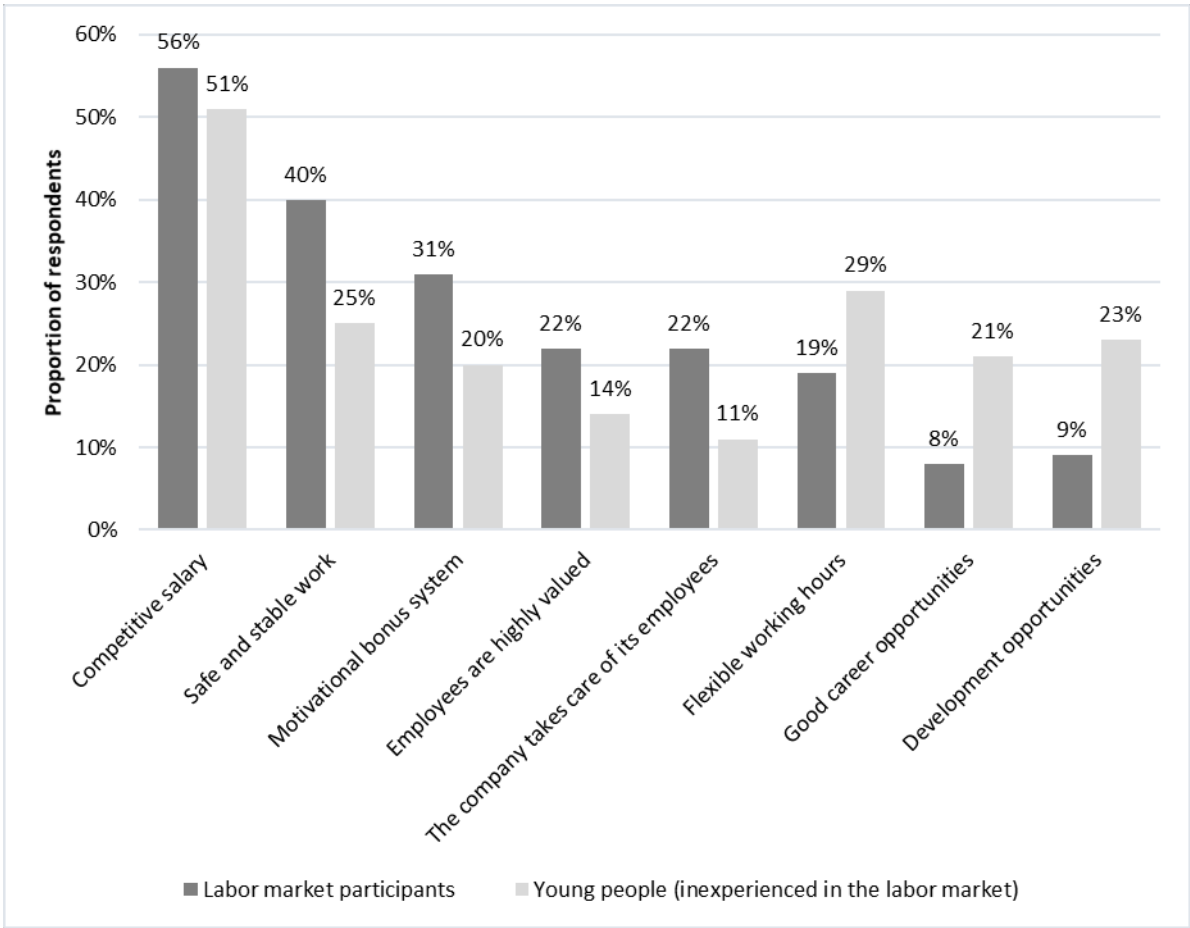

Fig. 3. Top 5 criteria for selecting an employer (Lāce 2018)

Human resources management expert Bronwyn Wainwright points out that employee motivation and loyalty to the workplace are reflected in employee commitment rates. (Wainwright 2018)

Employee commitment rate of Latvian labor market in 2017, compared to 2015, has decreased by 5 points - in total 52 points (Fig. 4), which is average.

Higher employee commitment rates are observed in different groups - young people between the ages of 18 and 35, new employees in companies, senior executives and middle managers and high-level professionals, and employees with upper-middle(from 601 EUR to 1000 EUR) or high personal income above 1000 EUR.

The current situation in the Latvian labor market shows that about 50% of employees are satisfied with their work, while 16% of employees feel motivated by the environment. (Kaņējeva 2017)

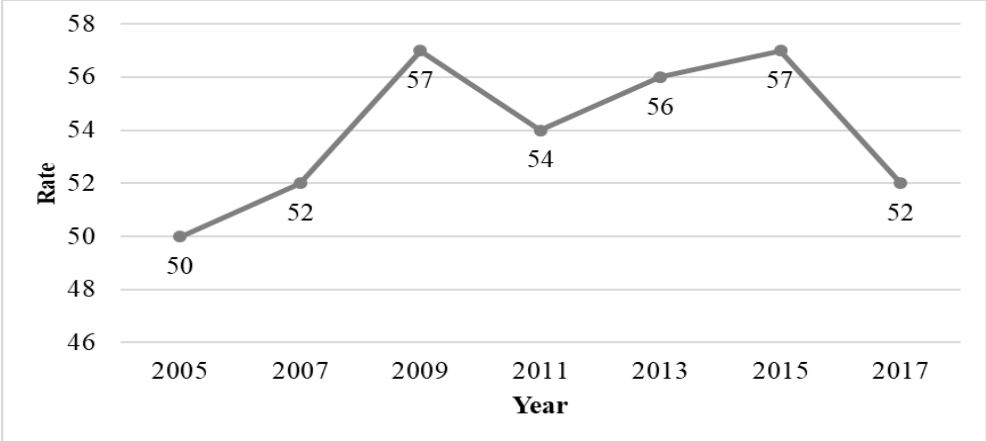

Fig. 4. Employee commitment rates in Latvia from 2005 to 2017 (Kaņējeva 2017)

According to the October 2018 survey conducted by Kantar TNS, 75% of the working population in the labor market in Latvia aged between 18 and 60 describe their emotional state at work as positive.

The most often positive emotional states in the work are evaluated by employees with income is above 1000 EUR (gross). The emotional state is assessed negatively by employees whose gross income is between 500 and 700 EUR per month. (Kantar TNS 2018)

According to a survey by Kantar TNS in 2018, 23% of workers consider changing jobs that year. The largest part of this audience is young workers between the ages of 18 and 24 and employees whose income is less than EUR 500 per month after tax. Based on the respondents' responses to the survey, the average desirable monthly net wage of employees is 1238 EUR. According to the survey, 45% of employees would like to receive a salary above 1000 EUR (net) per month (Fig. 5). (Kantar TNS 2018)

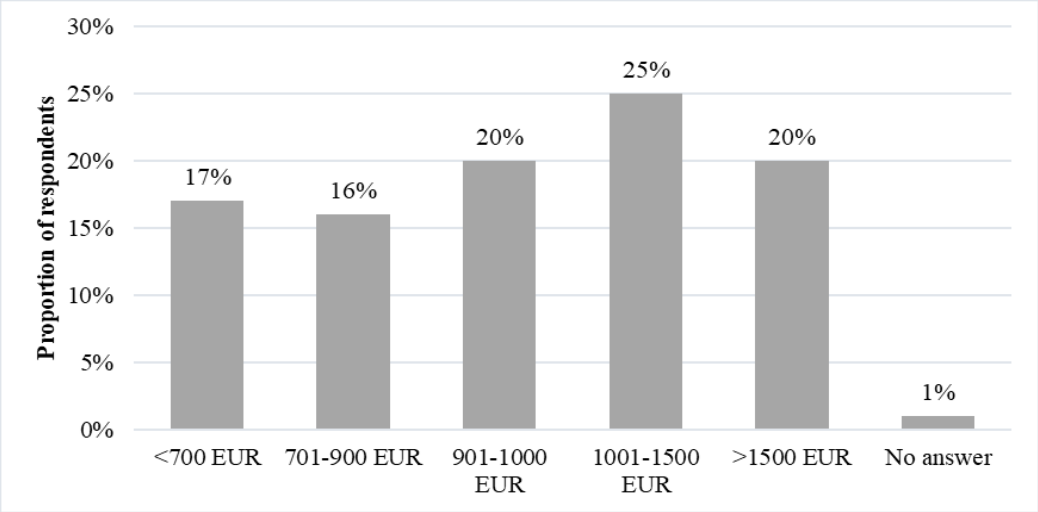

Fig. 5. Desired monthly net salary of Latvian labor market participants in 2018 (Kantar TNS 2018)

Motivation theories and research results

Maslow's theory reflects that people are motivated to work to meet five levels of need, which are divided into a certain hierarchy - physiological, safety, social, self-esteem and self- actualization. (Ešenvalde 2004) This hierarchy is also reflected in CV Online Latvia research about employee motivation, where 25% of correspondents as the most important factor denote a salary, but the most valued additional bonus (37%) is health insurance. (CV Online 2017)

John Stacey Adams's equity theory is different from Maslow's theory - it does not reflect human motivation as a system that needs to be implemented gradually. The theory states that employee inspiration to do the job tasks is influenced by subjectively assessed remuneration and contribution to the work that has been compared with other employees with similar results. The situation at work may be perceived as unfair if the employee receives a lower wage than is considered acceptable, resulting in demotivation. (Reņģe 2007)

D. A. Nadler's and Edward E. Louler's Expectancy theory reflects a person's expectation that a particular type of behavior will influence the result of work and satisfaction of the employee's needs. Expectancy theory notes three regularities that include the correlations between contributed work and results, work results and remuneration and between remuneration and satisfaction with it. This theory, like John Stacey's Adams equity theory, states that an employee is not motivated enough if there is no correlation between the work consumption and the result, the result, and remuneration. (Praude, Beļčikovs 2001)

The basis of John Stacey Adams's equity and D.A. Nadler and Edward E. Louler theories is reflected in the Kantar TNS research, which measures Latvian employee commitment rates in 2017 - concluding that Latvian companies have higher rates among younger workers aged 18-35, for new employees, senior and middle managers and senior professionals, and for those with average (from 601 EUR to 1000 EUR) or high personal net income - above 1000 EUR, which means that appropriate and competitive salary motivates the employees to achieve results and be loyal to employer. (Kaņējeva 2017)

Remuneration importance is also reflected in Kantar TNS 2018 research in that 23% of employees indicated that they consider changing jobs this year. This group includes young workers aged between 18 and 24 and those earning less than EUR 500 per month after tax. (Kantar TNS 2018)

The theory of David McClelland and John Atkinson divides three categories of motivator – achievement, affiliation, and power. Every employee has a dominant motivator. The employee whose dominant motivator is achievement needs to determine what he or she needs to do, why, when and where, and explain how and when his results will be evaluated. The employee whose dominant motivator is affiliation needs personal recognition, an opportunity to feel themselves an important member of

the team. For those with a strong power motivator is necessary to provide the opportunity to influence decisions and processes in an organisation. (Pelše, Ruperte 2009) In research by Kantar TNS about 5 important factors when choosing an employer, 31% of experienced labor market participants and 20% of inexperienced young people report that one of the top five is an attractive bonus system, which means these correspondents are focused on achievement. (Lāce 2018) In research by CV Online Latvia about motivational factors in the Latvian labor market, 24% of correspondents report that the appreciation from the direct manager is the most important factor that indicates these correspondents are focused on affiliation. (CV-Online Latvia, 2017) In a Kantar TNS research about 5 important factors when choosing an employer, 21% of inexperienced young people report that one of the top five is good career opportunities, which means that correspondents are focused on power - the ability to influence processes. (Lāce 2018)

Conclusions

The factors for choosing an employer between inexperienced young people and Latvian labor market participants are different, but both groups as the most important factor have mentioned a competitive salary. Very important factor for Latvian labor market participants is security and stability - employees are interested to receive their salary on time and feel secure about their job position. The employees' desire for safety is evidenced by their interest in health insurance as an added benefit in the workplace. This choice can also be defined as the need to meet basic needs in accordance with Maslow's Pyramid. High loyalty to the employer is most often felt by upper-middle and high-income employees - in practice - salary is the most important motivating factor in the Latvian labor market.

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Social sciences

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PHILOSOPHICAL CHALLENGES FOR SUSTAINABLE REGIONAL DEVELOPMENT

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Abstract
The aim of this article is to revel impact of classical philosophical-ethical theories on sustainable regional development. The difference between strong and weak sustainability are also analyzed and also the conflicts and synergies between social economic and environmental development in this article. There will also be a historical perspective to the concept of sustainable development. To give a deeper understanding about different opinions and approaches to sustainable development, there will be an interpretation of some theoretical perspective both about sustainable development and also about different philosophical theories and how they are related sustainable regional development. The study includes also a discussion about the synergies and conflicts between economic, ecologic and social development. We proceed to draw on consequentialist ethical theories and non-consequentialist ethical theories to argue the predominance of these classical philosophical value priorities and to explore which mindshifts are required to develop a more comprehensive understanding of what is needed to enable 'sustainable development'.
KEY WORDS: philosophical challenges; sustainable development; ethical theories.

Introduction

Nowadays, the concept of sustainable development has been defined in a variety of ways, but in practice it has three dimensions – economic, environmental and social ones. The word "sustainability" has become a global buzzword as a potential solution for many international, regional, and local problems facing society today: overpopulation, diseases, political conflicts, infrastructure deterioration, pollution, and unlimited urban expansion under limited resources' availability. The United Nations World Commission on Environment and Development (WECD, 1987) coined a definition of sustainable development, which is probably the most well-known in all of sustainability literature: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Another issue related to sustainable development is whether an as high economic growth as possible always is the best way to increase life satisfaction and happiness. These issues are also related to whether we are talking about weak or strong sustainability. Promoters of weak sustainability in a larger extent accept to substitute natural resources with man-made capital whereas promoters of strong sustainability argue that it is necessary to treat natural resources and man-made capital separately. The term sustainable development itself is the equivalent of the proper measure of all things, sought by classical philosophers in order to define the man's deeds in the world. Issues related to sustainable development such as the approach to natural resources and how to manage responsibility for future generations are related to different philosophical theories. Therefore we analyze different philosophical theories and there relation to sustainable development.

The main aim of the article is to investigate, to analyze and to present the influence of classical consequentialist and non-consequentialist philosophical ethical theories and main challenges to the concept of sustainable regional development.

Analyzed problem / object of the research: impact of classical philosophical ethical theories on the concept of sustainable regional development.

Objectives of the research: 1) to reveal the historical context and philosophical assumptions of the idea of sustainable regional development; 2) to reveal the difference and fundamental meaning of the concepts of weak and strong sustainability; 3) to analyze the fundamental philosophical significance of classical consequentialist and non-consequentialist philosophical ethical theories and challenges to the idea of sustainable development.

Research methods: systematic scientific literature analysis, comparative, logical text analysis, methods of generalization and theoretical reconstruction.

Theoretical Backgrounds of Sustainable Regional Development: Weak vs. Strong Sustainability

The concept of sustainable development is based on three dimensions: economic, environmental and social ones. Regions' development is usually defined as the integral community development (social, economic, environmental and healthcare, technological, cultural and recreational) on a particular territory (Jovovic, R., Draskovic, M., Delibasic, M., & Jovovic, M., 2017). Region's development must be based on their optimal expansion constituents (social, natural and economic development aspects) aimed at certain life's level maintenance and quality improvement through the mentioned constituents. Regional development encompasses not only traditional policy on a concrete territory, but also socioeconomic process organized in the

specific political and cultural context (Atkinson, 1996; Bourdeu, 1999; Spangenberg, 2002). Regional development in today's context is at a critical juncture, with multiple crises (financial, food and energy) forcing us to re-assess the economic paradigm of our time and to evaluate how to better address the unfulfilled promises that we are currently leaving to future generations in the areas of employment, social progress, quality of life and respect for nature. While there is no doubt about the importance of integration of the pillars of sustainable development onto the regional level, implementation of this concept has proved challenging in practice. In fact, integration of the environmental, economic, and social dimensions of sustainable development on the regional level implies the implementation of complimentary and coordinated actions in different areas which results in economic growth that is also supposed to achieve social objectives, without endangerment the rare resources of the planet.

Sustainability is also a political term. It has been used in a certain historical situation in response to specific problems. Its political utility is mainly composed of novelty and flexibility, in its capacity to gather consensus and to shift perceptions and values at the same time. These attributes do not correspond to scientific efforts for precise meanings (Thierstein & Walser, 2000). Today, the concept of sustainability is a hub for many different approaches. It is used for various policy issues, development processes and planning strategies at regional level. There are several important features related to the term "sustainability" (Thierstein & Walser, 1997): the first is that sustainability requires awareness of the interconnection of social, ecological and economic problems; Secondly, all concepts of sustainability are based on different needs within the region and therefore require a lot of knowledge of how to deal with different interests; As a third feature, implementation of sustainability concepts at the regional level should bring together local needs - formulated in 'Local Agenda 21' - and demands for co-operation created over problems above the local level. Regional sustainability is defined as "the continuous support of human quality of life within a region's ecological carrying capacity" (Wackernagel & Yount, 1998). Sustainable development is understood in the category of economic development assuming the availability of certain natural resources in the region. However, economic development should remain at a level not exceeding the environmental capacity of the region (Malik & Ciesielska, 2011). Sustainability within the region is realized through integration within orderliness of sustainability: economical, eco-space, socio-institutional and ethical. Integration within the region is implemented through strategies and development programs. Development plans are operational dimension of regional development strategy (Stimson, Stough, & Roberts, 2006, p. 85).

When talking about theories about sustainable development, there are two main approaches, weak and strong sustainability. Maintaining total capital intact is often called "weak sustainability" since it is based on generous assumptions about substitutability of capital for natural resources in production. By contrast, "strong sustainability" requires maintaining both man-made and natural capital intact separately, on the assumption that they are really not substitutes but complements in most production functions. (Daly, 1991). Furthermore, strong sustainability implies that renewable resources must not be drawn down faster than they can be replenished. Weak sustainability accepts that certain resources can be depleted as long as they can be substituted by others over time. A problem with weak sustainability is that it is sometimes hard to give a monetary value in all the natural resources and furthermore it does not take into account that some resources cannot be replaced by manufactured goods and service (Agyeman, Bullard, & Evans, 2003).

Weak sustainability requires keeping total net investment, suitably defined to include all relevant form of capital, above or equal to zero. Promoters of weak sustainability often talk about keeping "genuine saving" non-negative. The term "genuine" distinguish it from traditional net saving measures which only include depreciation of man-made capital (Asheim, 2011; Hartwick, 1977). If the value of man-made capital is big enough, an explicit policy for sustainability is not necessary since sustainability is guaranteed quasi-automatically. Otherwise, measures such as resource-tax, saving subsidy or regulation are needed to ensure non-negative genuine saving (Neumayer, 1999).

One of the promoters of strong sustainability is Eric Neumayer who has criticized promoters of weak sustainability of being environmental optimists. He argues that they are in favour of economic growth either because they believe that a rise in consumption can compensate a decline of renewable resources or because a rise in consumption will prevent a decline in renewable resources. According to him, promoters of weak sustainability believe that, eventually, with rising incomes the state of the environment will improve as well. (Neumayer, 1999). Neumayer himself argues for non-substitutability. He means that we are largely uncertain and ignorant about the detrimental effects of depleting natural capital. He also believes that natural capital losses often are irreversible. Another thing to take into account is that some forms of natural capital provide basic life-support functions. He also argues that it is impossible to compensate loss of natural resource with increased consumption possibilities. Neumayer distinguishes between two forms of strong sustainability. According to the first interpretation, strong sustainability is a paradigm that calls for keeping the aggregated total value of manmade capital and natural capital itself constant. Thus, strong sustainability encompasses weak sustainability, but it also includes an additional requirement that refers to natural as a subcategory of total capital. This interpretation of strong sustainability does not require that nature always has to be preserved in its origin. Nor does it mean that non-renewable resources must never be used in production. What is important is rather that when using a resource such as coal, the receipts from coal mining must be reinvested into the development of renewable energy sources in order to keep the aggregate value of the total natural resource stock constant. According to the other interpretation, strong sustainability is not defined in value terms; instead it calls for the preservation of the physical stocks of those forms of natural capital that are nonsubstitutable. If the flows from these resource stocks

are used, their regenerative capacity must not be exceeded, so that their environmental functions remain intact. This interpretation does not allow for any substitutability between different forms of critical natural capital. But it does not imply keeping nature as it is. What rather is important is to maintain its functions intact (Neumayer, 1999). The discussion about weak versus strong sustainability is related to the discussion whether it is possible or not to combine economic growth and environmental development.

The Impact of Classical Philosophical Ethical Consequentialist and Non-consequentialist Theories on the Concept of Sustainability

The issues of sustainability are connected to different philosophical theories. Normative theories can be divided into two main groups. According to some theories, one should act in ways that give rise to the best overall consequences. These theories are called consequentialist ethical theories. The other group of theories are called non-consequentialist ethical theories. Various nonconsequentialist theories exist, for example deontological theories or duty ethics, according to which the moral rightness of actions is determined by other factors than the consequences of the actions (Ariansen, 1993). According to proponents of utilitarianism, the morally correct action or policy is the one that produces the greatest amount of utility for the members of society. A problem associated with utilitarianism is the difficulty of determining what utility is. Below, there will be a description of different directions of utilitarianism and their respective methods to assess and calculate utility (Kymlicka, 1995). The English philosopher Jeremy Bentham is usually considered to be founder of utilitarianism. Bentham argued that utility (or happiness) is equal to pleasure. Hence, society should be organized so that people's happiness pleasure, or pleasurable experiences was as high as possible and their unhappiness as low as possible. This approach introduced two new approaches as a contrast to earlier traditional and religious moralities. Firstly, it was people's happiness and not, for example, their piety or virtuous characters, that was important. Secondly, humans were equal in the sense that nobody's happiness counted for more than anybody else's, independent of sex, background or social position. This original version of utilitarianism is commonly referred to as classic utilitarianism or hedonistic utilitarianism (Hansson, 2002). Others, for example the philosopher G.E. Moore, argues that pleasure is not the only value to take into account. According to him, also for example knowledge, love and beauty have a value. Therefore, he prefers a wider definition of utility than that of hedonistic utilitarianism. This form of utilitarianism is called ideal utilitarianism (Driver, 2009). Both hedonistic and ideal utilitarianism have been criticized since it is hard to give a specific content to values such as happiness, knowledge and beauties. It can also be argued that human welfare is something more than merely having a particular mental state. Another position is therefore the theory about utility as preference satisfactions. According to preference utilitarianism, preference satisfaction increases people's utility, independent of what those preferences are (Kymlicka, 1995). Another problem with preference utilitarianism is that we do not always know what our preferences are. We act based on a preference and then afterward regret what we did. What humans believe is important to do when they are thinking visionary is not always the same as what they prefer to do for the moment. It can therefore be argued that fulfillment of preferences is something valuable only so far as those preferences are not based on false perceptions. A way to manage this is to define utility as satisfaction of "rational" and "enlightened" preferences. Hence, according to this form of utilitarianism we should aim to satisfy those preferences that are based on complete and accurate information. Another kind of utilitarianism is the welfare utilitarianism that equals utility with welfare. The welfare utilitarianism differs from both the hedonistic- and the preference utilitarianism as it focuses on external living conditions rather than on internal mental states. The utility as should be taken into account according to the welfare utilitarianism is people's access to accommodation, health care, education and other things that are related to welfare (Hansson, 2002). Another way to handle utilitarianism is to do utility calculations for the actions. Consequences of an action are given a numerical value, then that value multiplies with the number of people affected. A problem is yet that a significant disadvantage for a small group of people can be accepted as long as it has enough positive consequences for another group of people. Another critic to the utilitarianism is that it is a strict impersonal theory. While traditional moral theories talk about individuals' interests and rights, the individual has absolutely no significance in utilitarianism, except as bearers of utility. It can also be discussed whether nonhuman beings preferences and utility should be taken into consideration in the utility calculus. Both hedonistic and moral utilitarianism emphasize the moral significance of certain mental states. Arguably, on the assumption that animals may possess at least some of these mental states, consequences for animals should be included into the happiness calculus. However, it is not sure that an action gives the same loss or utility for human as for nonhuman beings. It is for example possible that people can understand the extent of suffering more clearly than nonhuman beings and therefore suffer to morally more significant degrees (Ariansen, 1993).

Another consequence ethical theory is Johan Rawls' "A theory of justice". Rawls' method assumes hypothetical social contract situation. In this situation, no one knows their place in the society, class, position, intelligence, strange and so on. From this position he means that the maximin rules apply. According to this rule, alternatives shall be ranked by their worst possible outcomes, then we are to adopt the alternative, the worst of which is superior to the worst outcome of the others (Viking, 1995). He also argued that all social values – liberty and opportunity, income and wealth, and all the bases of self-respect- are to be used distributed equally, unless an unequal distribution of all or any of these values are to be to the greatest benefit of the least-advantaged members of society. An unequal distribution can also be acceptable if it is to everyone´s advantage. But, it is also important to point out, according to Rawls', each person

also processes an inviolability founded on justice that even the welfare of society as a whole cannot override. A large sum of advantages enjoyed by many cannot be overweighed by sacrifices imposed a few (Viking, 1995; Kymlicka, 1995).

Within the non-consequentialist ethical theories, actions are valued not by their consequences but rather by whether they are made with a good intention, if they are possible to place in a set of rules and also on different kinds of duties and virtues. An example on a non-consequentialist theory is Kant's moral theory, which are based on the so called Kant´s categorical imperative. Thus, to decide if it is morally acceptable to lie, one must answer the question: Would a rational individual accept lying as a universal rule? Kant also believes that to do something only out of self-interests is not ethically correct. The fact that all actions should be possible to place in a set of universal rules forbids actions that are merely done out of egoistic motives (Grøn, et al., 1988). Another non-consequence ethical theory is the Virtue ethic that focuses on the development of human character traits. The virtue ethic was developed during the antiquity when ancient philosophers promoted four main virtues which people should strive to achieve: justice, wisdom, courage and moderation. These are the so called cardinal virtues which are introduced in Plato's "The State" (Hansson, 2002). Aristotle also discussed these virtues and took them one step further and argued that the good life was to develop properties that are characteristic of humans in contrast to nonhuman beings, namely the human ability to reason and rationality. Instead of promoting a theory of ethics based on consequences of action, human rights or on a social contract, he argued for the idea that a human being of excellence will understand that it is rational to develop certain traits of character, called virtues. These virtues make it possible for the human being to develop a peaceful life in human community. Modern virtue ethicists argue in a similar way, but emphasize that the character traits that should be developed are those that are needed not only for the individual's development but for society as a whole. A consequence of this is that the desirable virtues may be different in different societies with their different traditions (Hansson, 2002).

Within the utilitarian theories, which aim at maximizing the total utility, it is definitely possible to see a connection with sustainable development. Since the utilitarianism see all human beings and sometimes also nonhuman beings as equal bearers of utility, it is possible to argue that we have the same responsibility for future generation as for the present. When talking about weak versus strong sustainability and whether it is possible or not to substitute natural resources with man-made capital, a utilitarian solution would be to do utility calculations. To decide whether it is correct or not to substitute natural resources with man-made capital we have to answer the question "does it generate most total utility for those affected by substitute natural resources with man-made capital?" If the answer is yes, it is correct to do that. What is important to point out when talking about utilitarianism and other consequentialist ethical theories is that, if it should be defensive both to substitute natural resources with man-made capital and to not do that, it has to be motivated by detecting consequences for those affected. Looking at Rawls' Theory of justice, it is easy to argue for sustainable development. Environmental problems affect poor people in poor developing countries most. The theory of justice and environmental issues are therefore close linked to each other. According to the theory of justice, you should handle as you do not know where in the society you are born. Therefore, it is easy to argue for taking future generations into account in decision making. If we instead talking about, for example conserving natural resources because it is a duty or a virtue, we are talking about non-consequentialist ethical theories Happiness and average annual income. One of the non-consequentialist ethical theories which are related to sustainable development is the "Environmental Virtue Ethics".

Promoters of Environmental Virtue Theory argue that we should develop characters that lead to the preservation of nature for its own sake and for the sake of becoming better and more joyful persons. A critic to this is that it is not certain that all people agree to that preserving nature will lead to higher joys and not either that depletion of natural resources will lead to lower joys. It is also in general hard to say which joys are higher and lower (Holly, 2006). One of the promoters of environmental Virtue Theory is Lisa Newton. Since she believes it is hard to motivate people to do things that lead to less material welfare and also to make them care about future generation remote from our own, she argues that it is the focus on the joys of living on the basis of a character of environmental virtue that motivate people to live in an environmentally sustainable way. Newton argues that less consumption of material and a simpler lifestyle need not entail a mindset of gloomy austerity and deprivation. She rather argues that such a lifestyle can contain joys and satisfactions that attend the flourishing of a more highly evolved character. This also involves a less materialistic flowering of the self in which environmental virtues, especially the one she considers the cardinal virtue of simplicity, are cultivated for the sake of the enjoyment of a deeper satisfaction in living as well as to protect the environment. She also argues for Land Ethic, which aims to preserve the integrity, stability, and beauty of the ecosystem as a whole, in which humans are just plain citizens alongside all the other creatures and entities of nature. What humans need to do is to find a place in the ecosystem along with the needs of other creatures and entities. She believes that Land ethic in combination with Environment Virtue ethic in combination with Land Ethic is the best way to promote sustainable development. Even if Newton promoters Virtue Ethics, which is a non-consequentialist ethic, Land Ethics can in a way be described as an extension of consequentialism to nonhuman nature, since it regards actions as right or wrong depending on whether they preserve the stability, integrity, and beauty of the land. It is therefore the original form of consequentialism in utilitarian theory that Newton criticized as not doing the job for environmentalism, since originally the theory only takes human beings into account.

Conclusions

The term sustainable development began to be used increasingly during the 1980s and includes social, economic and environmental development. This concept has evolved in sustainable measures: living within certain limits of the earths' capacity to maintain life; understanding the interconnections among economy, society, and environment; and maintaining a fair distribution of resources and opportunity for this generation and the next. The discussion about weak versus strong sustainability is related to the discussion whether it is possible or not to combine economic growth and environmental development. Sustainability within the region is realized through integration within orderliness of sustainability: economical, eco-space, socio-institutional and ethical. Sustainable development should provide a solution in terms of meeting basic human needs, integrating environmental development and protection, achieving equality, ensuring social self-determination and cultural diversity, and maintaining ecological integrity. Although the concept of sustainable development has undergone certain changes during the past, its fundamental principles and goals have contributed to a more conscious behaviour adapted to the limitations of the environment. This is the reason of adopting the concept in different areas of human activities.

The article reveals the significance of classical philosophical ethical theories and ethical values for the sustainable development of the region and its practical significance in making important decisions. The sustainable social well-being is impossible without ethical values that ensure the prosperity and sustainability of society as a whole. Classical consequentialist and non-consequentialist ethical theories can help to make concrete decisions that ensure sustainable regional development. Within the consequentialist (utilitarian) theories, which aim at maximizing the total utility, it is definitely possible to see a connection with sustainable development. Since the utilitarianism see all human beings and sometimes also nonhuman beings as equal bearers of utility, it is possible to argue that we have the same responsibility for future generation as for the present. When talking about weak versus strong sustainability and whether it is possible or not to substitute natural resources with man-made capital, a utilitarian solution would be to do utility calculations. Within the non-consequentialist ethical theories, actions are valued not by their consequences but rather by whether they are made with a good intention, if they are possible to place in a set of rules and also on different kinds of duties and virtues. Another non-consequence ethical theory is the Virtue ethic that focuses on the development of human character traits. Modern virtue ethicists argue in a similar way, but emphasize that the character traits that should be developed are those that are needed not only for the individual's development but for society as a whole.

Regional politicians, social, business and cultural leaders could develop sustainable ideas for the future based on classical philosophical theories. On the other hand, acquiring and retaining adequate knowledge and skills, which are gaining importance in a rapidly changing environment, is an important challenge.

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THE EFFECT OF COLLABORATION-ORIENTED MANAGERIAL ENVIRONMENT ON EMPLOYEE JOB SATISFACTION

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Abstract

In our studies, we have assumed a causal chain that says managerial collaboration-oriented approach influence employee satisfaction which in turn influence intra-organizational outcomes (e.g., creativity and innovation). On the basis of existing works, we have made a score on the basis of mosaic statements presented in the European Working Conditions Survey (EWCS). In order to identify the main differences between EU countries, we made the distinction among five country groups based on their institutional conditions (i.e. social welfare system, labour culture issues etc.). The current research addressed the following hypotheses: (1) There are significant differences between the public and private sectors in employee's assessment of the quality of collaboration-oriented management environment and their job satisfaction. (2) There are statistically significant differences in the quality of the working environment and the level of job satisfaction among the groups of European countries.

To measure the collaboration-oriented managerial environment a set of 13 statements form the sixth EWCS questionnaire was selected. The same work has been done with job satisfaction. A factor analysis, cluster analysis, correlation analysis, Mann -Whitney and Kruskal-Wallis tests were applied to address the hypotheses. Cronbach's alpha was used to assess the internal consistency of each score.

Results indicated a significant relationship between the elements of the collaboration-oriented managerial environment and job satisfaction for each factor examined. The value of score the collaboration-oriented management environment is higher in the public sector than in the private sector. The organizational trust indicator is significantly higher in the private sector in all country groups, except CEE. Analysis based on Mann-Whitney test leads us to the conclusion that we cannot talk about stable established patterns distributed among groups of countries.

This research has started to understand how the organizational context impacts the collaboration-oriented managerial environment, organisational satisfaction, creativity, engagement further analysis of boundary conditions is needed. This may include organizational size, team size, geographic location and business environment and an expansion of the dependent variables. We suggest further research into these paradigms, understanding the employee impact of each paradigm under different organizational contexts.

KEY WORDS: innovation activity, creativity, working relationship, management environment, European Working Conditions Survey, job satisfaction, public & private sector.

Introduction

People are not machines. In today's competitive environment it is impossible to achieve high results if you do not understand it. In our opinion, success and serious competitive advantages are achieved by those who create conditions for creative solutions.

Some of the studies have related managerial activities to organizational creativity and innovation, leaving the intermediate step as a "black box". In our studies testing this proposition, we have assumed a causal chain that says managerial collaboration-oriented approach influence employee satisfaction which in turn influence intra-organizational outcomes (e.g., creativity and innovation). We are not aware of any direct research with precise questions covering this topic. Therefore, first of all, on the basis of existing works, we made a score on the basis of mosaic statements presented in the European Working Conditions Survey.

For our purposes, the collaboration-oriented managerial environment is defined as the environment that helps to motivate employees to engage in innovation through the active constructive elements of working interactions. The collaboration-oriented management environment, along with "hard" elements of human capital, such as professional knowledge and competencies, also takes into account the "soft" components that determine the quality of interaction between people, such as motivation and values. We think that we should carry out knowledge-sharing oriented staff with respect for personality and unique values based on the "personality"-oriented management, can create unity, harmonious work atmosphere, inspire staff self-esteem, responsibility, achievement desire, thereby enhancing the vitality of enterprises, forming a good corporate culture.

Modern organizations are obsessed with innovation. It seems to us that collaboration-oriented managerial environment helps to find a balance between the interests of the organization, represented by innovation, and, on the other hand, the interests of employees, represented by the degree of their satisfaction. The main reason for innovativeness is whether the internal environment that management creates motivates employees to engage in innovation (Alpkan et al. 2010; Amabile 1988; Dorenbosch et al. 2005). A relationship between the organization and the employee characterized by support and trust is important for innovative work behaviour (Scott and Bruce 1994).

The principle discussed in the theory of leadership emphasises the importance of the situation in the effectiveness of a leader's behavioural style; situational changes needs a diversity of styles (Mostovicz et al. 2009). Management with ineffective and detrimental leadership behaviour, termed as toxic, destructive, or tyrannical leadership, has an adverse impact, not only on the organization but also on the well-being of the employees (Chukwura 2016). Conversely, through trust-building and

recognition management can get participation from employees are innovation (Burroughs et al. 2011; Pieterse et al. 2010; Zhang and Bartol 2010).

The job satisfaction, as defined by Lock (cited in Gruneberg, 1979, p. 3), is a pleasurable positive emotional state as a result of work appraisal from one's job experiences. Researchers have found positive linkages between general workplace attitudes and individual performance outcomes (Iaffaldano & Muchinsky 1985). One implication is that changes in management practices that increase employee satisfaction may increase business outcomes, including profit (Harter, et al. 2002). Employees satisfaction can enhance productivity and organizational performance (Cropanzano et al. 1993). Deeper job satisfaction is positively related to, for instance, employee motivation, performance, and pro-social work behaviour (Ilies et al. 2009; Judge et al. 2001).

At the same time, the satisfaction of smart and complex work is much greater. The sense of the found calling is in itself the strongest inner inspirer. Several empirical studies show that employees report higher levels of job satisfaction the better the job matches their skills (Belfield and Harris 2002; Vieira 2005). Csikszentmihalyi (1990) claims that the state of satisfaction and happiness is achieved by the employees only when they maximally put their abilities in performing the activities and functions at work. Higher job satisfaction was found for individuals whose work environments complemented the creative requirements of their jobs (Shalley et al. 2000). In this regard, for example, employees working in innovation-oriented cultures have been found to demonstrate higher levels of satisfaction and commitment (Odom et al. 1990; Quinn & Spreitzer 1991).

And on the contrary job satisfaction with a type of work and excessive job security is adversely affected by perceived skill underutilization (Allen and van der Velden 2001; Vieira 2005).

In this way, identifying factors that positively affect workers` jobs` satisfaction might provide important benefits to organizations. We argue that collaboration-oriented managerial environment might be such factor.

Social researchers are increasingly using a trust to explain various levels of cooperation evidenced in differing social and political environments (Navickas et al. 2014). In order for people to cooperate to achieve their goals, they need not only to know one another but also to trust each other so that they will not exploit or cheat in their relationship and can expect truly to benefit from their cooperation (Field 2003). Trust, defined as the willingness to be vulnerable based on positive expectations regarding the intentions of another party (Mayer et al. 1995; Rousseau et al. 1998), is of critical importance for organizations. Trust can be horizontal between an individual and their team members or vertical between an individual member and their supervisor (Mayer et al. 1995; Schoorman et al. 2007). Without trust, their behaviour shifts towards self-protection (Colquitt et al. 2011). The norm of reciprocity allows for individuals to be more trusting of, and committed to, one another (Cropanzano and Mitchell 2005). Trust maintains social exchange (Konovsky and Pugh 1994) and can affect the relationship between behaviour and performance (Homans 1958). In line with Scott and Bruce (1994), among others, the trust conditions individual innovative work behaviour aimed at improving workplace performance. Job autonomy, closely related to trust, can be an antecedent to individual entrepreneurial behaviour (De Jong et al. 2015). When employees trust their team colleagues and supervisors, they are more likely to engage in risk-taking and innovative behaviour aimed at exceeding task demands (Mayer et al. 1995).

According to our idea management may create a psychologically safe organizational environment with regard to innovative work behaviour to apply personal-orientation mechanisms. Thus the empirical researchers have examined environmental characteristics that can affect creativity at work (Oldham & Cummings 1996; Shalley 1991). An organizational environment characterized by autonomy provides employees with the necessary decision latitude for the development of new innovative ideas (Janssen and Van Yperen 2004).

However, not everything is so clear on this issue. The innovative behaviour introduced two negative interpersonal work consequences (Yuan and Woodman 2010). Through efficiency improvement, innovative work behaviour increased work-related conflicts and decreased general job satisfaction (Cheng et al. 2010; Shalley et al. 2000). In general, people do not like change. Therefore, the prospects of organizational change can lead to some negative emotions among employees, such as the level of tension or disagreement in relationships (Avermaete et al. 2003). That is why it is important for us to clarify this duality.

Differences between the public and the private sector are well documented in the literature (e.g., Rainey 2003). A major difference is that while the purpose of the public sector is to provide services to citizens, the private sector aims mostly at maximizing financial gain (Ghobadian, et al. 2007). Even in a crisis occurs, public sector, follows special laws and regulations ensuring the stability of the personnel. That is why in most EU countries, public sector careers are becomes considered as more secure than careers in private companies in recent years (Habanik, et al. 2018). Although considerable similarities between the sectors do exist (e.g., in structure, client orientation, heterogeneity of outcomes, managerial techniques, and performance measurement), differences have always fascinated researchers seeking to identify the uniqueness of each sector. For public administration scholars and professionals, the differences, more than the generic similarities, are perceived as crucial for change, reforms, and a better prognosis for the sector. One of the major differences is in managerial and human resource mechanisms, such as employment conditions, type of employment contracts, and motivation to work and serve (Perry 1990).

Hypotheses

In the model of our study, collaboration-oriented managerial environment is the 'input'. Also, our study looks at two outputs: innovative activity is the first 'output', job satisfaction is the second one.

Specifically, we test the following hypotheses:

H1: There are significant differences between the public and private sectors in employee's assessment of the

quality of collaboration-oriented management environment and their job satisfaction.

The proof of this hypothesis will indicate the need for managerial differentiation depending on the sector. Based on this finding, the collaboration-oriented management environment can be considered as a possible contributor to a high-quality public service system, which finally might lead to an increase in citizens' satisfaction. We examine this hypothesis by the groups of European countries defined in comprehensive institutional studies.

H2: There are statistically significant differences in the quality of the working environment and the level of job satisfaction among the groups of European countries.

Economical researches have always been interested in the differences in organizations that revolve around the conceptual frameworks used to understand institutional variation across countries. On such frameworks depend the answers to a range of important firm-related questions. Do companies located in different nations display systematic differences in their strategies? If so, what inspires such differences? How can national differences in the pace or character of innovation be explained? What factors condition the adjustment paths a political economy takes in the face of such challenges? Investigation of this hypothesis helps to give the development a new framework for understanding the institutional similarities and differences among the European economies, one that offers a new and intriguing set of answers to such questions.

Materials and methods

A considerable part of our analysis is based on the data source of the 6th European Working Conditions Survey (EWCS; source: EWCS 2015). EWCS is a cross-sectional survey taken in every five years since 1990 organized by European Foundation for the Improvement of Living and Working Conditions (Eurofound, Dublin), covering the EU members and various other European countries. (Eurofound 2017).

Table 1. Measurements and descriptive statistics for the components of collaboration-oriented managerial environment and job satisfaction

Dimensions	Sub-dimensions (scores)	Statements
Collaboration-oriented managerial environment	Managerial support and recognition	Q61b Your manager helps and supports you (1= strongly disagree, 5= strongly agree)
		Q63a Your immediate boss respects you as a person (1= strongly disagree, 5= strongly agree)
		Q63b Your immediate boss gives you praise and recognition when you do a good job (1= strongly disagree, 5= strongly agree)
		Q63c Your immediate boss is successful in getting people to work together (1= strongly disagree, 5= strongly agree)
		Q63d Your immediate boss…- Is helpful in getting the job done (1= strongly disagree, 5= strongly agree)
		Q63e Your immediate boss…- provides useful feedback on your work (1= strongly disagree, 5= strongly agree)
		Q63f Your immediate boss…- encourages and supports your development (1= strongly disagree, 5= strongly agree)
	Organizational trust	Q70a Employees are appreciated when they have done a good job (1= strongly disagree, 5= strongly agree)
		Q70b The management trusts the employees to do their work well (1= strongly disagree, 5= strongly agree)
		Q70c Conflicts are resolved in a fair way (1= strongly disagree, 5= strongly agree)
		Q70d The work is distributed fairly (1= strongly disagree, 5= strongly agree)
		Q70e There is good cooperation between you and your colleagues (1= strongly disagree, 5= strongly agree)
		Q70f In general, employees trust management (1= strongly disagree, 5= strongly agree)
Employee Job Satisfaction	Organizational satisfaction	Q89a Considering all my efforts and achievements in my job, I feel I get paid appropriately (1= strongly agree, 5= strongly disagree)
		Q89b My job offers good prospects for career advancement (1= strongly agree, 5= strongly disagree)
		Q89c I receive the recognition I deserve for my work (1= strongly agree, 5= strongly disagree)
		Q89e The organisation I work for motivates me to give my best job performance (1= strongly agree, 5= strongly disagree)
	Job engagement	Q89d I generally get on well with my work colleagues (1= strongly agree, 5= strongly disagree)
		Q90a At my work I feel full of energy (1= always, 5= never)
		Q90b I am enthusiastic about my job (1= always, 5= never)
		Q90c Time flies when I am working (1= always, 5= never)
		Q90f In my opinion, I am good at my job (1= always, 5= never)

Source*: authors' construction based on the questionnaire of European Working Conditions Survey (EWCS)*

To measure the collaboration-oriented managerial environment was selected the characterising approvals. The same work has been done with job satisfaction. Based on these responses to the allegations, a factor analysis (Principal Component Analysis) has conducted. The statements have been grouped into two-two scores for managerial environment, and job satisfaction according to the factor structure are listed in Table 1. According to the results of factor analysis, the following groups of statements are obtained. Cronbach's alpha reliability coefficient has been used to examine the internal consistency ("reliability") of the groups of statements. The values of scores were normalized into scale [0, 1]. Because the Kolmogorov-Smirnov test showed non-normal data distribution within European country groups, the Kruskal-Wallis test followed by post hoc Dunn-Bonferroni tests was applied for inter-group comparisons. To investigate differences in subdimensions of the collaborate-oriented managerial environment, the job satisfaction, also the level of creativity the Mann-Whitney nonparametric test has been used.

We performed a correlation analysis between obtained scores and to measure the strength and direction of dimensions of collaboration-oriented managerial environment and job satisfaction. Cronbach's alpha was used to assess the internal consistency of each score.

Table 2. Sample size and Descriptive Statistics of Score of Managerial Support and Recognition [0,1] based on the data from round 6 of the EWCS

Country	Abbreviation	Private				Public			
		N	Cronb. α	Mean	SD	N	Cronb. α	Mean	SD
Belgium	BE	1166	0.91	0.72	0.23	585	0.91	0.71	0.24
Bulgaria	BG	589	0.90	0.79	0.20	224	0.92	0.81	0.19
Czech Republic	CZ	555	0.89	0.74	0.20	205	0.90	0.73	0.20
Denmark	DK	501	0.89	0.74	0.22	306	0.89	0.71	0.22
Germany	DE	1226	0.89	0.69	0.21	207	0.90	0.67	0.21
Estonia	EE	515	0.87	0.67	0.21	241	0.81	0.70	0.18
Greece	EL	415	0.88	0.76	0.17	109	0.90	0.78	0.15
Spain	ES	1828	0.91	0.75	0.24	542	0.88	0.76	0.22
France	FR	795	0.90	0.68	0.25	377	0.90	0.70	0.22
Ireland	IE	540	0.92	0.79	0.22	236	0.95	0.76	0.26
Italy	IT	566	0.86	0.66	0.17	213	0.87	0.67	0.18
Cyprus	CY	574	0.91	0.77	0.18	144	0.91	0.78	0.19
Latvia	LV	465	0.89	0.68	0.23	247	0.88	0.73	0.20
Lithuania	LT	510	0.89	0.70	0.19	264	0.86	0.76	0.17
Luxembourg	LU	454	0.89	0.73	0.23	293	0.89	0.74	0.22
Hungary	HU	478	0.93	0.72	0.23	261	0.91	0.78	0.19
Malta	MT	504	0.91	0.81	0.21	263	0.91	0.78	0.21
Netherlands	NL	446	0.87	0.73	0.22	142	0.87	0.75	0.21
Austria	AT	614	0.90	0.73	0.22	169	0.89	0.73	0.22
Poland	PL	671	0.91	0.68	0.21	209	0.92	0.73	0.20
Portugal	PT	494	0.86	0.78	0.19	174	0.84	0.79	0.17
Romania	RO	592	0.88	0.78	0.18	195	0.86	0.80	0.18
Slovenia	SI	700	0.92	0.75	0.26	478	0.90	0.75	0.23
Slovakia	SK	491	0.91	0.66	0.19	249	0.90	0.72	0.18
Finland	FI	432	0.92	0.75	0.23	305	0.90	0.73	0.21
Sweden	SE	520	0.87	0.70	0.20	324	0.87	0.69	0.20
United Kingdom	UK	806	0.93	0.75	0.23	382	0.92	0.77	0.20
Croatia	HR	487	0.89	0.70	0.22	238	0.91	0.72	0.22
EU-28	-	17936	0.90	0.73	0.22	7584	0.89	0.74	0.21

Source: *authors' calculations based on the microdata of the sixth (2015) European Working Conditions Survey (EWCS)*

According to the results of the analysis, the ranking of the results according to the European innovation scoreboard (2015) has been made (Table 2). In the course of research development, we noted a significant difference between the factors affecting the management environment, and the satisfaction of employees in the public and private sectors. Therefore, we separated and comparatively review the results as for the first and second sectors. Thus, the study was conducted at two levels. The first (personal level) – the level of employees (respondents) according to European Working Conditions Survey 2015. The second (country level) is based on the average values of obtained scores.

In addition, we apply the Index of creativity (Lorenz-Lundvall 2010; Makó et al. 2018), which is also based on questions from the European Working Conditions Survey.

In order to characterize the main attributes of a creative workplace, the authors used six binary variables (Table 3). A binary variable transformed from a five-level ordinal scale, as follows: 'Almost always' and 'Often' were recoded into 'yes'; 'sometimes', 'rarely', and 'almost never' were recoded into 'no'.

Table 3. Index of creativity based on Lorenz-Lundvall (2010), Makó et al. (2018)

Dimension	Sub-dimension Questions and items
Index of creativity	[Generally, does your main paid job involve…] Q53c - Solving unforeseen problems on your own.
	[Generally, does your main paid job involve…] Q53e - Complex tasks.
	[Generally, does your main paid job involve…] Q53f - Learning new things.
	[Generally, does your main paid job involve…] Q54a - Your order of tasks.
	[Generally, does your main paid job involve…] Q54b - Your methods of work.
	[...select the response which best describes your work situation] Q61i - You are able to apply your own ideas in your work.

Source: *authors' construction based Lorenz-Lundvall (2010), Makó et al. (2018)*

We distinguished work organizations operating in the private and public sectors. Based on the related question asked in each of the three waves of the EWCS ("Are you working in the...? private sector; public sector; joint private-public organisation or company; not-for-profit

sector, NGO; other") we were able to distinguish between private and public sector employees ("joint private-public organisation or company"; "not-for-profit sector, NGO" and "other" answers were excluded from the results).

In order to identify the main differences between EU countries, we made the distinction among five country groups on the basis of their institutional conditions (i.e. social welfare system, labour culture issues etc.). Our typology is analogous to country grouping used in comprehensive institutional studies as well as organizational studies using the same database (Gallie & Zhou 2013, Makó et al. 2018).

Results

In this section, the authors review the results and analysis of hypothesis testing.

H1: There are significant differences between the public and private sectors in employee's assessment of the quality of collaboration-oriented management environment and their job satisfaction.

Based on the results of Mann-Whitney test, the level of the Collaboration-oriented management environment – measured by the Managerial support and recognition and Organizational trust subdimensions – is higher in the public sector than in the private sector (Table 4).

The Organizational trust indicator is significantly higher in the private sector in all country groups, except CEE.

The mean score of the Managerial support and recognition showed significant difference only for Nordic countries (Z = -3.245, p = 0.001), where the private sector has a higher score (Mean=0.73) comparing to public sector (Mean=0.71) and for the CEE countries (Z = -7.067, p = <0.001), where the mean score for public sector (Mean=0.75) is higher comparing to the mean value for private sector (Mean=0.72).

Table 4. Comparison of collaborate-oriented managerial environment and job satisfaction, also level of creativity in private and public sectors by European country groups

Score	European country groups	Mean rank		Mann-Whitney U	Z	p-value
		Private	Public			
Managerial support and recognition	Nordic countries	1268.0	1173.4	670761.5	-3.245	0.001
	Anglo-Saxon countries	989.6	989.3	419775.0	-0.008	0.994
	Continental countries	3349.4	3377.3	4421784.0	-0.525	0.600
	Mediterranean countries	2974.6	2922.5	3239480.0	-1.019	0.308
	CEE countries	4408.2	4824.3	8139619.5	-7.067	<0.001
Organizational trust	Nordic countries	1293.4	1125.5	621840.5	-5.767	<0.001
	Anglo-Saxon countries	1027.3	922.0	381483.0	-3.824	<0.001
	Continental countries	3398.7	3114.9	4038919.0	-5.420	<0.001
	Mediterranean countries	2997.8	2838.6	3177139.0	-3.158	0.002
	CEE countries	4405.8	4664.8	8248920.0	-4.432	<0.001
Organizational satisfaction	Nordic countries	1343.1	1167.1	669919.5	-5.947	<0.001
	Anglo-Saxon countries	1025.8	971.8	412469.5	-1.932	0.053
	Continental countries	3506.5	3530.4	4848393.5	-0.441	0.659
	Mediterranean countries	3076.8	3152.4	3540470.0	-1.451	0.147
	CEE countries	4643.3	4664.5	9320340.0	-0.356	0.722
Job engagement	Nordic countries	1285.2	1307.2	789021.5	-0.741	0.459
	Anglo-Saxon countries	1016.0	1095.8	430147.0	-2.827	0.005
	Continental countries	3539.1	3618.7	4941638.5	-1.470	0.142
	Mediterranean countries	3020.2	3356.4	3310521.0	-6.516	<0.001
	CEE countries	4595.2	5092.9	8772901.5	-8.286	<0.001
Creativity index based on Lorenz-Lundvall (2010), Makó et al. (2018)	Nordic countries	1228.5	1366.0	705378.5	-5.009	<0.001
	Anglo-Saxon countries	989.9	1149.2	391984.0	-5.801	<0.001
	Continental countries	3480.1	4012.6	4440119.0	-9.957	<0.001
	Mediterranean countries	3034.9	3657.1	3057379.5	-11.866	<0.001
	CEE countries	4439.8	5210.8	7888407.0	-13.049	<0.001

Source: *authors' calculations based on the microdata of the sixth (2015) European Working Conditions Survey (EWCS)*

In all groups of the EU countries the mean values of the Creativity index are higher in the public sector than in the private sector. These results are consistent with Makó et al. (2019).

A significant difference was found for the Nordic country group in the level of the Organizational satisfaction. The private sector employees in Nordic countries have significantly higher level (Z = -5.947, p = <0.001) of Organizational satisfaction (Mean=0.65) than

their colleagues from the public sector (Mean=0.61). For other country groups no a significant differnces were found between public and private sectors in the level of the Organizational satisfaction.

In terms of another subdimension of Employee Job Satisfaction, Job engagement the results of Mann-Whitney test show that the mean score for public sector is slightly higher than in the private sector in the Anglo-Saxon, Medditerian and CEE countries. For the Nordic (p=0.459) and Continental countries (p=0.142) there is no significant difference between the two sectors in the level of Job engagement.

Thus, the Hypothesis 1 is largely proven true.

H2: There are statistically significant differences in the quality of the working environment and the level of job satisfaction among the groups of European countries.

For examining significant differences in scores across country groups of origin by private and public sectors, the Kruskal–Wallis test was used followed by post hoc Dunn-Bonferroni tests (Appendix 1).

During examining two subdimensions of the Collaboration-oriented managerial environment, it can be established that Anglo-Saxon countries have a significantly higher score for the Managerial support and recognition in both sectors compared to all other country groups (Fig. 1, Appendix 1). In private sector the managerial support and recognition is held in low esteem by employees in the Continental and CEE countries. In public sector the Nordic and Continental countries have the lowest value of this score.

In case of the second subdimension of the Collaboration-oriented managerial environment – the Organizational trust – it can be stated, that the Anglo-Saxon countries have a significantly higher mean score compared to the Continental and CEE countries in private sector. In the public sector the CEE countries' employees have a significantly higher level of the Organisational trust comparing to all other country groups.

As result of examining the two aspects of the employee job satisfaction – organizational satisfaction and job engagement – it can be concluded that the average level of the organizational satisfaction and job engagement is higher in Nordic and Anglo-Saxon countries, however in Mediterian and CEE countries the employees have a lower opinion of the organizational satisfaction and job engagement, both in private and public sectors (Fig. 1, Appendix 1).

Comparing the country groups, we may see that the Organizational satisfaction score distributes a quite similar picture within both the private and public sectors. This is especially true for CEE countries, where the average score is substantively lower than the score of Continental, Northern, and Anglo-Saxon countries. Especially this separation is expressed in the case of the private sector. Nordic and Mediterranean countries have higher levels of job satisfaction compared to others.

In the public sector, the mean score of the Job engagement for Anglo-Saxon countries group is significantly higher (Kruskal-Wallis: p=0.012) compared to all other country groups (Fig. 1). In the private sector, two homogeneous subsets can be identified based on the value of the Job engagement: the first – Mediterranean countries and CEE countries having the lower value, and all other groups of countries that have higher value of the employees' job engagement.

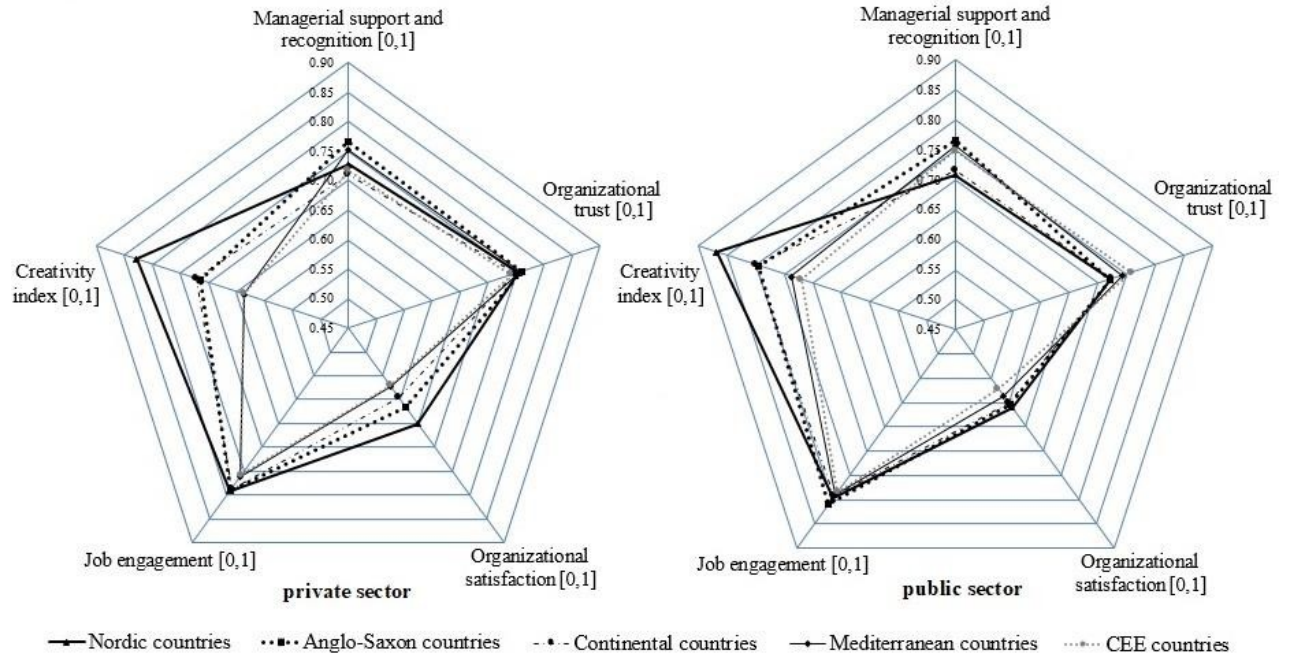

Fig. 1. Comparison of Mean values of scores of Collaborate-oriented Managerial Environment, Job Satisfaction, and Creativity for European Country Groups by Private and Public sectors

Source: authors' calculations based on the microdata of the sixth (2015) European Working Conditions Survey (EWCS)

The index of creativity distributes countries in a fixed hierarchy in both the private and public sectors: the Nordic countries have the leadership, Anglo-Saxon countries and Continental countries are staying confident in the middle,

Mediterranean countries and CEE countries close the country ranking based on the level of creativity.

These arguments lead us to the conclusion that we cannot talk about stable established patterns distributed among groups of countries. *Thus, our findings appeared to provide rejection for Hypothesis 2.*

Discussion and Conclusion

Public employees seem to respond more favorably to a people-oriented leadership style than do private employees (Zeffane 1994). In competing with private sector colleagues, government executives consider their coworkers and bosses significantly more important than doing business executives (Posner and Schmidt, 1996). Therefore, as we see the 'respect factor' from the statement 63C has a significant impact in this case.

For most country groups (except Nordic countries) there were no significant differences found between public and private sectors in the level of the Organizational satisfaction. Which, perhaps, indicates a greater connection of this score with national social capital than with the economic sector.

Job engagement is again higher in the public sector than in the private sector. Creativity index value similarity which repeats the same trend. In this case, we believe that it reflects a positive trend. European organizations have undergone changes in recent years. Some efforts are being made to change the attitudes and perceptions of public sector employees as to their job and mission of service (Vigoda-Gadot & Meiri 2008). Protean careers and the need for self-fulfilment are emerging as a significant part of public organization work (Hall 2004; McDonald et al. 2005). The enjoyment or self-satisfaction associated with serving society and helping the needy becomes a motivating drive. Work-related values such as the employees' desire to help others, benefit society, or engage in meaningful public service (Frank & Lewis 2004; Lewis & Frank 2002) are highlighted today more than in the past.

In the case of the Organizational trust, we see the opposite trend, which can be explained by the reaction to the above changes. Performance management and performance audit in the public sector becomes the name of the game and drive the relationship within the administration, between executive politicians and the administration, and between the legislative and executive branches. As a consequence, internal control systems, internal audit and external audit are reorganised, upgraded and expanded to include new procedures, actors and data to guide, control and evaluate relationships, even if there is a cost that is increasingly more substantial than the benefits (Put & Bouckaert 2011). This basic distrust affects the internal public sector culture. Once again this points to the needs for research the balance of management impacts.

Reviews of the relevant literature revealed that work motivation among public sector employees and managers is very different from that of their private sector counterparts (Ambrose and Kulik 1999; Rainey and Bozeman 2000). Public sector employees are less extrinsically motivated (Buelens & Van den Broeck 2007) This implies that extrinsic motivation factors such as pay and advancement have a significantly greater motivating potential for private managers than for public and nonprofit managers, while intrinsic rewards have the higher motivating potential for public and nonprofit managers than for private ones. Public and nonprofit employees are less likely to be motivated by extrinsic factors and more likely to be motivated by intrinsic rewards compared to workers in the for-profit sector (Buelens and Van den Broeck 2007).

Management finds itself challenged with the task to keep workers satisfied with their work in order to maintain organizational effectiveness. This finding may be highly relevant for practice because it testifies to the importance of organizational managements` environment.

In the context of limited resources, individualized flexible work arrangements, where practical, may go some way to reduced employee dissatisfaction and low rates of turnover intention. To retain employees organizations must create a collaboration-oriented managerial environment that keeps their employees happy or satisfied.

Explaining the results of the examining differences between the public and private sectors in employee's assessment of the quality of collaboration-oriented management environment and their job satisfaction, we assume that the indicators of the private sector to a greater extent reflect the characteristics of the social capital of groups of countries, as at the moment in all national economies of the EU public sector is represented in a smaller proportion. According to 4-th EWCS, early seven out of every 10 workers are employed in the private sector.

This research has started to understand how the organizational context impacts the collaboration-oriented managerial environment, organisational satisfaction, creativity, engagement further analysis of boundary conditions is needed. This may include organizational size, team size, geographic location and business environment and an expansion of the dependent variables. We suggest further research into these paradigms, understanding the employee impact of each paradigm under different organizational contexts.

Although many of the findings in this study are left controversial, it has suggested some interesting topics for future cross-cultural research. Organization and management theorists have much to contribute to this topic, and its further development is an exciting prospect for the field.

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Appendix 1

Table 5. Homogeneous Subsets based on the Dunn-Bonferroni post hoc test for private sector

Managerial support and recognition					**Organizational trust**				**Organizational satisfaction**					**Job engagement**			**Creativity index**			
Cntry groups	**Homogeneous subsets**				**Cntry groups**	**Homogeneous subsets**			**Cntry groups**	**Homogeneous subsets**				**Cntry groups**	**Homogeneous subsets**		**Cntry groups**	**Homogeneous subsets**		
	1	**2**	**3**	**4**		**1**	**2**	**3**		**1**	**2**	**3**	**4**		**1**	**2**		**1**	**2**	**3**
CON	8752				CEE	8839			CEE	9146				MED	9124		MED	8816		
CEE	8803				CON	9014	9014		MED	9167				CEE	9228		CEE	8911		
NRD		9195			NRD		9212	9212	CON		9594			CON		10142	AGS		10429	
MED			9764		MED		9251	9251	AGS			10251		AGS		10280	CON		10517	
AGS				10369	AGS			9447	NRD				10993	NRD		10323	NRD			12663
K-W test: p-value	<0.001				<0.001				<0.001					<0.001			<0.001			

Note: Homogeneous subsets are based on asymptotic significances. The significance level is 0.05. Each cell shows the sample average rank of score/index. AGS= Anglo-Saxon countries, NRD= Nordic countries, CON= Continental countries, MED= Mediterranean countries, CEE= Central and Eastern European countries

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

Table 6. Homogeneous Subsets based on the Dunn-Bonferroni post hoc test for public sector

Managerial support and recognition				**Organizational trust**				**Organizational satisfaction**			**Job engagement**			**Creativity index**			
Cntry groups	**Homogeneous subsets**			**Cntry groups**	**Homogeneous subsets**			**Cntry groups**	**Homogeneous subsets**		**Cntry groups**	**Homogeneous subsets**		**Cntry groups**	**Homogeneous subsets**		
	1	**2**	**3**		**1**	**2**	**3**		**1**	**2**		**1**	**2**		**1**	**2**	**3**
NRD	3536			NRD	3617			CEE	3915		MED	4071		CEE	3705		
CON	3685			CON	3701			MED	4007	4007	CEE	4107		MED	3767		
CEE		4023		AGS	3776	3776		CON		4132	CON	4135		CON		4319	
MED		4024		MED		3934		NRD		4179	NRD	4169		AGS		4348	
AGS			4344	CEE			4196	AGS		4184	AGS		4443	NRD			5064
K-W test: p-value	<0.001			<0.001				0.001			0.012			<0.001			

Note: Homogeneous subsets are based on asymptotic significances. The significance level is 0.05. Each cell shows the sample average rank of score/index. AGS= Anglo-Saxon countries, NRD= Nordic countries, CON= Continental countries, MED= Mediterranean countries, CEE= Central and Eastern European countries

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

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DEMAND OF LOGISTICS SPECIALISTS IN THE LABOR MARKET

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Abstract

The article analyses the demand for logistics specialists in the labor market in Lithuania. Detailed analysis of the logistics term was performed, the main and auxiliary logistics activities were distinguished, and a generalized term of the logistics specialist was formulated. Possible classification of logistics professionals was provided, indicating the boundaries of operations and responsibilities in the supply chain. Quantitative study of the need for logistics specialists in the labor market was performed. Noted that there is scientifically and practically incorrect grouping of professions, without taking into account the specifics of logistic activity. Noted, that profession of logistics specialist is in high demand in the labor market. The geographical location of the Lithuania, investments in transport infrastructure, positive transport and tax policy, globalization processes will increase the demand for logistics specialists in the labor market in the future. Qualitative research method was used to analyze the main requirements for logistics professionals by systematizing the content of job advertisements for logistics specialists and conducting an oral survey of logistics professionals. The main requirements for logistics specialists in the labor market were observed. Specified high education in logistics, management or transport engineering, computer software skills, verbal and written foreign language skills (mainly English and Russian, third language proficiency is considered as advantage) communication / communication culture, analytical thinking, quick decision making (quick orientation), goal seeking, teamwork skills, ability to solve complex problems, excellent negotiation skills, organizational skills, autonomy skills, ability to prioritize, result orientation, activeness, initiative, motivation, conflict management experience / knowledge, flexibility, positive attitude. Requirements for special knowledge and skills are directly dependent on the particularities of the logistics specialist's work.
KEY WORDS: logistics, logistic activity, logistic specialist, labour market.

Introduction

It can be stated that the term logistics is often misunderstood and used not correctly in modern society. Logistics often involves only the transport process from point A to point B, often mentioning only road transport. A driver who carries out road transport within the European Union is called a logistic specialist or freight forwarder. It is sometimes occurred that the warehousing process and the related functions are noted as an element of logistic operations. This is already the right direction for understanding the concept of logistics, but there are only two types of logistic activity. Sufficiently logistics concept is used without appreciating the complexity of the whole logistic process, a misunderstood definition of logistics, without knowing the basic and auxiliary logistic activities, flows that explore logistics.

After initial preparation for the study of the demand for logistics specialists in the labor market, it was noticed that there is no clear term for logistics specialists, definition of functions, attributes of grouping, place in logistics supply chain. Some of the most popular job search portals in Lithuania and the official website of the Employment Service were selected for the survey.

The object of the research is logistics specialists and their demand in the labor market. The aim of the research is to find out the need of logistics specialists in the labor market, to determine the main requirements for the candidates.

Research tasks:

1. To carry out a theoretical analysis of the terms "logistics activities" and "logistics specialist".
2. Carry out research on the demand for logistics specialists in the labor market.
3. Perform an analysis of the basic requirements for logistics specialists.

The following research methods were used: overview of scientific sources is used to reveal the meaning of logistics terms, to formulate the concept of logistics specialist and to provide a possible classification model for logistics specialists. A quantitative research method is used to identify the needs of logistics professionals by systematizing statistical information on official and popular job search portals. A qualitative research method is used to analyze the main requirements for logistics professionals by systematizing the content of job advertisements for logistics specialists and conducting an oral survey of logistics professionals.

Concept of logistic activity

When looking at the demand for logistics professionals in the labor market, one should start with the evolution of the concept of logistics, the identification of core and ancillary logistics activities, the formulation of a broad definition of logistics specialist and further grouping by area and function.

Logistics is a young science in general, began to develop rapidly during World War II, when it was used to address the defense industry, supplying the military with food, ammunition and weapons on time. Later, the concept and methods of logistics were transferred to the business - movement of material flows from source to production, from production to end user. According D. Bazaras (2005, p. 5). The word “logistics” comes from the Greek, where "logos" is the mind, "logismos" is the calculation, "logistica" is the art of calculation. According to J. A. Urbonas (2014, p. 11), “from the Greeks to

Rome, logistics was understood as the "distribution of food". The development of logistics was inspired by fundamental works by military theorist Baron A. A. Zhomini (1799-1869), who described logistics as a practical art of military control, including locating troops and transporting troops (Levkiv, 2009, p. 9). The concept and methods of logistics in business have recently been introduced. Thus, until the early 1960s, material flow optimization issues did not receive much attention. "In the 1960s, business logistics was understood as the coordination of the company's supply of raw materials and their inventory, processing of raw materials, packaging of finished products, warehousing and delivery to the customer. These are issues of physical distribution of material resources and finished goods" (Urbonas, 2014, p. 11). In the 1990s the logistics "revolution" took place. Logistics and the transportation process have undergone significant changes: from a microeconomic point of view, logistics and transportation from auxiliary functions related to material management have become an independent factor in production that is compatible with the global supply chain (Vahrenkamp, 2012, p. 255). Currently, scientists agree that the main object of logistics is the flow of materials throughout their journey, from the primary source of raw materials to their final consumer, and the main task is to optimize costs throughout the transportation journey.

The purpose and essence of logistics is well illustrated by the so-called "7R Rule" (R from the English word "Right"), in which the seven variables are interrelated: the right product, of right quality, in the right amount, at a right price, for the right user, in the right place, at the right time. The Logistic Purpose Based on Rule 7R: (1) the right product should be delivered (2) on time (3) to the right place, (4) at the lowest cost, (5) right quality, (6) right quantity, and (7) right customer. If these rules are followed, the goal of the logistics activity is considered to have been achieved (Левкин Г.Г., 2009).

These 7R rules of logistics are variable, compiled with each other or all together very often used to formulate the definition of logistics.

According Lithuanian authors, such as A. Garalis, R. Minalga, I. Meidute, R. Palšatis, D. Bazaras, J. A. Urbonas, Ž. Židonis, logistics is commonly understood and described as:

- a set of activities: getting the right amount at the right place at the right time at the lowest cost;
- integration of transport and production processes;
- the process of planning the cost of moving goods from the production site to the consumer's movement and storage;
- physical distribution management form;
- efficient movement of finished goods from production to the place of consumption;
- new scientific direction related to rational selection of material and information flow management methods;
- the science of rational organization of production and distribution.

According Minalga R. (2009) Logistics is the management (coordination) of material, information and financial flows in order to create a product that best meets the needs of the consumer, while reducing its production costs and increasing the profit of the company.

Logistics involves all physical operations that are repeated many times before the raw material is transformed into a product that is delivered to the consumer. Logistics - efficient transfer of goods from the supply point to the production point and from the production point to the final consumption point in the least costly manner while maintaining an acceptable (customer-agreed) level of quality.

The following logistic definitions also applied:

- managing all processes that facilitate the flow of material flow and the matching of supply and demand, generating space and time benefits;
- art and science to manage and control production, information, energy and other resources;
- delivering resources at the right time, at the right price and quality;
- all transportation, storage and related activities (these activities may include customer service, demand forecasting, inventory control, product storage, order management, after-sales service, site selection, stowage, waste collection and reuse, transportation organization) between production and consumption management.

A universal definition of logistics that emphasizes the flows in question is: Logistics is a practical activity and science that explores the processes of planning, organizing, managing and controlling material, financial and information flows in space and time from their original source to their end user.

Similarly, R. Palšaitis puts forward the concept of logistics: "Logistics is the interaction of two or more activities aimed at ensuring the planning, production, control and efficient movement of raw materials, material resources and production from the point of production to the point of consumption" (Palšaitis, 2007, p. 13).

V. Zinkevičiūtė and A. Vasilis Vasiliauskas also give their opinion on the concept of logistics: "Logistics - efficient transfer of goods from the place of supply to the place of production and from the place of production to the place of final consumption in the least costly manner, while maintaining an acceptable (customer-agreed) quality level" (Zinkevičiūtė, Vasiliauskas, 2013, p. 11).

According to V. Zinkevičiūtė and A. Vasilis Vasiliauskas, I. Meidutė understands logistics as service-oriented: "Logistics is a wide range of services, satisfying the needs of the client at the lowest possible cost" (Meidutė, 2012, p. 8).

Foreign author sees logistics as the totality of all logistics services oriented to profitability: "Logistics is the strategic management of purchases, the storage and movement of materials, parts and finished items, along with the flow of relevant information within an organization and its marketing channels, cost-efficiently executing orders and maintaining maximum current and future profitability" (Christopher, 2007, p. 12).

Russian author Gadzinskiy AM (A.M. Гаджинский, 2012, p. 11) understands logistics as the science of planning, control and packaging, transportation, warehousing and management, production, processing in the factory, delivery of finished products to the consumer, as well as related information transmission, storage and processing. Logistics is a practical activity and science

that explores the processes of planning, organizing, managing, and controlling material, financial, and information flows in space and time from their prime source to their end-user through production, where prime source, factories and end users can be on different continents.

Main and supporting logistics activities

In general, in theory, all logistic activities are divided into main and supporting functions. Main activities of logistics are: user support policies and standards; order processing; inventory management; transportation; warehousing and storage. Supporting logistics activities: information processing; demand forecasting; production and warehouse location selection; material handling; acquisition; supply of spare parts and customer after-sales service; packing; production waste management; handling of returned products.

According to Ž. Židonis (2002, p. 12-13) main activities of logistics in:

1) user Service Policies and Standards. Not only the customer is serviced, and the goods are offered according to his wishes, but the logistics area is based on the same principle, to provide the buyer with the best service conditions in order to buy the service from this particular seller. Even the main activities have to be adjusted from time to time for the exchange to take place.

2) order processing. The components of order management can be divided into 3 groups: operational - order acceptance, inclusion in the production cycle, preparation for order delivery, issue of required documents; communicative - receiving order information, providing additional information, correcting errors, completing additional requests; financial and accounting - invoicing and rendering them to the customer, payment of additional services purchased, invoice detailing, activity reports.

3) inventory management. Proper stock management not only enables the company to save money, but also to ensure that the right products and quantities are supplied according to customer needs. Raw materials, manufactured goods, equipment and its parts require space and capital to maintain, so the funds invested in inventories cannot be used in other stages of the operation.

4) transportation. One of the most responsible and important components of logistics activities. Its main task is to deliver products safely and on time from producer to consumer. Transportation - product movement control, the components of which are related to transport mode selection, vehicle selection, routing, carrier selection.

5) warehousing and storage. Finished products must be stored and stored on-site or off-site as required. This is needed for later sale to the buyer, but longer storage or storage increases the amount of stock. Warehousing and storage - activities related to space management.

Palšaitis (2010, p. 15) presents supporting logistic activities:

1) information processing. In order to make the process run smoothly, all logistics activities should be integrated: production, sales, logistics, finance and accounting. Customers and suppliers should also be included in a database. It can be information management system used by all employees of the company directly involved in logistics activities.

2) demand forecasting. Accurate and timely demand forecasting will allow the company to prepare in advance for the production of the required products and to prioritize transportation. Demand forecasting will allow the company to produce the right amount of production.

3) selection of production and warehouse locations. In addition to the production site (factory, factory), the strategic development plan should include storage and warehousing locations that are economically viable for the company.

4) material handling. Quality materials management, while not adding value to the product, can lead to production disruption, poor quality production, customer dissatisfaction, production downtime, or even loss or damage to the materials.

5) sourcing (acquisition). Providing the company with the right materials, parts or parts in a timely manner will guarantee the company continuous operation, because the production process will not stop due to material defects, but it is very important to monitor and coordinate the supply of these materials with suppliers in advance.

6) provision of spare parts and customer after-sales service. The logistics process does not end with the delivery of the products. In most cases, manufacturers continue to work with customers as a result of post-sales support. This may include replacement of new parts, ordering or even production, after-sales service, etc.

7) packing. Packaging has two main functions: trading function and logistic function.

8) management of production waste. Production waste accumulates during production and must be either transported to recycling facilities or destroyed or reused in production. In any case, they must be repaired, stacked and transported.

9) handling of returned products. Often referred to as reverse logistics because in this case the output travels not from manufacturer to consumer but vice versa. These are usually aftermarket repairs, remanufactured products, replacement products, etc.

As can be seen, the core activities take place in every segment of the logistics process, while the ancillary activities are already organized according to the needs of the company and only some of the mentioned activities can be carried out. After analysis of the concept of logistics and its activities, it is worthwhile to pay attention to the functional areas of logistics as well. There are 3 functional areas of logistics: supply logistics (from source to production), production logistics, distribution logistics (from production to end-user).

In summary, it can be stated that by function the logistic activities are divided into main and supporting, which are repeated in supply and distribution: main - user service policy and standards; order processing; inventory management; transportation; warehousing and storage; supporting - information processing and management, demand forecasting, manufacturing and warehouse location selection, material handling, sourcing, supply of spare parts and customer after-sales service, packaging, production waste management, returned product management.

Logistics specialist term and classification features

A comprehensive overview of the theoretical aspects of logistics activities, main and supporting activities can be used to formulate the definition of a logistics specialist.

Logistics specialist is a professional who coordinates the efficient movement of material flows from raw material sources to production and / or production sites to end-users, managing accompanying information and financial flows in the lowest cost while maintaining acceptable (customer-aligned) quality level (time, cost, etc.).

Thus, we cannot call vehicle drivers / operators (road, rail, air, sea transport), warehouse and terminal workers, as logistics specialists. Yes, they perform certain functions in the supply chain (transhipment, marking, packing, physical transportation, loading, reloading, etc.), they are executors, without them the movement of material flow would be impossible, but logistics specialists are managers and coordinators of the logistic process, material, information and financial flows.

Once the logistics specialist term is formulated, it would be appropriate to provide a possible classification of logistics specialists. First of all it is necessary to find out the limits of the logistics specialist's activity in the supply chain.

It is recommended to have exclusive supply and distribution logistics specialists. This will make it clear to the labor market participants the limits of possible responsibilities and the specifics of the logistics activity, as there is a significant difference between the supply and distribution of logistics. The object of supply logistics - material flows of raw materials directed to processing, industrial consumers, characterized by extremely large volumes of transported products, stability of qualitative characteristics, sufficiently narrow nomenclature of goods. Distribution logistics is a field of research that explores the systematic distribution of functions performed by material and accompanying (information, financial, post-transaction) flows between different users, i.e. integration of goods in the sales process. Distribution characterized by a particularly large product nomenclature at end users. It should be noted, that in both supply and distribution, the same basic and supporting logistic activities are most often distinguished and carried out. It is recommended that the functional areas also distinguish between supply and distribution:

•Transport logistics specialists (coordinating transport logistics): Road transport logistics specialist; Air transport logistics specialist; Maritime transport logistics specialist; Rail transport logistics specialist; Multimodal / Intermodal / Combined transport logistics specialist; Transport coordinator (only working with transport operators - carrier representatives).

• Forwarder
• Warehouse logistics specialists
• Inventory management logistics specialists
• Order management specialists
• Customs logistics specialists (customs clearance)
• Import managers (purchasing functions combined with logistic functions)
• Export managers (sales Functions combined with Logistic Functions)

It is also important to mention that in practice there are five major logistics service providers (organizations) [Erkan, 2014, p. 9-10]:

• 1PL (First party logistics) - first-tier logistics. Shipments by consignor or consignee where the process does not involve third party operators. The shipper or the consignee shall agree on the delivery and shall transport the goods by their own means of transport. This is the internal logistic process of the company.

• 2PL (Second Party Logistics) - tier 2 logistics involving third party carriers (carriers) can be a shipping company, rail operator, freight company hired to transport cargo from the production site to the destination.

• 3PL (Third party logistics). Some freight forwarders with value and physical assets (transport, warehouses) in a particular transportation segment while offering additional services in the logistics process. Additional services are related to warehousing, transhipment, branding. These service providers are directly involved in distribution logistics.

• 4PL (Fourth Party Logistics). Freight forwarders, who do not have any physical assets but operate under lease and service contracts. 4PL mostly purchases services from 3PL companies throughout the supply chain. They only have a few managers coordinating the process, IT professionals and intellectual property. Their main task is to meet customer needs by offering the most optimal service in the chain. 4PL customers usually do not know the names of the carrier, warehousing company, brokerage firm, and only the manager of this chain cares.

• 5PL (Fifth party logistics). It connects 3PL and 4PL supply chain players. 5PL is an innovative way in the supply chain, with IT technology as a key asset. This logistics process is not yet widely used as it is all about connecting all possible shippers, carriers, receivers, services into one single system where evaluation and comparison can be done and the most appropriate carrier or service provider selected.

The above model can also be used for the classification of logistics professionals, where the provider of logistics services is the employer organization.

In conclusion, a logistics specialist is a professional who coordinates the efficient movement of material flows from raw material sources to production and / or production to end-users, managing accompanying information and financial flows in a cost-effective conception while maintaining reasonable (customer-level) quality level (time, cost, etc.). Logistics professionals can be categorized by operational boundaries in the supply chain (supply logistics and distribution logistics), by main and supporting logistics activities, by the range of logistics services (1PL, 2PL, 3PL, 4PL 5PL) in supply and distribution logistics.

Quantitative research of the demand for logistics specialists in the labor market

It should be noted that the labor market is a very dynamic, characterized by both seasonal supply and

demand for jobs. For the purpose of the research, only actual day-to-day figures were fixed on different popular vacancies search portals and on the official Employment Service website. Repeated analysis of the data at specific time intervals, such as monthly, is required for more detailed investigations to identify changes in the demand for logistics specialists.

During the analysis of the statistical data incorrect and inflexible merging of professions and grouping without taking into account the specifics of logistic activity was observed, therefore, the actual labor market indicators differ from the published statistical overview.

For example, warehousing specialists are grouped together into a separate subgroup, without distinguishing between specialist and workers, and the subgroup "Logistics and Transport" is left out, emphasizing that warehousing is not a logistic, it is not a correct grouping, not based on scientific sources.

There is also situation, where supply specialists are not added to logistics specialists, although supply and distribution are the two main functional areas of logistics.

The official website of the Employment Service also does not distinguish a subset of separate group - "logistics specialist". The subgroup "Transport and Communications" includes professions such as driver, road repair worker or postman. The logistics specialist does not have the ability to collect data promptly to search for a job.

It can be concluded that the term logistics specialist is not clearly understood in society and in the labor market.

Following a statistical review of popular job portals, the highlighted trends are described below.

Distribution of job vacancies by groups on 10th of September 2019, from “CV Online” data shows that transport and logistics are separated but combined into one subgroup with 325 vacancies and have 8th position by group. Expected that the subgroups Customer Service, Manufacturing, Organization and Management, Sales, Purchasing, Supply also include logistics specialists. Thus, the eighth place is a good enough indicator of the possibilities of logistics specialists in the labor market.

Distribution of job vacancies by groups on 10th of September 2019, in the official statistics of the “Employment Service” show that the activity "Transport and Communications" is merged into one subgroup with 104 vacancies and 6th position according to the occupation groups sought. However, the subgroup brings together professions such as drivers, vehicle repair workers, road workers, postal workers and others. Information is not objective enough to assess the specific need for logistics specialist in the labor market. Expected that subgroups sales, purchasing, services, management and organization include logistics specialists.

Distribution of job vacancies by groups on 10th of September 2019, of data from “CV Market” shows that Transport, Logistics and Warehousing are separated into one subgroup with 382 vacancies and have 4th position by occupation. The subgroup includes transport and warehouse workers. Statistics on the need for logistics specialist are inaccurate. Expected that the subgroup "Purchases and sales" also refers to logistics specialists.

Distribution of job vacancies by groups on 10th of September 2019, from “CV.lt” data shows that storage (warehousing) is a separate subgroup, has 458 vacancies and ranks fourth in the most popular vacancy groups. Finally, transport drivers is subdivided into a separate subgroup and statistics rightly reflect the current demand for logistics specialist in the labor market. Logistics, transport management also divided into a separate subgroup, has 92 vacancies. Sales and Export Management is also divided into a separate subgroup and has 231 vacancies. Expected that the subgroup also refers to logistics specialists.

In summary, when research of the statistics, provided by official and most popular job search portals, was completed, it showed that there is incorrect classification of professions by scientific and practical point of view, grouping without taking into account the specifics of logistics business, therefore the actual indicators in the labor market differ from the published statistical overview. Profession grouping is not fair, is not based on scientific sources in the field of logistics. There is no distinction between qualified and not qualified transportation and storage infrastructure workers. Assuming, the subgroups of activities Customer Service, Organization and Management, Trade, Purchase, Supply, Import, Export also refer to logistics specialists, it can be said that the profession of logistics specialist is sufficiently in demand in the labor market.

The geographical location of the Republic of Lithuania, investments in transport infrastructure, positive transport and tax policy, globalization processes will only increase the demand for logistics specialists in the labor market in the future.

Basic requirements for logistics specialists

As mentioned above, the range of logistic services is extensive enough to cover the main and ancillary logistics activities, as well as relevant at any stage of the supply chain for logistics services, whether in supply or distribution. In addition, logistic service providers are grouped according to the range of services (1PL, 2PL, 3PL, 4PL 5PL) in supply and distribution logistics. This model can also be used to classify logistics specialist. In any case, whatever the classification used, the professional requirements for logistics specialists are quite probable and universal.

A qualitative research method is used to analyze the basic requirements for logistics specialist by systematizing the content of job advertisements for logistics specialist on popular vacancy portals and by oral survey of logistics professionals. During the informal interview, five different logistic business practitioners with more than ten years of experience in the logistics business were interviewed individually. Fifty logistics specialist job vacancies were randomly selected on the recruitment portals and systematized data showing job candidates requirements.

An analysis of the basic requirements for logistics professionals has highlighted such trends. Foremost, employers requires high education in logistics, management, transport, excellent computer skills, spoken and written foreign language skills (mainly English and Russian, third language proficiency is seen as an advantage, languages, German, Norwegian, French,

Italian, Spanish, Polish), correct Lithuanian written and spoken, culture of electronic correspondence / communication.

The personal qualities required by the logistics specialist most often referred to by employers include analytical thinking, communication skills, initiative, ability to make quick decisions (quick orientation), goal achievement, ability to work in a team, resistance to stressful situations, resilience to complex problems, negotiation skills, excellent planning, work organization skills, autonomy, ability to prioritize, result orientation skills, proactivity, motivation, conflict management experience / knowledge, flexibility, positive attitude.

Requirements for special knowledge and skills are directly dependent on the particularities of the logistics specialist's work. This may include knowledge of logistic processes for a particular mode of transport and international legislation, specialized computer software for warehouse, for material flow or vehicles, transportation units (wagon, container, semi-trailer), documentation (transport, commercial, customs, etc.), other specific knowledge.

Conclusions and results

The article analyzes the demand for logistics specialists in the labor market in Lithuania. The analysis of logistics term was performed, the main and auxiliary logistics activities were highlighted, the spheres of logistics activities were emphasized, and the generalized term of the logistics specialist was formulated. A possible classification of logistics specialist was provided, indicating the boundaries of operations and responsibilities in the supply chain. A quantitative research of the need for logistics specialists in the labor market was carried out.

Analyzing statistical data provided by official and most popular job search portals, noted, that there is scientifically and practically incorrect combination of professions, grouping without taking into account the specifics of logistics business. It can be said that the profession of logistics specialist is in demand in the labor market. The geographical location of the Lithuania, investments in transport infrastructure, positive transport and tax policy, globalization processes will only increase the demand for logistics specialists in the labor market in the future. The main requirements for logistics specialists in the labor market are explained. Employers specify basic requirements, such as higher education in logistics, management, transport, perfect computer software skills, verbal and written foreign language skills (mainly English and Russian, third language proficiency is considered as advantage) communication / communication culture, analytical thinking, communicative, proactive, quick decision making (quick orientation), goal seeking, teamwork ability, ability to solve complex problems, excellent negotiation skills, organizational skills, autonomy skills, ability to prioritize, result orientation, activeness, initiative, motivation, conflict management experience / knowledge, flexibility, positive attitude. Requirements for special knowledge and skills are directly dependent on the particularities of the logistics specialist's work.

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ANALYSIS OF ONLINE SHOPPING TRENDS OF HUNGARIAN AND AMERICAN ONLINE CONSUMERS

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Abstract
The appearance of Industry 4.0 has had a significant impact on the logistics and management processes of many companies. The study of this topic is also relevant because new shopping habits and marketing strategies on the internet have evolved and transformed with the popularity of online shopping.
This study shows comparable habits of online consumers as well as the differences between Hungary and the United States in this regard. The study was based on the results of an online questionnaire. The standardized questionnaire was completed by students from Szent István University and Murray State University, Kentucky, and their friends, and I used the Survey Monkey page for this purpose. The Hungarian survey was conducted between 23.09.2016 and 07.01.2017, and the American one between 24.02.2017 and 01.05.2017. For processing the data obtained during the research I used the IBM SPSS Statistics 21 statistical software package.
This analysis focuses on behaviours that reduce the risks associated with online consumer habits.
I used quantitative research techniques in order to reveal more precisely the consumer behaviour of the target group. During the basic research I conducted a non-representative survey on a sample of 932 people. Of these, Hungarians represented 729 people, Americans 203 people, and respondents claiming to have extreme (unrealistic, such as 1,999,999 HUF or 666,666 HUF) per capita net income were excluded.
The main subjects of the online survey included willingness to shop online, trust, online grocery shopping with VR glasses, and ordering from home. This was based on my earlier study on the popularity of online shopping and how to build trust.
The answers to the questions were first subjected to descriptive statistical analyses (mean, standard deviation, and frequency). The Likert scale was used, ranging from 1-5, forming a continuous ordinal scale. Accordingly, I applied a parametric procedure to examine the relationships between the statements of my questionnaire. Multivariate analysis of variance was used to examine the groups created during the analyses and the differences and relationships between them. The analysis of the Hungarian and American samples showed significant differences in income, place of residence and highest educational level; therefore, these variables were included in the analysis when comparing the answers of the questionnaire internationally. In summary, in the multivariate analysis of variance, the dependent variable was the value of responses to each of the online shopping statements, while the independent variables were nationality, income, place of residence, and highest educational attainment.
KEY WORDS: e-market, cross-study, online marketing, customer behaviour. online customer, online shopping.

Introduction

The focus of this paper is to characterize consumer behaviour when shopping online in Hungary and in America. My choice of subject was greatly influenced by the research scholarship that was established between Murray State University and Szent István University, which allowed me to work overseas.

The primary purpose of my research is to highlight which variables and information play a key role in influencing online consumer behaviour of the populations of the two countries. This includes mapping the factors behind the risk reduction behaviours associated with online consumption based on the responses of the sample participants.

Before starting my research, I assumed that convenience, speed and the possibility of buying food from home, even using VR glasses, play an important role in the e-shopping (shopping on the Internet) habits of Hungarian and American consumers.

The number of American online buyers was 197.6 million (MINIWATTS, 2018). In Hungary, this value is much lower, exceeding 3 million people only in 2017 (ORIGO, 2018). Compared to the EU average (65%), the number of Hungarian online buyers (47%) from among internet users is lower (PORTFOLIO, 2016).

In terms of online commerce, retail sales (as well as number of sellers) increased significantly in 2015. Online purchases accounted for 2.5% of total retail sales in Hungary; their turnover was 229 billion HUF, and since 2010 they have grown on average by 38% annually compared to the previous year (NAGY, 2016).

KNOKE and KOVÁCS (2018) also mention that the internet can introduce and create new business models by opening gateways to potential retail dealers for potential market niches; however, it rewards large companies with a multitude of network and threshold effects, which in many cases can lead to monopolies. Innovative solutions and new development strategies at micro and macro levels are therefore also highly important. According to a study conducted by IVSZ (2017), with the advent of Industry 4.0, in the digital world ever- increasing value is being given to state subsidies. In 2018, an opportunity and a source of financing was provided for the development of related software and applications. In the course of my research, I also examined the use of VR glasses at home, specifically for a grocery store purchase (simulation).

The Technology Acceptance Model (TAM) should be mentioned with regard to the online purchasing decision, which shows the potential for developing technological responsiveness, positive consumer attitudes and positive confidence (DAVIS-BAGOZZI¬WARSHAW, 1989, FEHÉR ¬ SZAKÁLY, 2015). SAM ¬ CHATWIN (2015) first summarized the characteristics of online consumer

behaviour in the Online Customer Style Inventory (O-CSI) based on the original CSI (Customer Style Inventory) created by SPROLES and KENDALL (1986). Of the original 8 factors, 7 have been identified which can also be found in the online marketplace. These are: online consumers' pursuit of high quality, brand loyalty, fashion, price sensitivity, product portability, website content, and website design (SAM ¬ CHATWIN, 2015; FEHÉR, 2017).

When looking at factors influencing consumer behaviour, there are many definitions. At the microeconomic level, consumers are characterized by economic, political, legal, technological, infrastructural and cultural conditions within the country (REKETTYE et al., 2015).

Analysis ¬ article material

The results of the research are based on Hungarian and American online buyers in 2017. The analysis begins with the demographic characterization of the sample. During the demographic analysis I found a special statistical relation between age groups, gender and income. Next, I examined the importance of grocery shopping in terms of online commerce (marketplace). However, it is important/meaningful/significant to map the range of products and services purchased online by nation. This analysis is given by the multi-dimensional variance analysis of the responses to the questions. Through those responses, I examined the preferences of online buyers.

Characteristics of the Sample

A total of N=932 people participated in the survey. Based on the answers provided, out of the total number, 371 are men (40.1%) and 555 are women (59.9%). Having split the sample by nationality, it seemed professionally justified to separate the respondents into four age groups. These were adolescents (16-20 years), young adults (21-25 years), early-stage adults (26-30 years), and mature adults (over 30 years). The oldest respondent was 73 and the youngest was 16. The rounded average age was 27. The age distribution of Hungarian and American respondents was similar. Most of the people who participated in the research were aged between 21 and 25 and between 26 and 30 (following a similar pattern for both nations).

On the whole it can be said that Hungarian consumers have a lower income than their American counterparts in the sample (Chi2 (4) = 77,391, p <0.001). A significantly higher proportion of Hungarians have well below average incomes. 24% of Hungarian women, 18.4% of men, 4.3% of American women, and none of the American men belonged to this income category. A significantly higher proportion of Americans fell into the category of average or above-average income.

Most American respondents (76.3%) lived in rural areas, 14.5% in the capital and 9.1% in cities. Almost half of the Hungarian respondents (47.4%) live in the capital, while 40.5% lived in cities and only 12% in villages.

Limitations of the analysis

It should not be ignored that the sampling of the research is not fully representative and that there are many differences between Hungarian and American students, such as fundamental cultural and technological differences. Taking all of this into account, I will conduct analyses that highlight the similarities and differences and may serve as a basis for further research.

Factorial ANOVA

In order to examine the preferences of online consumers, I analysed the responses to the 12 statements, i.e. "items". The responses were on a Likert scale ranging from 1 to 5 (1 - strongly disagree with the statement, 5 - strongly agree with the statement). A plus variable was the "Do Not Respond/Don't Know" option, which, if chosen, was always excluded during the analysis. I examined the two nationalities separately, the descriptive statistical indicators of which will be presented at the conference but this table shows that both Hungarian and American consumers showed the highest average values for more choice and flexibility of time, while comfort was the third. In addition to the averages, the frequency data for each category on the 1-5 scale also show 79.3% of Hungarians gave responses of 4 and 5, with 84.7% of Americans responding in the same way. Because the Hungarian and American samples showed significant differences in income, place of residence and highest educational level, these variables were further considered when comparisons of the 12 statements between the two countries were included in the analysis. Thus, I examined the main effect of nationality and the following interactions already mentioned in the methodology:

1. Nationality
2. Nationality compared with place of residence
3. Nationality compared with education
4. Nationality compared with income

The main effects, discrepancies, and interactions obtained in the analysis are highlighted in gray in Table 1. (source: own data):

Table 1. Test of Within- Subject Effects Based on Nationality and on the Interaction of Analysed Demographic Data

	Nationality			Nationality compared with residency			Nationality compared with education			Nationality compared with income		
	F	p	η^2p	F	p	η^2p	F	p	η^2p	F	p	η^2p
It is cheaper to shop online	0.128	0.721	0.00	1.571	0.180	0.01	2.522	0.040	0.01	2.096	0.034	0.02
Shopping online is faster	2.237	0.135	0.00	1.862	0.115	0.01	0.401	0.808	0.00	1.902	0.057	0.02
I get better quality online	5.652	0.018	0.01	1.778	0.131	0.01	2.963	0.019	0.02	2.275	0.021	0.02
Selection is bigger online	0.480	0.488	0.00	1.181	0.318	0.01	0.936	0.442	0.01	1.080	0.375	0.01
I choose it because of that	0.215	0.643	0.00	0.672	0.611	0.00	0.117	0.976	0.00	0.382	0.930	0.00
I can only purchase flexible schedule	5.194	0.023	0.01	0.668	0.615	0.00	1.807	0.125	0.01	1.478	0.161	0.02
I just like to compare products	4.891	0.027	0.01	1.433	0.221	0.01	0.207	0.935	0.00	2.262	0.022	0.02
I prefer online products	0.346	0.557	0.00	1.519	0.195	0.01	1.865	0.115	0.01	1.314	0.233	0.01
I prefer online because I can buy anything	0.682	0.409	0.00	1.114	0.349	0.01	1.258	0.285	0.01	1.313	0.233	0.01
I shop online because I can buy anything	54.052	0.000	0.07	0.612	0.654	0.00	1.413	0.228	0.01	0.836	0.571	0.01
Online shopping is comfortable because	0.113	0.737	0.00	0.742	0.563	0.00	0.605	0.659	0.00	0.996	0.438	0.01
It is safe If I could stop the groceries	0.908	0.341	0.00	0.382	0.821	0.00	1.016	0.398	0.01	1.574	0.129	0.02
I will get Online with the help of VR glasses then I should be open to this solution												

For the answer to the first statement ("Buying online is cheaper"), the interaction of nationality x educational attainment (F (4,770)=2,522; p=0.040) and nationality x income (F (8,770) =2.096; p=0.034) was statistically significant.

In the case of the nationality compared with education, Hungarian consumers with primary and secondary education were more likely to agree (mean: Hmiddle=3.77) that products purchased online are cheaper than American consumers with the same educational level (Amiddle=3.48). The opinion of Hungarian and American consumers with higher educational levels did not differ significantly on this question (see mean: Acollege=3,60, Hcollege.=3,49; Auniversity=3,76, Huniversity=3,76).

In the case of nationality x income interaction, Hungarian consumers were more likely than American consumers to agree that the product purchased online was cheaper. The monthly net income of the household (interaction), in the well-below average income categories (means: Abelow.income=3,04, Hbelow.income=3,43), and well-above average (net) income categories (means: Aabove.income=3,38, Habove.income=3,75) was also a factor.

Hungarian consumers were statistically significantly more likely to agree that online purchases are of higher quality (mean: 3.14) than American consumers (mean: 2.82). The interaction between nationality x education (F (4,767)=2,963; p=0.019) and nationality x income (F (8,767)=2,275; p=0.021) was statistically significant. At each level of education, the Hungarian consumers were more likely to agree with the “better quality” statement for the nationality x school education interaction; however, Hungarian consumers with primary and secondary education and those with higher education showed a greater difference compared to American consumers.

They buy online because products purchased online are of better quality than American consumers with the same educational level.

Nationality x income, namely, taking into account the household's monthly net income per capita during the research, the incidence of agreement with the statement varied across all income categories. American e-shoppers in all income categories were less likely to agree that they buy online because of the higher quality of products there. Significant differences were found between people with average income (means: Aaverage.income.=2,87, Haverage.income=3,27),and those with well-above average incomes (means: Awell.above.average.income=2,51, Hwell.above.average.income=3,09) in examining the consumer habits of the two nations.

Nationality played a statistically significant main effect in the answers to the sixth statement (“You can only buy the product online”) (F (1,758)=5.194; p=0.023). American e-buyers were significantly more likely to agree that online purchases can only be purchased online (mean: 3.16) than Hungarian consumers (mean: 2.63).

Nationality played a statistically significant main effect in response to the seventh statement (“I only compare on the Internet”) (F (1,752)=4.891; p=0.027). American consumers agreed significantly that they only compare the product they want to buy online (mean: 3,16), while Hungarians agreed less to that statement (mean: 2.69). The interaction of nationality x income (F (8,752)=2,262; p=0.022) was statistically significant. Figure 5 illustrates the interaction of nationality x income, where American and Hungarian consumers showed almost the same value only in the well-below-average income category. In the other income categories, Americans were more likely to agree that they were browsing the internet because they were only comparing products than Hungarian consumers with the same income.

Nationality played a statistically significant main effect when analysing the tenth statement (“Online shopping is more convenient”) (F (1,767)=54,052; p=0.000). In this regard, American consumers were significantly more likely to agree to prefer online shopping for convenience (mean: 4.07) than Hungarian consumers (mean: 2.58). Other main effects and interactions did not show statistically significant results.

Conclusions

The topic selection is timely because we use the World Wide Web every day in the office and at home. This research analysed, on the basis of a non-representative sample, the national and demographic identities and differences of Hungarian and American online buyers.

The first objective of this article is to explore the attitudes of different national categories toward online products and services by analysing research results. The majority of Hungarian consumers in the survey chose hot meals, food and daily consumer goods as their most frequently-purchased online product and/or service category, and 1/5 of them indicated that they used the sites of online insurance and banks. The Americans surveyed tended to buy mostly fashion products, clothing, and accessories online. Further research has revealed that one of the main reasons for different consumer habits (for example, daily consumer goods, semi-finished products, etc.) is given.

A further research objective was to explore, based on the results of the study, which variables and information could play a role in favouring online shopping. This is included in the “justification for online shopping” statements in Table 1, which summarizes the advantages and disadvantages of online shopping. When examining consumer preferences, there was a significant difference in terms of nationality between "better quality", products "only available for purchase online" and "convenience" and "I just compare the products online with each other". In addition, in the case of "better quality", demographic differences between nations (such as individuals' educational attainment and income) significantly influenced the results obtained. As an example, in the "well below average income" category, American and Hungarian consumers showed nearly the same value. In the other income categories, Americans were more likely to agree that they were browsing the internet because they were only comparing products than Hungarian consumers with the same income. In the case of the "I only compare on the Internet" statement, the study showed a significant difference by income level.

On the subject of online grocery shopping with the help of VR glasses, I studied consumers ‘attitude toward buying food online at home, where the response was a moderate, relatively neutral value for both nationalities. Thus, I did not receive a clear, positive result on the possibility of virtual shopping in the grocery store.

Based on the results of my current questionnaire survey, additional potential research topics have emerged in many scientific disciplines (e.g. robotics and software development), which I will investigate in further research.

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CHANGES OF THE FACTORS AFFECTING THE QUALITY OF LIFE

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Abstract
The publication presents the results of questionnaire survey based on the Calvert-Henderson model. The questionnaire survey was conducted in 2017 and repeated in 2019 when it was enriched by the interviewer with an oral interview with respondent. The results of the survey and interview were presented in quantitative terms and supplemented with a description based on the respondents' statements.
The purpose of this paper is an analyzing the quality of life assess by people who have a job.
The diverse approaches to values, that affect the quality of life, depending on the age of the respondents, have special significance. Whereas the quality of life factors, which in the 2017 year were assessed as necessary for improvement, are - except the employment - further assessed as requiring change.
KEY WORDS: Calvert-Henderson model, changes, factors, quality of life.

Introduction

The development of societies runs evolutionary, but experience shows that in certain moments there is a qualitative leap often called a civilization leap, which is associated with the qualitative development of productive forces.

Historically, we distinguish three types of civilizations, which Allvin Toffler (2006) determined in view of most importance resources, as three waves:

- agrarian (land),
- industrial civilization (capital),
- information society (information civilization, society of knowledge - resources are knowledge) (Toffler 2006).

Now we live at the turn of two civilization ages: industrial and society of knowledge.

In the industrial phase, so-called the second wave, both in the capitalist and socialist economy, striving to higher and higher level of labor productivity and to more and more increase of production, resulted in particular interest in the efficiency of using existing as well as newly emerging fixed assets.

The twilight of the second wave was largely caused by the problem of disturbing the environmental balance, the depleting of non-renewable energy sources and ending access to cheap raw materials, as well as more and more often appearing the surplus of supply over demand. These factors caused the decrease in interest in a steady growth in the volume of industrial production.

The third post-industrial wave is also called the information age in the development of which in recent time the progress of digital technology strongly affects both the lives of people as well as the functioning of markets and the operation of the organizations. Digital technologies become the basic force determining the contemporary management.

From management point of view one can notice a few key phenomena, which taken together create a synergistic system that creates the basis for the new version and the new paradigms of management. „In particular, one should consider the consequences of such phenomena as:

- increase in computer „intelligence”,
- universality of digitization,
- development of the Web 2.0 version,
- increase in popularity of mobile and wireless technologies,
- new data analysis possibilities - Big Data,
- data storage in so-called clouds (cloud computing),
- the development of so-called Internet of Things,
- the emergence of so-called 3D printing technology.” (Gonciarski 2017).

The management in new conditions has become more complicated and now it requires new qualifications, both from managers and specialists, as well as from ordinary employees, who are often engaged in the organization management system.

Knowledge based the third wave causes that the main burden of interest of various fields of enterprise science has been shifted from financial and physical capital to intellectual capital.

In intellectual capital, human capital has an essential meaning and its efficiency also depends on the perceived quality of life.

The purpose of this paper is an analyzing the quality of life assess by people who have a job.

Quality of life

St. Oziemski emphasizes that „quality” is particularly important in a knowledge-based economy.

The term „quality” is the most often related to products or more generally to systems.

„Quality is by its nature an abstract concept, so it does not exist in itself and therefore it can be considered only in relation to the purpose serving it in understanding the degree of realization of appointed aim." (Woropay, Muślewski 2005).

Review of the definitions of quality one can summarize by E. Skrzypek's statement: „quality is a set of product features (of system - by author's generalization), which fully guarantee meeting the expectations and requirements of internal and external customer, whereby it is necessary to know, that the need for quality at first must arise in a man himself, that he must understand its essence and meaning, in order to be its creator and to strive for its permanent improvement." (Skrzypek 2002).

Quality of life is a difficult to define category and even more difficult to measure. When assessing the quality of life, the „customer" is anyone who can assess what values and to what extent they give him a satisfaction with life. Values that bring satisfaction, are perceived differently at different times of life.

The most often mentioned values defining the quality of life can be divided into three groups:

- psychological and moral,
- social and cultural values,
- technical and economical.

Measuring quality of life is a problem that the authors of the Calvert-Henderson study „Quality of Life Indicators" are trying to answer (Henderson, Lickerman 1999). In that study, the authors notice that one knows more about the local and planetary environment than about the national environment, and therefore they present new tools for assessing national trends in the field of quality of life based on the following factors: educational, employment, environment, health, human rights, income, national security, public security, shelter (housing), infrastructure, recreation.

Many measures are quoted for the Calvert-Henderson model in order to determine the level of quality of life. For example, for the education factor one can use the following measures:

- achieved level of education,
- level of educational expenses.
- skill rate,
- access to education,
- distribution of education.

The Calvert-Henderson model is useful when comparing quality of life in different countries and over different periods of time. If we want to answer the question in which case the indicators achieved according to the criteria used by the evaluator are at a higher level, it arises the question, whether for everyone the particular criterion will be equally important.

The development of knowledge influences feeling the needs by people. Therefore in the information society knowledge on achieving life satisfaction has more and more impact. Therefore, it seems that it is no accident that the Calvert-Henderson model begins with the first factor of quality of life - education along with the above-mentioned assessment measures.

In that model, the authors list in sequence presented in Table 2 factors of quality of life.

Making an assumptions of the Calvert-Henderson model, the authors conducted surveys among people working in the Mazowieckie Voivodeship in the period February - June 2017 and repeated them in 2019.

In the year 2017 200 questionnaires were distributed and 74 fulfilled were returned, in the year 2019 also 200 questionnaires were distributed and 70 were returned. Table 1 includes a structure of respondents.

Table 1. The structure of repondents

		Survey year	
		2017	**2019**
Sex	Females	52 %	74%
	Males	48%	26%
Age	Up to 25	14 %	46%
	26-30	18 %	10%
	31-40	41 %	19%
	Over 40	27 %	26%
Education	Primary school	0%	0%
	Over primary school	0%	0%
	Secondary school	50%	36%
	Vocational secondary school	32%	36%
	High humanities school	14%	21%
	High technical school	4%	7%
Number of inhabitants in locality of residence	Up to 10000	36%	17%
	10000 – 50000	14%	30%
	50000–100000	23%	9%
	Over 100000	27%	44%

Source: own questionnaire survey

The first and the second degree students of Warsaw Management School Graduate and Postgraduate School were the interviewers and their acquaintances were to be respondents; the only limitation was that respondents should were currently employed.

Results of the survey

In Table 2 are presented aggregated results of the survey which are given as average number of points assigned by the respondents to individual values in the assessment of existing state and by desire of change.

Table 2. Average number of points assigned by respondents to individual factors of quality of life

Factors of quality of life	Average number of points by the respondents in 2017		Average number of points by the respondents in 2019	
	Current state	Change is required	Current state	Change is required
education	10	15	12	10
employment	10	15	11	11
environment	10	10	18	18
health care	10	20	8	17
human rights	12	5	10	8
incomes	8	17	10	14
infrastructure	5	10	9	9
national security	10	10	9	9
public security	15	5	9	9
recreation	15	7	10	8
living conditions	15	6	13	9
Total	120	120	120	120

Source: own questionnaire survey

The analysis of questionnaires in relation to individual values as factors influencing the quality of life assessment is presented below. This analysis results not only from quantitative data but also from comments provided by interviewers resulting from their interviews with respondents. As a base for analysis they were assumed the results of questionnaires of 2017, while the results of questionnaires of 2019 first of all are the directions of changes.

Education

For women and men up to 25 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education, the assessment of current state is identical with the assessment of final (desirable) state - **no improvement is required**. This results of the fact that education has just been completed and currently it doesn't affect the quality of life.

For women and men in 31-40 age range - regardless of the number of inhabitants in the locality of residence and regardless of the education - the difference in assessment of current state and final (desirable) state is huge and it needs improvement. For those with one or more children in the age of primary school or lower secondary school, one can notice the impact of the change in the education system consisting in liquidation of lower secondary schools and returning to 8-year primary school and 4-year secondary school. The inhabitants of towns up to 10000 inhabitants feel it to the greatest extend, especially in rural areas, where extending the time of travel/walking to a new educational institution significantly reduces the quality of life of both the respondents (parents) and their children. Important element of reduction of the quality of life is also a stress related to security on the way to school and relationships related to difference of age of pupils in an educational institution. Lower secondary schools in natural way were eliminating conflicts of children in difficult period of their life of 14-16 years old with their younger colleges in age range of 7-13 years.

For women and men over 40 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education, the difference of assessment of current state and final (desirable) state is insignificant - **no improvement is required**. This is due to the fact of finishing the education process by their offspring and taking up work or moving to the category of "students", resulting independence of offspring what eliminates the impact on the quality of life at the respondents.

The results of 2019 survey are, to a large extent, an assessment based on frustration, especially of parents or acquaintances of children graduating from lower secondary school or reformed primary school, who often express opinion that any change in general education only makes the situation worse.

Employment

For women and men up to 25 years old the assessment of current state is definitely different from the assessment of final (desirable) level – **the improvement is required**. This is due to the desire of achieving the preferred social status and the associated with it level of salary as soon as possible. For respondents living in towns of up to 50000 inhabitants moving to large urban agglomerations is the final element of high quality of life; it gives an prospect of employment in learned profession, at a reasonable distance from the locality of residence, for a fair salary.

For women in 31-40 age range, regardless of the number of inhabitants in the locality of residence and regardless of the education, the assessment of current state is similar to the assessment of final (desirable) state - **no improvement is required**. This is due to the fact that in this age group, women give birth to planned (or not) number of offspring, what with the amended regulations (in their favor) regarding maternity and parental leave causes that employment has insignificant impact on their quality of life.

For men in 31-40 age range, unlike for women in the same age range, employment is a very important element. Hence there is a big difference in assessment of current state and assessment of final (desirable) state - **the improvement is required**. During this period, a man is obligated to ensure material existence for his family at preferred level due to bringing up children by his partner. That is why at 90% of surveyed men the desire of qualitatively changing the employment (increasing incomes, promotion and hence possible change of employer) is so strong.

For women over 40 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education - the assessment of current state and the assessment of final (desirable) state are characterized by a big difference - **the improvement is required**. This is due to the fact of returning to active professional life after years of „exclusion" caused by bringing up children. Internal pressure to reach own incomes, promotion in the professional hierarchy, and often ambitious desire of proving the partner the usefulness not only family but also substantive in the job results in awarding for desired state many number of points.

For men over 40 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education, the difference between assessment of current state and assessment of final (desirable) state is insignificant - **no improvement is required**. This is due to the fact of professional stabilization, achieving an „upper limit" of promotions in the employing organization and shifting life „center of gravity" from domestic duties to the consumption of already achieved work results (weekend rest, holidays, foreign trips, hobby).

The change in the labor market from the employer's market to the employee's market was reflected in the 2019 survey. The current state was assessed as satisfactory, which did not require changes.

Environment

For all surveyed women and men, regardless of the number of inhabitants in the locality of residence, regardless of the age and education, the assessment of current state is decidedly lower than the assessment of final (desirable) level - **the improvement is required**. This is due to the desire to live in environment that is not a threat to health and life, to the desire to drink the clean water, as well as to consume of agricultural products from uncontaminated soils, to breath of air free of toxic fumes and vapors, to have a bath in waters free of toxic substances from sewage.

In the 2019 survey the current state was assessed much better than in the 2017 survey, simultaneously accepting that it requires further improvement.

Health care

For all age groups, this is the most important quality of life factor. However, there is a noticeable difference between the assessment of current state and state desired by individual categories of respondents.

For women and men up to 25 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education, the difference between assessment of current state and assessment of final (desirable) state is insignificant - **no improvement is required**. This is due to the fact that there are no health complaints resulting naturally from the young age, and therefore the health care has little impact on the quality of life.

For women and men in 31-40 age range, living in towns of up to 50000 inhabitants, the assessments of current state and final (desired) state are almost equal but only in the scope of primary health care. According to respondents, the access to specialist care, which lacks in the locality of residence, and which is very difficult to access in agglomerations of over 100000 inhabitants, **requires significant improvement**.

For women and men over 40 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education, the assessment of current state is very negative and the assessment of final (desirable) state has the highest point value in the entire questionnaire - **the improvement is required**. Because of natural causes, middle-aged and older people begin to suffer various health ailments as well as chronically or long-term illness. One should highlight the fact, which respondents strongly emphasize, that with very low salaries and, therefore, low health premiums, the differences between the funds obtained for treatment and the costs of treatment are in extreme cases ten times (average annual health premium from the lowest salary around PLN 2400, average cost of surgical operation - PLN 24000 under general anesthesia, PLN 4800 under the local anesthesia). According to the respondents, the most important postulate is to change the approach to the structure of collecting health premiums in order to minimize differences between income due to their collection and the costs of treatment. Balancing incomes and expenditures in this respect would significantly increase the quality of life, eliminating the length of waiting for specialist assistance, regardless of the largeness the town inhabited by respondents.

In 2019, the assessment of current state is at lower level than in 2017 and there is a clear expectation of a change for the better; in the talks it was visible a pessimism as to the possibility of improvement.

As to other quality of life factors, there were no changes in the assessment of the quality of life between 2017 and 2019, apart from living conditions.

Human rights

For women up to 25 years old, living in cities of 50000 inhabitants and above, with secondary and higher education, the difference in the assessment of current state of human rights (especially women's rights) and the assessment of final (desirable) state in this scope is significant – **the improvement is required**. This is influenced by the amended law regarding availability of so-called „the day-after pill", which for many unexperienced young women is the only salvation against unwanted pregnancy.

For women in 31-40 age range living in cities of more than 100000 inhabitants, with higher education, the difference in the assessment of current state of human rights (especially women's rights) and the assessment of final (desirable) state in this scope is very significant - **the improvement is required**. This is due to worrying and raising women's fears of the current activities authorities' actions in such important segments for women as right to abortion, right to in vitro fertilization and using of contraceptives. According to the respondents, tightening the regulations in this area would definitely reduce their quality of life, in particular their mental quality of life.

For men in 31-40 age range and women above this age, the difference in assessment of current state and assessment of final (desirable) state is not significant. This is due to the fact of stable sex life and lack of impact of any changes in the law on the quality of their lives.

Incomes

For all women and men surveyed, regardless of the number of inhabitants in the locality of residence, regardless of the age and education, the assessment of current state is definitely lower than the assessment of final (desired) level – **the improvement is required**. This is due to the desire to permanently raise the standard of living, including consumption of goods of higher quality.

This confirms the principle that the better is the enemy of the good and the appetite grows while eating. An important element in assessing the difference between current state and final (desirable) state is the progressing economic stratification of society particularly visible in the state sector: incomes in relation to the contribution of own work.

Infrastructure

For women and men in all age ranges living in cities with up to 50000 inhabitants, of all education categories, the difference in the assessment of current state and the assessment of final (desirable) state is significant - **the improvement is required**. This is due to the very negative assessment of practically all infrastructure facilities (or their lack) except the commercial facilities, especially network ones. The dissatisfaction is aroused by: the condition of roads, cultural and educational facilities, water and sewage infrastructure, bus connections between small towns (despite constantly growing indicator of the number of passenger cars per 1000 inhabitants) and the most noticeable is the lack of health care facilities.

For women and men in 31-40 age range, of all education, living in cities with more than 100000 inhabitants, the difference in the assessment of current state and final (desirable) state is also significant - **the improvement is required**. This is mainly due to the lack of space in nurseries and kindergartens, as elements of urban infrastructure, preventing professional activation of women after maternity and parental leave.

For women and men over 40 years old, in cities with more than 100000 inhabitants, the difference in the assessment of current and assessment of final (desirable) state is also significant **- the improvement is required.** In this case, the lack of infrastructure for disabled people is a very important problem.

National security

For women and men up to 25 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education - the assessment of current state and final (desirable) state is identical - **no improvement is required**. This is due to the lack of a deeper reflection on the existing conditions of the current international situation and focusing on one's own life: the realization of planned actions in the professional and emotional sphere as well as enjoy the privilege of being young, leaving concern for national security to the elder people.

For women and men in 31-40 age range the assessment of current state and final (desirable) state is unchanged - **no improvement is required**. The reason for such answer is the belief that „we have no influence on it anyway".

For men in 31-40 age range, inhabitants of cities over 100000 with higher education - the assessment of current state and final (desirable) state is varied – **the improvement is required**. The response was influenced by the activities of the Minister of National Defense in the field of personnel and equipment regarding the Polish Army.

For women over 40 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education - the assessment of current state and final (desirable) state is not significant - **no improvement is required**. This is due to a lack of interest and knowledge about potential threats arising from the current international situation. According to the respondents, the level of national security does not directly affect their level of quality of life.

For men over 40 years old, inhabitants of towns up to 50000, with secondary education – the assessment of current state and final (desirable) state is also meaningless - **no improvement is required**. Their keynote at answering this question is the maxim „what will be, it will be".

For men over 40 years old, inhabitants of cities over 100000, with higher education - the assessment of current state and final (desirable) state is at the same level - **no improvement is required**. The reason for such answer to this question is the stability of defense spending within the framework of NATO pact, which, according to respondents, should be the guarantor of our national security.

Public security

For all women and men surveyed, regardless of the number of inhabitants in the locality of residence, regardless of the age and education - the assessment of current state is the same as final/desired level - **no improvement is required**. Hence the conclusion is that the level of public safety fully meets the conditions of the proper quality of life in our country.

Recreation

For women and men up to 25 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education - the assessments of current state and final (desirable) state are identical - **no improvement is required**. This is due to the fact that it is possible to organize recreational activities in an optimal for themselves time and place.

For women and men in 31-40 age range, with one or more children, the assessments of current and final (desirable) state are significantly different - **the improvement is required**. The desired model would be a larger number of available, technically diverse recreational facilities, as close as possible to the place of residence. These types of statements apply to respondents of all localities regardless of the number of people living in them and regardless of the education.

For women and men over 40 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education – the difference between assessment of current state and assessment of final (desirable) state is not significant - it does not require improvement. This is due to the transition to the middle age „zone", where care for health and treatment of emerging diseases are more important than recreational activities.

Living conditions

For women and men up to 25 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education - the assessments of current state and final (desirable) state ares radically different - **the improvement is required**. This is due to the desire to live independently, giving young people a sense of freedom and non-embarrassment by the presence of other people, especially parents and siblings. It is also a proof of independence and greater „bargaining power" while searching for „life" partner.

For women and men in 31-40 age range, regardless of the number of inhabitants in the locality of residence and regardless of the education, having children, there is also the difference between the assessment of current state and assesment of final (desirable) state - **the improvement is required.** This is due to the desire to create such living conditions in which parents and children (regardless of age) will be able to have independent rooms in the dwelling they occupy.

For women and men over 40 years old, regardless of the number of inhabitants in the locality of residence and regardless of the education – the difference between the assessment of current state and assessment of final (desirable) state is not significant – no **improvement is required**. This is due to the fact that they do not own final dwellings. Slight differences in the assessment of the current state and final state result from individual plans to change the dwelling in a multi-family house into a house on a plot of land under the city in perspective of retirement and the beginning of the last stage of life far from the urban noise.

In the year 2019, the conditions of residence according to respondents have deteriorated and require improvement. This is particularly visible in the answers of people aged up to 25 years.

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STUDY OF THE LBUAS GRADUATES CAREER MONITORING

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Abstract
Career Monitoring of Graduates is a relevant aspect for every higher education institution seeking to improve the Curricula. Graduates gaining an attractive specialty in the labour market and competencies that meet employers' expectations are more successfully positioned in a changing labour market. The article analyses career monitoring data of Lithuanian Business University of Applied Sciences graduates during the period from 2015 to 2019. The success of the investigation is assured by the high school's close relationship with the Alumni, who are invited not only to take part in the surveys but also to actively participate in their Alma Mater life. An empirical study revealed that about two thirds of graduates are satisfied with both their chosen specialty and studies completed. The majority of graduates' studies also met their expectations. The results of the study are analysed and recommendations are developed to make informed decisions that helps to achieve the stated goals at the institutional level.
KEY WORDS: graduate, monitoring, career, job market, feedback.

Introduction

Social, economic and technological changes in the country, especially in the context of integration into the European Union, set new requirements for a person's vocational training. The issue of whether (and to what extent) education and qualifications meet current and future economic needs is of particular importance, as effective use of advanced technologies and productive potential increasingly depends on people's vocational training, and the supply of qualifications needs to be constantly matched.

The first graduate career survey in Lithuania was conducted and presented by the Center for Research and Higher Education Monitoring and Analysis (MOSTA) which looked at labor market performance over the period 2012-2013 for graduates. It was done in order to ensure that such information is collected on a continuous basis, it is possible not only to see the current situation but also to follow trends.

In order to improve the quality of studies, since 2012, the Lithuania Business University of Applied Science (LBUAS) has been monitoring the careers of its graduates. The purpose of monitoring is to assess the relevance of the education and training system to the needs of society and the economy. In cooperation with state institutions, LBUAS receives statistical data (unpersonalized and averaged) on graduates' career in the labor market and statistical reports based on these data for five years after graduation. The annual monitoring of graduates, based on the results obtained, improves the quality of teaching and learning by better tailoring these processes to the needs of society. Every educational institution, which guarantees high quality of studies, must know the opinion of the graduates and strive to ensure that the study process fully satisfies the students.

The main purpose of this work is to assess the quality of Lithuanian Bachelor's graduate training and the demand in the labor market.

Stages of graduates career monitoring

One of the objectives of the Bologna Process and the EU Agenda for the Modernization of Higher Education is to promote a transparent and flexible higher education system. Monitoring of students and graduates contributes to a more open higher education system.

Lithuania Business University of Applied Science is always actively interested in its former graduates. In order to stay in close contact with graduates, they are invited to participate in various college events, projects, conferences, workshops and post-graduate events to share their experiences with students, and to participate in annual Alumni Days to discuss current topics.

Graduates' primary interviews are conducted immediately after graduation. Later - 12 months after graduation, in such a way there is an opportunity is to find out what proportion of graduates are successfully employed after graduation. Did the studies live up to their expectations. The survey and analysis of the data results are carried out in several stages.

Fig. 1. Stages of graduates monitoring

In the first phase, information on the position of graduates in the labor market is obtained from the graduates themselves or from employers or from various databases. This data includes information about the job, employment period, etc. Continuous surveys are designed to interview the same graduates at different periods after graduation. The surveys also asked questions about whether the study process and quality matched expectations, difficulties in finding a first job, and so on.

In the second stage, data is collected and processed, graduates' satisfaction with the quality of studies, the process of integration into the labor market and the correspondence between the competences acquired during studies and the functions performed at work are calculated.

The information collected in stage three is used at the institutional level to reach stakeholders who have different goals for making recommendations.

Analysis of graduates career monitoring

Graduate career monitoring is relevant in order to update study programs that provide graduates with the most needed competencies that are valued in the labor market.

The Lithuania Business University of Applied Science is in constant contact with graduates. Graduate employment and career development data reveal employment and career opportunities after graduation, and assess the success of Lithuania Business University of Applied Science graduates in the labor market and determine its determinants. Since 2011 the College signs a "*consent for the processing of personal data for graduate career monitoring*" with the graduate. Objective indicators about graduates' careers are obtained from state information systems, state or departmental registers for 5 years after graduation.

There are two types of indicators used in higher education for career monitoring:

-*objective* they show how fast graduates get employment, describe the position of graduates in the labor market, the level of wages, etc .;

- *subjective, sociological survey indicators:* they provide the subjective opinion of graduates on various career issues.

2015-2019 355 respondents (inclusive) participated in the survey.

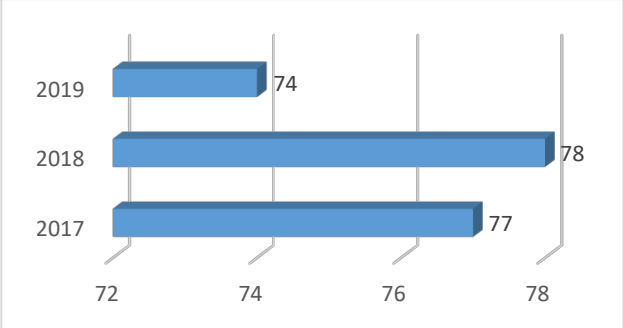

Fig. 2. Number of graduates in survey

The aim is to reveal the graduates' working situation, how graduates evaluate certain aspects of their work and career, how the situation, attitudes and expectations change.

Tasks:

-to determine the current employment, career situation of graduates;

-to reveal graduates' expectations and attitudes about different aspects of their studies, work and careers

The number of graduates participating in the survey allows an objective evaluation of the research results and their reliability. Respondents from all college study programs and all forms of study (full-time, part-time, distance) participated in the survey.

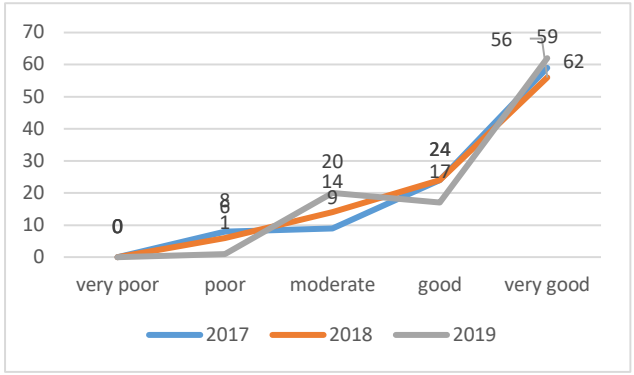

Fig. 3. Preparation of LBUAS graduates for the labor market

The results show that college graduates rank the highest in post-graduate training. It should be mentioned that in 2017 year 88% of graduates evaluated their readiness in the labor market "good" or "very good. In 2019 rated their preparedness as very good. It must be assumed that the expectations of the students enrolled in the college are largely met.

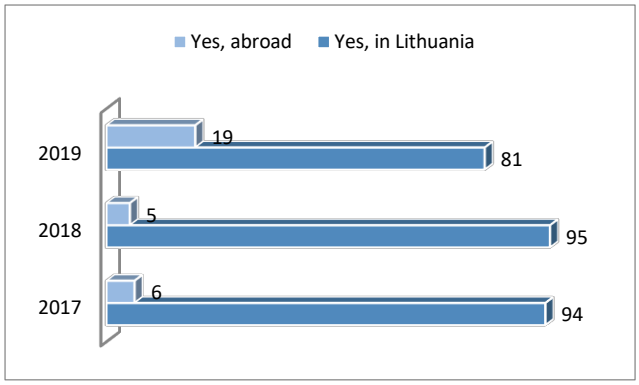

Fig. 3. Internship distribution

Graduates of all study programs had the opportunity to practice in foreign countries during their studies. Full-time students also choose internships through the Erasmus + exchange program. One of the planned internships - the teaching internship is done by full-time and part-time students at the College-based Imitation Company Biurometa. Accredited and awarded by Pe Biurometa, the International EUROPEN-PEN INTERNATIONAL Certificate is recognized worldwide that certifies that the imitation company located in the Lithuania Business University of Applied Science meets the EUROPEN-PEN INTERNATIONAL level of competence requirements. Pe's "Biurometa" is the first imitation company in a non-governmental college in Lithuania acredited with an international europen-pen international certificate.

One of the topical questions that the research wants to know in order to ensure further quality of studies is whether the graduates work according to their qualification.

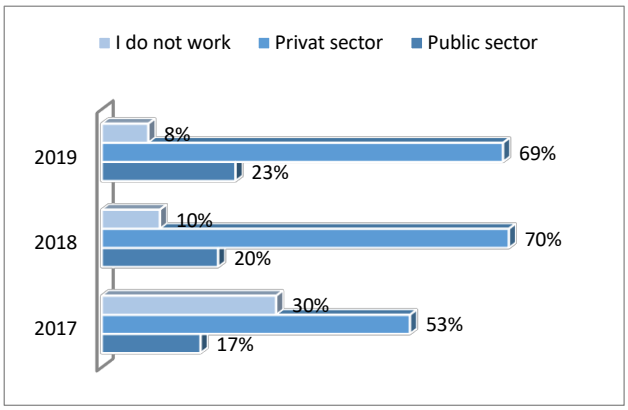

Fig. 4. Graduates' employability by qualification

Graduates of a professional bachelor's degree, after graduation, finds a job that is related or partially related to the acquired qualification. This confirms that the studies were purposeful. It is noticeable that an increasing number of graduates are offered by employers after their post-graduate training as their first job.

Those who feel well prepared for the labor market and whose studies have met the expectations are more in demand in the Lithuanian and foreign labor market.

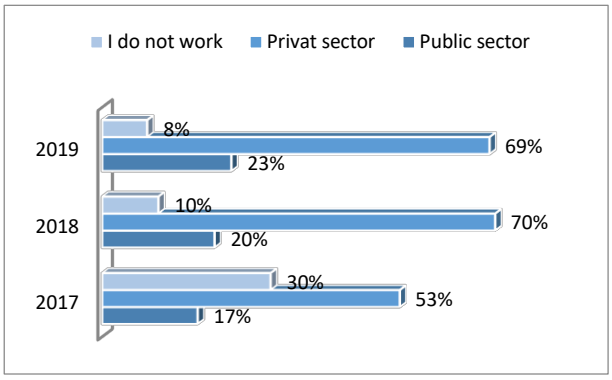

Fig. 5. Graduates workplace

The college is oriented towards entrepreneurship education, so it is likely that the majority of respondents work in the private sector. It is believed that some of them have also established their own business. Respondents who noted that they were working in the public sector and pursuing a specialization in public administration or pursuing careers as statutory officers. Some of the respondents who indicated that they were unemployed indicated that they were continuing their studies or were not working due to family circumstances.

A very important question when monitoring graduate careers is what are the causes of post-employment in today's situation.

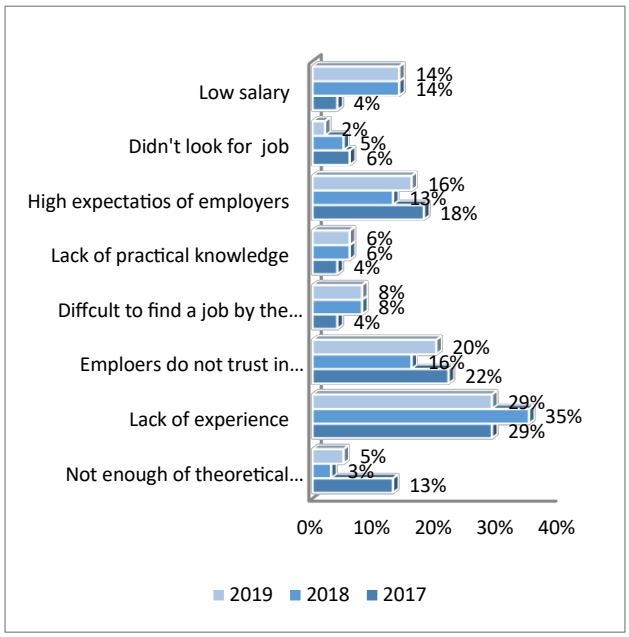

Fig. 6. Reasons for not being employed

The reason for non-employability identified by the respondents as being the main reason for the high expectations of the employers and the lack of work experience. The least marked are “not finding a job by profession” and “not looking for a job” - it is stated that graduates of Lithuania Business University of Applied Science are well prepared to enter the labor market.

Another important issue for which data is very important is what the average net income is.

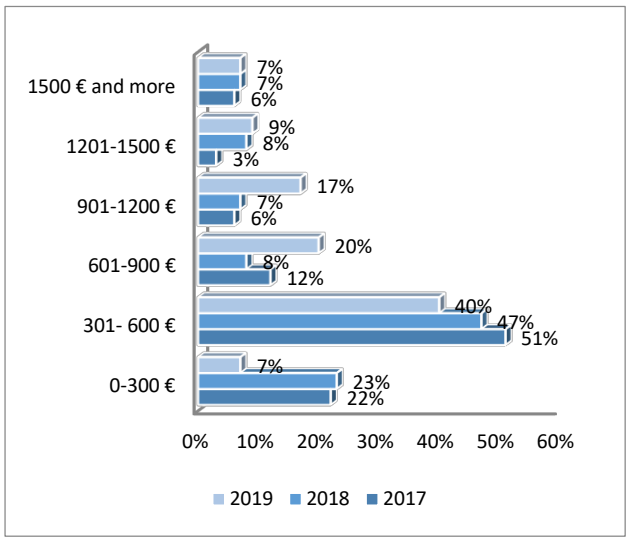

Fig. 7. Average net income

Results from a three-year survey show that nearly half of those surveyed have an average net income of between € 300 and € 600. 15% noted that on average they receive over € 1,000. In conclusion, it must be assumed that these are graduates who work in foreign countries or have upgraded their current job.

Summarizing the survey, it can be stated that the graduates participating in the survey have a good opinion about the college. No substantive comments were noted. Graduates who have participated in the survey evaluate Lithuania Business University of Applied Science as

highly qualified for their professional training and after graduation have the opportunity to work with the acquired qualification. The results obtained are useful in seeking feedback between high school and alumni**.**

Conclusions

Graduate career monitoring is needed to improve curricula, improve the quality of education, and better organize student admissions and other evidence-based decisions. Graduate employment and career development data reveals employment and career opportunities after graduation from the Lithuanian and foreign labour market.

Those who have taken part in social activities, who went abroad for part-time study or internship programs, are more likely to be self-demanding graduates, are more often "offered by the employer" themselves, and more often upgrade and improve their qualifications after graduation.

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IMPACT OF KNOWLEDGE AND INNOVATION MANAGEMENT TO FIRM FINANCIAL AND NON-FINANCIAL PERFORMANCE

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Abstract

This research describes Knowledge and Innovation Management (KIM) dimensions and processes that are practiced in corporations in Malaysia. Specifically, KIM dimensions and KIM processes were measured and their relationship towards company financial and non-financial performances were determined. Data was collected from 300 large corporations operating in Malaysia. The analyses suggest that KIM dimensions and KIM processes are significantly practiced by corporations and these constructs (KIM dimensions and processes) have significant impact towards firms' financial and non-financial performances. This paper raises awareness and provides empirical evidence for the systematic implementation of KIM in organization, which are vital for firm performance. As empirical studies that tests and validates KIM principles in corporations are rare, this research provides valuable insights into the critical role of KIM in organizations as well as paves path for further exploration in the field of organizational performance.
KEY WORDS: Knowledge and innovation management, financial performance, non-financial performance, Malaysia.

Introduction

Corporations are often in a dilemma when it comes to capturing its knowledge and innovation assets. Due to employee turnover which may deplete firm of its knowledge and innovation assets, various Knowledge and Innovation Management (KIM) initiatives are implemented in firms. Despite various definitions by authors, knowledge and innovation management is commonly attributed to the "how" knowledge and innovation is captured and used in firms instead of just "what" is captured. KIM is explained as "a field that arose with rapid practical intellectual strength for management" (Baskerville and Dulipovici, 2006, p. 83). Yu et al. (2019) also suggested in their recent study the importance of KIM dimensions – both internal and external knowledge sharing – in order to improve the overall performance of organizations. KIM facilitates organisations in developing synergies between disparate knowledge objects, resulting in tremendous increase in innovation (Desouza and Raider, 2006) which facilitates firm success. Organisations that truly implement KIM in the early stages have the propensity to increase their competitive advantage extensively compared to organisations that refrain from doing so (Chong and Chong, 2009). From resource based view, the focus has been shifting towards the intangible assets instead of tangible assets in case of corporate inputs. Moreover, in case of tangible assets, the criteria needed to achieve a competitive advantage in the market are now lacking since they can easily by reproduced. The organisations' competitiveness depends on flexible and innovative human resource management, thus the role of knowledge and intellectual capital is continuously increasing (Darroux et al., 2013; Gavurova et al., 2017; Ulewicz and Blaskova, 2018; Ayman et al., 2019).

In this context, organisations are increasingly aware of the importance of KIM to exploit the competitive advantage that knowledge can bring. Gupta and Govindarian (2000) concluded that large corporations exist due to their ability to transfer and exploit knowledge more efficiently. Employees are residing in disparate locations with different economical, socio-political, demographic, cultural settings, and even knowledge on product spread can be very different (Alavi and Leidner, 2001; Davenport and Prusak, 1998; O'Sullivan, 2008). However, achieving such a common set of KIM objective through coordinating the knowledge of a highly diverse workforce can be a major challenge, viewing from both the perspectives of individual employees and organisations. Lean approach, for example, can be a good solution to explore the current situation of any organisations in order to make improvements towards more efficient and effective operation. Olah et al. (2017) also presented in their study the practical use of the lean approach.

Due to the many differences that exist, the types of knowledge required by the parent and host companies are expected to vary and that they are spread on remote locations (Singh et al., 2006) even if similar knowledge processes are established and performed corporation-wide. For instance, different management styles, organisational structures, and culture affect the types of knowledge required and needed. Also the study of Abdullah and Liang (2013) represents that top management compensation system, cultural differences and top management's role have a significant influence in the level of knowledge sharing between subsidiaries and

headquarters or employees and managers. Similarly, Lu et al. (2019) stated in their research that "ethical leadership can significantly facilitate knowledge sharing through generating genuine concern for the organization." At the same time, differences in the demographic characteristics, attitudes, and the levels of skills and knowledge of information and communications technology (ICT) among the employees also bear significant effect. The study published by Ahmad & Barner-Rasmussen (2019) clearly described also the importance of language diversity – how language can influence knowledge sharing in multinational organisations. Yet, leveraging on the knowledge of employees and making them accessible can be very challenging. On top of all is the overall understanding of the broad spectrum of KIM. Without consistent awareness and understanding across all levels and subsidiaries, KIM implementation can be very cumbersome. All these issues call for research attention.

Notwithstanding the important contributions of KM to the MNCs and its implementation challenges, empirical studies on KM in MNCs to date are sparse. Many studies are conceptual in nature with limited focus (e.g., Fahey and Prusak, 1998; Lindgren and Henfridsson, 2002). Many of the studies are conducted in the Western countries with little focus on large corporations with subsidiaries in the developing countries. Forsgren, Holm and Johanson (2006) insist that KIM on the subsidiary level should be taken into consideration if one were to attempt to understand the KIM challenges faced by large corporations. This is in view of the fact that each subsidiary can be considered as an organisation within a large organisation.

As large corporations including MNNs operate in different regions, it is interesting to identify whether regional differences bear significant deviations to KIM practices. There is a scarce of studies done on KIM practices among large corporations in Malaysia which looked at their firm financial and non-financial performance. Prior studies have been conducted, among others, on local government (Kalsom and Syed Noh, 2005); among graduate students (Nathan, Ibrahim and Adebola (2017). KIM also relates to knowledge society and it is crucial to understand the meaning of absorption in KIM. Absorption means the ability of an individual or company to absorb and apply specific knowledge in unchanged form. Employee development has an essential role in this progress, as quality of human resources can be improved through education which can enable organisations to adapt. Furthermore, there is a critical relationship between absorptive capacity and collective effectiveness (Zhang et al., 2019).

A careful examination can thus determine KIM implementation success in Malaysian large corporations. This study is aimed at combining three important variables: (1) KIM dimensions; (2) KIM processes; and (3) KIM performance measurement. The rest of the paper is organised as follow. The next section reviews the relevant literature, followed by the methodology adopted. The descriptive results followed by empirical results are presented and interpreted before the implications are discussed. The paper ends with concluding remarks and suggestions for future research.

Literature Review

KIM Dimensions

KIM critical dimensions include managerial areas that must be assigned special and continual attention to achieve high performance (OuYang et al., 2010). According to Quinn, Anderson and Finkelstein (1996), KIM dimensions provide important meaning to KIM through the identification of core processes that are critical to successful KIM implementation. Many efforts have been taken to develop a comprehensive list of success factors since the early 1990s to date.

Table 1 shows the result of literature review and identification of KIM dimensions through seminal works.

Table 1. Knowledge and Innovation Management Dimensions

No.	*KIM Dimensions*	*Source*
1	Training	Ahn & Chang (2005),Bennett & Gabriel (1999), Chase (1997), Chong (2006), Chong & Choi (2005), Dein & Seward (2005), Kalsom & Syed Noh (2005), Pastor (1996), Salleh & Goh (2002), Walczak (2006), Akhavan et al. (2014)
2	Employee Involvement	Choi (2000); Chong & Choi (2005), Chua & Lam (2005), Crauise O'Brien (1995), Davis, et al. (2005), Hall (2001), Lawler (1992), Lopez, et al. (2004), McMahon & Lawler III (1995), Ordonez de Pablos (2004), Robbins, (1998), Silos (1999); Wilson & Asay (1999).
3	Teamwork	Chase (1997), Choi (2000), Chong (2006), Conti & Kleiner (1997), Maier & Remus (2003), Nielsen, Nykodym, Simonetti, & Welling (1994), Nonaka (1994), Walczak (2006)
4	Empowerment	Anahotu (1998), Chong (2006), Chong & Choi (2005), De Long & Fahey (2000), Lopez, et al. (2004), S. Michailova & Nielson (2006), Ordonez de Pablos (2004); Robbins (1998), Senge, et al. (1999)
5	Leadership	Abell & Oxbrow (1999), Chase (1997), Choi (2000), Chong (2006), Chong & Choi (2005), Chua & Lam (2005), Davenport & Klahr (1998), Goh & Richards (1997), Hansen, Nohria, & Tierney (1999), Lin & Tseng, (2005), Lopez, et al. (2004), Moffett, McAdam, & Parkinson (2003), Nahm, Vonderembse, & Koufteros (2004), Politis, (2001), Salleh & Goh (2002), Swan, Newell, & Robertson (2000), Wiig (1997), Zammuto, Gifford, & Goodman, (2000),

		Zammuto & O'Connor (1992), Akhavan et al. (2014), Selvarajah et al. (2013).
6	Information system (IS) infrastructure	Beecheler & Yong (1994), Chase (1997), Chong (2006), Davis, et al. (2005), Maier & Remus (2003), Tsai (2001), Walczak (2006), Wiig (1997)
7	Performance measurement	Ahn & Chang (2005), Bassi & Van Buren (1999), Uit Beijerse (1999); W. Bukowitz & Petrash (1997); W. R. Bukowitz & Williams (2000); Carneiro (2001), Chong, 2006; Ghalayini & Noble (1996), Gooijer (2000), Martinez (1998), Moffett, et al. (2003), Pearson (1999), Tiwana (2002), Walczak (2006)
8	Knowledge-friendly culture	Ahn & Chang (2005),Uit Beijerse (1999), Bell & Housel (2001), Buckman (1998), Bukowitz & Williams (2000), Chase (1997), Chong (2006), Chong & Choi (2005), Chua & Lam (2005), Dunphy & Herbig (1998), De Jager (1999), Ordonez de Pablos (2004), Walczak (2006), Bučková (2015), Akhavan et al. (2014)
9	Benchmarking	Uit Beijerse (1999), Boxwell (1994), Camp (1989), Carpentar & Rudge (2003), Chong & Choi (2005), Cox & Thompson (1998), De Jager (1999); O'Dell (1996), Tiwana (2002)
10	Knowledge structure	Ahn & Chang (2005), Uit Beijerse (1999), Bukowitz & Williams (2000), Choi (2000), Chong (2006), Chong & Choi (2005), Davenport & Klahr (1998), Desouza & Raider (2006), Hsieh, Yang, & Lin (2002), S. Michailova & Nielson (2006), Ordonez de Pablos (2004), Ulrich, Von Glinow, & Jick, 1993, Wiig (1997)
11	Organisational constraints	Ahn & Chang (2005), Bassi & Van Buren (1999), Bonaventura (1997), Chase (1997), Choi (2000), Chong, (2006), Chong & Choi (2005), Chua & Lam (2005), Clarke & Rollo (2001), Davenport & Klahr (1998), Demarest (1997), Desouza & Raider (2006), Dyer & McDonough (2001), Liebowitz (1999), Longbottom & Chourides (2001), Maier & Remus (2003), McCune (1999), McDermott & O'Rell (2001), Ordonez de Pablos, (2004), Ruggles (1998)
12	Business strategy	Chong (2006), Lin & Tseng (2005), Nesbitt (2002), Wiig (1997)

KIM processes

Systematic KIM processes provide a clear guideline for organisations in the KIM implementation process. Without clear process innovation, knowledge captured is of little use to the firm. KIM systems have to efficiently create, capture, organise, share, and apply organisational knowledge and expertise (Albers and Brewer, 2003; Gottschalk, 2002; Gupta, Lakshmi and Iyer, 2000; Liebowitz, 2000; Evans, Dalkir and Bidian, 2014; Rodriguez and Al-Ashaab, 2007). The KIM processes identified through the seminal works in the area are presented together with its definition in Table 2.

Table 2. KIM Process

No.	*KIM processes*	*Description*	*Source*
1	knowledge and innovation creation	Knowledge and innovations in corporations especially new knowledge can be created by employees and customers through socialisation, externalisation, combination, and internalisation.	Uit Beijerse (1999), Bergeron (2002), Kermally, (2002), Nonaka & Takeuchi (1995), Stapleton, (2003), Wiig (1997)
2	knowledge and innovation gathering	Large corporations that operate in many countries can gather more information from their subsidiaries as more information sources the company have, the more opportunities for the company to be more competitive than other companies.	Ahn & Chang (2005), Bloodgood & Salisbury, (2001), Chong (2006), Michailova & Nielson (2006), Ordonez de Pablos (2004), Stapleton, (2003), Ikhsan & Rowland (2004)
3	Knowledge and innovation organising	Knowledge and innovation gathered from different groups of knowledge workers has to be arranged accordingly for easy access, consequently firm can discover knowledge they need but do not have, or have but have not utilised.	Uit Beijersev (1999), Call (2005), Chong (2006), Chua & Lam (2005), Davis, et al. (2005), Harvey, (2003) Wiig (1997)

4	Knowledge and innovation diffusing	Knowledge and innovation gathered in firms should be distributed and transmitted through teams either through formal or informal way by utilising and diffusing via innovation sharing network or communication technology.	Chase (1997), Chua & Lam (2005), Maier & Remus (2003), Michailova & Nielson (2006), Nonaka & Konno (1998), Publishing (2002), Soliman & Spooner (2000), Stapleton (2003), Wiig (1997), Lu et al. (2019), Ahmad & Barner-Rasmussen (2019)
5	Knowledge and innovation using	Employees will use knowledge and innovation created in-house in their daily operation, customized according to the division/function of the teams. These innovations should be easily accessible as well.	Ahn & Chang (2005), Chase (1997), Davis, et al. (2005), Lopez, et al. (2004), Maier & Remus (2003), Ordonez de Pablos (2004)

KIM performance measurement

There is general agreement that KIM implementation results in knowledge and innovation related effectiveness and allowing practicing organisations to maximise their returns from knowledge-related assets (Uit Beijerse, 1999; Ordonez de Pablos, 2004; Wiig, 1997).

Performance measurement is crucial part in KIM; as without measurement (such as KPIs) organizations are unable to make correct and grounded decisions about further improvement (Andone, 2009; Wong et al., 2015; Shannak, 2009).

KIM implementation can be measured and evaluated in terms of financial and non-financial perspectives. Traditional measurements focused on financial terms as it is posited that corporations that have a full-fledged KIM implementation in place will experience an increase in profit and reduce in cost.

Furthermore, it will also increase their market shares and sizes, which eventually lead to a higher return on investment. There are also non-financial factors that can be used to evaluate KM performance, i.e. systematic knowledge activity, employee development, customer satisfaction, good external relationship, and organisational operation success (Chong, Wong and Lin, 2006). These factors are considered in the study.

Figure 1 shows the research framework of this study. The KIM Dimensions and KIM processes (independent variables) are posited to be important determinants of KIM performance outcomes (dependent variables) in terms of Financial and Non-Financial Outcomes.

Based on this research framework, the research methodology is designed to measure and test this framework as explained in the following section.

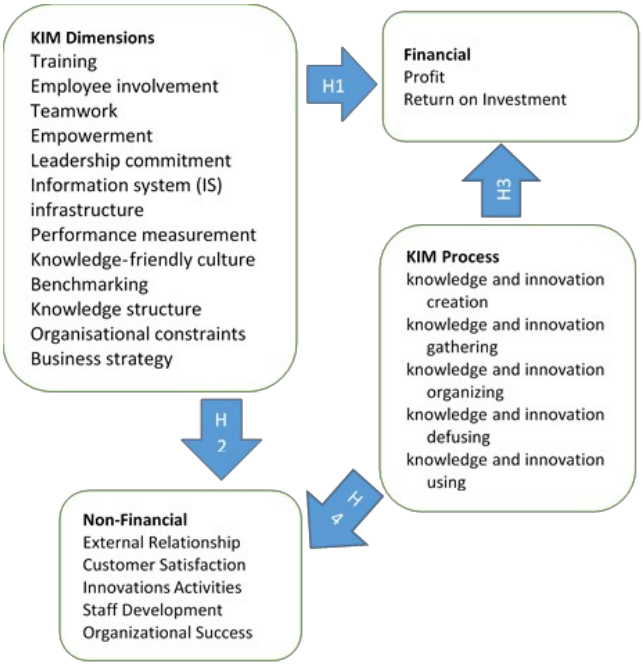

Fig. 1. Research framework

Methodology

Sampling

A comprehensive list of all large corporation operating in Malaysia was obtained from the Malaysian Industrial Development Authority (MIDA). From the list, 300 large corporations which were predominantly Malaysian and Foreign Multi-National Corporations operating in Malaysia were selected through systematic sampling method. Self-reporting questionnaires were sent by mail with self-addressed stamped envelopes to the corporations, particularly from those who are holding the positions of managers and above. About 102 questionnaires were returned after a three-month period of data collection, yielding a response rate of 34 percent.

Questionnaire Design

The questionnaire is divided into four sections. Section A contains information on the individual and organisational demographic characteristics. Section B covers the degree of implementation of KIM Dimensions in which a 5-point Likert scale (1 = not implemented at all to 5 = extensively implemented with 3 as neutral point) was used. The questions were adopted primarily from the studies of Chong (2006). Section C measures the KIM processes in the firms. In both Sections B and C, the items have been tested for construct validity and are therefore fit to be replicated in this study. Section D measures the KIM performance outcomes. Respondents were asked to rank the impact of KIM implementation on their companies' performance using a 5-point Likert scale (1 = no value at all to 5 = high value) with a neutral response in between.

Results and Discussion

The following sections present the descriptive results obtained from the empirical survey.

About 81.4 percent of the respondents are male executives. They come from various departments of the MNCs. The largest group of respondents come from the Finance department (19.61 percent), followed by Marketing/Sales (17.65 percent) and Human Resource department (16.67 percent). The smallest representation comes from the Research and Development department and the Production department, both sharing 1.96% each.

Most of the corporations surveyed (98.04 percent) indicated that they either have made investments in KIM (58.8 percent) or plan to invest in KIM in the next 4 years. This justifies the earlier argument that many firms sense a greater need for KIM towards their business success. About 7.8 percent of them intend to invest in KIM in the next 1 year, 9.8 percent in the next 1-2 years, and 21.6 percent between the next 2 to 4 years. In terms of departments, 28.4 percent of the 58.8 percent. Firms have implemented KIM in all departments. About 22.6 percent have implemented KIM in their Marketing/Sales department and 18.6 percent with the information technology (IT) department. The other departments with smaller percentage include finance, manufacturing, customer service, research and development, engineering, production, accounts, and administration department.

Table 3 shows the mean and standard deviation scores for the KIM dimensions, KIM processes and KIM performance outcomes.

Table 3 shows that 5 of the 12 Dimensions scored means of above 3.50, implying that teamwork, knowledge-friendly culture, knowledge structure, leadership commitment towards KIM, and information systems infrastructure have been implemented to some extent.

Table 3. Means and Standard Deviations of KIM Dimensions, KIM processes, Financial and Non-Financial Measurements

KIM Dimensions			
No.		**Mean**	**Std. Dev.**
1.	Training	3.04	1.089
2.	Involvement	3.37	0.843
3.	Teamwork	3.72	0.763
4.	Empowerment	3.35	1.011
5.	Leadership commitment	3.58	0.789
6.	IS infrastructure	3.54	0.852
7.	Performance measurement	3.46	0.897
8.	Knowledge-friendly Culture	3.64	0.806
9.	Benchmarking	2.80	0.758
10.	Knowledge structure	3.62	0.797
11.	Organisational constraints	3.21	0.813
12.	Business strategy	3.13	0.897
KIM Processes			
1.	Knowledge and Innovation creation	3.95	0.50
2.	Knowledge and Innovation gathering	3.71	0.77
3.	Knowledge and Innovation organising	4.14	0.77
4.	Knowledge and Innovation diffusing	3.79	0.55
5.	Knowledge and Innovation using	3.86	0.83
Non-Financial Measurement			
1.	External relationship	4.11	0.88
2.	Customer satisfaction	3.86	0.75
3.	Innovation activities	3.87	0.73
4.	Staff development	4.20	0.60
5.	Organisational success	3.86	0.61
Financial Measurement			
1.	Profit	4.08	0.68
2.	Return on investment	3.86	0.76

The standard deviation scores for all the factors are well below 1 except for training and empowerment, implying consistency in the respondents' answers. Benchmarking has been found to be the least implemented KIM factor, followed by training, and business strategy.

In terms of KIM processes, many of the respondents' state that organising knowledge is the most implemented processes, followed by creation, use, diffusion, and gathering. All the processes scored mean values of above 3.50, indicating that they are implemented to some extent in the corporations.

Most participants agree that employee development is the most important KIM outcomes. This is followed by good external relationship and innovation activities in firms that promote open innovation. Customer satisfaction and organisational success share the same mean values of 3.86. In terms of financial performance, profit has been identified as the highest value of KIM outcomes, followed by return on investment.

Inferential statistics: Relationships between KIM Dimensions, KIM processes and KIM performance outcomes

Table 4 shows the results of the inferential statistics between KIM Dimensions, KIM processes and KIM performance outcomes.

Table 4: Summary of ANOVA test results for H1, H2, H3 and H4

Independent Variables	**Dependent Variable (Organizational Performance)**	
	Financial	**Non-Financial**
KIM Dimensions	F = 2.203 p = 0.018 Significant [H1]	F = 1.785 p = 0.063 Not Significant [H2]
KIM Process	F = 4.746 p < 0.001 Significant [H3]	F = 12.136 p < 0.001 Significant [H4]

The results reveal that KIM Dimensions have significant relationship with financial performance of the firms but insignificant with the non-financial performance indicators. Hence H1 is supported while H2 is not supported.

This signals the pivotal role that KIM dimensions play in the financial performance of large corporations. This finding agrees with previous research that have highlighted the importance of KIM dimensions for positive financial performance of organizations (OuYang et al., 2010).

KIM processes, on the other hand is found to be significantly related to both the financial and non-financial performance of the firms. Hence both H3 and H4 are supported. This again highlights the importance of systematically implementing KIM processes in firms significantly leads to better financial and non-financial performance of the companies. Although KIM dimensions do not statistically lead to non-financial outcome of corporations, it seems that KIM processes nevertheless has significant impact to non-financial outcome. This could include innovation activities that promotes open innovation culture at firms that creates positive and lively working environment.

Conclusion and Suggestions for Future Research

This paper highlights the major dimensions of KIM implementation is large corporations operating in Malaysia. To this extend, this paper due to the page limitation only reports the descriptive findings of this large empirical ongoing study.

KIM dimensions are found to be significantly impacting corporations' financial performance. This is a major finding of this research which emphasizes that large corporations are able to be competitive financially due to their systematic efforts in promoting knowledge and innovation management in firms. KIM processes which includes creation, gathering, organizing, diffusing and using are significantly impacting large corporations' both financial and non-financial performance. For learning organizations, this is a critical finding to encourage firms to continue initiatives of knowledge and innovation capturing and diffusing.

This study is limited to Malaysian large corporation and similar studies comparing corporations in the region in warranted to better generalise the findings. Future research could also include other dimensions such as design thinking and business model canvassing practice in firms that could lead to more agile innovation artchitecture.

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SOUTH BALTIC BLUE GROWTH INDEX

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Abstract
Blue Growth is the long-term strategy to support sustainable growth in the marine and maritime sectors. Seas and oceans are drivers for the European economy and have great potential for innovation and growth. It is the maritime contribution to achieving the goals of the Europe 2020 strategy for smart, sustainable and inclusive growth. During implementation of South Baltic programme INTERMARE, dedicated to internationalisation of South Baltic maritime economy, by application of author Circular Economy 3.0 methodology was created Blue growth qualitative index concept and their measurement tool. Expert poll enabled to measure Blue growth qualitative index in South Baltic countries: Germany, Denmark, Lithuania, Poland and Sweden. It demonstrates development of growth qualities transiting Physical, Economic, Ecologic, Sustainable and Smart growth stages. This index will be used for composing SB maritime economy marketing strategy. Created blue growth index and its measurement tool is enough universal and could be easy used for assessment of Blue growth state in other Seas and regions. Worked out recommendations could be useful for EU Blue Growth and maritime development issues towards 2030/2035 year.
KEY WORDS: blue growth; qualitative index; South Baltic; circular economy 3.00.

Introduction

Seas and oceans are drivers for the European economy and have great potential for innovation and growth, what is the biggest nowadays challenge [3, 15]. The 'blue' economy represents roughly 5.4 million jobs and generates a gross added value of almost €500 billion a year. Maritime sector's growth is specified additionally by EU Integrated maritime policy [1] and Blue growth strategy[2]. It is the maritime contribution to achieving the goals of the Europe 2020 strategy for smart, sustainable and inclusive growth[3]. Blue Growth was accepted in 2012 and is the long-term strategy to support sustainable growth in the marine and maritime sectors. According to the strategy, further growth is possible in several areas which are highlighted within the strategy.

The strategy consists of three components: 1. Develop sectors that have a high potential for sustainable jobs and growth, such as: a. aquaculture, b. coastal tourism, c. marine biotechnology, d. ocean energy, e. seabed mining; 2. Essential components to provide knowledge, legal certainty and security in the blue economy: a. marine knowledge to improve access to information about the sea; b. maritime spatial planning to ensure an efficient and sustainable management of activities at sea; c. integrated maritime surveillance to give authorities a better picture of what is happening at sea; 3. Sea basin strategies to ensure tailor-made measures and to foster cooperation between countries: a. Adriatic and Ionian Seas, b. Arctic Ocean, c. Atlantic Ocean, d. Baltic Sea, e. Black Sea, f. Mediterranean Sea, g. North Sea.

The main problem. During initiation and implementation of South Baltic programme project "INTERMARE – Internationalization of South Baltic maritime economy"(2017-2020), seeking to work out this region Blue growth, marketing strategy was prepared and made market research, during which were recognised significant methodological and practical problems of Blue growth strategy generally and lack of reliable data for assessment the state of Blue growth. Concentration to only 5 specified fields of maritime activities isn't in accordance to holistic approach, which requires to assure growth of all scope of interconnected 20 main maritime activities. For example, not assuring clean marine waters it's difficult to talk about aquaculture development. Use of quantitative indexes for assessment of Blue growth meets with lack of reliable maritime statistics, why it's very difficult to evaluate dynamics of Blue growth, which is qualitative phenomenon at first. Here is lack of qualitative indexes of Blue growth. In scientific literature and development practice we hear many uncertain initiatives and strategies, as green, circular economy, blue, smart, sustainable, inclusive growth, which frequently are understanding as buzzwords difficult applicable as methodological and operational tools for practical growth.

During implementation of South Baltic programme project CIRTOINNO, dedicated to applying circular economy principles to green and blue tourism SME's in South Baltic area, author of this article composed Circular economy 3.0 methodology [14], which was applied to Blue growth strategy. Composed Blue growth index was used for assessment of the state, potential and strategic targets of Blue growth in South Baltic region [13].
Main subject of the article is localisation of South Baltic region Blue growth index on the qualitative leap of smart

[1] https://ec.europa.eu/maritimeaffairs/policy_en
[2] https://ec.europa.eu/maritimeaffairs/policy/blue_growth_en
[3] https://www.eea.europa.eu/policy-documents/com-2010-2020-europe-2020

growth by use Blue growth index and provide It's growth strategy.

Main aim of the article is to assess Blue growth state, potential and strategic targets by use qualitative Blue growth index virtual self-assessment poll.

Main tasks of the article are:

1. To describe Blue growth index assessment technics and characteristics.
2. To present South Baltic common Blue growth index values.
3. To analyse Blue growth index values by maritime branches, activities and countries.
4. To synthesise Blue growth strategic qualities.

Blue growth index assessment technics and characteristics

Quantifiable indicators of blue growth composed as the matrix of Blue growth indicators with short characteristic of each maritime economy activity and by qualities of growth: physical, economic, green, sustainable and smart [13] (Table 2). Here taken care, that each characteristic is relevant to the activity and growth quality. They also must be short, clear, as much as possible equal understandable by developers, experts and readers of the research report.

The expert virtual poll method is chosen for measure of Blue growth indicators by South Baltic (SB) region countries: Lithuania, Denmark, Sweden, Poland and Germany [11]. Experts were people from maritime industry and their expertise was grounded on different options: Common understanding, Work practice in maritime sector, Business practice in maritime sector, Scholar knowledge of maritime sector, Scientific research of maritime sector practice. In the poll was provided to help experts to justify on equal understanding of main qualities of growth by asking them - What is your priority stage of growth: 1. Physical - new constructions, larger production and service; 2. Economic - seeking for bigger income and less costs; 3. Green - introduction of clean technologies; 4. Sustainable - increasing of wellness and life span of people; 5. Smart - transition to artificial intelligence, internet and robotics.

A set of general and comparative indicators were introduced into questionnaire: Country growth priority; Maritime sector growth priority; Availability of a country blue growth or like maritime growth strategy. Correlation between values of evaluation of different experts helped to recognise level of understanding and abilities of correct evaluation of indicators, what was especially important in the stage of design of editions of questions and answers.

The questionnaire was implemented in qualitative mode with quantifiable evaluation of investigating features with provided Deformalisation its back to qualitative sense. Many questions of questionnaire constructed in penthatomic (n=5) mode and consist of five quantifiable variants of answers with weight coefficients: "Physical "- 1, "Economic" – 2, "Green" – 3 "Sustainable" – 4, "Smart" - 5. The weighted average measure of feature is calculating using equity (1).

$$Ki = \sum_{j=1}^{N} \frac{k_j n_i}{n} \quad (1)$$

This equity is appropriate to measure Blue growth index by a region and a country. Deformalisation of quantifiable measure K to verbal mode is implementing by placing K into appropriate interval. In the questionnaire were introduced geographical coordinates of South Baltic countries, what enabled to present result of the state of the market on map visually and comparative. Defined values of indicators were placed on maritime activities qualitative leaps. This was useful on planning of their values in strategic points of a future.

The poll was implemented by project INTERMARE team with participation of Polish, German and Lithuanian partners. 100 experts were attracted from all South Baltic programme countries. Biggest number of experts were from Lithuania, Poland and Germany.

Assessment results reflects average quality of understanding of real situation in maritime sector of South Baltic region - weighted quotient is 0,54. Only 18% of expert's knowledge grounded on common understanding of maritime growth state. One third of experts is from maritime practice: 22% has maritime work practice and 11% are maritime businessmen. Scholar and scientific research knowledge in maritime sector consist 44% of all assessments. This gives ground to accept assessments and evaluations as enough acceptable for guidance.

Experts are enough equally distributed by qualities of growth priority. One third of them - 28% belongs to the past qualities – physical and economic growth. One third – 36% - represents green and sustainable growth supporters. The last third – 30% of experts orients to the most modern – smart growth priorities. Further we will see how average expert's growth quality 0,60 corresponds to qualities of growth in South Baltic region, countries and maritime sector growth priorities.

Common Blue growth index values of South Baltic region

The direct assessment by experts of a country and separate maritime sector growth priorities discovered significant and important disproportions on attention giving by countries and by their governments to maritime sector growth. Going from East to West of SB region evident transition from economic to green and sustainable growth priorities (table 1). When Lithuania still try to grow economically, Poland and Sweden prefer to grow in green way. More ewer Germany and Denmark leads in a quality of sustainable growth. As common disproportion is evident less on 11% growth quality in maritime sector comparing to common growth culture by all countries from 8% in Lithuania till 15% and16% in Germany and Poland. This difference corresponds to South Baltic programme aims to liquidate disproportions in development of continental and seashore regions.

Table 1. Direst assessment of the state of growth by countries and SB region

Index No.	Indicator	Lithuania	Poland	Sweden	Germany	Denmark	SB region average
0.1.	Country growth priority	0,34	0,46	0,60	0,69	0,73	0,48
0.2.	Maritime sector of a country growth priority	0,26	0,30	0,50	0,54	0,63	0,37
	Difference	0,08	0,16	0,1	0,15	0,1	0,11

Distribution of experts by answers concerning knowledge related to Blue growth strategy in a country shows significant challenge (table 2). Each EU country is obligatory to apply EU Blue growth strategy to maritime sector and coastal region. However, is very clear that in Lithuania this strategy wasn't worked out yet and this important EU strategic document isn't implementing here. In Poland some ideas of Blue growth together with Smart specialisation orienteers are introduced in regional development programmes. Germany is one of the most active countries, who uses Blue growth strategy in national and sea-coast regions.

Table 2. Distribution of experts by knowing is it here in a country Blue growth or similar strategy

Question	Yes	Maybe	No	Don't know	Other	K
Is it here in country Blue or similar strategy?	27	27	15	28	3	0,59

First limited assessment of state of growth indicators in South Baltic region enabled to recognise distribution of growth culture by indicators in interval from physical till green growth. Sustainable growth level was recognised in governance only. It means, that here are variety of programmes and projections of sustainable growth. However, in practice sustainable growth quality wasn't recognised no in one maritime activity.

Expert poll enabled to assess and measure Blue growth indexes by countries and overall South Baltic region through evaluation of growth priorities in each of 20 activities in 4 branches. (Figure 2). Blue growth index of South Baltic region in firsts half of 2019 year defined as 0,40 and reflects limit of economic growth quality.

Using virtual modelling methodology Virtualics, the Blue growth process was imagined as quality leap from Physical in 2010 till Smart in 2035 year (Figure 1). It's optimistic, that expert's personal priority growth rate is 0,60 and it is significantly higher comparing to assessments of SB country and maritime sector growth rates: 0,48 and 0,37. It shows, that experts give negative assessment of SB countries and maritime growth priorities. This made impact on this, that direct countries maritime sector growth rate 0,37 was lower as indirectly assessed SB region Blue growth index 0,40.

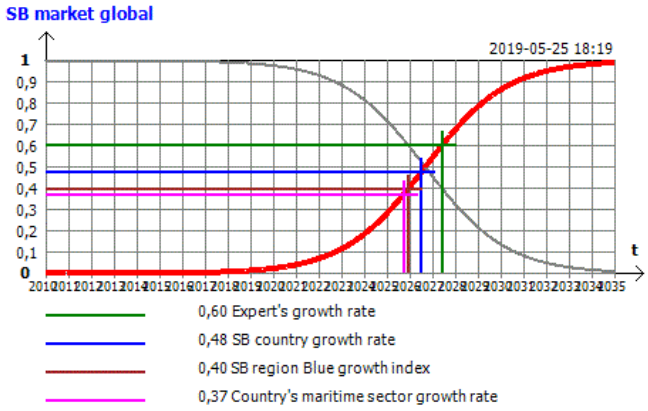

Fig. 1. Localisation of Blue growth results on the quality leap of Smart growth

The model gives right to state, that defined by EU 2020 strategy the quality of smart growth in maritime sector of SB region needs of significant efforts to be achieved not in 2020, but as optimistic case in 2035 year.

Assessment of Blue growth qualities by maritime branches, activities and countries

By SB region average growth quality indexes (table 3) maritime branches and activities marked as transiting from economic (yellow colour) to green (green colour) and to sustainable growth (blue colour). Due to aged economic management maritime sector growth is not homogenous. Unseeing, that European Union supply modern – green Blue growth strategy and ecological regulations, planning, marketing and finance qualities still economic, what makes troubles seeking to rise quality of growth of all maritime sector.

Maritime industry still in old economic traditions and not demonstrate signs of qualitative growth towards green, sustainable and smart. Exclusion is Biotechnologies sector, where SB countries achieved significant success in aquaculture and marine biotechnologies.

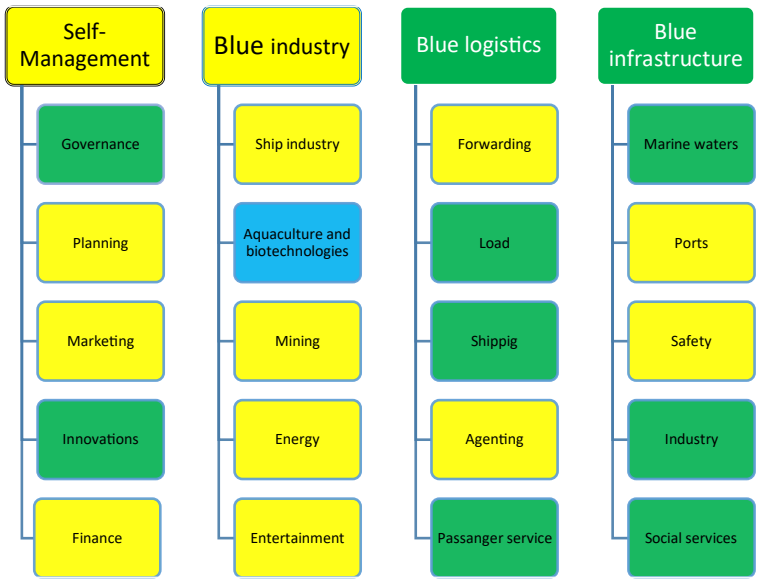

Fig. 2. SB maritime branches and activities marked by growth qualities. Yellow – economic, green – green, blue – sustainable

SB maritime logistics demonstrates green quality of growth in loading, shipping and passenger services, related to transition to modular container and "ro-ro" cargo. However, logistics supporting activities as forwarding and agenting still in economic quality, what limits overall qualitative growth of this branch. Maritime infrastructure as whole and its activities related to marine waters, coastal industry and social services demonstrated positive links to green growth under impact of EU marine spatial planning regulations and more developed onshore activities.

Blue growth indexes of Lithuania and Poland are economic – consequently 0,37 and 0,36 (Table 3). Sweden, Germany and Denmark characterised as green growth maritime countries with indexes: 0,44; 0,41 and 0,56.

Table 3. Growth culture distribution by South Baltic countries

Countries		Lithuania	Poland	Sweden	Germany	Denmark	SB region average
	Blue growth index	0,37	0,36	0,44	0,41	0,56	0,40
1	**Self-Management**	**0,34**	**0,36**	**0,43**	**0,44**	**0,56**	**0,39**
1.1	Governance	0,45	0,63	0,53	0,73	0,75	0,56
1.2	Planning	0,25	0,35	0,48	0,43	0,53	0,35
1.3	Marketing	0,29	0,26	0,38	0,34	0,43	0,31
1.4	Innovations	0,38	0,43	0,55	0,48	0,63	0,44
1.5	Finance	0,34	0,12	0,2	0,22	0,48	0,28
2	**Blue industry**	**0,36**	**0,32**	**0,37**	**0,36**	**0,49**	**0,37**
2.1	Ship industry	0,3	0,25	0,28	0,27	0,45	0,3
2.2	Biotechnologies	0,62	0,71	0,83	0,63	0,68	0,67
2.3	Mining	0,33	0,28	0,18	0,46	0,55	0,34
2.4	Energy	0,33	0,22	0,45	0,2	0,48	0,31
2.5	Entertainment	0,23	0,16	0,13	0,22	0,28	0,21
3	**Blue logistics**	**0,41**	**0,40**	**0,40**	**0,44**	**0,54**	**0,42**
3.1	Forwarding	0,39	0,33	0,38	0,53	0,48	0,4
3.2	Shipping	0,35	0,35	0,4	0,54	0,6	0,41
3.3	Load	0,4	0,49	0,4	0,35	0,58	0,43
3.4	Agenting	0,35	0,31	0,31	0,48	0,45	0,36
3.5	Passenger services	0,57	0,5	0,53	0,32	0,58	0,52
4	**Blue infrastructure**	**0,36**	**0,36**	**0,55**	**0,41**	**0,65**	**0,42**
4.1	Marine waters	0,38	0,35	0,59	0,52	0,68	0,44
4.2	Ports	0,28	0,17	0,47	0,44	0,6	0,33
4.3	Safety	0,33	0,46	0,42	0,25	0,68	0,4

4.4	Coastal industry	0,41	0,36	0,58	0,43	0,6	0,44
4.5	Social services	0,39	0,46	0,67	0,41	0,68	0,47

It has sense to talk about real existing social units related to maritime sector. At this point of view South Baltic region could be accepted as real if it has social organisation attributes as governance, planning, marketing, innovations and finances. Nowadays the institutional status of South Baltic region society not exist. It's used for paint geographical borders by South Baltic programme only. However, this not make troubles to overview the quality of implementing Self-Management functions of the region by participating countries or international organisations.

Expert poll shows, that South Baltic region Management/ Self-Management has economic quality with index value 0,39. Lithuania and Poland accepts this region of area for economic growth. Sweden Germany and Denmark – as area for green growth.

Blue or maritime industry has old historic paths. Nowadays are seen significant changes in approaches to operation and growth of maritime same as on its resources. European Union gives great attention to qualitative growth of maritime sector. Integrated maritime policy (from 2006) and European Blue growth strategy (from 2012) recognised only five main fields of prospective maritime: coastal and marine tourism, aquaculture, marine biotechnologies, sea bad mining and marine energy. This is related to transformations and synthesis of many traditional maritime activities and business. However, green, sustainable and smart growth approaches enable significantly exceed such 5 Blue growth activities, because in all branches of the unavoidable maritime complex are efficient green, sustainable and smart solutions. Expert assessed blue industry growth quality as economic, index – 0,37. In all SB countries, excluding Denmark, blue industry is of economic quality. In Denmark blue industry is accepted as green. It's evident, that here is lack of advanced green, sustainable and smart approaches.

Maritime transport is occupied in logistics of goods through marine waters and ports from ancient times. Traditionally logistic operations consist of purchase, sells, storage and transportation of goods. Maritime logistics elements are forwarding, load, shipping, agenting and passenger services. Blue logistics in SB maritime was assessed by experts as green, index value 0,42. This quality level is similar in all SB countries.

Necessary resources of Blue growth are marine water, ports, safety facilities, industrial and social infrastructure. In different stages of growth not equal attention is giving to such unavoidable resources. Experts assessed quality of maritime infrastructure services as green, index value 0,42. Lithuania and Poland characterised as economic, Sweden and Germany – green and Denmark as sustainable.

South Baltic Blue growth potential and strategic targets

In terms of EU 2020 strategy for smart, sustainable and inclusive growth South Baltic maritime growth potential could be assessed as 0,6 comparing to achieved 0,4 trough quality leaps of physical, economic, green, sustainable and smart growth.

Until isn't formed legal SB region maritime unit or cluster, it's useful to compose some set of recommendations to EU and SB countries' authorities on homogenisation and harmonisation of development for strategic period till 2030/2035 years. It means, that smart value of SB Blue growth index must be reached 1,0 in all maritime branches and activities in 2030/2035 year.

EU Blue growth strategy was accepted as common guidelines for overall EU countries and maritime regions in 2012.[4] As shows our made market research for 7 years Blue growth in SB maritime still waiting to be improved. As it was made concerning Mediterranean region, EU could work out growth strategy for South Baltic/ Baltic region too trough framing homogenous growth standards in all maritime branches and activities.

Made research and assessment gives ground to state, that exclusion of 5 Blue growth priority fields and try to develop them leaving without attention of rest 15 destroys overall system of maritime internal links and connections. What don't let achieve Blue growth strategy wishes and make bad impact into overall maritime economy. The concept of Blue growth must be improved by returning to homogenous development of all branches and activities and growth qualities in all countries. This could be achieved by introduction of composed during this research Blue growth index.

EU principle of equal opportunities requires to shorten differences between maritime economies of different countries, especial in axis „East-West" countries. It's evident, that Lithuania and Poland as more East countries are significantly less developed towards Blue growth qualities. In Lithuania don't exists any Blue growth strategy not talking about its implementation. Maritime cluster isn't formed here. Not efficient centralised management of coastal maritime activities more stops than support development of this branch.

Maritime industry of SB region as ship industry, marine biotechnologies, marine mining, marine energy, marine and coastal entertainment must move towards smart till 2030/2035 according to natural development trends. It needs of significant efforts from EU and SB region country authorities. However, its necessary, considering growing pressure of foreign competitors from Asia and USA. Ship industry cycle consists of marketing, ship design, construction, exploitation, maintenance, repair, modernisation and utilisation. All this process and its elements must be developed through quality steps of physical, economic, green, sustainable and smart growth

[4] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52012DC0494

qualities. It means Global marketing, virtual design, autonomous navigation, preventive/initiative maintenance, waste free utilisation. Majority of such functions are implementing in ship yards, which must access smart growth level and be specialised on smart autonomous ships design and construction.

It's evident, that traditional fishing and fish industry is replacing by recreational fishing, aquaculture and marine biotechnologies. High development level of marine biotechnologies in SB countries give priorities to continue and spread this activity in overall SB region. At sustainable development stage health and beauty needs forms high demand for cosmetics, nutrition, supplements and medicines which could be produced by use marine biotechnologies. Obligatory conditions for aquaculture and marine biotechnologies is clean waters near cost line and harbours. So, clean waters and clean ports are needed for this.

Abandonment of fossil fuel consumption will reduce and stop extraction of oil and gas from sea bad. However, investigation, searching and extraction of rare minerals and metals from Sea bad same as investigation, monitoring and extraction of chemical weapons and mines will be operated by robots.

Specific for marine areas kind of energy is offshore wind power. Many research and investigations show, that SB region has great opportunity to install hundreds of GW of offshore wind power and cover all demands of countries on energy needs in electricity production, heating of individual and block-houses, also transport. This is in accordance to inappropriateness of combusting (oil, gas, biofuel, biomass, etc.) kinds of energy in relation to climate change and negative impact into human's health and life span. Smart electricity grids just provided to construct along, and cross SB marine area and they will transfer offshore wind energy to coastal consumers. Offshore wind power stations are automatically working, and their maintenance needs are reducing by introduction robotic service solutions like air and underwater drones. The future of autonomous shipping energy belongs to big capacity electric batteries and use of solar, wind and hydrogen energy.

Sailing, coastal and cruise shipping will become electric and clean. Large cruise ships will change combusting engines to electric. Small cruise ships till 300 passengers has trend to growth in Baltic Sea and SB region. Circular economy approaches let's reduce and avoid pollution of marine waters from marine entertainment facilities.

Maritime forwarding, shipping, loading, agenting and passenger service will be significantly changed towards smart, grounded on artificial intelligence, quality. Specialised forwarding services will be replaced by virtual Self-forwarding technologies. Any owner of a cargo will be free to use virtual portal, which will propose and assures to choose and deliver goods from one to other place without intermediary service. Smart shipping will be implemented by autonomous electric ships without crew. Ports will adopt infrastructure for autonomous shipping. Smart loading will be implemented by robotic container terminals. "Ro-ro" ferries will be also loaded by robotic tugs. Autonomous shipping will avoid supply of materials, goods, water, etc. for needs of a crew. Connection of autonomous ship to port electricity, water, waste, information systems will be operating automatically. Smart passenger service will be grounded on virtual communication means. Transport mean will recognize a passenger from face or mobile device. Passenger with luggage will be transported inside of ship by use of autonomous electric wheelchair.

Marine water, port cities, marine safety, coastal industry and social services will be smart. They assure services by reducing manual work and information processing by consumer. Marine waters together with coasts are main infrastructure attributes of maritime activities. A smart virtual spatial modelling of marine water use including underwater monitoring will assure efficient and responsible use of water and provide un wished changes as rise of Sea level, destroying of coasts, etc.

Only democratically Self-managing port-city society can assure sustainable development by coordinating economic, ecologic and social priorities with responsibility against future generations. In case if port is managing by a business or outside/regional/governmental bodies, inhabitants hasn't means to assure clean environment and healthy life conditions in a harbour. So why ports must be owned by port society.

The biggest value of a port-city is the earth near water and opportunity to access coats of sea or a water basin. If the earth belongs to outside owners, they aren't interested to assure efficient and sustainable use of this area. In this reason ports hold large and very expensive areas for storing unpacked loads, they operate reload bulk and liquid materials, chemical goods, oil, coal, oil cox, fertilisers, etc., what pollutes air, water and make negative impact into health and life quality of near living people. Green and sustainable growth culture require to load in living areas only packed and modular/container loads. Store and reload of cargo from one to other kind of transportation must be operated out of port areas.

As mean for regulation of ***load quality growth*** is Index of earth use efficiency, calculating to 1 m^2 of port area and 1 m of quay. Sustainability of use of such measure means economical work productivity, ecologically – cleanness and socially – health of the loading activity. As higher is value of this index, as higher is load quality in a harbour. In smart port we see two kinds of water coast use: a) robotic modular load and cruise shipping terminals and b) free access of inhabitants to water areas. Safety always is safety of humans. So, both – physical and informational safety of a human must be assured in connection to maritime activities. Smart safety is complex concept, which takes together all technical, ecological, social and other risks for assure as longer as possible full-scale life span of a human. Permanent virtual monitoring of health parameters (hearth rhythm, blood pressure, oxygen level, etc.) and readiness of safety services come to help at every time and everywhere.

Smart coastal industry means production of goods without manual work. Smart social services mean opportunities to receive medical, informational, financial, accommodation, food, transportation service without intermediation of a human.

Conclusions

Made market research, composed and measured Blue growth index in South Baltic maritime sector enabled to do next conclusions:

Blue growth index of South Baltic region defined as 0,40 and reflects limit of economic growth quality in first half of 2019. Blue growth indexes are transiting from economic in Lithuania and Poland to green in Sweden, Germany and Denmark.

SB region average growth quality indexes by maritime branches and activities shows transiting from economic to green and sustainable growth qualities.

Not homogenous growth qualities in different branches and fields of SB maritime sector demonstrates lack of strategic Self-Management and responsibility of countries on implementation EU Blue growth strategy.

Maritime industry still in conventional economic traditions and not demonstrate signs of qualitative growth towards green, sustainable and smart. Exclusion is biotechnologies sector, where SB countries achieved significant success in aquaculture and marine biotechnologies.

SB maritime logistics demonstrates green quality of growth in loading, shipping and passenger services, related to transition to modular container and "ro-ro" cargo. However, logistics supporting activities of forwarding and agenting still in economic quality, what is limits overall qualitative growth of this branch.

Maritime infrastructure as whole and its activities related to marine waters, coastal industry and social services demonstrated positive links to green growth under impact of EU marine spatial planning regulations and more developed onshore activities.

The potential of SB maritime sector growth is related to development towards smart quality of growth in all branches and activities, to what must be oriented marketing strategy till 2030/2035 year.

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SOME, ESPECIALLY LEGAL AND ECONOMIC ASPECTS OF USING BIO-LABELS

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Abstract
Nowadays there is an increasing emphasis on pursuing a health and environmentally conscious lifestyle, which includes organic farming using environmentally friendly production methods and healthy organic food with low levels of harmful substances. Certification marks provide consumers with certainty that the products are made to the standard and therefore play an important role in determining the market position of organic food. The beginnings of organic farming date back to the early 1920s, with Rudolf Steiner, who started dynamic organic farming in 1924. Its global expansion and development only took place later in the 1990s, due to the growing importance of health and environmental awareness, and from that time onwards, EU legislation has fundamentally defined the objectives and principles of organic production. The number of ecologically conscious farms in the EU member states is increasing year by year, considering the territorial proportions and the number of farmers. Austria, the Czech Republic, Estonia and Sweden, are the countries with the highest organic production ratio, which are well above average. Long before the introduction of the EU trademark, these countries had their own inspection and certification organizations for organic farming, giving consumers greater confidence in domestic products and brands. Compared to the EU average, the proportion of areas under organic farming and the number of farmers in Hungary is low. Our survey of more than 250 people - based on the Internet - and in-depth interviews revealed that only a very small group of people in our country regularly consume organic food: typically, middle-aged, middle-class, high-income people or families with young children. Thus, one of the problems is the lack of consumer awareness and the high price, which is already deterring most consumers from the "world" of organic food. Our country is export oriented in the field of organic food: instead of the domestic market, it is mainly aimed at the markets of Germany, Switzerland and Austria, where there is no demand for processed products, but mainly for raw materials. According to our research it is worth developing the supply and business side with methods such as grants, incentives or action plans that work well in practice.
KEY WORDS: bio labels, certification rules, organic farming problems and solutions.

Introduction

The beginning of organic farming dates to the early 1920s, when Rudolf Steiner launched dynamic organic farming in 1924. Its boom happened in 1970s, when various eco-friendly green movements became more popular and the need for more environmentally friendly production methods increased to a few countries. Its global spread and development took place only later, in the 1990s, due to the growing importance of health and environmental awareness. Consumers and growers alike saw an eco-friendlier future in organic farming (Tamm et al. 2013), as organic farming is based on the absence of synthetic agents and the use of natural biological cycles, local resources and a strong emphasis on the environment, protection of biodiversity and resources. The term organic farming is often used in simplistic terms, with the organic term being solely about the production without chemicals. In fact, it is a much more complex system, including harmonious cooperation with natural systems, preserving soil productivity, minimizing pollutant emissions using renewable energy sources and more (Fig. 1).

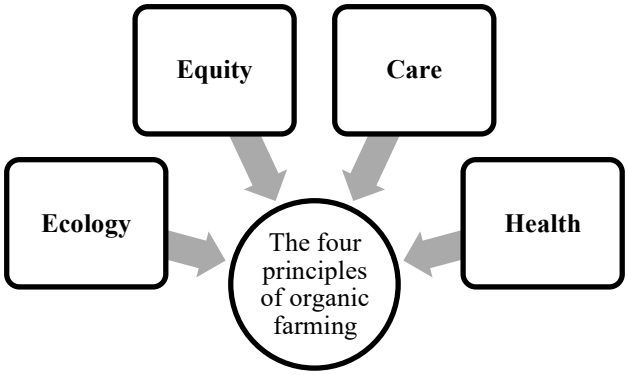

Fig. 1. The four principles of organic farming
Source: IFOAM (2019) and own work

The production process is regulated by various European Union and national laws and requirements, which are monitored by certification bodies. In addition, the produced organic food is also functional food, as it typically has added value, its market is constantly growing, and it plays a significant role among health-conscious consumers (Németh et al. 2014). Following the development, the number of ecologically conscious farms in the EU Member States is increasing every year, considering the territorial proportions and the number of farmers. Despite the growing tendency, the proportion of organic farming is still relatively low in most countries, including Hungary. Observing the clearly positive examples, it can be stated that in order to increase the proportion of bio-areas and to achieve the related goals, appropriate promotion and support from the farmer side and development of information, transparency and

accessibility from the consumer side. Moreover, proper confidence in products are essential (Dér 2002).

The quality of organic food, including its production and distribution in the European Union, is controlled in Hungary by various regulations. Organic farming in the European Union has been influenced by various pieces of legislation since the early 1990s (Dér 2002), to which a system of local control bodies is attached. The terms "organic", "biological", "eco" and "organic" or even "organic" are equivalent in meaning to these product groups and are protected designations, the right of which is given by these organizations (Tamm et al. 2013). In the case of organic food, there are so-called certification marks which are not much different from the traditional trademarks, but there is always a set of rules behind them. Demeter, one of the oldest organic brands, controls the production of products from biodynamic farming that are specifically associated with Dr. Rudolf Steiner. Pursuant to domestic law, a certification mark distinguishes goods or services of a quality or other quality from other goods or services by certifying their quality or characteristics. In countries that already had their own organic inspection and certification bodies for organic farming well before the introduction of the EU trademark, consumers are more aware of them and thus rely on domestic products and brands. To be more specific, trademarks with a strong set of conditions give consumers greater confidence in the products, are well aware of the organic products, the concept of organic, consume and trust in these products, and can be afforded due to their high level of welfare more expensive selling goods of organic food (Dér 2002).

This study attempts to present the state of organic farming in Europe and, in this context, the situation in Hungary. The second step is to present the most important elements of the relevant legislation, both at Community and at domestic level. There are two reasons for presenting legislation. On the one hand, at least to outline the complex and strict rules behind organic food and, on the other hand, to justify the use of organic labels. Because, even in the case of those coming from the scientific community, the acceptance of bio-labels is not high in Hungarian society, and it is difficult to doubt the thoroughness and European standard of the control system behind them. The reasons behind consumers' choices regarding organic products are presented through a questionnaire survey and cross-statistical analysis of the results.

In the light of a previous consumer survey, we started from the basic assumption that in Hungary only very few consumers consume organic products: primarily the richer and environmentally conscious consumers. We also assumed that consumers of organic products prefer domestically produced, thus more environmentally friendly products, rather than those produced abroad.

Although consumer habits differ from country to country, we hope that by presenting the situation in Hungary, we can contribute to an understanding of the processes at least in countries with approximately the same level of economic development and income.

Methodology

In preparing this study, we relied on the expertise of professionals, organic farmers and the operator of the largest online bio store in Hungary to review the literature. We completed this by a questionnaire, which was distributed to consumers of farms that produce organic products via the Internet. We counted on the help of the staff of these farms to distribute the questionnaires. As a result of our activities, more than 250 completed questionnaires were received, however, the research was not representative, and however, it was suitable for measuring the attitude towards organic products.

The data from the survey were analysed by descriptive statistical and cross-tabulation analysis (chi-square test), compared to the results of other survey researches.

Results and Discussion

The situation of ecologically conscious farms in the European Union and in Hungary

From European Union Austria has the largest share of organic farming with a share of organic farming 23.37% in 2017 and the Czech Republic, Estonia and Sweden well above the 8% average (Fig. 2).

Further significant growth can be seen in the Baltic States, where growth has also been 4-5% in recent years. Compared to the European Union average, in 2010 the proportion of areas under organic farming and the number of farmers in Hungary were extremely low (Table 1). Between 2010 and 2015, there are some slight increases or decreases, but a basically stagnant range of 2.3-2.4%, representing between 120,000 and 130,000 hectares.

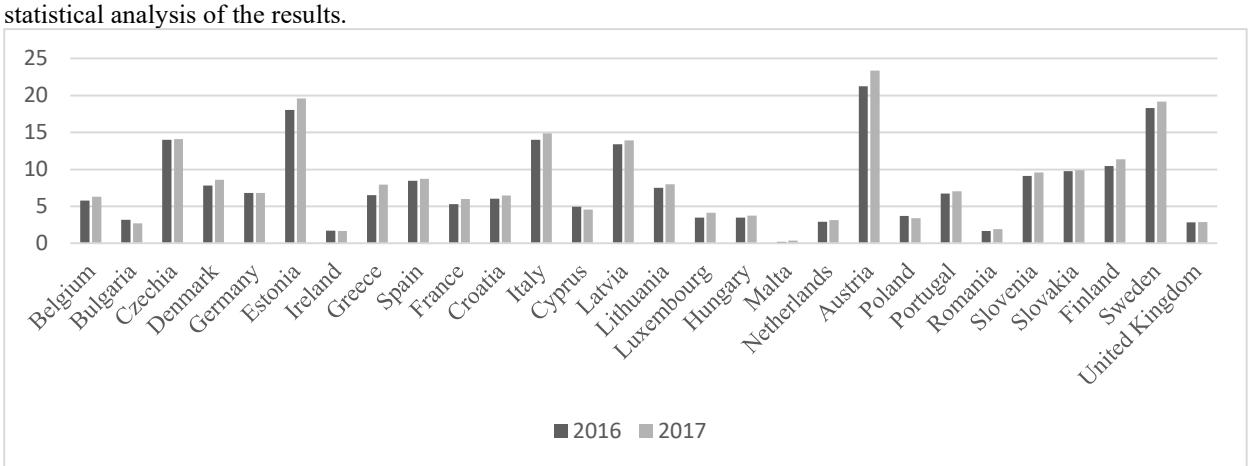

Fig. 2. Percentage of organic farms as a proportion of total agricultural area (2016 - 2017)
Source: authors' constriction based on data from EUROSTAT (2018)

We managed to break this stagnant state in 2016, as the territorial ratio increased by 1.05% to 3.48%. The growth described above can be linked to support for the spread of organic farming under the Rural Development Program launched in 2015. As the areas under organic farming have grown, the number of farms has increased too. As a result of the subsidies, more and more people started to switch to organic farming, as the number of organic farms between 1,500 and 1,900 stagnating at 2010-2015 has increased significantly by 2016.

Table 1. The changing situation of organic farming in Hungary

Year	*Proportion of areas under organic farming (%)*	*Organic farming areas (ha)*	*Number of organic farms)*
2010	2,4	127 605	1 574
2011	2,3	124 428	1 436
2012	2,45	130 633	1 560
2013	2,45	131 018	1 682
2014	2,34	124 841	1 672
2015	2,43	129 735	1 971
2016	3,48	186 322	3 414
2017	3,73	199 683	3 642

Source: KSH/CSO (2017) and own work

In the context of the Rural Development Program, a proposal to support organic farmers was re-launched in 2018, with the original 12 billion HUF envelope being raised to 32 billion in 2019, since the significant increase in the number of applicant farmers (Ambrus 2019). One of the most decisive incentive methods for farmers is the use of subsidies, the transition and the promotion of competitiveness. According to the information of Biokontroll Hungária, almost all candidates were able to win, due to a significant increase in the amount of the funds, some rejection of formal shortcomings. Despite a clear increase in the number of areas and farms under organic farming, there are still very few organic products produced for domestic consumption, a significant proportion of consumers still on cheaper traditional roads Products (Mile 2015). In Hungary, therefore, organic food is only consumed by a very narrow layer regularly, typically middle-aged, middle-class, with higher incomes, or even some families with young children. Lower income families mostly only cover basic foods. It is therefore observable that domestic purchasing power is small, and in many cases, consumers cannot afford the full, organic food consumption appropriate to their needs. Many consumers therefore narrow their purchases to the factors that are most important to them (e.g. young children), but due to the extremely high domestic price of organic food, most of them are unable to do so, even if more justified, due to a possible illness. (Hegedűs 2012). Nonetheless, one of the biggest problems facing the consumer segment in Hungary is the lack of information, meaning that a significant proportion of consumers are not aware of the concept of organic and cannot distinguish it from traditional products. Higher-income consumers tend to consume them because of some indication of a higher social level, but many domestic consumers buy these products because of some familiar illness (or prevention) (Drexler et al. 2012). Another problem is the inadequate supply due to the narrow range of products and the high export orientation and the resulting high prices compared to the above-mentioned traditional foods (Hegedűs 2012).

However, the sharp increase in processing numbers due to the increase in the number of farmers and the increase in regional growth rates has not been observed. As a result, domestic deficiencies in processing are probably not due to the lack of support and encouragement of farmers. Problems include the relatively high value of organic food, as well as technological obsolescence and high export orientation, as well as shortcomings in the domestic consumer segment. Our country is export oriented in the field of organic food: instead of the domestic market, it is mainly aimed at the markets of Germany, Switzerland and Austria, where there is no demand for processed products, but mainly for raw materials. As a result, few people in Hungary are involved in processing, and those who are engaged in processing are not able to achieve the quality of Western European manufacturing industry with more advanced production tools. Domestic farmers' sales opportunities in Hungary extend to traditional and organic markets, albeit in small quantities. The situation is further exacerbated by the fact that a significant proportion of processed organic products for consumption are imported products from abroad, and thus few domestic producers are marginalized (Mile 2015). For these reasons, a significant proportion of domestic organic products - mainly raw materials and feed - almost 80% are sold for export. Arable crops and pastures make up most of the areas involved in organic farming. The main reason for the spread of arable crops and pastures is that they can be cultivated most easily. In the case of arable crops, cereal or green fodder production is most common, as these crops are not too risky and can be produced more easily, more safely than their counterparts, and are more easily transported in large quantities and have almost endless foreign outlets. (Gergely 2014). This is in line with the export orientation mentioned above and the lack of processing.

Basics of the domestic and EU legal environment

Legislation affecting organic farming in the European Union extends to organic production, product labelling and the system for controlling organisms, including imports from third countries. EU legislation basically defines the objectives and different principles of organic production (a comprehensive system of economic management and food production). The aim of organic production and its containment is to create a system that works in a sustainable manner, in a way that respects and enhances environmental and natural values. It is very important, for both consumer protection and fair competition, that the

terms used to designate 'organic' are in fact used in all countries only for organic products. This includes words and abbreviations derived from expressions. In order to ensure accurate consumer information, it is mandatory to use the Community logo within the Member States of the European Union for all pre-packaged organic food. It plays a role in the use of voluntary trademarks, non-prepacked organic products or organic products imported from third countries. There are basically two types of trademark in the European Union, the European Union mark and the national mark. The European Union trademark is a unified green logo that all member states must put on their products for consumers (Pullai 2018). In order to provide consumers with accurate information, the use of the Community trademark is restricted to products which consist exclusively of organic ingredients, which means that products of conversion or where less than 95% of the ingredients of processed food products are of organic origin may not be used. National trademarks are trademarks issued by inspection bodies that are mandatory in all countries. In addition, there may be so-called private trademarks, which, although not mandatory, are much more demanding and have stricter requirements. The Community logo shall in no circumstances prevent the use of national or private logos.

In Hungary, the legality of the operation of certification bodies is verified and recognized by the National Food Chain Safety Authority as a certification body, provided that the operation of the bodies meets the requirements of the legal regulations. The certification body shall draw up an annual plan for its operation in cooperation with the Office. A farmer can only operate his/her business under the control of a certification organization, but he/she can change at any time, as organizations cannot restrict farmers from switching freely.

Simultaneous conversion of the entire agricultural area (generally a conversion period of 3 years) is a more ideal method, but so-called parallel farming is also allowed by certification bodies. In the latter case only, the farmer starts production according to the organic farming requirements in part of his areas, and in the other areas traditional farming takes place, and later he gradually integrates them into organic farming. The disadvantage of this is that the transition is much more difficult, since care must be taken to ensure that the two products are not in contact with each other during production and that the tools used in conventional farming are not in contact with those involved in organic farming (Pullai 2018). Once the management process has met the requirements, a hologram protected certification will be issued. The farmer or operator concerned shall ensure the traceability of his products at all stages of his activities in order to verify the origin of his products from organic farming. Inspections are usually performed once a year, after prior registration, but there may be cases where additional, unannounced inspections may be conducted, based both on the risk of the product and on the subjective judgment of the inspectors (Roszík 2015). Organizations check the areas in question to verify that production is being performed in accordance with the requirements, whether there are traces of synthetic agents, or the use of external resources, such as the use of prohibited plant protection products or fertilizers, pollution or GMO contamination. In case of suspicion, they can even check the products by sampling. (Roszík 2015). If a certification body becomes aware that an operator it certifies is in breach of its requirements, it may act in a manner proportionate to the breach. There are currently two inspection (certification) organizations operating in Hungary. These are Biokontroll Hungária Nonprofit Kft. (HU-ÖKO-01) and Hungária Öko Garancia Kft. (HU-ÖKO-02). Organic-certified products are labelled with the national certification body's code, depending on the organization under which they are produced, and must bear the European Union organic logo or, in certain cases, carry the words "controlled organic" (Pullai 2018).

Statistical analyses and conclusions

In a 2014 statistical survey (Szente 2014) of 1,000 people, respondents were asked about their attitudes towards the consumption of organic products. 59.8% of respondents did not care whether the product was of organic origin or certified. For only 28.2% of respondents, this question was fundamental. Only 3.7% of consumers would be fully willing (i.e. regular/regular) and 26.2% partially willing to buy organic products. However, more than 70% of consumers do not.

Our own questionnaire survey received 256 responses. About 37% of respondents are between 36 and 45 years old, but the vast majority are young. The proportion of people aged 18 to 45 is 74%. The distribution of respondents by monthly income categories between respondents was already more equable. One third of the respondents belonged to the income category of 150 to 250 thousand HUF (about 450 to 750 EUR), but only 21% of the respondents ranked in the highest category above 350 thousand HUF (1050 EUR). Even though our sample cannot be considered representative, we can conclude that the purchase of organic food is, at the very least, not a “money question”, that is, it is not necessarily dependent on monthly income. Most respondents - more than 90% - buy organic products only domestically. In this context, 56.9% of respondents generally believe that trademarks are either fully trusted or highly trusted. For the domestic control system this proportion is less, just over 50%. At the same time, the picture that only two-thirds of the respondents were familiar with the two national rating agencies, as far as the trademarks affixed to the qualified products are concerned, is overshadowed. Further data, related to what has been said, is that organic products are generally considered to be wholly or very positive by most respondents, but only 43% are fully aware of the methods used to produce organic products. Of course, the truth is that there were hardly any respondents who did not know organic products at all. Regarding the organic product control system, the overall picture is less satisfactory, as only 23% of the respondents were fully or aware of the activities of certification bodies, while 26% were not at all aware.

Based on the preliminary hypotheses, cross-tabulation analyses with Chi-square test also yielded unexpected results. In the questionnaire we asked about the factors that motivated the choice of organic food, including the role of environmental protection. Surprisingly, the analysis revealed that there is no statistically significant relationship between the importance of environmental

protection for the consumer of the environment (Fig. 3.) and the consumer's net monthly income (p=0.423). The same can be said about the relationship between the consumer's monthly net income and the preference for domestic or foreign organic products (p=0.278).

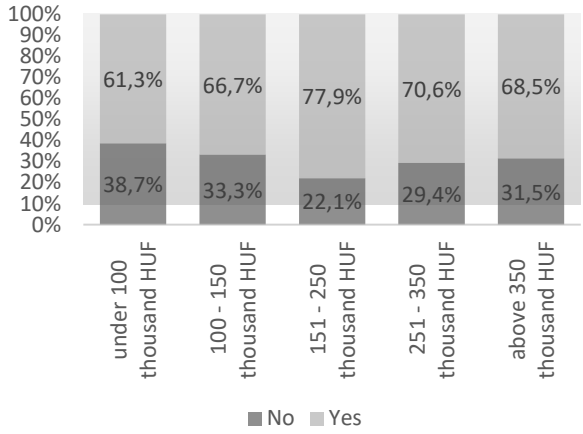

Fig. 3. The relationship between environmental awareness of organic consumers and their net monthly income
Source: own work

"Instead of conclusion" – What can we expect in Hungary?

However, most European countries are already witnessing the so-called "eco-boom", which is a steep increase in demand for organic food, for some reason. In Hungary, the number of diet-related diseases is very high when members of the public become aware of what makes patients sick and what they can do, and find a solution to organic food consumption, which can certainly lead to a steep increase in organic consumption in Hungary. Consumers of domestic organic products are currently more likely to be sexually or occasionally purchased, and the number of consumers who purchase regular, organic food is extremely low. For the time being, however, there are very few people who specifically know and are looking for bio-labels. However, the question is not whether they are aware of the trademark, as the vast majority are unaware of the concept of bio or reject it. In addition, there is a lack of adequate, independent, grassroots advocacy in Hungary, which would "defeat" adequate state support. Based on these, the most important thing would be proper communication and dissemination of knowledge to spread the basics of the bio concept itself. However, due to the lack of processing, a significant proportion of farmers produce for export, and most consumers only encounter various organic products on supermarket shelves, which are, however, largely imported products, which are extremely high commodity prices. Lack of trust and high prices are already deterring most consumers from the "world" of organic food. The greatest trust is when local farmers are contacted, because if the consumer sees who he is from, the product does not need a trademark. However, once a product becomes faceless, a source of trust is needed, that is, the inclusion of trademarks becomes necessary, but even if there are authentic trademarks issued by appropriate inspection agencies in Hungary, consumers are not aware of the product idling than in more advanced countries where the consumers are aware of and are looking for trademarks.

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DEVELOPMENT AND EVALUATION OF THE STUDENTS' COLLABORATION SKILLS WORKING IN INTERNATIONAL TEAMS

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Abstract
Collaboration is a form of cooperation in pursuit of a common goal, social interplay of human beings, emerged in joint attempts of work related activities. The foundation of collaboration is composed of the structural interaction. The essence of such – situations of equal communication, where "a human being is free to make own decisions and feel responsible for own made actions; it is an opportunity to be heard, understood and accepted the way you are". The skills of collaboration are acquired only during a group work. The field of sports is rich in a potential of group collaboration elements. Based on Bennett et al. (2000) cooperative learning model, it is presumed that in a process of development of collaboration skills a tight interaction, positive interdependence should be achieved, skills of joint work developed, direct communication, ability to reflect as well as personal responsibility should he promoted.
The aim of the research is to analyze and assess the cooperation skills of students, participating in an international Erasmus IP project by applying the tourism and sports animation program.
The following research methods were applied: analysis of scientific literature, semi-structured interview, development project (Erasmus Intensive Program's (IP) Project "Sport for tourist animation", and qualitative data analysis.
Research organization. The research was conducted using case study methodology in January 2015. The semi-structured interview was carried out using the social media (Cooper et al, 2016) and had 6 students (3 females and 3 males).
Research results revealed that during the Erasmus IP (intensive program) project "Sport for tourist animation" a favourable environment for cooperative learning was ensured: a positive psychological climate was established which allowed the project participants to develop skills of self-expression (self-confidence, self-esteem, creativity). Students were able to feel psychologically safe, shared their experience, were which attentive and friendly, supported, and encouraged each other. They were united by a sense of unity and a common goal. Team based and individual collaboration skills of students were developed throughout all of the tourism and sport related activities: beach volleyball and tennis, canoe and kayak, windsurfing, teambuilding, evening animation tasks, and national evening events. Based on the collaboration model, the following skills of students, participating in the Erasmus IP project, were developed: ability to express and accept a verbal and physical emotional support; cooperative learning, listening to others and expression of own ideas; play assigned role; pursue a common goal; be a leader, supervise, organize; actively participate, when activities are organized by others; rate the activities in consideration of their efficiency and values. Results gathered from the interview responses highlighted a specific factor in regards to development of the collaboration skill – a sense of national pride and responsibility for own country and university had influence on students' sense of responsibility.
KEY WORDS: collaboration skills, development, students.

Introduction

Collaboration is a form of cooperation in pursuit of a common goal, social interplay of human beings, emerged in joint attempts of work related activities (Indrašienė 2004; Hoaglund, Birkenfeld, Box, 2014; Care et al, 2015). P. Griffin, E. Care (2015) notes that collaborative problem solving is one of the key 21st century skills that can be taught and learned. The foundation of collaboration is composed of the structural interaction. The essence of such – situations of equal communication, where "a human being is completely free, is free to express his essence, thoughts and intentions. Such are the situations in which each participant feels emphatic towards another person and accepts as he is with all his feelings and thoughts. During such interplay each and everyone is granted an opportunity to feel oneself, make free decisions and feel responsible for own made actions; fundamental needs of a human are being met – to express oneself, be heard, understood and accepted as one is" (Butkienė 1993). An ability of a human to see the best in person achieved in collaboration facilitates a development of self-esteem, helps to remain oneself, create.

The skill of collaboration is acquired only during a group work (Indrašienė 2004, Hoaglund et al, 2014, Care et al, 2015). Collaboration during sport related activities is achieved under more complex conditions as participants are physically active, and the process of collaboration is impeded by such obstructions as noise, lack of attention and listening skills. However, the field of sports is rich in a potential of group collaboration elements: a group has a very clear objective; group members relate socially and assist each other. They have to analyze their own activities and rate achieved results; seek a benefit for the group first without focusing on a personal advantage. Each member of the group actively participates in activities and reveals his own creativity (Petrulytė et al. 2010; Griffin, McGaw, Care, 2012).

According to A. Hoaglund, K. Birkenfeld, J. Box (2014) "to create a professional learning community, focus on learning rather than teaching, work collaboratively and hold yourself accountable for results."

Bennett, Rolheiser–Bennett, Stevahn (2000) described the model of cooperative learning. Based on the authors, in development of the collaboration skills, it is obligatory to achieve a tight interaction, positive interdependence, skills of a joint work should be developed, direct communication, ability to reflect as well as a personal responsibility should be promoted.

The aim of the research is to analyze and assess the collaboration skills of students, participating in an international Erasmus IP project by applying the tourism and sports animation program.

Research methodology

The following research methods were applied: analysis of scientific literature, semi-structured interview, development project, qualitative data analysis.

The development project was implemented during the period of: September 2-13 of 2014. During such an implementation of the international Erasmus project an Erasmus IP "Sport for tourist animation" was organized. The project involved 24 students, 72,7 % (n = 16) of which were males and 27,3 % (n = 6) females, from a total of 4 countries (St. Cyril and St. Methodius University of Veliko Turnovo, Bulgaria; HU Brussels, Sportcampus Parnas, Belgium; KATHO, campus RENO, Belgium; Mustafa Kemal University, Antakya, Turkey; University of Klaipeda, Lithuania). Coordinator of the project is St. Cyril and St. Methodius University of Veliko Turnovo, Bulgaria. The IP project had the following activities of tourism and sport organized: teambuilding (8 h), beach tennis (10 h), beach volleyball (10 h), evening animation (22 h), simulation training (34 h), windsurfing (10 h), canoe and kayak (10 h), gymnastics with yoga (8 h), gymnastics with paneurhythmy (8 h). During the above listed activities, the skills of team (group) and individual cooperation and collaboration were developed.

The research was conducted using case study methodology in January 2015. The semi-structured interview was carried out using the social media (Cooper et al, 2016) Semi-structured interview was composed of questions in respect to developed collaboration skills through the tourism and sport activities implemented throughout the project. Questions and their order of asking were not precisely regulated. The interviewer was allowed to ask additional questions.

The research was as an experience of the Erasmus IP project in application of the tourism and sports animation program is unique. Following such methodology, in order "to summarize the gained experience, people having achieved excellent results during activities were selected" (Bitinas, Rupšienė, Žydžiūnaitė 2008). The semi-structured interview had 6 students (3 females and 3 males). Responses of the respondents were recorded and, in compliance with the principles of research ethics, such were coded by composing the code from the name of the country, university, and the respondent's initials.

Authors of the present article performed a qualitative analysis of the interview content by grouping gathered interview data into categories based on highlighted principal elements of collaboration. The interview results were analyzed by exemplifying the highlighted statements supporting collaboration.

Research results

Interview results, in compliance with the presented model of cooperative learning (Fig.1.), were divided into categories based on the following criteria: interaction, facilitating collaboration, personal responsibility, communicative competence, positive interdependence, and group based collaboration processes.

Stimulating interaction is one of the principal components of the collaboration model. In an attempt to group the statements of such category, the following two subcategories were excluded: verbal emotional support and physical emotional support, – which reflect collaboration skills of the students. Interview statements substantiating collaboration skills of students, participating in the tourism and sports animation program, to properly express verbal and provide physical positive support, allow to presume that group work in pursuit of a common goal developed an ability of helping each other, encourage, notice and compliment each other's efforts, actively speak, listen, express not only one's own feelings, but feel emphatic towards others in explaining the tasks and looking for solutions (Table 1).

Statements substantiating the ability to accept a positive support reveal that reaction of students in accepting such support was adequate: for ex., "I was grateful to them". This allowed the students to develop such ability and not get arrogant.

Table 1. Interaction stimulating collaboration

Supporting statement	Males	Females
Subcategory: verbal emotional support ***Ability to express and accept verbal emotional support***		
During learning process of canoe rowing I encouraged other members of the group, those who did not dare taking a risk, to engage in such activity.	TMBO	LKMES
Encouraged and motivated my team members to engage in new activities (windsurfing), as some of them were afraid and fearful.	TMBO	BKMRV; LKMGV
Even though I was not good at playing beach volleyball, members of my team encouraged and supported me and I was thankful for that.	TMBM	
When I tried windsurfing for the first time other team members, already having experience in such sport, positively encouraged and supported me; I was happy about it.		LKMES
Subcategory: physical emotional support ***Ability to express and accept physical emotional support***		
After winning the game, we always hug and dance in a circle.	BVBB	LKMGV C
I shook a hand to my competitors.	TMBO	BKMRV
My team members hugged and patted me on the shoulder.	BVBBC	LKMES
I always smile to my team members.	TMBM	
I appreciate that we have a ritual of hugging each other to show that we are one team.		LKMGV
Girls from the other team taught me how to surf, and I am really happy about that.		LKMGV LKMES

An ability to properly express and accept verbal as well as physical support is very significant in developing a positive psychological climate of a team. Existence of a positive psychological climate is substantiated by the students' statements that during the tourism and sports animation program they were attentive and friendly, supported and encouraged each other (Table 2). A positive psychological environment allowed feeling psychologically safe, developed the students' ability of self-confidence, self-esteem and creativity.

Statements supporting **personal responsibility** allowed excluding and analyzing students' ability of being leaders; ability to engage actively in activities, when such activities are organized by others; revealed

organizational skills of students as well as their sense of responsibility.

Table 2. Students' ability of self-expression

Supporting statement	Males	Females
Self-confidence		
Beach tennis was a completely new field of sports to me, but I believed I can learn it was interesting.	TMBO It	LKMES
I learned to play beach voleyball in groups as I believed that one can learn anything with the help of a team work.		BKMRV
Self-esteem		
I felt I was appreciated as the group respected my opinion and ideas in regards to organization of events or matches.		BKMV
We made a fascinating representation of a group, I had a good time working with my group, and It was an honor working with those people.	BVBB	C
Creativity		
I designed a logo of my team for the last night presentation.		BKMRV
I was actively involved in a search of a solution for a creative canoe teaching activity.	TMBM	
I assisted in providing the tasks for demonstration of teambuilding competencies.	TMBM	BKMRV
During the evening of team presentation I helped my team to think of a slogan, select photos, I also helped to introduce my team; we all had our friendly contribution to such activity.	TMBO	
I assisted in thinking of the tasks to perform by the teams during the windsurfing competition.	TMBM	
I offered a variety of tasks and games for the evening animation program.	TMBM	LKMGV
In organizing the tasks of teambuilding competency demonstration, I assisted my team in providing few tasks; I felt pleased having contributed to such an activity.	TMBO	

Being a leader means accepting the greatest responsibility for made decision and its implementation. Function of a leader is to supervise and coordinate activities of a group. An ability to take initiative and become a leader was observed when students were asked to find a solution in various problematic situations, make decisions, organize events, competitions, perform assigned tasks (Table 3, Table 4). Leadership skills revealed during teambuilding, animation, national evening and team presentations as well as other activities: "I was a leader in representing my country as I wanted that my country's team would perform as impressive as possible" (3 cases), „In organizing the demonstration of teambuilding competencies I was not the one suggesting a great a variety of ideas, however I tried to do my best in supervision, as I enjoy being dominant during collaboration activities" (1 case). We may conclude that during the IP program excellent conditions were made to develop the skill of leadership, as the group members had to make decisions, they had a common goal and a competitive activity with the other groups.

Analysis of the interview revealed that students of the IP program had a relatively well developed collaboration skill in *active participation* of joint task implementation, when *activities are organized by others.* It is possible to state that at the end of the IP program such ability was evident at a more extensive level compared to the beginning of such program: more responses were obtained during the interview in respect to assistance towards each other in activities, which were implemented at the end of the program as opposed to the beginning.

Table 3. Personal responsibility of students

Supporting statement	Males	Females
Ability of leadership and supervision		
I was a leader in representing my country, as I wanted that my country's team would perform as impressive as possible.	TMBM; BVBBC	LKMES
In organizing the beach tennis competition I was the leader of my group; I supervised my group as to how, what and who should act, as well as I was actively involved in activities.	BVBBC	
I was the host of the evening animation program.	BVBBC	
I was a team leader and a participant during a beach volleyball match; I enjoy being dominant.	BVBBC	
In organizing the evening animation program I felt I was a leader, as I supervised the most in getting ready for the evening, offered a wide variety of great ideas, group members supported me.		LKMES
I offered more than half of the tasks for the canoe competition, therefore I believe I am capable of supervising and I always have plenty of great ideas.		BKMRV
I voluntarely offered my help to other team members in learning a new activity as I was not new at this.		BKMRV
Ability to actively participate when activities are organized by others		
During the beach tennis game all of us managed to referee and we helped each other as much as we could if we saw that a team member falls behind with his tasks.	BVBBC	
I helped other teams to perform their tasks – I was an active participant.	TMBM	
I always supported my team in organizing various activities as I enjoy working in a group	BVBBC	
Organizational skills		
My team organized demonstration of windsurfing competencies and I contributed to such activity.	TMBM	
I assisted in preparing the inventory for the beach tennis match, as my group was in charge for such activity, I was happy having an opportunity to contribute to organization of such task.		LKMES

Table 4. Internal responsibility of students

Supporting statement	Males	Females
Sense of internal responsibility		
I felt responsible for implementation of the assigned task (organization for windsurfing competency demonstration) - I contributed to such activity.	TMBM	
I always feel a sense of personal responsibility for implementation of a task assigned to me, as I wish for my group to show as good and interestingly as possible. Being in this program, we are not only students, but also representatives of our country. Moreover, I wish to feel appreciated by my group.		LKMGV
I feel responsible for an impeccable performance of tasks assigned to my team.		LKMGV
We presented a culture of our country during the national evening (Turkey, Lithuania, Bulgaria, and Belgium). I felt responsible to perform as well as I could as I love my country. I felt responsible for an impressive hosting of the nations' evening, as I wanted others to get to know the culture of my country.	TMBM; TMBO; BVBBC	LKMGV; LKMES; BKMRV LKMGV

Responses to the questions about active participation revealed organizational skills of the students. Such skills were developed through various activities, which had to be organized by the students divided into teams: "I helped my team to think of tasks and games in organizing the evening animation program; we all contributed" (1 case), "I provided my assistance in preparing for the beach volleyball competency tasks and holding the match, therefore my team members appreciated my efforts" (1 case), „In preparing for the teambuilding task, I helped my team to gather and prepare all of the inventory on the beach, I felt necessary in the group, and I appreciated hearing compliments for my efforts" (1 case). We may conclude that a feedback (complimenting for efforts) facilitated a development of such ability, as such promotes a wish to be useful and repeat such behavior.

In discussion of the students' internal sense of responsibility, we can conclude that students felt responsible for the tasks assigned to their teams or them individually. This skill was developed throughout an entire IP program and development of such was influenced by the sense of national pride, responsibility for their own country and university.

Communicative competence is an obligatory condition for collaboration. Collaboration skill of the present category revealed through *an ability to listen to the opinion of others, express one's own opinion and an ability to manage conflicts*. Having summarized a communicative competence of the students, involved in the IP program, we may claim that students were able to accept opinion of others and listen actively: "I always listen to the opinion of others, when team members wish to express it, because it is a polite thing to do", "Students from other country accepted me into their team when playing beach volleyball, even though I was not good at playing it, however, they encouraged and told me what I was good at and what I did wrong; I accepted the criticism, because I believe this is normal" (Table 5).

The IP program also developed an ability of debating: "...I actively debated with the team members regarding tasks for the evening animation program; however we managed to avoid an argument". A safe psychological environment allowed to easily express one's opinion.

One of the communicative competencies is an ability to manage conflicts. Responses provided by the students reveal that a number of conflict situations were very low, even though their opinions diverged on many issues. Such conflict situations that originated were successfully solved: "I managed to solve conflicts originated in my team when organizing the windsurfing competition as the opinions diverged on how to organize it" (1 case). Having summarized we can state that during implementation of the present project there were not many situations for the development of a conflict management skill.

Table 5. Communicative competence of students

Supporting statement	Males	Females
Ability to listen to an opinion of others		
I do not interrupt when team members speak up, because I understand that it is difficult to talk when the audience in inattentive.	TMBM	
I am able to listen actively; interested in tasks.	TMBM; TMBO	LKMGV;
I always listen to the opinion of others when team members wish to express it, because this is a polite thing to do.		BKMRV; LKMGV
I listen to the opinion of other in regards to an event.		LKMGV
Students from other country accepted me into their team when playing beach volleyball, even though I was not good at playing it, however, they encouraged and told me what I was good at, and what I did wrong; I accepted the criticism, because I believe this is normal.		BKMRV
Ability to express one's opinion		
I expressed my ideas in regards to beach volleyball and demonstration tasks of tennis competency.	TMBM	
I actively discussed with the team members in regards to the tasks for the evening animation; however, we managed to escape an argument.	TMBM	
We expressed our ideas in organizing the demonstration task of team building competency; listened and heard each other.	BVBBC	
Ability to manage conflicts		
I managed to solve conflicts originated in my team when organizing the windsurfing competition as the opinions diverged on how to organize it.	TMBM	
Our group did not have a conflict situation once, as we all managed to communicate well and collaborated throughout an entire period of the program.		LKMES; BKMRV

Positive interdependence is established having identified whether the group members have common goals, whether they are in pursuit of joint results and how they distribute their roles (Indrašienė, 2004). According to the data obtained from a research conducted by Salas et al., (1999), formation of a team improves performance of a team.

Collaboration skill of the present category was revealed through the *ability to pursue a common goal, perform assigned role and a willingness to learn how to perform an activity* (Table 6). A sense of unity experienced by the students, participating in the IP program, had a great influence on an ability to pursue a common goal. Team members attempted to achieve the common goal, win the game, were able to play their role even though they did not approve of certain tasks: "I tried to perform my role as good as I could within the team as I knew that they needed me, despite the fact that I did not really like it". Students were motivated to act knowing that they were appreciated and necessary in order to perform the tasks: "I believe we were really necessary to each other in organizing the national evening of our country, – we all contributed as much as we could". Therefore, we can conclude that a sense of unity and necessity united the students of the IP program.

The IP program had various tasks and activities; therefore, a personal motivation to learn was obligatory. Results of the interview reveal that students were very willing to learn various activities "I happily engaged myself in learning dances, games and songs of different countries (Belgium, Bulgaria, Turkey)", "Beach tennis was a completely new sport to me, therefore I was interested in learning its techniques". We may conclude that participants of the IP program arrived being prepared for new activities, tasks and were happy to learn them as well as willingly attended the majority of events.

Table 6. Positive interdependence of students

Supporting statement	Males	Females
Ability to pursue a common goal. Sense of unity and necessity.		
We competed in windsurfing groups, therefore I actively participated in them, and we felt we were necessary to each other in order to win the game.		LKMES
I believe we are necessary to each other in order to perform a task.	TMBM;	
I believe we were necessary to each other in organizing the national evening of our country; we all contributed as much as we could.		LKMES
I attempted to perform all of the tasks diligently for which other teams were held in charge in order for them to succeed (teambuilding and other competitions).	TMBM	
I felt appreciated by the team when playing beach volleyball as I am a good player and the team always complimented me.		LKMES
My team had to host the beach volleyball game; I contributed to this because I believe we are necessary to each other in order to complete the tasks successfully.	TMBO	
I felt necessary to the team of my country, in order for the national event to be a success, and thanks to our good collaboration skills, it was successful and we received compliments from the representatives of other countries.		LKMGV
Ability to perform the assigned role		
I tried to perform my role as good as I could within the team, as I knew that they needed me, despite the fact that I did not really like it.		BKMRV
I assisted in preparing the inventory for the beach tennis match, as my group was in charge for such activity; I was happy having an opportunity to contribute to organization of such task.		
Willingness to learn new activities		
I tried to learn playing volleyball, even though this game was new to me. I was happy to learn to play the game.	TMBM TMBO	
I tried to learn playing beach tennis. Beach tennis was a completely new sport to me; therefore, I was interested in learning its techniques.	TMBM BVBBC	
Sometimes we had to play in teams; therefore, a tight teamwork is necessary.		BKMRV
I danced the dances of different nations (Bulgaria, Turkey, and Belgium) as this drew us closer. It was difficult for me to try the national dances of other nations; however, it was interesting to try it out.	BVBBC	LKMGV BKMRV
I happily engaged myself in learning dances, games, and songs of different countries (Belgium, Bulgaria, and Turkey). I tried dancing Bulgarian dances, as it was interesting and new.	TMBM; TMBO; BVBBC	LKMGV; BKMRV; LKMES
I played the games of other nations; it was entertaining and amusing.	BVBBC	
I willingly engaged myself in learning beach tennis, as it was a new sport; therefore, I was interested in learning it.	TMBO	LKMES

Group processes are intended for maintaining good relationships among the team members and self-assessment of performed activities (Teresevičienė, Gedvilienė, 2003). During the research the students were asked to rate their team's performance and participation at events (Table 6). The Erasmus IP program had specific time intervals dedicated to a teamwork, during which team members could discuss performed activities or get ready for the new events. An environment in which each team member could speak up in regards to processes happening in the group, was created, as well as students could express their ideas on how to improve, rate the task and anticipate the actions contributing to a better performance.

Group based collaboration processes. Two skills highlighted in the present category: ability to rate the activity, considering its efficiency (result), and ability to rate the activity in consideration of the values (Table 7). Having analyzed the students ability to rate the activities in consideration of their efficiency, we may conclude that at the end of the IP program, students were content with their team members, their joint work and achieved results: ".Our collaboration and teamwork won us few victories", "We all contributed to organizing the national evening of our country, it was entertaining, and I enjoyed cooperating with the people of my country in preparing for the evening. The program was so successful that it could be presented to other audiences as well", "I appreciate my team, as we did everything we could in organizing teambuilding". In support of the above statements, we may conclude that achieved great results are emphasized.

An ability of students to rate the activity in consideration of the values reveals that such values as unity ("I helped my team to organize the last night's event, we all contributed to organizing the event, we worked very closely. We all gave our contribution to this task (designed the logo, slogan, uploaded photos and information into a computer) and had a very intensive cooperation"), friendship ("I really enjoyed collaborating with the team of my country in getting ready for the national evening; such experience was really entertaining and amusing, as our group was extremely friendly"), honesty ("I observed for the teambuilding tasks to be performed fairly") were highlighted.

Having generalized the statements provided by the students, involved in the Erasmus IP program, in regards to how they rated themselves and work of their teams, we may conclude that students paid a greater attention to rating the activities in consideration of their efficiency: they willingly collaborated with the members of their own and other countries, appreciated the joint work and achieved results.

Table 7. Group based collaboration processes

Supporting statement	Males	Females
Ability to rate the activity, considering its efficiency (results)		
We have always used the entire time given for the teamwork (discussion), we were all involved pretty well.		LKMGV
From the very first day we attended various events divided into groups, therefore it helped to befriend and get to know each other better.	BVBBC	LKMGV
We all contributed to organizing the team's presentation, every one offered their ideas, listened to each other and arrived at joint solutions.	BVBBC	
We all contributed to organizing the national evening of our country, it was entertaining, and I enjoyed cooperating with the people of my country in preparing for the evening. The program was so successful that it could be presented to other audiences as well.	TMBO	
The entire group worked very closely in organizing the evening's animation program; we all had our fair contribution to organization and idea generation; the evening was successful.	TMBM	
Our cooperation and teamwork won us few victories.		
Ability to rate the activity in consideration of values		
I really enjoyed collaborating with the team of my country in getting ready for the national evening; such experience was really entertaining and amusing, as our group was extremely friendly.		LKMES
I observed for the teambuilding tasks to be performed fairly.	TMBM	
I helped my team to organize the last night's event, we all contributed to organizing the event, and we worked very closely. We all gave our contribution to this task (designed the logo, slogan, uploaded photos and information into a computer) and had a very intensive cooperation.	TMBM	LKMGV
I appreciate my team, as we did everything we could in organizing the teambuilding.		LKMGV

Discussion

Collaboration – interpersonal relationships expressed in joint activities during which the needs of each other are considered. Results obtained from the present research reveal that students, attending the IP project had a perfect sense of when a team member needed help, listening, emotional support or encouragement and the joint activities granted a perfect environment for formation of interpersonal relationships.

E. Care, P. Griffin, P., C. Scoular, N. Awwal, N. Zoanetti, (2015) identifies two distinc types of collaborative problem solving tasks – content-free and content-dependent – each allowing students to apply different strategies to solve problems collaboratively. Content-free tasks were developed to emphasise the enhancement of inductive and deductive thinking skills. Content-dependent tasks allow students to draw on knowledge gained through traditional learning areas or subjects within the curriculum. The collaborative problem solving framework emphasises communication for the purpose of information gathering, identification of available and required information, identification and analysis of patterns in the data, formulation of contingencies or rules, generalisation of rules, and test hypotheses. Our study found that students used both problem solving pathways.

E. Jensen (1999), P. Griffin, B. McGaw, E. Care (2012) claims that prior to establishing the collaboration atmosphere in a group, first, it is necessary to obtain a positive interdependence and a personal responsibility. Our research results confirm that positive interdependence is a very significant factor in developing collaboration ability. Such allowed experiencing a sense of unity and necessity, which is confirmed by the research of Malinauskas (2010). Team collaboration and inter-team competition increase a sense of unity (Baron, Greenberg, 1990). Personal responsibility also contributed to a development of collaboration, which is confirmed by the research of other authors (Indrašienė, 2004; Teresevičienė, Gedvilienė, 2003; Griffin, McGaw, Care, 2012).

P. Griffin, E. Care (2015) notes that students need to be prepared for new ways of working that will call upon their communication and collaboration skills and need to be able to cross those boundaries to collaborate on shared. As data of research (Barvydienė, Kasiulis, 1998, Hoaglund, Birkenfeld, Box, 2014) confirms a joint work is a basis for the group focus, which determined a psychological climate of a team. According to the information gathered during the present research, the students were mainly united by the interplay stimulating collaboration (ability to express and accept a verbal and physical emotional support), which facilitated a formation of a positive psychological climate, which in its turn allowed to reveal the students creativity and developed an ability of self-confidence and self-esteem. Such is confirmed by the data obtained from the research conducted by Bennett et al (2000) stating that in cooperative learning a tight interaction and emotional support should be achieved. Kontautienė (2000), who claimed that mutual understanding is a foundation of a successful collaboration, made similar conclusions.

The general curriculum framework for Lithuania's secondary education schools (2011) note that collaboration skills: team work, pursuit of common goals, coordination of different opinion, understanding the needs of other people, maintaining benevolent relationships, using the methods of democratic effect develop a social and civil competency. Our research established that students, participating in the international Erasmus IP project, not only developed such skills, but also experienced a sense of national pride being granted an opportunity to represent their country and its culture.

Conclusions

During the Erasmus IP (intensive program) project "Sport for tourist animation at a seaside resort" a favorable environment for cooperative learning was ensured: a positive psychological climate was established which allowed the project participants to develop skills of self-expression (self-confidence, self-esteem, creativity). Students were able to feel psychologically safe, shared their experience, were attentive and friendly, supported, and encouraged each other. They were united by a sense of unity and a common goal.

Team based and individual collaboration skills of students were developed throughout all of the tourism and sport related activities: beach volleyball and tennis, canoe and kayak, windsurfing, teambuilding, evening animation tasks and national evening performances.

Based on the model, the following skills of students, participating in the Erasmus IP project, were developed: ability to express and accept a verbal and physical emotional support; cooperative learning, listening to others and expression of own ideas; play assigned role; pursue a common goal; be a leader, supervise, organize; actively participate, when activities are organized by others; rate the activities in consideration of their efficiency and values. Results gathered from the interview responses highlighted a specific factor in regards to development of the collaboration skill – a sense of national pride and responsibility for own country and university had influence on students' sense of responsibility.

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THE ROLE OF THE POLICE IN ENSURING PUBLIC ORDER

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Abstract
The aim of the article is to reveal the role of the police as one of the law enforcement bodies in the maintenance of the law and order in the country. There are identified the main areas of the activity of the police institution and there is detailed the function of the public order. The police are the most important public security and public order institution; therefore, they are the most visible and accessible. This institution takes the high risk in the implementation of coercive measures, and in the fight against crime. In the article there are analysed the peculiarities of the maintenance of the public order in the country. The analysis of the statistical data shows that the public order violations in Lithuania in 2010 – 2018 increased significantly from 72% to 82.6%. Using the survey there was also researched the correlation between the level of the crime investigation and residents' trust in the police. The survey results indicated that trust in the police institution increased significantly from 60% to 75% as well. Therefore, it can be stated, that there is a significant correlation between the level of the crime investigation and the trust in the police institution. Thus, as the level of crime investigation increases, public confidence in the police, as one of the law enforcement bodies, increases as well.
KEY WORDS: public institution, control institution, police officer, security, crime prevention, social security.

Introduction

In the European Union with the free movement of persons, it has arisen not only the opportunities to travel freely but also a new policy, refugee issues, xenophobia, war threats, terrorism and other serious crimes. These global issues exist not only in the EU and other countries of the world, but they do not overtake the Republic of Lithuania. The Police, one of the law enforcement institutions, are responsible for the national security of Lithuania. The current legal regulation in Lithuania is harmonised and in line with the EU legislation on the public safety issues, but there is a reasoned question whether the society is capable of coping with crime. One of the priorities of the Government of the Republic of Lithuania is to strengthen the state governance and the self-governance, to ensure the public order and to improve the functioning of the legal system. The police are one of the main institutions ensuring the public security and the public order in the country.

The aim of the research of the article:

Reveal the role of the police as the main institution ensuring public order in the country.

Tasks of the research:

1. Identify the main areas of activity of the police institution;
2. Carry out the analysis of the public order in the country.

Methods of the research: qualitative analysis of the scientific literature and documents, statistical analysis of the data.

Concept and areas of the activity of the police institution

The word "police" is derived from the Greek word *politeia*, which meant governance of a state or a city (*polis* – a city), which was primarily related to state protection and policing (Usačiovas, 2009). Pursuant to the Law on Police of the Republic of Lithuania (Law on Police of the Republic of Lithuania, TAR 2015-07-03, ed. 2015-10818, current edition from 01/07/2019) the police are perceived as a whole of police institutions and officers ensuring personal, public security and public order. A police body is understood to be a legal entity which carries out tasks entrusted to the police.

Scientists treat the policing as an institution which uses the public order, the public security, the protection of the human rights and freedom and coercive measures for crime prevention. Public safety researcher Tumalavičius (2012) indicates that "the state performs a police function in order to maintain or restore public order, and, therefore, the police are the main institution performing this function". Thus, the police function of the state and its institutions implies that in case of any threat to the protected values, the institutions which are responsible for protecting those values take active steps to prevent these threats. In the event of disruption of the public order, the state has the right to impose coercion in order to restore the violated rights. Urbonas (2011) defines that the police are usually the first one which receive the information about a violation of the rights or a crime and are required to respond and ensure adequate protection rights and legitimate interests of the victims. Vitkauskas (2011) recognises that new criminal offences arising from the globalisation process and the growing threat of the organised and international crime oblige the police to seek joint solutions in the implementation of the strategic tasks in the field of public security. According to Kalesnykas (2000), the police are the one of the specific bodies of the state, which are given special powers to ensure public security. The police are a justice administration service protecting rights of the citizens against unlawful infringements.

Schneider (2001) points out that the police are information gatherers. The main task of the police is the analysis of the risk factors and their control. The assessment of the risk and its control is a scientific task for the police. Police are a system of experts gathering and sharing security data.

Similarly, foreign scientific literature focuses on the research of the police in which there are analysed aspects of the community engagement in the prevention activities. Nikartas (2012), defining the purpose of the police, emphasises that "formal police control can enhance the ability of the population to fight against crime and disorder. To reduce the number of the crimes it can help not only daily response to resident calls, but also the proactive community policing. The police encourage residents to solve problems jointly and to ensure the public order".

However, Vaišvila (1997) points out conversely that, the police must first and foremost be in power in order to be able to implement a social service protecting the legitimate interests of the citizens. Some authors prioritise preventive work when talking about the police as a service provider.

Policing, according to Osborne & Gaebler (1992), becomes a priority because the public authority, which is based on the principles of a new public management, is defined as preventive. Dubov (1994) says that the function of the police institutions is to prevent any anti-social, immoral phenomena or acts, since a person always goes through some form of moral deformity before committing a crime.

Similarly, other scientists recognise that police are an institution providing social services and carrying out preventive work. This is first mentioned in the Police Officer European Charter (1993), which states that policing is a public service that guarantees and protects the rights and freedoms of all citizens and serves the society. Laurinavičius (2000) points out that "the modern police, as a civil service, have a duty to properly represent the interests of the state in society: they must perform active preventive work, provide citizens with social services, and involve citizens in the implementation of police programmes."

One of the first police law makers in Lithuania after the restoration of the independence, Pumputis (1997) points out that according to the modern police provision, the police is an institution providing services to the society. Preventive policing is seen as the highest form of protection of the human rights. Preventive activities carried out by the police should be focused on the fulfilment of the police tasks: protecting human rights and freedoms; ensuring public order and public security; providing emergency assistance to individuals when in some cases it is necessary; ensuring safe traffic; crime detection and investigation.

According to Tidikis (2003), the police, is a state institution, which serves the society and performs the function of social control, law protection, and public order. The police implement law enforcement by protecting people and property, transferring offenders to law enforcement institutions, detain offenders and fight against the crime, and provide specific services to the society. They carry out their operational functions in accordance with the law and the rules of conduct shaped in the society. The police are empowered to use coercion to prevent crime. This concept is also followed by Smalskys (2008), who states that the police are a rather conservative statutory organisation of the public sector, but they are related to the concept of the service to the citizens. Chatthong, Kovitaya & Kongjaroen (2014) say that the police must be focused on providing immediate assistance to people and providing services to the society.

The police can be understood as a public and control institution, a decision-making body which relies on special knowledge and practical skills and can cooperate with various communities. Fenton (1991) states that every task of the police must be based on the knowledge and practical abilities. Both the knowledge and practical skills help to perform the direct work. In the absence of any of these elements, it is impossible a good level of a practical exercise of the tasks by a police officer. Cichorz & Komar (1995) distinguish the police as a public organisation, a public control body and the policing as a profession. Cox & Fitzgerald (1992) point out that the police can cooperate with a variety of communities, including the school community and non-governmental organisations. Usačiovas (2009) distinguishes the police as the one of the largest state institutions, stating that the police are the one of the largest state institutions, which is in constant contact with the residents, working for the benefit of the whole society. This concedes it an exclusive position in the state. Due to its diverse activities in all spheres of the public life, the police occupy a central place in the apparatus of the state administration. In any country of the world, the police, along with the armed forces and secret services of the country, are a pillar of the state power, an integral part of the state mechanism. The police maintain public order, fight against crime, concern about crime prevention, and their activities are related to the compliance with the law, but at the same time the police, as a state institution, are influenced by various political forces, on which depend the levers of the state power.

Thus, based on the work of scientists, the following main areas of police activity there are identified: prevention of crime and other violations, detection and investigation of crimes, ensuring public order and public security, protection of the rights and freedoms of the citizens and social assistance to the population. It is noteworthy that the police are the most important public security and public order institution in the country, the aim of the police is to serve the people and ensure their safe life by striving to be active guarantors of the people security.

Ensuring Public Order in the Country

Public order ensures public peace, honour, dignity, and cultural communication, and protects the society from physical violence, noise, obscene words or gestures, and disruption of public gatherings (Carlan, Nored, & Downey, 2010). The legislator closely links public order with public security, and such a link is justified, because only public order guarantees the safety of individuals in public places, ensures peace of mind and prevention of terrorist acts (Gruodytė, 2007). Public security is closely linked to the area of the public order, which includes

public relations related to the liquidation of the consequences of dangerous acts on human health and life resulting from dangerous activities of the people or natural disasters and the elimination of the causes of such consequences. According to Novikovas (2008), personal and public security is understood as a state of protection of vital personal and public interests; public order should be understood as a set of well-organised public relations and communications in which there is ensured not only the peace of the society but also the security of an individual and a society.

According to Lacey, Wells & Quick, (2003), disorderly, physical and violent acts not only violate public order, but also have adverse effects on the surrounding members of the society, which can cause mental or physical harm. The main purpose of the public order is to protect the public interest, to make the society feel secure and inviolable, and to ensure the individual's right to property, and, therefore, the violation of these interests cause the criminal liability as it is protected by the measures of the criminal law (Lacey, Wells & Quick, 2003).

The concept of the public order is also used in the laws of the Republic of Lithuania. The public order is also protected by the Supreme Law of the Republic of Lithuania – the Constitution (1992). Item 1 of the Article 94 thereof states that "The Government of the Republic of Lithuania shall administer the affairs of the country, protect the inviolability of the territory of the Republic of Lithuania, and guarantee national security and public order" (The Constitution of the Republic of Lithuania, 1992).

The concept of public order is also used in other laws of the Republic of Lithuania such as the Civil Code of the Republic of Lithuania (2000), the item 1 of the Article 1.81 thereof states that a transaction contrary to public order or morality is null and void. In the Law on the Police of the Republic of Lithuania (2015), in the item 2 of the section 1 of the Article 5 thereof there is indicated that the task of the police is to ensure personal and public security and the public order. The Code of Administrative Offenses (2016), Item 1 of the Article 481 thereof defines obscene words or gestures in public places, offensive harassment of people, other intentional acts intended to violate public order and the peace of the people. The Law on Assemblies of the Republic of Lithuania (1993), the Item 5 of the Article 9 thereof states that there shall be specified in the notice: the requests to the police for the maintenance of the public order.

The criminal liability for violating the public order there is provided for in the Article 284 of the Criminal Code, which stipulates: "A person who, by defiant conduct, threats, taunting or acts of vandalism, demonstrates disrespect to the surrounding people or the environment in a public place and thereby disrupts public peace or order" (The Criminal Code, 2003). Thus, in violation of the public order, a person's beliefs and thoughts are realised in dangerous ways of committing acts – insolent behaviour, threats, malicious bullying, acts of vandalism there is demonstrated the disrespect for the surrounding people or the environment. These cases of violation of the public order are intolerable by the society, because the violation of public order causes damage not only to a member of the society but also to the society as whole, therefore, they are prohibited by the criminal law.

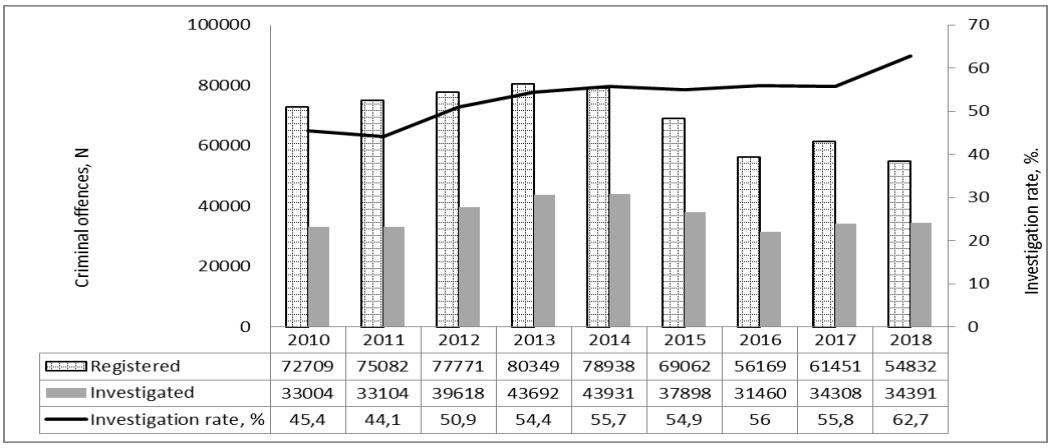
In the case law, the concept of the public order is formulated differently in different legal proceedings. In the legal proceedings practice of the civil cases, public order includes: "the fundamental principles on which the legal system of the State is based, and the principles enshrined in the Constitution of the Republic of Lithuania and other legislation. (The Decision of the Civil Cases Division of the Supreme Court of Lithuania of 20th November 2015 issued in the civil case 3K-3-546-915/2015).

In the cases of the administrative offenses, public order is described in a completely different way: "public order is a common set of rules of public behaviour based on the principles of morality and respect for one another existing in the society". Therefore, this violation can only be committed by intentional acts that directly or indirectly through additional objects (such as human honour and dignity, peace, health or property) violate the aforementioned public order" (The Court order of 14th March 2014 of the Klaipėda City District Court, issued in the administrative offences case No. A2.9.–594–889/2014).

The carried-out analysis substantiated that the state's priority is to ensure the public security and the public order. Crimes committed in the public places in the presence of other persons affect not only the victims of the crime, but also other persons. Although no physical or property damage has been caused to others, there is a real and ongoing threat of it. Thus, not only the violence, but also other insolent behaviour, threats, malicious bullying or acts of vandalism, demonstration of disrespect for the surrounding people or the environment, and disruption of the public peace or order can harm the interests of others. Thus, public order is protected not only by measures of the administrative but by criminal law as well.

Analysis of the Lithuanian situation

The police are the main institution ensuring public security and public order in the country; therefore, it is expedient to carry out analysis of criminal offences in the Republic of Lithuania.



	2010	2011	2012	2013	2014	2015	2016	2017	2018
Registered	72709	75082	77771	80349	78938	69062	56169	61451	54832
Investigated	33004	33104	39618	43692	43931	37898	31460	34308	34391
Investigation rate, %	45,4	44,1	50,9	54,4	55,7	54,9	56	55,8	62,7

Fig. 1. Criminal offences registered and investigated in Lithuania in 2010 - 2018 (source: http://policija.lrv.lt/).

According to the data of the Lithuanian police, the number of registered criminal offences was changing unevenly during the period of 2010 - 2018, but overall, there is observed a significant decrease of registered criminal offences by almost 25%. Also, in 2010-2018 the level of the successful investigation of criminal offences in Lithuania increased from 45.4 percent in 2010, up to 62.7 percent in 2018, i.e. more than 17 percentage points.

In 2010, there were investigated 45.4 percent of all registered criminal offences in Lithuania and this indicator only decreased in 2011, the situation improved in all other periods. Since 2012 the successful investigation rate of all criminal offences registered in Lithuania exceeded 50 percent, and it reached 62.7 percent in 2018.

In 2018 the police registered 10.8 percent fewer crimes than in 2017. In 2018 the successful crime investigation rate was 6.9 percent points higher than in 2017.

Evaluating these tendencies of crime offences and their investigation, it can be assumed that the police work becomes more efficient and public security in the country increases as well.

Analysing the police work in the field of public order enforcement, it is noticeable that in 2018 the largest number of criminal offences under the Article 284 of the CC was recorded in Vilnius (747), Kaunas (482), Šiauliai (315) and Klaipėda (278) counties (see Figure 2).

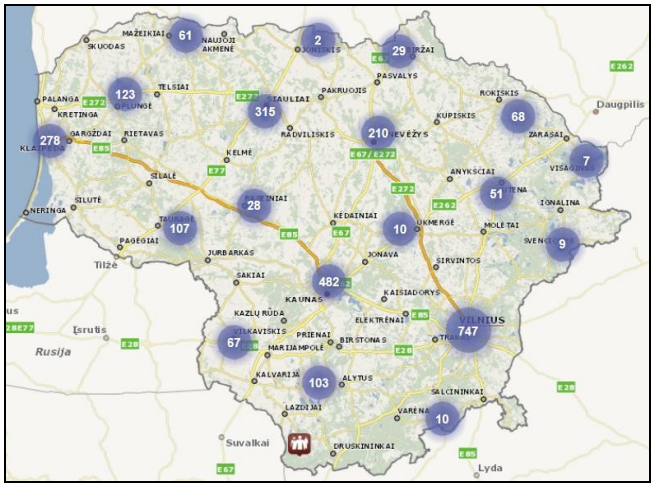
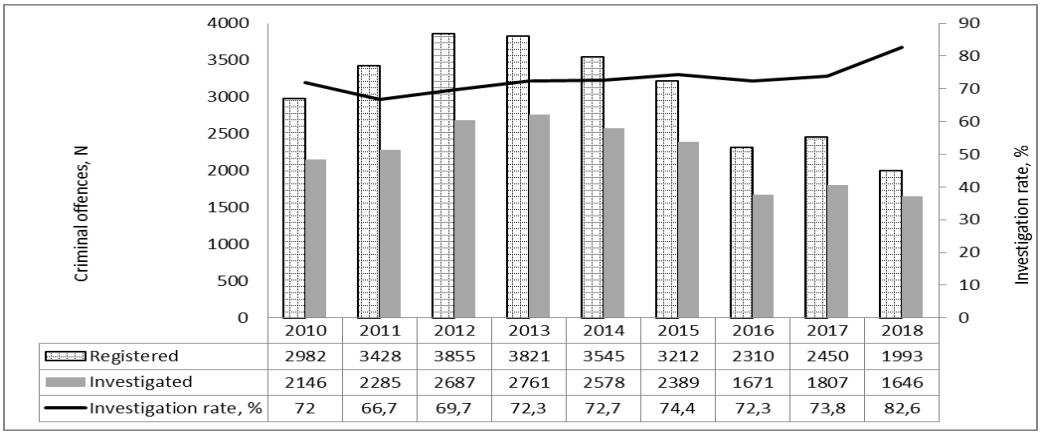


Fig. 2. Offences of the public order registered in Lithuanian counties according to the Article 284 of the CC of the Republic of Lithuania (source: The Information Technology and Communications Department under the Ministry of the Interior) in 2018.

Detailing the long-term tendencies of the public order violations under the Article 284 of the CC, it is noticeable that the situation in the Republic of Lithuania improved in 2010-2018.



	2010	2011	2012	2013	2014	2015	2016	2017	2018
Registered	2982	3428	3855	3821	3545	3212	2310	2450	1993
Investigated	2146	2285	2687	2761	2578	2389	1671	1807	1646
Investigation rate, %	72	66,7	69,7	72,3	72,7	74,4	72,3	73,8	82,6

Fig. 3. Violations of the public order according to the Article 284 of the CC of the Republic of Lithuania registered and successfully investigated in Lithuania in 2010 – 2018 (source: http://policija.lrv.lt/).

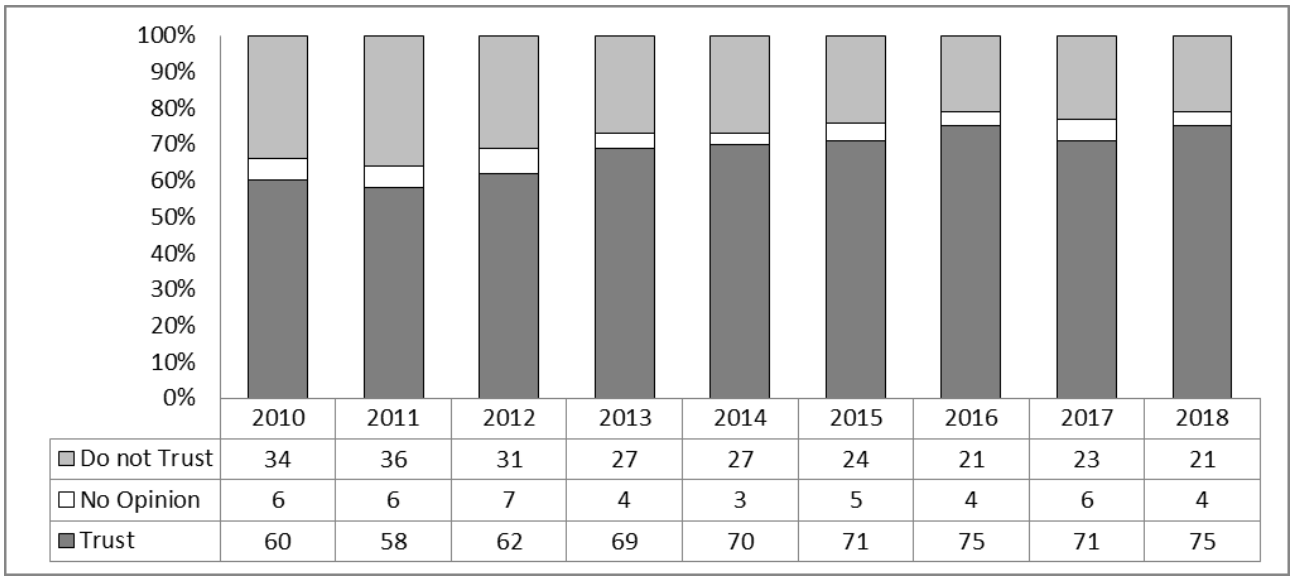
According to the data of the Lithuanian police, the tendencies of the number of the offences of the public order registered in the period of 2010 – 2018 are similar to those of all criminal offences. In general, there is observed a significant (even 33 percent) decrease in registered offences from 2010 to 2018.

According to the data of the Police Department under the Ministry of the Interior, about 70 percent offences of the public order provided for in the Article 284 of the CC of the Republic of Lithuania there are investigated every year since 2010, and even 82 percent in 2018. According to the data of the PD under the Ministry of the Interior, 72 percent all public order offences registered in Lithuania there were investigated in Lithuania in 2010. In 2011 - 2012 the successful investigation of the offences of the public order were decreased, in 2012 – 69.7%, i.e. by almost 2 percentage points, and especially in 2011 (66.7%), i.e. by almost 5 percentage points compared to 2010 (72%). From 2013 to 2017, the successful investigation of the offences of the public order reached 70 percent and varied from 72.3 percent in 2013, up to 74.4 percent in 2015 and 73.8 percent in 2017. In 2018 the successful investigation of the offences of the public order increased up to 82.6 percent, which was the highest investigation level of this criminal offence since 2010, there was recorded an increase of more than 10 percentage points.

In 2018 there was registered 18.6 percent fewer offences of the public order than in 2017. In 2018 there were 8.8 percentage points higher successful investigation of these offences than in 2017.

This analysis confirms that police work efficiency has also improved in the field of ensuring the public order.

As the police work improved, analogously increased public security and trust in the police.



	2010	2011	2012	2013	2014	2015	2016	2017	2018
Do not Trust	34	36	31	27	27	24	21	23	21
No Opinion	6	6	7	4	3	5	4	6	4
Trust	60	58	62	69	70	71	75	71	75

Fig. 4. Society trust in the police in Lithuania in 2010 – 2018 (source: http://policija.lrv.lt/).

Public surveys are conducted annually by the Ministry of the Interior. According to the data on the public opinion since 2010 60 percent of all residents of Lithuania trusted the police, while 34 percent of the Lithuanian residents indicated that they did not trust the police, 6 percent said that they did not have opinion or said it was difficult to say why.

In 2011 according to the data of the survey the society trust fell by 2 percentage points i.e. according to data of the public survey 58 percent trusted the police, respectively 36 percent stated that they did not trust the police, and 6 percent, as in 2010, said that it was difficult to say do they trust the police or not.

From 2012 to 2016 the society trust in the police steadily increased from 62 percent in 2012, up to 75 percent in 2016. Distrust in the police decreased accordingly. According to the data of the public opinion survey in 2017, the public trust in the police fell by 4 percentage points and 71 percent of all respondents to the survey stated that they trust the police, 6% of all respondents said they could not say did they trust the police or not and 23% of the respondents indicated that they did not trust the police. However, in 2018 75 percent of the residents indicated that they trust the police again. The trust in the police increased by 4 percentage points compared to 2017 and by 15 percentage points since 2010. In addition, in 2018 21 percent of all respondents of the survey said they did not trust the police, leading to a 13-percentage point drop from 2010.

In order to assess the relation between criminal offences and public trust in the police there was conducted the correlation analysis. There was determined a statistically significant correlation between the level of the successful investigation of all criminal offences and trust in the police ($p < 0.01$; $r = 0.936$). There is also a statistically significant correlation between the level of successful investigation of the offences of the public order and trust in the police ($p < 0.05$; $r = 0.728$). Thus, it can be summarised that there is a significant correlation between the rate of the successful investigation of the criminal offences and trust in the police in the country.

Conclusions

After carrying out the analysis of the main areas of the activity of the police institution it can be stated that the main areas of activity of the police are the maintenance of the public order and public security, crime prevention, provision of social services to the residents and detection and investigation of criminal offences. The police can be named as the main institution for ensuring public order and public security in the country, because the offence of the public order not only damages the victims, but also there is a real threat to the surrounding persons, it creates a feeling of public insecurity and decreases the society trust in the police institution.

Significantly increased society trust in the police institution helps the police to detect most of the criminal offences while contributing to the level of the successful investigation of the offences of the public order. Conversely, as it increases the percentage of criminal offences successfully investigated by the police, including the offences of the public order, it grows the society trust in the police institution.

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IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOALS IN THE REPUBLIC OF LATVIA

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Abstract
European Union (EU) environmental law has had a significant impact on the direction of environmental policy, both at EU level and within each Member State. This has always been the case for environmental law and policy in the EU, yet the new strategic objective of a circular economy well demonstrates the close association in environmental policy of economic, social and environmental objectives.Beginning of the planning of sustainable development started in Latvia in early 1990s after regaining independence and when it was possible to launch own independent environmental policy. Latvian Parliament (Saeima) has adopted "Development Planning System Law", which entered into force on January 1 2009 in order to promote sustainable development of the Republic of Latvia. The purpose of this mentioned law is to promote sustainable and stable development of the State, as well as the improvement of the quality of life of inhabitants, by determining the development planning system. "Latvia 2030" sustainable development strategy of Latvia was developed, starting with an analysis and survey of changes related to global processes: a) demographical changes – decrease in the number of inhabitants and their ageing; b) globalisation in economics and development of innovation economics; c) dynamics of the labour market and demand for new competences and skills; d) climate changes, threats to the biological diversity and nature as the environment of life; e) increasing demand for energy resources and energy safety; f) crisis of democratic representation institutions and emerging of new public participation forms; g) global development of the middle class and increase in relative poverty risks; and h) urbanisation, spreading of cities, regional positioning. Latvian National Development Plan 2014-2020 (NDP 2020) was adopted by announcement of Latvian Parliament (Saeima) on December 20, 2012. It definied a vision for Latvia in 2020: "The economic breakthrough - the growth of every citizen of Latvia and the country's well-being!" Author of the article agrees with Mr. J.Pleps, that "The Preamble of the Constitution entails specific State obligations which must be implemented with a specific national policy, regulatory enactments and financial support. The Preamble of the Constitution is the legal basis for State action, and it is also possible to ascertain the adequacy and appropriateness of State action in certain areas through legal proceedings. The Preamble of the Constitution has not been completed with its development and adoption, but requires certain state action in practical policy. The Preamble of the Constitution is not a political text but requires its implementation and implementation in the legal reality". As a result of this research the author has made the main conclusion: in order to plan National Development Plan 2021-2027 (NDP 2017) the main principles from Preamble of the Satversme (Constitution) of the Republic of Latvia must be taken as a basis for sustainable development plan: each individual takes care of oneself, one's relatives and the common good of society by acting responsibly toward other people, future generations, the environment and nature.
KEY WORDS: Preamble of the Satversme (Constitution); sustainable development; National Development Plan.

Introduction

The goal of the paper is to research legal aspects of the planning National Development Plan 2021-2027 in the Republic of Latvia. The analysed problem is current discussions during elaboration of the new National Development Plan 2021-2027. Research object is National Development Plan. There are not so many academic legal publications in Latvia concerning sustainable development and planning national development plans. The research deployed descriptive, analytical and deductive-inductive research methods. Using these methods, legal acts, policy planning documents and different reports were reviewed and analysed, and subsequently conclusions and recommendations were made. This is one the first article concerning legal aspects on the creating development planning in the Republic of Latvia; therefore this paper is with a significant novelty.

Sustainability is a relationship between human economic systems and larger dynamic, but normally slower-changing ecological systems, in which (1) human life can continue indefinitely, (2) human individuals can flourish, and (3) human cultures can develop; but in which effects of human activities remain within bounds, so as not to destroy the diversity, complexity and function of the ecological life support system (Faucheux). The key principle of sustainable development underlying all others is the integration of environmental, social, and economic concerns into all aspects of decision making. All other principles in the SD framework have integrated decision making at their core (Dernbach, 1998).

European Union (EU) environmental law has had a significant impact on the direction of environmental policy, both at EU level and within each Member State. The principles upon which EU environmental law is founded influence the development of policy on many levels, internationally and locally. This has always been the case for environmental law and policy in the EU, yet the new strategic objective of a circular economy well demonstrates the close association in environmental policy of economic, social and environmental objectives. The focus is on sources of future economic growth where more products are made out of secondary raw materials and where waste is considered a valuable resource (Hoorspool, Humphrey and Wells-Greco: 2016). Therefore planning of sustainable development plays a very important role for any of EU Member States. Other principles of international co-operation in the field of environmental protection are beginning to emerge and inform the development of legal norms. Principle 15 of the Rio Declaration states that "in order to protect the

environment, the precautionary approach shall be widely applied by states according to their capabilities (Shaw M.N., 2003). In addition, the concept of sustainable development has been evolving in a way that circumscribes the competence of states to direct their own development (Boyle A. and Freestone D., 1999). The Climate Change Convention declares in Article 3(4) that "the parties have a right to, and should, promote sustainable development (UN Framework Convention, 1992). The article 3(1) of the same convention recognizes the common but differentiated responsibilities and respective capabilities of states in implementing the obligation to protect and preserve the climate system for the benefit of present and future generations (Redgwell C., 2006).

Following the 1983 World Commission on Environment and Development (WCED), chaired by Gro Harlem Brundtland, a 1987 report named 'Our Common Future' was published, defining Sustainable Development as: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The report highlighted three fundamental components to sustainable development: environmental protection, economic growth and social equity (Report of the World Commission, 1987). Sustainable development does not mean that current generations should ensure the well-being of future generations - each generation must take care of their own well-being. But our generation must not leave the next generation in a worse starting position, damaging the environment and making it pay our debts or correcting the mistakes made (Atstāja D., Dimante D., Brīvers I., etc., 2011).

At the modern world protection of environment relates also to human rights. So, reference to human rights was in the Rio Declaration on Environment and Development adopted at the UN Conference on Environment and Development in 1992. Principle 1 declares thet human beings are "at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature" (Rio Declaration, 1992). Principle 2 of Rio Declaration underlined that states have "the sovereign right to exploit their own resources pursuant to their own environmental and development policies", while Principle 3 stated that "the right to development must be fulfilled so as to equitable meet developmental and environmental needs of present and future generations" (Rio Declaration, 1992). The correct balance between development and environmental protection is now one of the main challenges facing the international community and reflects the competing interests posed by the principle of state sovereignity on the one hand and the need for international co-operation on the othger hand (Shaw, 2013, p.759).

In 2001 the EU developed its Sustainable Development Strategy, and since then sustainability has grown in stature as an overarching principle of European governance. Sustainable development is not only mentioned in the Preamble to the Treaty on the Functioning of the European Union (TFEU) as an aspiration (Treaty on he Functioning European Union, 2012), but is repeatedly mentioned throughout the Treaty on European Union (TEU) - (Articles 3(3), 3(5), 21(2)(d) and (f) etc. For example, Article 3 (3) of TEU prescribes that "The Union shall establish an internal market. It shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment" (Treaty on European Union, 2012). Article 11of TFEU states that "Environmental protection requirements must be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development" **(**Treaty on the Functioning of the European Union, 2012). Additionally, several of those provisions refer to EU relations with the international community, and seek to integrate environmental protection within EU Fforeign policy.

Starting point of the sustainable development

Beginning of the planning of sustainable development started in Latvia in early 1990s after regaining independence and when it was possible to launch own independent environmental policy. The Latvian planning system is decentralized and follows the principal of subsidiarity. Preamble of the Satversme (Constitution) of the Republic of Latvia prescribes that Latvia protects its national interests and promotes sustainable and democratic development of a united Europe and the world. Article 115 of the Satversme (Constitution) underlines that "The State shall protect the right of everyone to live in a benevolent environment by providing information about environmental conditions and by promoting the preservation and improvement of the environment" (Latvijas Republikas Satversme: 1922). Conceptual policy document "Latvia Growths Model: Putting People First" was approved by Latvian Parliament (Saeima) already in 2005 just one year after joinning EU. It definies a human oriented growth model for the improvement of wellbeing, security and sustainability of everyone in Latvia (Latvijas izaugsmes modelis: 2005).

The integration of Latvia to the EU has positively affected the economic development – since 2004 the economic growth of Latvia had been the most rapid in the EU, however, it was unsustainable. Along with the rapid growth, the external imbalance (high current account deficit) and internal imbalance (high inflation) of the economy of Latvia developed and deepened.

Latvian Parliament (Saeima) has adopted "Development Planning System Law", which entered into force on January 1 2009 in order to promote sustainable development of the Republic of Latvia. The purpose of this mentioned law is to promote sustainable and stable development of the State, as well as the improvement of the quality of life of inhabitants, by determining the development planning system (Attīstības plānošanas sistēmas likums:2008).) The following guiding principles shall be taken into account in the development planning:

1) the principle of sustainable development - the present and next generations shall be ensured with

qualitative environment and balanced economic development, natural, human and material resources shall be used rationally, the natural and cultural heritage shall be conserved and developed;

2) the principle of interest co-ordination - different interests shall be co-ordinated and the succession of development planning documents shall be followed, ensuring that they are not duplicated;

3) the participation principle - all interested persons shall have a possibility to participate in the drawing up of the development planning document;

4) the co-operation principle - State and local government institutions shall co-operate, including in fulfilling the tasks proposed in the development planning documents and in informing each other regarding the achievement of the objectives set and the results intended;

5) the principle of financial possibilities - the present resources and resources foreseen in the medium-term shall be evaluated and the most effective solutions shall be offered in respect of the costs necessary for the achievement of the objectives set;

6) the principle of openness - the process of development planning shall be open and the society shall be informed regarding the development planning and support measures and results thereof, following the restrictions of availability of information specified in the Law;

7) the principle of monitoring and assessment - an impact assessment in the development planning and implementation of the development planning documents at all administration levels, as well as the monitoring and provision of reports regarding the achieved results shall be ensured;

8) the principle of subsidiarity - the policy shall be implemented by the State or local government institution which is located as close to the recipient of the service as possible and the relevant measures shall be implemented effectively at the lowest possible level of administration;

9) the principle of coherence in development planning and drawing up of regulatory enactments - the policy shall be planned before the issuance of the regulatory enactment and in drawing up of regulatory enactments the development planning documents shall be taken into account; and

10) the principle of balanced development - the policy shall be planned by balancing of the development levels and paces of separate State territories etc. (Attīstības plānošanas sistēmas likums:2008).

The sustainable development strategy of Latvia "Latvija 2030" was developed by a group of experts led by associate professor Roberts Ķīlis, in accordance with the task of the Ministry of Regional Development and Local Government. "Latvia 2030" sustainable development strategy of Latvia was developed, starting with an analysis and survey of changes related to global processes: a) demographical changes – decrease in the number of inhabitants and their ageing; b) globalisation in economics and development of innovation economics; c) dynamics of the labour market and demand for new competences and skills; d) climate changes, threats to the biological diversity and nature as the environment of life; e) increasing demand for energy resources and energy safety; f) crisis of democratic representation institutions and emerging of new public participation forms; g) global development of the middle class and increase in relative poverty risks; and h) urbanisation, spreading of cities, regional positioning (Latvija 2030, 2009).

After European Commission adopted Europe 2020 strategy (Europe 2020, 2010), National Reform Programmes (NRP) for the Implementation of the EU 2020 Strategy was elaborated by the Ministry of Economics of the Republic of Latvia (National Reform Programmes, 2011). The NRP of Latvia consists of 3 chapters: first chapter desscribes the medium-term macroeconomic scenario; next one deals with the main macro-structural bottlenecks of Latvia and third chapter defines the national targets of Latvia for 2020.

Latvian National Development Plan 2014-2020 (NDP 2020) was adopted by announcement of Latvian Parliament (Saeima) on December 20, 2012 (Latvijas Nacionālais attīstības plāns 2014.-2020.gadam, 2013). It definied a vision for Latvia in 2020: "The economic breakthrough - the growth of every citizen of Latvia and the country's well-being!" "NDP 2020" was the hierarchically superior medium-term planning document at national level; it was closely linked to mentioned strategy Latvia 2030 and NRP. It was predicted that Latvia will be our only home as a green and cohesive, creative and easy to reach place in the world area, for which sustainable development we all and each of us are responsible in front of future generations.

New plan for period 2021-2027

In NDP 2020 106 indicators were mentioned, of which 45 are currently met or overflowing, 47 close to execution, but 14 are not met (Berzins G., 2018). Linking budget and planning processes is crucial to achieving sustainable development goals. The NDP defined investments needed to ensure achievement of the targets in twelve areas. The funding needs are broken down according to sources, including the national budget, EU funds, and other investment from abroad, co-financing by local governments and the private sector. The most important indicators which will not be reached by 2020 are the following:

Table No.1. Not reached Indicators

Indicator	Goal in 2020
Manufacturing industry from GDP	20%
Investments in research and development from GDP	1,5%
Export of goods and services from GDP	70%

(Source: made by author)

Manufacturing industry plays important for the economical development of the country; unfortunately proportion of it was only 12,5% in 2016 . It's sad to understand that state invest not enought in research and development; state spend only 6,2% in 2016.

Reducing inequality is one of the most important macro-goals of Latvia's current NDP2000. When designing policies to reduce the share of people at risk of poverty, particular attention was paid to high risk groups. In recent years, Latvia has targeted and made significant improvements in reducing poverty of families with three or more children, as well as employed persons. However, target groups are changing. At present, the poverty risk is particularly acute for the elderly (especially those living alone) and for single-parent families. Inequality of income and opportunity has a pronounced territorial dimension. Now, economic development is beginning to concentrate around the capital, regional development centres and their adjacent areas. This is due, in part, to consolidation of farm holdings and ensuing migration of the rural population to the capital and/or out of the country. Because distances between communities in Latvia are not large, strong development centres can evolve by reorganizing school and road networks, health care and other infrastructure and resources. Then, though increased mobility, rural populations would have access to education opportunities, quality jobs, services, etc. (Latvia. Implementation of the Sustainable Development Goals, 2018)

Last year Latvia presented its report on sustainable development to the United Nations. It was underlined that biggest advantages are Latvia's stable economic situation (low public debt, almost balanced budget, good balance of payments ratio), as well as Latvia's cultural, natural and digital capital (Latvia. Implementation of the Sustainable Development Goals, 2018). Report showed that all 17 SDG's are being integrated into the Latvian planning system. By the middle of 2019, a series of midterm impact assessments must be carried out on several important Latvian sectoral policies, including public health, inclusive education, inclusive employment and other areas. Of course, Latvia still have challenges in the economy, for example, necessity to increase productivity of the economy, including through the efficient and productive use of resources; to improve the availability of labour by providing highquality adult education, promoting return migration and access to expertise from abroad, ensuring access to housing, etc.
Just now Latvia starts to elaborate the new Latvian National Development Plan 2021-2027 (NDP 2027). Already Information report on the proposal on the objectives, priorities and action lines of the National Development Plan 2021-2027, as well as its future development and public consultation process was presented to the Cabinet of Ministers of the Republic of Latvia (Informatīvais ziņojums, 2018). So we have a chance to prepare a better plan in comparision with NDP 2020. Considering that NDP 2027 is a national medium-term development plan defining its priorities, action lines and planned investment projects/policy measures, it is essential to take into account the processes and timelines that will affect the majority of the funds available to finance national development needs, which will be determined by the EU multiannual budget for the period 2021-2027.

The role of Preamble of the Satversme (Constitution)

Informative report is done in accordance with Article 11 (3) of the Development Planning System Law. In the future the National Development Plan shall determine the State development objectives, priorities (including priorities for the development of territories) and the results to be achieved (also at the macro level), as well as the directions of action in each priority, the policy results to be achieved and the responsible institutions. According to the author the new NDP 2027 must be elaborated acordingly to the principles from Preamble of the Satversme (Constitution) of the Republic of Latvia. I fully agree with my colleague from University of Latvia, Mr. J.Pleps, that "The Preamble of the Constitution entails specific State obligations which must be implemented with a specific national policy, regulatory enactments and financial support. The Preamble of the Constitution is the legal basis for State action, and it is also possible to ascertain the adequacy and appropriateness of State action in certain areas through legal proceedings. The Preamble of the Constitution has not been completed with its development and adoption, but requires certain state action in practical policy. The Preamble of the Constitution is not a political text but requires its implementation and implementation in the legal reality" (Pleps J., 2014).

Preamble of the Satversme underlines that "Latvia as democratic, socially responsible and national state is based on the rule of law and on respect for human dignity and freedom…. freedom, equality, solidarity, justice, honesty, work ethic and family are the foundations of a cohesive society" (Latvijas Republikas Satversme, 1922). Probably, socially responsible state, equality, solidarity, honesty etc. must became the main keywords for NDP 2027.

It is declared that in planning the further development of Latvia's state and society within NDP 2027, the primary question is the strategic objective set up during the relevant time period, which must be adequate for the resources available to us. The definition of the target to be achieved in the future must be concentrated and comprehensible to everyone, motivate the public for active actions to achieve the objective and, at the same time, include our national interests and comply with the basic assumptions defined in the first section of this report.

The author agrees with G.Berzins that one the most significant shortcomings in the proposed new planning period 2020-2027 is that there are no clear answers to the question: what is the goal of Latvia in the next programming period? (Berzins G., 2018) Estonians, for example, have a clear story about "Estonia as a digital country". Just now the main aim is sustainable growth and quality of life for all citizens. The aim, expressed in the form of a story, must create hope and conviction for long-term stability, reducing inequality and justice; just now it is too general.

NDP2027's priorities stem from the conclusions of the long-term conceptual document "Latvia Growths Model: Putting People First" (Latvijas izaugsmes modelis, 2015) the long-term development priorities defined in Latvia's

sustainable development strategy, the mid-term assessment of NDP 2020 and the Latvian report on the implementation of the UN objectives. To increase birth rate is among the top priorities in the NDP 2027. This is influenced by a number of social and economic factors, including good health, sufficient material welfare, social security, support systems for child needs, etcFrom the perspective of the country, birth rates are encouraged to strengthen the awareness of family values in the country and ensure the return of the people of Latvia under the conditions of depopulation. The indicator for birth rate is the average number of children who could be born to a single woman during her life. This should be at least 2.1 to ensure the reproduction of the nation, i.e. the number of births would not be less than the number of dead

Conclusions

Sustainability is a relationship between human economic systems and larger dynamic, but normally slower-changing ecological systems, in which (1) human life can continue indefinitely, (2) human individuals can flourish, and (3) human cultures can develop; but in which effects of human activities remain within bounds, so as not to destroy the diversity, complexity and function of the ecological life support system.

European Union (EU) environmental law has had a significant impact on the direction of environmental policy, both at EU level and within each Member State. The principles upon which EU environmental law is founded influence the development of policy on many levels, internationally and locally.

Principle 15 of the Rio Declaration states that "in order to protect the environment, the precautionary approach shall be widely applied by states according to their capabilities

In general the Republic of Latvia has successfully implemented the Sustainable Development Goals in its Constitution, laws and policy planning documents. Sustainable development was a very important topic also in National Develoment plan 2014-2010; it must be taken into account also in the next National Development plan 2021-2017.

As a result of this research the author has made the main conclusion: in order to plan National Development Plan 2021-2027 (NDP 2017) the main principles from Preamble of the Satversme (Constitution) of the Republic of Latvia must be taken as a basis for sustainable development plan: each individual takes care of oneself, one's relatives and the common good of society by acting responsibly toward other people, future generations, the environment and nature.

By preparing new NDP 2027 we have to find clear answer to the question: what is the goal of Latvia in the next development planning period? Answer must be short, clear and inspiring.

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LIABILITY AND COMPENSATION FOR ACCIDENTS AT WORK

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Abstract
The number of accidents at work per employee, employed by the employment contract, is decreasing while the number of work accidents for police officers is increasing, but the downward trend in compensation reimbursement shows that officers' accidents are not linked to the increased risk or danger to their health or life. This article analyzes the peculiarities of the legal regulation of accidents at work for civil servants and employees as well as the procedure for determining the granting of allowances. Qualitative document and data analysis as well as comparative document analysis methods help to investigate the main aspects of legal regulation and the procedure for determining allowances.
KEY WORDS: accidents, at work, on duty, liability, police officer, employees, occupational diseases, social security.

Introduction

The health and life of officials and employees is compulsorily insured against accidents at work (on service) approved by the Government of the Republic of Lithuania in accordance with the State Insurance of Persons and Compensation for Injury or Death at the workplace or on service.The Law on Social Security for Accidents at Work and Occupational Diseases provides that an accident at work (service) is an accident, including a traffic accident, while performing work functions or while being at work (during extra breaks, special or lunch breaks while the employee is at work location, company premises, or on its territory), which causes an employee's health damage and disability for at least one day or causes the employee to die, has been properly investigated and recognized as an accident at work (2016, No. 18827). An accident at work is also defined as an incident related to the performance of the official's duties, where the official is exposed to a risk factor (chemical, physical, biological, physical or ergonomic) or to several factors resulting in the death or disruption of the official.

In each case, the damage in a particular situation must be precisely calculated. Damages, as an expression of monetary damage, must be compensated to the extent that the injured party or civil servant has lost oneself as a result of the wrongful act of the person who caused the damage, since such a reparation serves the function of compensation. However, in determining the amount of non-pecuniary damage to be compensated, the courts also considered the actions of the victim and the perpetrator, who did not have full legal capacity, the circumstances of the injury (injury obtained not during the conflict but while communicating during the break between classes among minors), minors` communication and interpersonal relationship after obtained injury, their social connections, as well as the amount of non-pecuniary damage claimed by the plaintiffs.

Purpose of the article research:
To perform a comparative analysis of employees working under an employment contract and civil servants in regards to accident settlement procedure.

Research tasks:
1. To identify key differences in the legal framework for accidents at work and on service;
2. To analyze the criteria for determining the amount of benefits at work and on service;
3. To carry out the analysis of the employees and the maintenance of public order in the country.

Research methods: qualitative analysis of scientific literature and documents, statistical data analysis, comparative document analysis method.

The concept of accident at work (service) and legal regulation

Scientists define an accident as "a painful and loss-making event with high economic costs and traumatic psychological experiences" (Tartilaitė, 2010). Tartilas (2008) states that "an accident at work is recognized as an insured event". Thus, the recognition of an accident at work as an insured event is a necessary and essential condition for the payment of social security benefits intended to compensate the insured persons for the loss of income resulting from an accident at work and their family members in the event of death. The concept of accident is highlighted by researchers Moore, Wiscusi (2014) as an incident at work that is subject to self-examination, identifying the causes of the accident and paying compensation to the employee.

Article 2 of the Lithuanian Law on Safety and Health at Work defines work accident as an „accident at work, including a traffic accident, which happens while performing work functions or staying at the workplace, which results in injury and employee loses work capacity for at least one day or dies, investigated and recognized as an accident at work", presents a concept similar to the Law on Social Insurance for Accidents at Work and Occupational Diseases (2016, No. 18827). The glossary of

social security terms provides a clearer definition of an accident at work: "acute damage to the health of a worker through short-term hazardous, noxious or negligent exposure to the work environment resulting in a worker being unable to work for one day or even dying". Thus, the definition of an accident is not the same in all legal acts, which may be influenced by ever-changing laws and the reformulation of the concept of an accident.

A number of legal acts regulate the compensation of officials and employees in the event of an accident at work (i.e. the Law on Social Insurance for Accidents at Work and Occupational Diseases (2016, No. 18827), the Temporary Law on Compensation for Accidents at Work or No. 20026), Labor Code (2016, No. 23709), Civil Code (2000, No. 74-2262), Accident Benefits for Police Officers are governed by the Internal Service Statute (2018, No. 12049), Police Act (2015, No. . 2015-10818).

The Labor Code (2016) provides that the procedure for compensation for incapacity for work resulting from an accident at work and the resulting loss of earnings shall be established by social security and other laws. Persons working under employment contracts are compulsorily insured for accidents at work. Such insurance compensates, in the cases provided by law, for loss of income resulting from insured events, such as accidents at work, commuting to work or occupational diseases.

The Statute of the Internal Service (2018) provided compensations for police officers in the event of their death or disruption, as well as insurance benefits under state health and life insurance against accidents during their official duties. Police officers are civil servants and have higher requirements for becoming statutory officers, thus after the Police Act came into force, additional allowances have been introduced for officers in the event of an accident at work.

The Statute also foresees compensations for officials in the event of accidents at work, such as lump-sum compensation for incapacity for work or periodic compensation for incapacity for work of up to 12 months provided for in the Law on Social Insurance against Accidents at Work and Occupational Diseases) and the extent of the health disorder: (1) for the loss of 75 to 100 percent of the worker's capacity for work due to injury or self-harm - 60 months of one`s average salary; 2) for the loss of 60-70 per cent of the capacity for work due to an injury or self-harm - 48 months of his or her average salary; 3) for the loss of 45-55 per cent of the capacity for work due to an injury or self-harm - the average monthly salary for 36 months; 4) up to 40 percent of his or her average salary due to an injury or self-harm resulting in an incapacity of up to 40 per cent of his or her incapacity for work; (5) 24 months of one`s average salary in the case of serious illness; (6) 18 months of his or her average salary in the case of minor health impairment; 7) in the case of a mild health disorder, from 1 to 12 months of his average salary.

It is noteworthy that the Extended Chamber of Judges of the Supreme Court of Lithuania as of November 17, 2008 in civil case no. 3K-7-496 / 2008 held that the system of compensating State employees who suffered as a result of their service by means of state funds is to be considered as a form of state social insurance, because the police institutions in some sense fulfill the function of social insurance institutions.

The amount of the allowance for employees under the employment contract is determined by Art. VIII-1509 Law Amending Articles 3, 15, 19, 26 and 27 (2018), which foresees that „in the event of the death of the insured person as a result of an accident at work, on the way to or back from work or an acute occupational disease, recognized as an insured event, the family of the deceased receives a lump sum insurance allowance equal to 46.55 times of the national average wage (D) for the month when death occured due to an accident at work, on the way to or back from work or an acute occupational disease. This benefit is paid in equal amounts to each member of the family of the deceased“. It should be noted that this lump sum is used to compensate for loss of income incurred by the family members due to an accident. It should also be noted that this benefit is only available to the members of the family of the deceased worker if the court properly investigates and evaluates the case and determines the extent of the damage suffered by the members of the family entitled to the indemnity.

If the employee, working under employment contract, loses up to 20 per cent of one`s incapacity for work as a result of an accident, one receives a lump-sum compensation equal to 10 per cent of his 24-month compensatory wage for the purpose of calculating lump-sum compensation. If the injured party loses more than 20 per cent but less than 30 per cent of his or her incapacity for work due to the insured event, one receives a one-off compensation for incapacity for work equal to 20 per cent of his or her 24-month compensatory wage. If it is determined that the victim has lost 30 to 45 percent of the capacity to work as a result of the insured event, one is paid a periodic compensation for the loss of capacity for work. A person who has lost 45 or more per cent of his or her capacity for work due to an insured event shall receive a periodic compensation for the loss of capacity for work. The comparison of compensations for workers employed by the employment contract and by the Statute, indicates, that civil servants can expect better compensations for injuries caused by accsidents at work.

In the event of death of an insured person as a result of an accident at work, on the way to or back from work or an acute occupational disease, recognized as an insured event, the deceased's family is paid a lump sum equal to 60 national average monthly wages, valid for the last quarter till the death due to the accident at work, on the way to or back from work or an acute occupational disease. This allowance is paid in equal amounts to each member of the deceased's family (5 July 2016, No 18827, Articles 11 to 27).

Compared to police officers, in the event of death, members of the family of an official who died in the course of or in connection with the performance of his official duties or who has been killed during the performance of his duties or due to the official`s status, the family receives a lump sum of 93.1 months of his average salary within one year of the official's death.

Criteria for Assessing Allowance and Responsibility for Occupational Safety Violations

In the classification traits of severe injuries, approved by order of the Minister of Health as of April 10, 2014 (2014, No. 4448), the occupational accident shall be investigated and the health damage caused to the employee shall be assessed. Serious health damage is determined by the following two signs: threat to life and consequences. Serious health injuries are those life-threatening injuries that can endanger the life of the victim, including death without medical assistance. (i.e. fractures of skull and base bones; open brain and spinal injuries; brain injury; diffuse brain axon injury); acute bleeding above, under the solid cerebral membrane, and / or in the brain; multiple fractures of the facial bone (except for nasal bones); immersion or dislocation of the cervical vertebra, accompanied by damage to the spinal cord or nerve root and other. It should be noted that the list of such injuries is not exhaustive and other serious injuries may also be classified as serious injuries.

In order to compensate for the damage caused to health, in each case the health damage caused to both employees and police officers must be assessed in monetary terms and compensated. Thus, compensation for damage caused to the employee's health is calculated according to certain criteria and it is assessed what allowance, compensation is entitled to the employee (official).

An analysis of the Lithuanian case law reveals the frequency of prosecution of a company manager for violations of safety or health at work. According to the data of State Labour Inspectorate, in 2014, in major Lithuanian cities, 152 corporate executives were fined for the administrative offense referred to in this article (2015). It is noteworthy that violations of occupational safety and health requirements are widely analyzed and recognized as criminal offenses in the legal system of third countries as well, for instance in Ukraine criminal liability is applied for violation of occupational safety and health requirements (SCL, case no. 3K-385/2013). From the above mentioned statistics, which show a high number of law violations of the company managers, it can be concluded that the developed substantive norm of applying administrative liability for work safety violations at the workplace is sufficiently effective, since managers of the enterprise are often responsible for law violations in the field of occupational safety and health. In the event of an accident at work, the fault of the employer is presumed, but it is not sufficient to establish the fault of the employer, it is also necessary to lay down other general conditions of civil liability: unlawful acts (omissions), harm and causation between the resulting damage and unlawful acts. In the Supreme Court of Lithuania (SCL) it is noted the necessity to prove what unlawful acts or omissions on the part of the employer have occurred and how they have caused or at least had a minimal effect on the occurrence of the damage. If these conditions are imposed, the employer is obliged to compensate only the part of the damage that is not covered by the Law on Social Insurance for Accidents at Work and Occupational Diseases (SCL, case no. 3K-3-476/2008).

In a ruling of the Supreme Court of Lithuania, after reviewing a cassation appeal against a ruling which ordered the State Patient Fund to pay LTL 22,705 from the convict and the victim's employer for reimbursement of the victim's treatment costs, in the case it was stated that the social insurance institutions, that paid the insurance allowances, do not acquire the right of recourse against the person who caused the damage when the person who paid the insurance premiums was paid by the person who caused the damage (SCL, case no. 3K-3-476/2008). In a cassation court case, where the employer breached his duty and failed to provide safe working conditions, all of which resulted in an accident. The applicant stated that his average long-distance driver's salary was EUR 1300 per month, so that property damage as loss of income amounts to EUR 26 000 per 20 months. He therefore requests that the defendant was ordered to pay EUR 26000 in respect of material damage. At the same time,accosding to the District Court of Klaipeda City, the plaintiff sought compensation of EUR 15000 for non-pecuniary damage, stating that the injury suffered had a lasting effect, namely till the current day he has been incapacitated for work, his movement has been impaired, due to constant medical procedures he has to experience pain resulting in stress, mental shocks and emotional depression (DCK, case no. E2A-189-260/2017).

An analysis of Lithuanian case-law has shown that in cases involving accidents at work associated with health impairment, the courts do not have unanimous opinion due to determination of the amount of the damage and the determination of compensation, which remains within the discretion of the court. In the absence of a set of clear rules or a single legal instrument for determining the amount of non-pecuniary damage in the specific circumstances surrounding the caused damage, it is advisable to establish a standardized description of the factors that determine non-pecuniary damage. This would be a contribution to the unification of the law, as well as to the perception by the subjects of what expectations can be justified and expressed in monetary terms when applying to national judicial authorities.

Thus, legal labour relations, in regards to indemnification of damage, are significant for both the occurrence and the indemnity of the employee's health. Pursuant to Article 160 of the Labor Code, a worker suffers damage to health by acting in the employer's best interests and by complying with instructions to which the employer is the subject. The transfer of an employer 's duties or competences does not eliminate the employer' s obligation to compensate for the employee 's health damage caused by the employee' s crippling or other injury to his health, his death or occupational disease.

An investigation of the accident involving a police officer is conducted by assessing: (1) whether the health of the police officer was impaired during the performance of his or her duties involving danger or greater risk for life or health of the officer; (2) whether

the performance of one`s duties was accompanied by an increased risk or danger to the life or health of the officer, it has also been repeatedly stated that interpretation of this circumstance should determine the extent to which the situation was characterized by increased risk or danger, this is to determine whether the above factors, by the nature of the official's duties (in the event of personal injury or other medical conditions), are to be regarded as normal factors contributing to the performance of those duties (SACL, case no. A-501-552/2017). SACL as of 1st of December 2014 in administrative order case no. A438-1346/2014 has noted that "the performance of official duties which involve increased danger or increased risk to the official's life or health includes situations in which the very nature of the duties performed involves greater risks and hazards to human health and life; for example, detention, prosecution of criminals, suppression of various conflict situations, etc.; these are usually exceptional and short-term situations involving the official in the performance of one`s duties or in the performance of specific tasks; these situations arise where there is an increased risk or danger to the life or health of the official; and conversely, until such circumstances occur, the official carries out his functions, despite of their nature".

It should be noted that under the Temporary Law on Compensation for Accidents at Work or Occupational Diseases of the Republic of Lithuania (Article 11), damage is not compensated in all cases if: 1) the accident is caused by alcohol, narcotic or toxic effects not related to the technological process; 2) it arose out of an intentional criminal offense by the victim; 3) it arose in the course of an accidental work of the victim without the permission (consent) of the employer or the farmer or in the course of work outside the employer, for the benefit of the farmer; 4) the victim knowingly sought to have the accident.

Analysis of Lithuanian situation

In the case of an accident at work, allowances are paid to both employees and police officers. The payment of a social security benefit is subject to the conditions laid down in the Law on Social Insurance against Accidents at Work and Occupational Diseases under which an accident at work is recognized as an insured event.

According to the Statistics of the State Social Insurance Fund Board for 2019 (Fig. 1), in Lithuania over 2015-2018 years period the number of accidents at work has been declining. In 2015 there were identified 22 death cases, in 2018 - 20 cases. The number of fatal accidents most decreased in manufacturing enterprises and slightly in construction, agricultural and forestry enterprises.

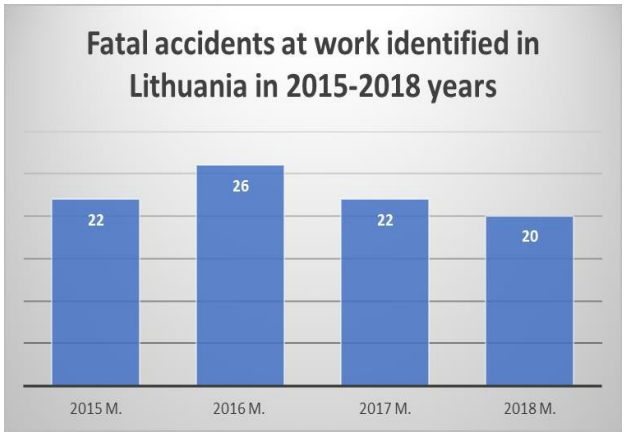

Fig. 1. Fatal accidents at work identified in Lithuania in 2015-2018 years (source:https://www.vdi.lt/Forms/Tema.aspx?Tema_ID=61)

The most common priority areas for occupational safety and health are falls from a height. Researches on accidents at work shows that about a quarter of workers were killed in the workplace and the same amount of employees was severely injured by falling from high places.

As of 2016 the number of serious accidents at work also decreased. The biggest amount of accidents occurs in the construction sector, as well as during unloading and loading operations. According to the presented statistics (Fig. 2) in 2016 the number of serious accidents was 71, in 2018 - 52, which is a 13 per cent downward trend.

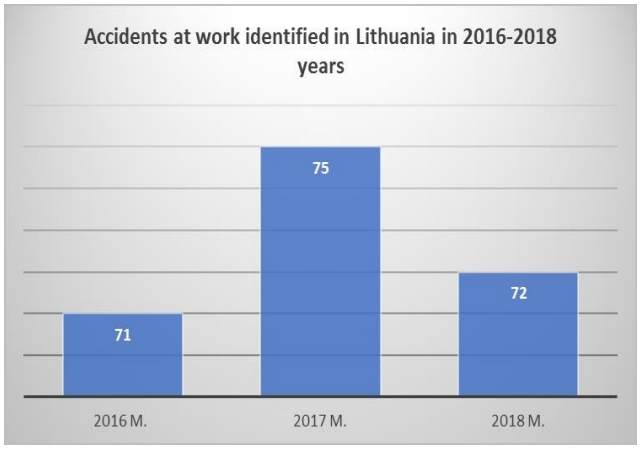

Fig. 2. Accidents at work identified in Lithuania in 2016-2018 years

source: https://www.vdi.lt/Forms/Tema.aspx?Tema_ID=7

According to the Police Department, police officers also receive compensation as a part of their social guarantees in the event of an accident at work. Compared to workers employed by the employment contract, the number of accidents involving police officers increased, but compensation payments decreased (Figure 3). In 2016 there were identified 112 civil service accidents, in 2017- 138, in 2018 -141 accidents. So,the number of accidents increased by 8%.

Fig. 3. Accidents at work identified among police officers in Lithuania in 2016-2018 years

An official who is injured, self-harmed or impaired while performing one's duties, in the performance of these duties was associated with a greater risk or danger to life or health of the official, or whose injury, self-harm or performance of official duties was associated with a greater risk or danger to life or health of the official, or whose health was impaired by the performance of duties or official's status, receives a compensation, however in those cases, when it was determined that the official was injured while being on service but one's health was impaired while performing official duties with a not higher risk or danger to the official's life or health, or was not accompanied by an increased risk or danger to the official's life or health, the compensation is not paid (Fig. 4)

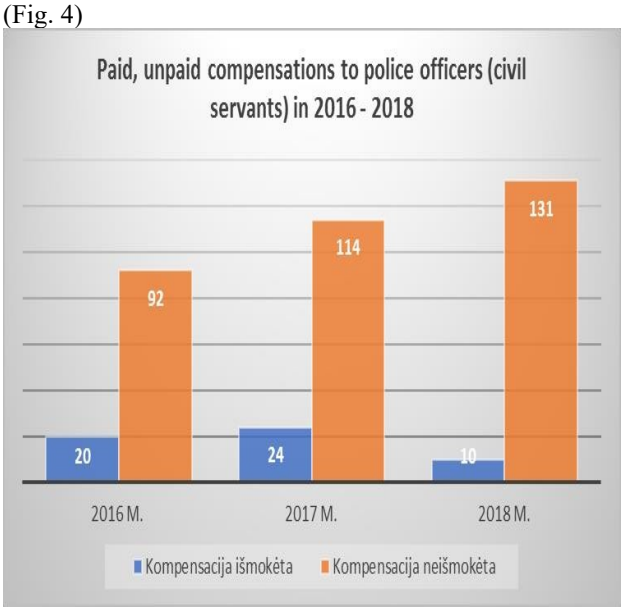

Fig. 4. Paid, unpaid compensations to police officers (civil servants) in 2016 – 2018

Conclusions

The analysis of case law of Lithuania indicates, that the system of compensating employees who suffered as a result of their service by means of state funds is to be considered as a form of state social insurance, because the police institutions in some sense fulfill the function of social insurance institutions. Therefore Lithuanian courts decitions, in case of accidents at work, points out the necessity to prove what unlawful acts on the part of the employer have occurred and how they have caused the damage. If these conditions are imposed, the employer is obliged to compensate only the part of the damage that is not covered by the law on social insurance.

Lithuanian legislation implies, that worker, who has suffered the damage to health by acting in the employer's best interests and by complying with instructions acting on his duty, the transfer of an employer's duties or competences does not eliminate the employer's obligation to compensate for the employee 's health damage caused by accsidents at work.

The comparison of compensations for workers employed by the employment contract and by the Statute, indicates, that civil servants can expect better compensations for injuries caused by accsidents at work, due to operational risks, potential health risks and the importance of the activities to public welfare and health.

In summary, the number of accidents at work per employee, employed by the employment contract, is decreasing while the number of work accidents for police officers is increasing, but the downward trend in compensation reimbursement shows that officers' accidents are not linked to the increased risk or danger to their health or life. Accident investigations estimated, that about half of all fatal and serious occurred accidents at work during 2016-2018 were caused by the employer's failure to implement the requirements of the legislation on health and safety at work. About a quarter of accidents at work occurred when employees failed to follow instructions given by managers, thereby endangering their health or life.

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FOREIGN EXCHANGE RATE UPDATE BASED ON SOA

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Abstract
In the broadest sense, the exchange rate refers to the ratio of the value of domestic currency and the foreign currency in which the short-term loans are expressed, and strongly influences the cross-border economic transactions. Trade, investment, finance, tourism, migration and other economc areas are all deeply influenced by national monetary policy. The paper proposes a solution to the gap of using the forex (foreign exchange rates) used in the banking systems in North Macedonia using SOA model.
The proposed platform reduces risks of valuation and mispricing products (Value at Risk discovery), considering the fact that most banks do not update rates more than 2-4 times a day and rate falls 15% within a few seconds; this is especially true for the smaller banks that are not scrapping prices. Next, the model ensures that there is centralized monitoring of failed jobs and there is an overall centralized oversight of various banking systems data exchanges being driven through a single system.
KEY WORDS: SOA; Foreign Exchange; Rate Update; Value Risk Discovery.

Introduction

The exchange rate represents the direct ratio between the value of domestic currency and the foreign currency (Ronald MacD 2007). In this way, the exchange rate represents the price of a unit of foreign currency dominated in domestic currency. Accordingly, any foreign currency, repectively, short-term loan, which is expressed in foreign currency, represents the foreign exchange in the domestic market and has its price, i.e. the foreign exchange rate of the domestic market.

National currency exercises the functions of money within its own national economies. However, given that today's economic transactions are international in nature and involve several countries, there is a need to exchange these currencies in the foreign exchange market.

Many developing countries' governments have sought alternatives to uncertainties that may prevail in international currency markets.

The proposed model will reduce the risk of valuation and mispricing products considering that internal requirements, external interfaces and services will be wrapped in either a Biztalk job, or a web service. It will also be able to allow bank imports funds transfer transactions from SWIFT using an interface. However, the import will not be done directly from SWIFT adapter to Temenos T24 Core banking system as normal logic would expect, there is expected to be used a middleware Biztalk job server and MSSQL Server, to ensure that there is consistency, audit trail and recoverability of transactions.

This Fig.1. below depicts how the system is developed inside the IT infrastructure to handle current interfaces and services in relation to core banking system.

The proposed platform will use Restful web services, still they are working with resources instead of operations, offering full web-scale interoperability and scalability advantages while exchanging information between applications and in this way is more adequate, also offering HTTP content negotiation, most importantly discoverability for free and HTTP concurrency control and compression. Although there are de-facto standardized solutions for such SOA architectures, essential problems remain and need to be addressed: Authentication, Authorization, and Security (Memeti et al, 2015)

The paper is organized as follows: the first part elaborates the banking system in North Macedonia (currencies, exchange rate, and economy), the second one proposes the SOA based model, and the last part is the conclusion.

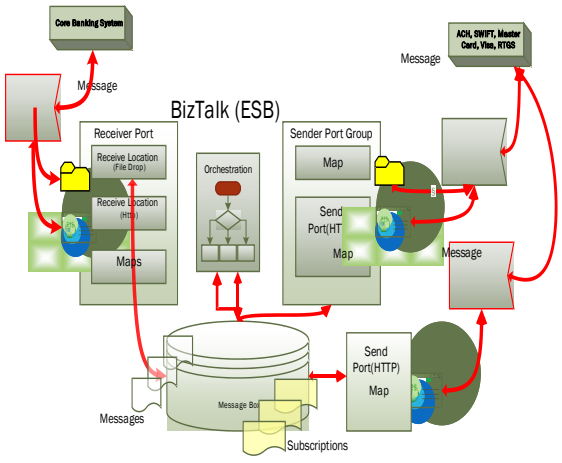

Fig. 1. Core banking system

State of the Art

The exchange rate of the Republic of North Macedonia dates back to December 1991, shortly after its secession from the former Yugoslavia and the declaration of independence. The two-year period, until the adoption of the first law on the legal regulation of this field, was characterized by a marked lack of influence by the

Central Bank of North Macedonia on the exchange rate movements due to several reasons, among which three were more highlighted:

- lack of foreign exchange market;
- low foreign exchange reserves,
- non-coordination with other state policies.

On May, 1993, the (Law on Foreign Exchange) was adopted, establishing the basic institutional framework of the official foreign exchange market, the organization of which was entrusted to the National Bank of the North Macedonia. On this occasion, the National Bank became competent for the formation of the denar exchange rate, although formally the Assembly was competent for the formation of monetary policy goals and tasks (Central Bank of North Macedonia, 2019).

A significant turnaround in foreign exchange policy occured in 2001 with the adoption of a new foreign exchange law (Official gazette of North Macedonia). This law, despite numerous and frequent interventions of the nature of amendments for effectively controlling the exchange rate, successfully neutralizing all pressures for devaluation of the denar, but also for respecting the directives and recommendations deriving from the legal acts of the European Union in an effort to harmonize the legal regulation of foreign exchange with that required by the EU, remains applicable to this day.

Currencies, exchange rate and economy

Currencies are often the targets of speculators and sometimes reflections and engines of a country's prosperity. They affect consumption rates, political stability and industrial success. Exchange rates are carefully set and endlessly analyzed and changed.

To understand why countries export, let us start by looking at the idea of exchange rates. Have you ever thought of why there is no universal currency? Instead, different countries have different currencies (also called 'monetary units') and each currency has its own value. This value is not set, but fluctuates based on a variety of factors.

The exchange rate has a significant impact primarily on the overseas trade exchange, i.e. on import and export, but also on economic development in general: Gross Domestic Product (GDP), employment, inflation and investment. If the exchange rate of the domestic currency unit is overvalued (held at a higher level than that set by the exchange rate supply and demand ratios), then the export of goods and services abroad becomes more expensive. On the other hand, import prices of foreign goods and services are reduced.

If the domestic currency – Macedonian denar - is undervalued against the Albanian lek for example, there are likely to result both benefits and costs to the Albanian economy. It would mean that imported and exported Macedonian goods would be cheaper than they would if the denar were market determined. This lowers prices for Albanian consumers and diminishes inflationary pressures. It also lower prices for Albanian firms that use imported inputs (such as parts) in their production, making such firms more competitive. On the other hand, lower priced goods from North Macedonia may hurt Albanian industries that compete with those products, diminishing their production and employment. When Albania runs a trade deficit with North Macedonia, this requires a capital inflow from North Macedonia to Albania. This in turn, lowers Albanian interest rates and increase Albanian investment spending. On the negative side, lower priced goods from North Macedonia may hurt Albanian industries that compete with those products, diminishing their production and employment. In addition, an undervalued denar makes Albanian exports to North Macedonia more expensive, thus diminishing the level of Albanian exports to North Macedonia and job opportunities for Albanian workers in those sectors (Marcy L.F., 2007)

Service Oriented Architecture

Service-oriented architecture (SOA) as an approach for integrating applications that expose services present many new challenges to organizations resulting in significant risks to their business (Bianco P et al, 2007).

With a service-oriented architecture approach, there are several benefits especially for educational institutions, where several e-services are used.

Starting by: provide a layer of abstraction that enables an organization to continue leveraging its investment in IT by wrapping these existing assets as services that provide business functions; the integration point in a service-oriented architecture is the service specification and not the implementation; the ability to compose new services out of existing ones provides a distinct advantage to an organization that has to be agile to respond to demanding business needs. Leveraging existing components and services reduces the time needed to go through the software development life cycle of gathering requirements, performing design, development and testing; less duplication of resources, more potential for reuse, and lower costs (Endrei M. et al, 2004).

A RESTful design constrains web architecture for the purpose of simplifying usage, development, and deployment to the web. Firstly, this design requires the use of a client-server architecture that separates the user interface from the data storage concerns, and the biggest benefit is that development of components can proceed independently. The stateless constraint requires application state to be maintained exclusively by the client (Cholia Sh. Et al, 2010).

The REST architectural style contrasts the RPC/SOAP architectural style, since the great advantage of the REST, compared to other Web services technologies, is that the message exchanged be transmitted directly over the HTTP protocol without encapsulation need and without use of envelopes. In this architecture, the focus is on resources and not on the call to the procedure/service. This approach is interesting for applications where the focus on interoperability is greater than the formal contract between the parties (Taveres N. Et al, 2013).

According to Roy Fielding (Fielding R., 2000), REST architectural style describes six constraints which define the basis of Restful-style. The Uniform Interface is the interface between clients and servers, simplifying the architecture, enabling each part to evolve independently;

Stateless, as a key of REST services, means the necessary state to handle the request whether as part of the URI, query-string parameters, body, or headers; Cacheable, as clients cache responses, eliminating some client-server interactions, further improving scalability and performance; Client-server, clients not concerned with data storage, which remains internal to each server, so that the portability of client code is improved, and servers are not concerned with the user interface or user state, so that servers can be simpler and more scalable; Layered system, a client cannot ordinarily tell whether it is connected directly to the end server, or to an intermediary along the way and Code on demand, and optional constraint (Fredrich T., 2015).

Proposed Model Design
Logic causes

The logic of the problem statement is depicted in Fig.2. below. The new platform design must deal with the underlying issue. As the brainstorming diagram shows below, the consistency and ability of human mind to follow multiple events rapidly is not possible. Furthermore, in smaller banks little dedicated staff is available and therefore the staff are focused on routine tasks rather than expecting very rare market movements. Clearly the SOA design has to be made around the human, and human interaction must be brought to a minimum.

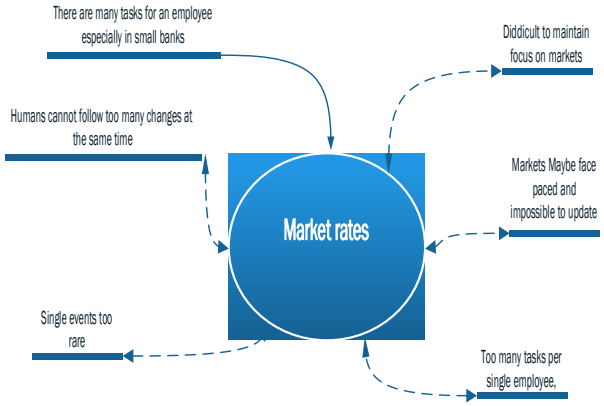

Fig. 2. Problem Statement

Process Flow Design

From Corporate organization point of view the goals of SOA are to enable fast, efficient, cost effective and safe implementation of web Services, to achieve low cost and mitigate the risks from previous solutions. Implementation for the underlying Service will be done via the JSON API. As seen from the previous sections above, existing Corporate Infrastructure (Integration and implementation) must be respected. The Data Flow Diagram, Fig.3. explains the Process.

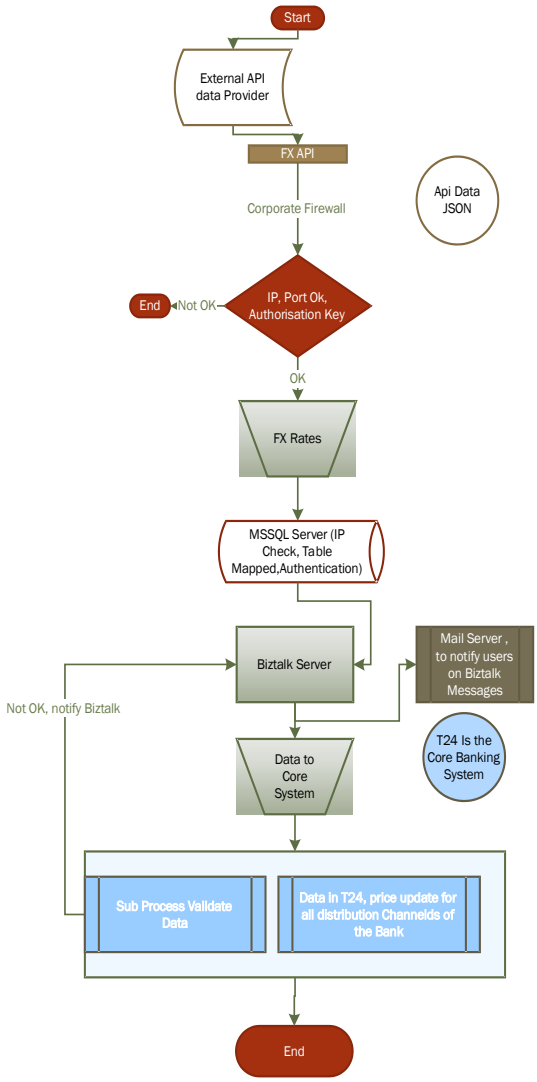

Fig. 3. Proposed Model: Data flow diagram

- External API Json is selected for implementation. Based on the Frequency of the updates the API providers usually have a tiered pricing. More frequent the update, the higher the price. Preferably the 5-minute update is selected, however some large Banks may choose live update of minute update frequency, however the prices for such frequent updates are so much higher.
- The external API System has to have a provision of Source IP (not mandatory), and a unique Api Key for access and Security.
- Corporate Firewall will allow/check the correct IP/port access of the API.
- MS SQL Trigger/Call: The JSON is transformed into MS SQL Server data table (after KEY authentication is done). This, as well can be routed through the Biztalk Server first, but I chose MSSQL Server first.
- BizTalk Server will orchestrate the updates frequency from MSSQL and Core Banking System T24. In addition, T24 has a tool to check if the prices and data fields correspond before it can post.
- End of Process

Programming platform and tools

JSON external API will be used for implementation. There are plenty of providers of Forex API Data in the market. The Forex API data provide data on currency Paris like EUR/USD, EUR/CHF and hundreds of other currency pairs to chose from. For this implementations we chose rapidapi, since it provides GET option with a API Key. Before we go further to mention that the API key is used by the External provider to identify the external Customer/ap. This information is important not only for the provider, but also for us, since we once we send a CALL to GET data, we should immediately receive data, and the Key Itself will reduce likelihood of session hijacking by a hacker.

Rapid API, is a web-based platform for subscriptions and also offers admin area for administration. (https://www.rapidapi.com).

The rapid API requires two Keys:

1) X-Rapid-API Key. This Key is important since it makes sure that correct message is accessed, since rapidapi.com has many different API's.

2) User Key: This is the Key that is required for the provider to be able track API calls made by paying API Customer.
3) The underlying Call for the C# will be like this :

```
// "live" endpoint - request the most recent
      exchange rate data
```

```
http://apilayer.net/api/live

 ? access_key = YOUR ACCESS KEY (example
xd9182e73d0bcf23a7b417fb21f83b78)

    & source = GBP

    & currencies = USD,AUD,CAD,PLN,MXN

    & format = 1
```

```
    // XXX, click on the URL above to get the
most recent exchange

    // rates for USD, AUD, CAD, PLN and MXN
```

The Response would be:

```
{
  "success":true,

"terms":"https:\/\/currencylayer
.com\/terms",

"privacy":"https:\/\/currencylay
er.com\/privacy",
  "timestamp":1549530546,
  "source":"USD",
  "quotes":{
    "EURCHF":1.143,
    "EURUSD":1.1390,
    "EURMKD":61.53,
    "USDAMD":488.115002,
    "USDANG":1.798202,
    "USDAOA":313.147503,
    "USDARS":37.524998,
    "USDAUD":1.40882,
    "USDAWG":1.8,
    "USDAZN":1.7025,

  }
}
```

Conclusions

The mentioned proposed solution will provide safety in prices' updates in the multiple branch network of the bank. Since they are done towards the Core banking system, this will affect all distribution channels' updates of the bank. Very often, the e-banking applications work in tandem with Core banking system, thus no changes should be required in other nodes of the system. For example, the e-banking system picks up the latest exchange rates applicable in the currency market table in core banking system. As long as the price updates are updated as per new API in the core banking system, the E/m-banking application will simply pick up the latest rates from this table same as before the API approach was implemented. The customers can use the e-banking app in doing the conversion and funds transfers in the same way as before.

In addition, valuation systems ensure that the company does not suffer losses from lack of update of market prices for products. Inherently, both the bank and the customer are protected from prices traded of the market price for a given currency pair. The risk and financial impact of the negligence of the staff monitoring the prices becomes obsolete.

As mentioned, the same approach can be used for price updates of other asset classes traded by customers, like Equities, Funds, and Government Bonds. Furthermore, banks and other financial institutions can benefit from using API or simply scrapping data (subject to EULA allowance) on credit scoring information and other governmental statistical data directly to the systems of the bank,

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AN ANALYSIS OF TECHNICAL EFFICIENCY OF VEGETABLE'S HOUSEHOLDS IN MONGOLIA

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Abstract
Efficiency is one of the most important concept in production. Specifically, technical efficiency is expressed as the side of production and defined as the level of production that ratio between the observed output(s) to the potential output(s). The aim of this study is to analyse the technical efficiency of vegetable's households in Khovd province of West region in Mongolia. The Western region is one of main producer in vegetable production and produces approximately 20 percent of total vegetables production in Mongolia (National Statistics office of Mongolia, 2017). We defined the technical efficiency using SFA (Stochastic Frontier Analysis) model. Primary data was collected from 100 vegetable's households in Norjinkhairkhan bag of Buyant soum of Khovd province of Mongolia. Our resukts showed the mean technical efficiency was 34.7% which means that household's vegetable's production could have been increased further by 65.3% at same levels of inputs if households had been technically efficient.
KEY WORDS: Vegetable's production, technical efficiency, stochastic frontier analysis.

Introduction

For Mongolia, vegetable production is one of the most important agricultural products in crop production after wheat and potatoes. In our country, we are planting a variety of vegetables due to the climatic extreme condition such as cabbage, carrots, turnips, onions, garlic, cucumber, tomatoes, watermelon, and a small number of peppers and beet. In 2017, vegetables sown area was 8.4 thousand hectares which have increased by 8.4 times compared to the first year (1960) of vegetables sown area. Total sown area divided into a region, including Central region (60%), Western region (20%), Khangai region (15%), Eastern region (4%) and Ulaanbaatar area (1%). Vegetables main growing area is located in Selenge, Darkhan -Uul, Tuv (Central region) and Khovd (Western region) provinces. Currently, there are 15985 households and 1447 companies are in crop production (Agricultural statistics, 2017). Most of the households in crop sector (approximately 80%) are producing vegetables.

In the recent years, the studies of efficiency have been taken the attention policy makers. But, to date, there is no efficiency analysis for vegetable production in Mongolia. The aim of this study is to measure the technical efficiency of vegetable's household's production in Norjinkhaikhan bag, Buyant soum, Khovd province. Buyant soum is about 25 km far from Khovd city, which divided into 5 bags (Bag is minimum level of our country's) namely, Norjinkhairkhan, Narankhairkhan, Tsagaan Burgas, Tsagaan ereg and Tsagaan burgas. In total 800 households and 3000 peoples live in this soum. Norjinkhairkhan bag is main vegetable's planting area in Buyant soum.

According to statistics, the total sown area was 600 ha, total harvest was 5200 ton for potato and 3800 ton for vegetables, which are producing 60% of total harvest of Khovd province.

Materials and methods

a) Stochastic frontier analysis

Since the seminal work of Farrell (1957), there are two widely used methods of measuring the efficiency of a decision making unit: The Data Envelopment Analysis (DEA) - non-parametric approach and the Stochastic Frontier Analysis (SFA)- parametric approach. (Dennis J.Aigner, 1976) proposed the stochastic frontier production function to account for the presence of measurement error in production in the specification and estimation of frontier production functions. Other dual frontiers, such as a cost, revenue frontier and profit frontier, are defined in similar manner. Cost frontier represents the minimum expenditure on inputs required to produce output (Lovell, 1995).

Stochastic frontier production functions have two error terms, one to account for the existence of technical inefficiency of production and the other to account for factors such as, measurement error in the output variable, luck, weather, etc. and the combined effects of unobserved inputs on production (Battese, 1995). According to Aigner et al. (1977), the general form of SFA model:

$$lny_{it} = \ln f(Z_{it}, \beta) + v_{it} - u_{it}$$
$$\varepsilon_{it} = v_{it} - u_{it}$$

Where *ln* indicates the natural logarithm function form, y_{it} represents the vector of the output of i^{h} firm, Z_{it} denotes a set of inputs and β is the associated vector

that describes technology parameters to be estimated. ε_{it} refers to the composed error term consisting of v_{it}, is two-side random noise distributed to be normal distribution as $N(0; If_v^2)$, and u_{it}, the technical inefficiency part, is one-side error term that assumed to be independent to u_{it} with half-normal distribution of $N^+(0; If_u^2)$. The error component u_i needs to satisfy the assumption $u_{it} \geq 0$. u_{it} and v_{it} are independent. *i* = 1,2, …, N; N is number of total observations, and *t* is time variable measured as year, *t* = 1,2, …, T.

The majority of the applications which try to explain the distinctions in technical efficiencies of farmers use a two-stage approach. The first stage includes the estimation of a stochastic frontier production function and the prediction of farm level technical inefficiency effects (or technical efficiencies). In the second stage, these predicted technical inefficiency effects (or technical efficiencies) are related to farmer-specific factors using ordinary least square regression. This approach seems to have been first used by (Kalirajan, 1981). This method has been criticized since the identical distribution assumption on the inefficiencies in the first step contradicts with the regression of the second step by subverting the variation due to inefficiency (Holtkamp, 2016).

Furthermore, correlations between the firm characteristics and the inputs may exist, leading to biased estimates (Wang, Schmidt, 2002). The Cobb-Douglas and translog models mostly dominate the applications literature in stochastic frontier and econometric inefficiency estimation and literature in DEA—by construction—is dominated by linear formulations (Greene, 2007). For our estimations, we choose the general empirical model in the form of the Cobb-Douglas production function. Cobb-Douglas production function of SFA model can be written as:

$$lny_{it} = \beta_0 + \sum_{j=1}^{8} \beta_i \, lnz_{jit} + v_{it} - u_{it}$$

Where, y_{it}- is total vegetable production of household, by ton. z_{ji} - is vegetable production inputs j^{th} of i^{th} household at t year, j is number of inputs variables, j= 1, 2, 3 …. 8, namely, total land (ha), sown area (ha), seed cost (MNT), manure cost (MNT), labor cost (MNT), pesticide (MNT), cultivation cost (MNT) and capital (MNT). β_0, β_i are to be estimated coefficients. $v_{it} - u_{it} = \varepsilon_{it}$ is error term. $N(0; If_v^2) \sim u_{it}$, $N^+(0; If_u^2) \sim v_{it}$, ln- natural logarithm, we will take logarithm the all variables. The parameters estimation SFA model can be achieved by applying Maximum-Likelihood (ML) estimation method which estimates the likelihood function in terms of two variance parameters (Coelli et al. 1995).

$$\gamma = \frac{\sigma_u^2}{\sigma_s^2} \; ; \; If_s^2 = If_v^2 + If_u^2$$

where γ takes value between 0 to 1, reflects validity of random disturbances (v_{it} ; u_{it}) proportion. If $\gamma \sim 0$, it shows that gap between actual output and maximum possible output mainly comes from uncontrolled pure random factors, makes use of SFA model meaningless. In contrast, if $\gamma \sim 1$, it represents gap comes mainly from technical inefficiency due to effects of one or more exogenous variables, indicates using SFA model is more appropriate (Coelli and Battese 1996, Coelli et al. 2005).

Technical efficiency of i^{th} household can be estimated by the ratio of observed output for i^{th} household relative to the potential output defined by SFA model, as follow:

$$TE_{it} = \frac{y_{it}}{f(x_{it}, t)} = \exp(-u_{it}) \leq 1$$

b) Data collection and variables sign

We use primary data of 100 randomly selected vegetable's households in Norjinkhairkhan bag, Buyant soum, Khovd province using SFA model, Stata software. The data was collected in the field from end of August to first of September, 2019. The SFA model was constructed by one output (total quantity of vegetable's production of households, by ton) and 8 inputs including total land (ha), sown area (ha), seed cost (MNT), manure cost (MNT), labor cost (MNT), pesticide (MNT), cultivation cost (MNT) and capital (MNT). We try to define some variables sign based on previous literature (Table 1).

Table 1. Some variables expected sign

Inputs	To be estimated sign	Meaning	Some related references
Land	+	Increasing quantity used of total irrigated area and non-irrigated area could cause the increasing of farms' production.	(Battese Coelli, 1996), (Kea, Li, & Pich, 2016)
Fertilizer, pesticide and so on	+	Increasing quantity used of fertilizer, pesticide could cause the increasing of farms' production.	(Kea et al., 2016)
Labor	+	The total quantity of labor for family members and hired labor	(Battese Coelli, 1996)
Age	+	The older farmers who are likely to be more experienced in farming utilize resources more efficiently in production. If the household head is older, there is the likelihood that the family labor may increase as the children become older.	((Anang, Tetteh et al., 2016)), (Mwajombe & Mlozi, 2015)
Gender (sex)	+/-	Many researchers have recognized the important role of women as agricultural producers. However, gender	(Msuya, 2008)

		inequality in access to production technology in many developing countries means that women farmers are often disadvantaged which can adversely affect their level of efficiency. Women also face other challenges that have negative impact on their technical efficiency. Male farmers more efficient.	
Farm size	-/+	Smaller farms are more efficient; this may be due to the better use and higher care for the use of inputs by smaller farms because they are also poorer. Some empirical studies result show larger families appear to be more efficient than smaller families.	((Osmani & Andoni, 2017)), ((Bravo-Ureta & Pinheiro, 1993)), (Anang, Tetteh et al., 2016), (Abdulai & Eberlin, 2001)

Results

a) Descriptive data of variables

Table 2 shows that summary statistics of variables. Most of the households are harvesting potato, carrot, cabbage, watermelon and onion. Average age of household's head is 48.62 years, family size 5.1 members, 80% of household's head are male, 20% of household's head are female.

Table 2. Summary statistics of variables for vegetable's households, 2019

Variables	*Mean*	*Standard error*
Age	48.62	1.33
Family size	5.1	0.15
Output quantity, tn	20.27	1.14
Total land, ha	3.76	0.16
Sown area, ha	2.1	0.11
Seed cost, MNT	1546400	93115.3
Manure cost, MNT	471600	24985.3
Labor, MNT	506875	28510.7
Pesticide, MNT	209600	11105
Capital, MNT	6988000	427705.4
Cultivation cost, MNT	314400	16657

Source: Calculated by MS. Office excel

Average vegetable's household's production was 20.27 tn. Land input divided into 2 section, one is total land of households, second is sown area. Sown area is covered by harvesting area in hectare (ha). Most of households responded some of households does not enough labor force, some of household has a financial problem, some of households responded need to change harvesting field that question: why are not harvest total land?

The average cost of seed was 15646400 MNT this year. Some of households keep seed in warehouse for next year's sowing while some of households directly sale to market due to not warehouse. For manure cost, most of the households using organic fertilizer namely, manure. It cost is depended on sown area.

The labor cost is only cultivation and harvesting period who is working in field. Pesticide cost is including cost only cabbage, onion field. These vegetables are easy to infected. So, households buy using only for these vegetables. All of households spent money for cultivation period and harvesting period. Because households are not tractor for cultivation and harvest. So, every households rent a tractor and pay 150000-200000 MNT for 1 hectare. Capital is indicated every household's equipment's cost. Every households have a truck for sale to market.

b) Estimation result of SFA model

We estimated using SFA model in Stata software. Firstly, we checked there is technical efficiency exist or not exist efficiency using γ parameter. Our γ parameter is closed to 0 which means that gap between actual output and maximum possible output mainly comes from uncontrolled pure random factors (Table 3).

Some of variables for example, manure cost, pesticide, cultivation cost does not estimate due to multicollinearity. Only sown area input had positive coefficient and significant at 5%. Capital and labor variables had negative coefficient and significant at 5% and 1%. So, we need improve our questionnaire and check respondent's response's truly situation.

Table 3. Results of Cobb-Douglas stochastic frontier production function based on normal/half normal distribution.

Dependent variable: Lntotal output			
Independent variables	Coefficient	Standard error	P value
Constant	445.3	26.2	0.09
lnsown area	19.6	8.48	0.02
lnmanure cost		does not defined	
lnlabor cost	-25.07	7.99	0.002
lnpesticide cost		does not defined	
lncapital	-5.14	7.95	0.03

lncultivation_cost	does not defined		
lnsig2v	6.6	0.57	0
lnsig2u	1.29	0.101	0.09
sigma_v	27.12	7.83	
sigma_u	1.91	29.6	
sigma2	739.5		
lambda	0.07		
γ	0.004		
LR test of sigma_u=0: chibar2(01) = 7.0e-06	*Prob >= chibar2 = 0.499*		

Source: Author's calculation

But we try to estimate technical efficiency for vegetable's household production in Buyant soum Khovd province. The computed mean of technical efficiency was 34.7% which means that household's vegetable's production could have been increased further by 65.3% at same levels of inputs if households had been technically efficient. Also, we defined technical efficiency for clarified household's land size (Table 4). There is no difference efficiency depending on land size. The literature points, it indicates that large farms are more efficient than small or medium farms.

Table 4. Mean efficiency level, by household's land size

	Technical efficiency, by farm
Small (0-2 ha)	0.341
Medium (2-4 ha)	0.349
Large (more than 4 ha)	0.345

Source: Author's calculation

For example, small land size household (0-2 ha)'s technical efficiency was 34.1%, medium size (2-4 ha) household's efficiency was 34.9 % and large size (more than 4 ha)'s efficiency was 34.5%.

Conclusions

The main goal of this paper was to determine technical efficiency of vegetable's households in Khovd province of Western region in Mongolia. The Western region is one of main producer in vegetable production and produces approximately 20 percent of total vegetables production in Mongolia. So, we tried to define the technical efficiency of 100 vegetable's production households in Norjinkhairkhan bag in Buyant soum. Our technical efficiency study is first study in Mongolia. There is no efficiency analysis for vegetable production. Unfortunately, our result is not expected result. In the future, we need to improve our questionnaire.

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INTEGRATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) IN BERRY AND FRUIT FARMS COOPERATION IN LITHUANIA

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Abstract
The article analyses theoretical and practical aspects of the integration of information and communication technologies (ICT) in agricultural co-operation. ICT change is much faster in agricultural organizations than in any other activity. ICT helps agricultural cooperatives improve their operations. But it is very difficult to assess the impact and extent of ICT integration into agricultural co-operation, as Lithuanian berry and fruit farms are fragmented into separate fields of activity. One way to increase the impact of ICT on agricultural co-operation is to identify key factors from a range of economic, strategic and organizational factors and to increase their impact on agricultural efficiency and high value-added farm development.
A quantitative exploratory study, commissioned by the Lithuanian Association of Berry Growers, Processors and Traders, revealed that integration of ICT into agricultural co-operation requires consideration of key groups of factors - economic, strategic and organizational. Each set of factors has distinctive factors that need to be addressed and maximized in order to increase operational efficiency, compete in the market and develop high value-added farms. These are strategic intelligence and data security; increasing revenue and reducing costs; continuous employee development, leadership and communications development. The analysis of the survey results revealed that the rapid integration of ICT into the agricultural co-operation in Lithuanian berry and fruit farms, the development of efficient agricultural activities while raising the productivity of the whole agriculture, and the development of high value added farms.
KEY WORDS: Information and communication technologies (ICT), cooperation, development of high value-added berry and fruit farms, Lithuanian Association of Berry Growers, Processors and Traders.

Introduction

Today, new directions for development are opening up for agricultural co-operation (Ilham, Bouchra, 2018). In this regard, the State of Lithuania shall make every effort to ensure the sustainability and efficiency of agricultural cooperative and cooperative development projects in order to better overcome the problems of marketing, creation and realization of high value of products and economic recovery as a whole. Recent issues call on researchers and managers to look for new tools to ensure the integration of Information and Communication Technologies (ICT) in agribusiness and sustainable agriculture and rural development in a modern environment, using innovative tools and opportunities (World Economic Forum, 2019, PwC, 2018, OECD, 2014). ICT is a tool for facilitating the punctuality and quality of real-time work, increasing turnover, information intelligence, and competencies. Integrating ICT into any organization is measured through their information system and the use of technological tools (Ilham, 2018). As information and communication technologies (ICT) evolve very rapidly, their influence on business-to-business cooperation and development is increasing, so that farmers, working together to create a strong cooperative community, will not lose out in international competition. It is imperative that agriculture integrates ICT tools, is aware of the opportunities and threats to achieve commercial goals. The lack of a strategic ICT plan and strategic management increases the risk that ICT development measures will not meet agricultural needs and that ICT development funds will be used inefficiently.

Recently, Lithuanian berry and fruit growers face great competition from foreign countries, because the cost of berries and fruits grown in Lithuania is higher and the yields are not high. Berry and fruit growers are looking for solutions that can help them not only survive but also become competitive in the berry market. The integration of ICT into the structure of agriculture and the economy, while facing various endogenous and exogenous constraints, opens the door to the integration of these methods into institutional systems, in particular to the products, practices and processes resulting from this integration, but in the current situation.

The aim of this study was to answer the question: which factors increase the impact of ICT integration on agricultural cooperation in berry and fruit farms in Lithuania.

Research object. Integration of ICT in agricultural cooperation in berry and fruit farms in Lithuania.

The aim. To determine the factors increasing the impact of ICT integration on agricultural cooperation in Lithuanian berry and fruit farms.

Research methods. Methods used in the research: analysis, systematisation, comparison of scientific literature, documents, examples of good practice; quantitative survey: a questionnaire survey of agricultural entities engaged in cooperative activities in the field of berries and fruits; interpretation of quantitative research results, systematization and grouping of data. The SPSS-22 software was used to process the research results.

Theoretical use of ICT in agricultural co-operation

Body Information and Communication Technology (ICT) has become one of the most important vectors of economic and social activity, driving positive change in both developed and developing countries (Bloom, Christos, Sadun and Van Reenen, 2012). ICT is accelerating worldwide. With the advancement of Information and Communication Technologies (ICT), the development of Internet opportunities, the integration of proposed tools in agribusiness, new markets are opening up, product safety and quality are progressing rapidly and more change is underway. The issue of ICT integration into business, its impact on measuring and measuring business efficiency is a first concern for business leaders, executives and economists (PwC, 2016). The OECD (2010) stressed the importance of ICT integration as a key innovation tool. Eastern countries must have a particular interest in implementing and integrating ICT for the economic development of the country. Opportunities for the use of ICT tools for the development and integration of co-operation are the dominant global problem solved by scientists, sociologists, managers, political scientists. There is a need for a different understanding of earth business, co-operation, new organizational structures and operating models and adaptation, and the importance of the whole in the context of ICT.

The modernization of agricultural activity through the use of ICT processes is primarily organizational and then technological. In Lithuania, there is a significant problem of agricultural cooperative activity, inadequate funds intended for the promotion of activity, more formal cooperation of cooperative activities, lack of added value, rural depopulation, increasing social problems, which could be successfully solved by agricultural cooperation and ICT integration. There is a need to create conditions in agriculture so that the development and modernization of ICT does not happen by chance and is driven by a momentum, but in a planned and targeted way, with positive results. ICT opportunities for a new agribusiness model are presented in Table 1.

Table 1. ICT opportunities for a new business model

Areas for ICT integration	Opportunities for ICT tools integration in agribusiness
Removal of intermediaries	Reducing the distribution chain through direct contact with the end customer - ecommerce, co-financing, peer-to-peer lending, etc.
Agency	New operators providing unified access to individual products or services that capture greater value, such as hotel and restaurant reservation sites.
From product to service migration	A shift from product sales to product-based services marketing such as movie and music streaming, new car rental methods, and remote printing subscriptions.
Untapped opportunities available online	Growth of entities connecting potential customers with individuals or companies with unused capacity or excess inventory.
Economy on order	As services expand to meet immediate customer needs, creating new competition in previously closed markets.
Digitally expanding international expansion	Adoption of ICT as a driver for opportunities abroad in emerging markets (low cost markets, opportunities for widespread mobile use, customer data provided on social networks, etc.)

In conclusion, the integration of ICT tools in various fields, including agriculture, is a driver of transformation. Consumers are becoming digital travelers who want to fulfill their wants and needs everywhere and as quickly and economically as possible. Already, most agricultural companies make online purchases. New distribution methods such as short circuits, subscriptions, distribution channels, home delivery are already meeting the expectations of digital consumers.

Industry 4.0 is considered the fourth industrial revolution after mechanization, mass production and automation (electronics and robotics). It identifies data as a central value chain and encourages the use of smart, interconnected, data generation systems (Table 2).

Table 2. Use of digital data in business processes

ICT lines of action	Measures for the digital development of agricultural co-operation
Value chain digitization and horizontal and vertical integration.	Mobile devices Cloud computing Augmented Reality User interaction and profiling Big data analytics and advanced algorithms Smart sensors, 3D printing Identification and fraud detection Advanced human-machine interfaces Detection technologies, IoT platforms, Block chain
Digitization of products and services	
Digital Business Models and Consumer Access.	

The abundance of information managed by agricultural cooperatives today makes it necessary to use

information and communication technologies (ICT) and integrate them into most activities (Table 2). Various agricultural activities operate information networks and technologies that participate in business management and enable real-time information exchange.

Information and communication technology (ICT) integration has become a necessity in the face of new developments: markets are increasingly competitive, customer behavior is changing and the consumer is becoming more sophisticated, learning about product quality, performance, comparing services and systematically negotiating prices and more. In this sense, the convergence of technology and equipment with new services is aimed at all audiences defining the ICT sector used, as well as natural and legal persons (Mtar, 2014). However, there is no doubt that the development of the ICT system is accelerating and tending to position the user at the center of the technology (Pelletier and Moreau, 2008). Inside the company, the Internet becomes an intranet that enables standardization of functions and access by internal users according to company permissions under the same conditions of use in networks: dissemination, research, consulting, etc. (Attouch and Talay, 2016). With the changes he knew, he was becoming more dynamic and interactive, making the business easier.

The most accessible ICT tools for any type of business are those that integrate and have a direct impact on its organization and operation (Bouchra, 2018, Agarwal, 2018, Reix, 2002). According to KPMG (2017), Hergueux (2014), Mebarki (2013), in the context of international competition, the competitiveness of cooperatives is seen as a strategy of continuous adaptation or management of acquired positions and is no longer solely dependent on firm factors but especially their ability to manage change. This governance must necessarily be based on multiple ICT applications and integration in all areas.

In conclusion, the commercial integration of ICT in cooperative activities and its impact is important for business development, information retrieval and transfer, management. Agricultural cooperatives can manage their activities faster and more efficiently, know what is happening in their internal and external environment and thus make strategic decisions by integrating the Internet. The visions of managerial strategies play a key role in the development of a cooperative strategy, organizational work for the integration of ICT in agricultural activities. The integration of ICT in cooperative agricultural activities has certain advantages and disadvantages. There is a risk of misuse of ICT in agricultural activities.

Application of ICT in Agricultural Cooperative

For agricultural co-operation, information is needed for specific actions: to create, produce, increase productivity or quality, sell, sell more or more expensive, at lower costs, etc. (PwC, 2016). These questions relate to the company's strategy, its socio-economic context, the importance of history and culture, resources, i.e. its structure and management methods; staff involvement and technological capabilities (Carlson, 2013, Hanafi and Faical, 2014). In order to modernize the cooperative movement and transform the entrepreneurial world, state institutions are developing coherent formation, monitoring and control systems and fully supporting the whole process (Ilham and Bouchra, 2018). Collaboration based on this principle facilitates value chains or community building, thus making good cooperation and promoting the use of ICT more beneficial (World Economic Forum, 2019, 2018; Nwamen, 2006). This ability to adapt to unpredictable risks in a constantly changing, threatening environment is based on the rapid exchange of information. The speed and quality of information exchange determine the effectiveness of an organization's operations and its ability to respond promptly to changes both within and outside the organization. Organizations use various networks to communicate with their employees, with their customers and / or their suppliers, for the benefit of the organization.

Understanding the level of integration of ICT and cooperative IS at management level allows collaborative and user leaders to better define the true role of ICT in terms of productivity, competitiveness and, most importantly, information resources critical to the survival, growth and flexibility of this sector (Mtar (2014); Raymond, Croteau (2010); Hergueux, 2014, Dondeyne, 2010, Lemery, 2003). This facilitates a better coordination of interinstitutional action on development aid for farms, which is considered an inevitable welfare criterion. Reguieg-Issaâd (2010) highlights the benefits of properly integrated ICT for businesses: increasing labor productivity to access information, thereby reducing costs; relocation of production, better knowledge of the environment and appropriate, rapid response to the environment, more efficient decision - making, more efficient strategic intelligence, better organization, less hierarchical, more intensive information sharing, better human resources management (better employment conditions, easier career management, etc.) ; development of a potential market (in particular through e-commerce), lower supply costs and better logistical support, development of service and product innovations that meet consumers' needs, and enhancement of the business (innovative company) image.

Typically, an agricultural cooperative information system (IS) is designed and implemented with the purpose of improving business performance indicators or key performance indicators (KPIs) to meet cooperative needs. There are generally 4 key elements to measurable and immeasurable commercial KPIs: Prices, Quantities, Cash Data, ROI (Ilham and Bouchra, 2018). Commercial cooperatives must take into account the needs of their customers, the strategies of their competitors, in order to maintain or even increase their market shares. Effective collaboration uses sophisticated networks of structured relationships involving people, machines, and procedures to create a stream of relevant information. Information from internal sources and from outside the company is for decision making. ICT is used as a mechanism by which information is generated, collected, processed, stored and transmitted, bringing together and empowering a variety of actors: chairmen and members of agricultural cooperatives to coordinate their activities within the

cooperative. As much information as possible should be stored and communicated in a timely, comprehensive, consistent and accurate manner. For this, the entire information system of the co-operation, the objectives of the organization and the information and communication technologies must be integrated into one system; the relationship between parts and their function is coordinated and subordinated and regulated in terms of system-wide interests (PwC 2018).

One way to assess the integration of ICT and its impact on agricultural cooperative activities is to integrate it into a global system of analysis. ICT in a global and dynamic system is based on the conceptual model CSI (Conceptual Computer Systems) because its components are: readiness, access and use. It is through these three components that we can actually measure the impact and level of ICT integration for all cooperative functions. According to Chaabouni (2007), it is necessary to define the perspectives of the analysis taking into account the specific features of the elements of the information system. These perspectives may be of management or organizational type or others. Analyzing the key indicators necessary for the implementation phase of the impact assessment system, based on the selection criteria (Chaabouni 2007, Attouch and Talay, 2016, OCDE, 2016), proposes key areas that are summarized in Table 3.

Table 3. Tab Key areas of ICT integration affecting agricultural cooperation

AREAS	THE IMPACT OF INTEGRATION
Economic	
Investment in ICT (hardware, software, staff).	Percentage of turnover from ICT investment, Reduced costs at the supply level.
Costs.	Reducing the cost of services on the Internet.
Operations relating to online transactions.	Percentage of Internet Services, Percentage of online purchases, Part of agreements, transactions concluded on the Internet B to B, B to C
Strategic	
Clients / Citizens (Development & Coverage), International Development.	Expanding your target audience (national market), Development of target customers (international market), R&D activities.
Network organizations	Network intranet and extranet
Control	Strategic intelligence, control (information on competition, new products, new processes, price developments ...), Evaluation system (on-line surveys of employees, cooperative activities involving as many stakeholders as possible)
Security	ICT Security, Impact of Disruptions on Data and Applications, Risk Management (Insurance), Motivation, openness (open data supply and use)
Communications	lo ICT tools for communication, information communication and collaboration with stakeholders. Better communication with stakeholders (universities, governments, public bodies, etc., projects implemented, R&D activities), Access to sources of finance (international financing used, investments received)
Organizational	
Changes in structure (division and division of labor, coordination, flexibility)	Improving the cooperative response to change, the environment, Communication tools are used
Leadership and Management	Management flexibility (task sharing for information monitoring, responsiveness, workflow system, automated work systems)
Telework development	Percentage of telecommuting paid (from home, specialized centers ...)
Knowledge, skills	Competence and Knowledge Engineering (distance learning, on-line seminars, in-service training in Moodle and similar)

In conclusion, the integration of new tools causes changes that not all companies experience in the same way. Volunteering, mobilization and cooperation are important factors for the development of agricultural cooperation. The main impact of integration through ICT is strategic and organizational. The integration of ICT in the agricultural cooperative must be developed to fulfill an increasing number of tasks: communication, information search, marketing of products and services, teamwork, business management, exploration, work organization, etc., as the impact of ICT integration is operationally oriented, the integration of ICT in an agricultural cooperative is also closely linked to the level of education of the farmers themselves and their employees, in order to increase competitiveness and productivity, the analysis of ICT integration in the agricultural cooperative will enable us to learn more about their importance for the company in the field of improvement at all levels.

Research methodology and results

The aim of this study is to determine the factors increasing the impact of ICT integration on agricultural co-operation in Lithuanian berry and fruit farms. In pursuit of the goal, the work follows the prevailing concept of technological determinism, which states that technological change determines the change of social systems (including human) and not vice versa. According to Kanišauskas (2015), the essence of technological determinism is the means of human and social transformation and control aimed at the search for a better world. This study seeks to answer the question: which factors increase the impact of ICT integration on agricultural cooperation in berry and fruit farms in Lithuania.

The survey was commissioned by the Lithuanian Association of Berry Growers, Processors and Traders. The quantitative research method was chosen - questionnaire survey. The survey instrument is a questionnaire. The statements made by summarizing the theoretical aspects of the impact of ICT integration on agricultural cooperatives in Lithuania are organized into three sets of statements: a set of economic factors; a group of strategic factors; a group of organizational factors. The fourth block of statements presents the demographics of the respondents. According to the Likert scale (Kardelis, 2007, p. 95), the statement in question is rated on five response options (from 1 "completely irrelevant" to 5 - "absolutely important"). The Cronbach's alpha coefficient was used to assess the internal consistency of the questionnaire scale. A Cronbach's alpha coefficient of each block of statements found that the first block was 0.852, the second block 0.687, and the third block 0.753. Coefficients greater than 0.6, so Cronbach's alpha coefficient values provide a reasonably high scale reliability.

A targeted selection method is used for the study. Respondents - managers of Lithuanian agricultural cooperatives or cooperative-based entities (communities, associations, cooperatives) and specialists working in the field of berries and fruits are able to recognize (analyze) information according to the research topic. 48 respondents participated in the survey: 32 managers and 16 specialists. All respondents agreed in good faith to participate in the study and did not need any incentives. The survey was conducted in May - June 2019.

Research results

The first block of research aims to find out the impact of ICT on agricultural co-operation in terms of economic factors.

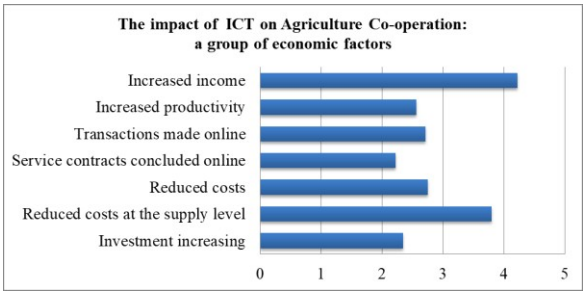

Fig. 1. Impact of ICT integration on agricultural cooperatives by economic factors

According to the research data (Figure 1), the main economic factors are the increase of agricultural income (average value 4.3) and cost reduction (average value 3.79). Income from agricultural activities is among the lowest among farmers in EU countries (Statistics Lithuania, 2017). Rapid activation of income from agricultural activities and actual cost savings through the use of the latest technologies are required. The integration of ICT into agricultural co-operation through economic factors can be achieved by maximizing productivity and successfully marketing production in foreign markets. Productivity is related to changes in output and inputs. The productivity of agricultural activity can be increased by improving its factors of production through management, technology, innovation and knowledge.

The second block of research is designed to find out the impact of ICT on agricultural co-operation according to strategic factors (Figure 2).

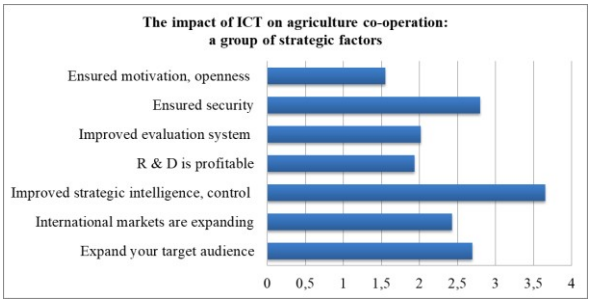

Fig. 2. Impact of ICT integration on agricultural co-operation according to strategic factors

According to the obtained research data (Figure 2) on strategic factors, it can be stated that strategic intelligence (mean value 3.65) and data security (mean value 2.79). Strategic intelligence is considered one of the key strategic areas for operational development. In line with EU strategic plans, it is advisable to redirect agricultural investment between large and small farms, and to give more support to already cooperative farms. El. ensuring information security is solely dependent on the awareness of IT staff and can lead to security vulnerabilities. Factors hindering the development of cooperative activities include motivation (mean value 1.55) and profitable R&D activity (mean value 1.93). It is therefore essential to continue to explore new ways and means of increasing the viability of agricultural cooperatives. For farms, co-

operation becomes the only opportunity to gain a place in the market for their produce and to stay in it.

The third block of research is devoted to find out the impact of ICT on agricultural co-operation by organizational factors (Figure 3).

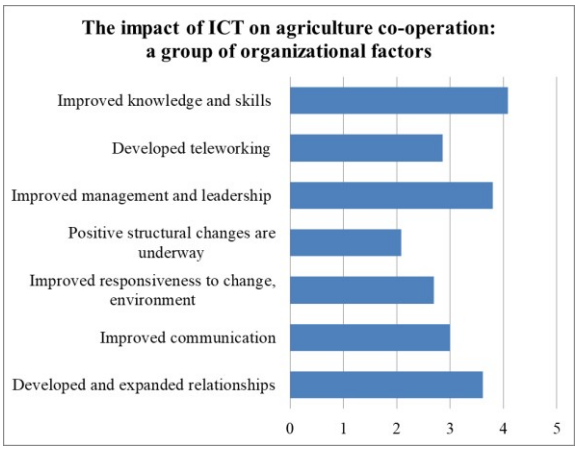

Fig. 3. Impact of ICT integration on agricultural co-operation by organizational factors.

According to the research data (Figure 3), organizational factors can be distinguished from continuous employee development (mean 4.08), leadership (mean 3.79) and relationship development (mean 3.61). An important factor beyond education is the continuous development of employees through learning. It is advisable to increase the skills of agricultural workers, their knowledge base, knowledge dissemination to the participants of the co-operation, as it is a means to increase the skills of employees. Effective leadership in the market must be constantly sought. Effective leadership is a changing way of thinking, sensing and behaving. Emphasis should be placed on the expression of employees' social relationships, facilitating their cooperation and coordination for their mutual benefit (for the organization and the employees). The main factor hindering the development of cooperative agricultural activities is structural changes in the organizations (mean 2.08). Therefore, the ability to modernize is a prerequisite for the success of any organization.

The results of the study show that the integration of ICT in the berry and fruit cooperative activity is increasing to secure market place. In the group of strategic factors the most important are the following: increasing income and reducing expenses. The strategic factors include: strategic intelligence and data security. The group of economic factors distinguishes between: increasing income and reducing costs. Organizational factors include: employee development, leadership, and relationship development. Each group of factors cannot participate in separate operational roles as they must work towards the overall effectiveness of the activity.

Conclusions

Information and communication technologies (ICT) are changing much faster in agricultural organizations than in any other activity. The integration of ICT in agricultural cooperative activities should be understood as a set of processes, from the collection, processing and presentation of information to the user in the form of specific solutions (results). The impact of ICT is directed at the development of cooperative activities to increase their productivity. But it is very difficult to assess the impact and extent of ICT integration into agricultural co-operation, as Lithuanian berry and fruit farms are fragmented into separate fields of activity. One way to increase the impact of ICT on agricultural co-operation is to identify key factors from a range of economic, strategic, and organizational factors, and to increase their impact on agricultural efficiency.

The results of the quantitative survey revealed that the integration of ICT in agricultural cooperation in Lithuanian berry and fruit farms is more important than ever. The aim is to increase the impact of the necessary factors, thereby improving the attractiveness of the business. Each set of factors (economic, strategic, organizational) has unique factors that need to be further strengthened in order to achieve operational efficiency. These are: strategic intelligence and data security; increasing revenue and reducing costs; continuous employee development, leadership and communications development. Each of the above mentioned factors is most involved in the competition in the market. There is a need to increase the practical application of ICT to agricultural cooperation by mitigating and adapting to the effects of market change. Factors that do not participate or hinder the development of co-operation in agriculture include: motivation, profitable R&D and structural changes in organizations. Therefore, such factors need to be monitored for impact on performance.

The analysis of the survey results revealed that the rapid integration of ICT into the agricultural co-operation in the Lithuanian berry and fruit farms, the development of productive agricultural activities while raising the productivity of the whole agriculture, and the development of high value-added farms.

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INDIAN CONSUMER'S PURCHASING BEHAVIOUR TOWARDS ECO-FRIENDLY PRODUCTS

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Abstract
Environmental concerns are no longer unfamiliar in the over populated country like India. It is been decades, since when the government, firms and companies including stakeholders are making efforts for constant and sustainable development in the economy with minimum deterioration of environment. Environmental degradation, climate change and global warming are such issues that induced concern related to environment protection among the producers and consumers as well. The aim of this paper is to understand the purchasing behaviour of the consumers for eco-friendly products and what are the factors that affect the buying intention for such products. The study was conducted in Uttar Pradesh region of north-western part of India and data was collected using well-structured questionnaire among 230 respondents using convenient sampling out of which the results of 198 questionnaires were used for analysis. One-way ANOVA test has been used to test the significance level of the independent variable over dependent variable. The findings revealed that education level does not affect the concern for environment protection when buying the eco-friendly products. The analysis showed that the willingness to pay for green products was also influenced by income level of the consumers.
KEY WORDS: eco-friendly products, sustainable development, environment, climate change, India.

Introduction

In the last few decades, the continuous development of economies with the increasing number of industries, firms and companies lead to the deterioration of environment which became the cause of climate change and global warming. Human beings acted in a way which created negative impact on the environment and on the ecosystem as well. The human activities like burning of fossil fuels, deforestation, farming of livestock, increased industrialisation and growth in the number of vehicles has influenced the earth's temperature and climate. All these activities have increased the amount of greenhouse gases in the atmosphere that resulted in the greenhouse effect and global warming. According to the report of Intergovernmental Panel on Climate Change (IPCC 2018), the activities of human beings have caused around 1.0ºC of global warming and if it continues to rise at this current rate then it is to be expected to reach 1.5 ºC till 2030. The most common greenhouse gas in environment is carbon dioxide that is accountable for 64% of man-made global warming and it is generally produced by the activities of human beings (European commission onclimatechange, https://ec.europa.eu/clima/change/causes_en). As it was clear that the extensive exploitation of the environment is taking place since decades that resulted in pollution, ozone layer depletion, greenhouse effect, rise in global temperature, widespread climate change, melting of glaciers, rise in sea level etc. The technological progress has also increased the activities related to industries and the growth in industrial activities lead to the causes effecting environment. These on-going environmental complications have risen up the concerns of working for betterment of ecological system and for protecting the environment. These concerns have made the government and the companies to adopt the policies of going green. The introduction of environmentally friendly policies created a new market that promotes products that are least harmful for the environment, biodegradable, recyclable and reusable. Such products are termed as green products or environment friendly products or eco-friendly products. The green products are the result of environment friendly marketing practices that was termed as green marketing which came into existence in late 1980s.

According to the American Marketing Association (AMA), the term green marketing is defined as the marketing of the products that are environmentally safe. Pride and Ferrell (1993) defined green marketing as an effort of the organisation in the development, promotion, distribution and price of the product that will have negligible effect on environment. They also termed green marketing as environmental marketing or sustainable marketing. On the other hand, Polonsky (1994) gave the definition of green marketing as the activities involve satisfying the needs and wants of the

consumer with no negative influence on the environment. Hence, green marketing integrates all the activities that include modification of the product for the sake of environment, the needed change in the process of production, change with eco-friendly packaging and also the modification in the advertising policies that reflect more of environment concern. With the increase in awareness of green marketing the responsiveness of green products also took a leap. The purchasing behaviour of the consumers is getting influenced by various factors like environmental concern, environment protection, credibility of green products etc.

Review of Literature

All over the world businesses are set up according to sustainable development goals to preserve the natural resources to meet the future generation needs. Continuous variability in natural resources and over use of resources led to the realization of human thinking towards nature. This realization force human beings to develop some consumption patterns and also increases the green purchase behaviour among people (Sharma et al., 2013). Consumption and utilization or purchasing of products which have minimum effect on environment referred to as green purchase behaviour (Mainieri et al., 1997). It is necessary to develop environment conscious behaviour among people like purchasing of green products to reduce the direct or indirect impact on environment degradation. According to Roberts, (1996) purchase behaviour is strongly influenced by the awareness about the products and attitude of consumer. Similarly, Arcury, (1990) also concluded that the individual which have more knowledge about environmental issues showed more positive behaviour towards green products. Actually, knowledge about environmental problems is a driving force for the more positive behaviour towards environment safety (Laroche et al., 2001). Schahn & Holzer, (1990) also supported the argument that responsible behaviour of people towards environment safety is based on their knowledge about environmental problems. Studies conducted in this regard revealed that green products purchasing behaviour of human beings showed inclination towards environment protection (Punyatoya, 2014; Jain and Kaur, 2004). Although the results shown by value-action gap theory are not so convincing, researchers concluded that there is a link between green behaviour and EA (Lee, 2011; Nath et al., 2013). A positive relationship has been reported among pro environmental behaviour and EA (Khan & Kirmani, 2015; Chen & Chang, 2012; Punyatoya, 2014; Kotchen & Reiling, 2000). In a study conducted by Kaiser et al., (2007) showed a significant relation between pro-environmental behaviour and attitude of people. Nath et al., (2013) conducted an experiment and concluded that EA plays an important role towards green product adoption. According to Schultz et al., (2004) beliefs and feelings to save the environment called as *Environment Involvement* (EI). According to Lee, (2011) GBP have direct and indirect relationship with EI. In a study conducted by Lee, (2008) on adolescents in Hong Kong reported that in explaining GBP second most important element is EI. Singh, (2011) reported that environment consciousness (EC) increased the intention in people to purchase green products. It is necessary for the adolescent users to recognize their individual role in protecting the environment (Lee, 2008). According to Mostafa, (2007) purchasing of recyclable products which have zero harm to the environment referred to as green purchase behaviour. According to Clem, (2008) purchasing and using green products is the social behaviour of people to save or preserve natural resources. According to Brown, (2003) human intention to buy green products is a potent force to buy green products. It is also concluded that the consumers which have higher intention to buy green products are actually more prone to buy green products rather than the people which have no intention to buy green products. Blackwell et al., (2001) also supports the argument that people only buy the things which they actually want to buy. Thus, to buy a green product purchase intention plays an important role. It is also reported that the consumers which have habit or which are intended to use green products can pay higher amounts to purchase green products (Peattie, 2001; Laroche *et al*, 2001). According Mahenc, (2008) higher price of green or eco-friendly products are considered as indicator for safe environment because to produce environment friendly products higher cost required. D,Souza et al., (2006) conducted a study and reported that green products purchasing behaviour of people is wrongly associated with purchase intention of people even when the quality of green products is poor than the conventional products which are cheaper. Similarly, Gan et al., (2008) also reported that quality, brand name of conventional products is most important things that a buyer considered. Green products should have to behave competitively with respect to environment as well as in quality and durability (Diamontopoulos et al., 2003). Packaging also plays an important role in choosing green products. According to Dantas et al., (2004) the things which make an impact on buyer are the labels and packages. It is concluded by several researchers that green purchase behaviour can cause hindrance to marketers and to overall green consumption (Crane, 2000; Mintel, 1995; Wong, Turner & Stoneman, 1996).

Objectives

1. To analyse the factors affecting the buying behaviour of the consumers towards green products.
2. To study the significance of the demographic factors such as gender, education level and income on various attributes regarding green

products like awareness, satisfaction level, willingness to pay, intention to buy and concern towards the environment.

Research Methodology

The present study is focused on finding different characteristics of the consumer that affects their buying behaviour towards green products. The study was conducted in Uttar Pradesh region of north-western part of India and data was collected using well-structured questionnaire among 230 respondents using convenient sampling out of which the results of 198 questionnaires were used for analysis. The independent demographic variables of the analysis were gender, income and education level. The main factors that were analysed with this study to identify the significance of demographic factors were concern for environment, awareness of green products, satisfaction level, willingness to pay for green products and intention to buy green products. One-way ANOVA test has been used to test the significance level of the independent variable over dependent variable and the factor analysis has been used to explain the variance of the given set of variables.

The tables 1, 2 and 3 show the distribution of the respondents on the basis of gender, income and education level:

The total number of respondents that were taken into account was one hundred and ninety-eight, out of which 40% were males that is eighty in number and 60% were females that is one hundred and eighteen in number.

Table 1. Gender wise distribution

Gender-wise distribution			
	Frequency	**Percent**	**Cumulative Percent**
Male	80	40	40
Female	118	60	100
Total	198	100	

On the basis of education level, the distribution was carried out with four levels such as undergraduate, graduate, postgraduate and doctorate. Out of the total number of respondents 11 falls under the category of undergraduates that corresponds to 5%, 60 falls under the category of graduates that corresponds to 30%, 114 falls under the category of post graduates that corresponds to 58% and 13 falls under the category of doctorates that corresponds to 7%.

Table 2. Qualification wise distribution

Qualification-wise distribution			
	Frequency	**Percent**	**Cumulative Percent**
Undergraduate	11	5	5
Graduate	60	30	35
Post graduate	114	58	93
Doctorate	13	7	100
Total	198	100	

On the basis of income level the distribution was carried out with four levels of income per annum such as six lakhs and above, between four to six lakhs, between two to four lakhs and less than two lakhs. Out of 198 respondents the frequency of respondents that falls under the level of 6 lakhs and above is 89 that corresponds to 45%, the frequency of respondents under income level of four to six lakhs is 25 that corresponds to 13%, 28 respondents were under the income level of two to four lakhs that corresponds to 14% and 56 respondents were under the level of less than two lakhs that corresponds to 28% of the total number of respondents.

Table 3. Income wise distribution

Income-wise distribution			
Per annum	**Frequency**	**Percent**	**Cumulative Percent**
6 lakhs and above	89	45	45
4-6 lakhs	25	13	58
2-4 lakhs	28	14	72
Less than 2 lakhs	56	28	100
Total	198	100	

Data Analysis

Means of the attributes regarding consumption and buying behaviour has been calculated to identify which factor is most important for the consumer in order to change their consumption attitude.

Table 4 showed that the highest mean is of awareness that is 4.41 which signifies that awareness related to green products strongly influence the buying behaviour of consumers.

The intention to purchase green products also strongly influence the buying behaviour of the consumers as it is justified by the mean value of 4.19. The environmental concern and satisfaction are almost equally influence consumers buying behaviour as their calculated means are 3.96 and 3.84 respectively.

Among these attributes the willingness to pay came out to be least influencing factor as indicated by the mean of 3.05, but alone it strongly influence the purchasing behaviour of consumers towards green products.

Table 4. Total means of different factors

Items	**Observations**	**Min. value**	**Max. value**	**Mean**	**Std. Dev.**
Satisfaction	198	1	5	3.84	1.04
Awareness	198	1	5	4.41	0.84
Willingness to pay	198	1	5	3.05	1.19
Environmental concern	198	1	5	3.96	0.93
Purchasing intention	198	1	5	4.19	0.78

Influence of demographic factors on consumer satisfaction towards green products

One-way ANOVA has been used to analyse the data. In Table 5, the analysis showed that the effect of education level on consumer satisfaction towards green products was significant as shown by P value (0.02) which lies under the limit of confidence interval (0.05). The results signify that education has positive impact on consumer satisfaction towards green products.

Table 5. Impact of demographic factors on consumer satisfaction

Attribute / Demo-Graphic factor	Satisfaction					
Education level	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Education	4	12.06	3.014	2.91	0.022
	Error	193	200.08	1.036		
	Total	197	212.14			
Gender	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Gender	1	5.023	5.02	4.74	0.030
	Error	196	207.12	1.05		
	Total	197	212.14			
Income level	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Income level	3	2.69	0.897	0.83	0.477
	Error	194	209.45	1.07		
	Total	197	212.14			

In Table 5, the data analysis showed that the effect of gender on consumer satisfaction towards green products was significant as shown by P value (0.03) which lies under the limit of confidence interval (0.05). The result signifies that gender has positive impact on consumer satisfaction towards green products.

The data analysis showed that the effect of income level on consumer satisfaction towards green products was non-significant as shown by P value (0.47) which does not lie under the limit of confidence interval (0.05). The result showed that gender do not has positive impact on consumer satisfaction towards green products.

Influence of demographic factors on concern for environment while choosing green products

In Table 6, the analysis showed that the effect of education level on concern for environment while choosing green products was non-significant as shown by P value (0.67) which do not lie under the limit of confidence interval (0.05). The results showed that education level does not have positive impact on concern for environment while choosing green products.

The data analysis showed that the effect of gender on concern for environment while choosing green products was highly significant as shown by P value (0.005) which lies under the limit of confidence interval (0.05). The result signifies that gender has positive impact on concerned for environment while choosing green products.

The data analysis showed that the effect of income level on concern for environment while choosing green products was non-significant as shown by P value (0.54) which does not lie under the limit of confidence interval (0.05). The result showed that income level does not have positive impact on concern for environment while choosing green products.

Table 6. Impact of demographic factors on environmental concern

Attribute / Demo-Graphic factor	Environmental Concern					
Education level	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Education	4	2.031	0.507	0.58	0.674
	Error	193	167.64	0.868		
	Total	197	169.67			
Gender	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Gender	1	6.62	6.62	7.96	0.0053
	Error	196	163.05	0.83		
	Total	197	169.67			
Income level	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Income level	3	1.870	0.623	0.72	0.54
	Error	194	167.8	0.864		
	Total	197	169.6			

Influence of demographic factors on willingness to pay for green products

In Table 7, the analysis showed that the effect of education level on willingness to pay for green products was non-significant as shown by P value (0.35) which does not lie under the limit of confidence interval (0.05). The results showed that education level does not have positive impact on willingness to pay for green products.

The data analysis showed that the effect of gender on willingness to pay for green products was non-significant as shown by P value (0.37) which does not lie under the limit of confidence interval (0.05). The result showed that gender has no positive impact on willingness to pay for green products.

The data analysis showed that the effect of income level on willingness to pay for green products was non-significant as shown by P value (0.45) which does not lie under the limit of confidence interval (0.05). The result showed that income level does not have positive impact on willingness to pay for green products.

Table 7. Impact of demographic factors on willingness to pay

Attributes Demo-Graphic factor	Willingness to pay					
Education level	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Education	4	6.26	1.56	1.10	0.356
	Error	193	274.32	1.42		
	Total	197	280.59			
Gender	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Gender	1	1.137	1.137	0.80	0.37
	Error	196	279.45	1.42		
	Total	197	280.59			
Income level	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Income level	3	3.77	1.25	0.88	0.451
	Error	194	276.8	1.42		
	Total	197	280.5			

Influence of demographic factors on awareness of green products

In Table 8, the analysis showed that the effect of education level on awareness of green products was non-significant as shown by P value (0.09) which does not lie under the limit of confidence interval (0.05). The results showed that education level does not have positive impact on awareness of green products.

The data analysis showed that the effect of gender awareness of green products was significant as shown by P value (0.01) which lies under the limit of confidence interval (0.05). The result showed that gender has positive impact on awareness of green products. The data analysis showed that the effect of income level on awareness of green products was non-significant as shown by P value (0.14) which does not lie under the limit of confidence interval (0.05). The result showed that income level does not have positive impact on awareness of green products.

Table 8. Impact of demographic factors on awareness of green products0000

Attributes Demo-Graphic factor	Awareness					
Education level	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Education	4	5.63	1.40	2.02	0.092
	Error	193	134.40	0.69		
	Total	197	140.0			
Gender	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Gender	1	4.188	4.18	6.04	0.0148
	Error	196	135.8	0.693		
	Total	197	140.04			
Income level	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Income level	3	3.79	4.18	1.80	0.148
	Error	194	136.24	0.693		
	Total	197	140.0			

Influence of demographic factors on purchasing intention towards green products

The analysis showed that the effect of education level on purchasing intention towards green products was non-significant as shown by P value (0.96) which does not lie under the limit of confidence interval (0.05). The results showed that education level does not have positive impact on purchasing intention towards green products.

The data analysis showed that the effect of gender on purchasing intention towards green products was non-significant as shown by P value (0.08) which does not lie under the limit of confidence interval (0.05). The result showed that gender has no positive impact on purchasing intention towards green products

Table 9. Impact of demographic factors on purchasing intention of consumers

Attributes Demo–Graphic factor	Purchasing Intention					
Education level	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Education	4	0.367	0.091	0.15	0.964
	Error	193	120.34	0.623		
	Total	197	120.70			
Gender	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Gender	1	1.83	1.835	3.03	0.0835
	Error	196	118.87	0.606		
	Total	197	120.70			
Income level	**Source**	**DF**	**SS**	**MS**	**F**	**P**
	Income level	3	0.151	0.050	0.08	0.970
	Error	194	120.55	0.621		
	Total	197	120.70			

The data analysis (Table 9) showed that the effect of income level on purchasing intention towards green products was non-significant as shown by P value (0.97) which does not lie under the limit of confidence interval (0.05). The result showed that income level does not have positive impact on purchasing intention towards green products.

Conclusion

The study was conducted to analyse the purchasing behaviour of the consumers towards green products and factors affecting their green consumption behaviour. It was manifested with the analysis that education level and income level does not affect the concern for environment protection when buying the eco-friendly products. The analysis showed that the willingness to pay for green products was also influenced by income level of the consumers and also education level and gender has significant impact on consumer satisfaction towards green products. The awareness of eco-friendly products also plays an important role as far as consumption behaviour is concerned. It was also recognized that consumers have optimistic behaviour towards buying green products, but while intending to purchase, price, satisfaction, willingness to pay, and environmental concerns plays the key role in influencing their buying decisions.

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INTERNET OF THINGS AND CUSTOMER BENEFITS

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Abstract
Although internet of things (IoT) is already being used successfully and intensively in the business-to-business (B2B) sector and can be found under the term Industry 4.0 in particular, beneficial innovations in the business-to-consumer (B2C) sector have so far played only a subordinate role (cf. Bitkom 2015: 14–19; Platform Industrie 4.0 2014: 7–9). Overall, it should be noted that there is currently only a small number of value creation models for B2C compared to the much more diverse application areas and the resulting newer value creation in the B2B sector. Nevertheless, relevant studies and reports also predict a significant growth for IoT in the area of private consumers (cf. Initiative D21 2016: 24ff.; Kratzert et al. 2016: 3f.; Bitkom 2015: 3; Accenture 2014: 3). As a result, IoT will become increasingly relevant for end customers as part of sociological digitization. This study divides the IoT market for consumer devices based on the customer benefits and types of devices into four different segments: Time savings, security & control, health & wellbeing as well as status & entertainment. To assess these defined segments and to forecast the potential rollout speed, this study uses data of a two-staged Delphi-Survey with a total of 23 experts – mainly working in the telecommunications industry. The presented evidences in this paper are showing, especially devices within the segment for time saving use cases will rapidly diffuse through the consumer market. Followed by the segments of status and entertainment as well as the security & control, which both are not showing a significance for either a fast or slow rollout. Either way the findings clearly indicate, that devices for health and well-being, will potentially take a longer period of time to prevail in the market.
KEY WORDS: Internet of Things; Value Creation Models; Innovations; Customer Benefits; Delphi Method.

Introduction

Digitalization, commonly referred to as the "digital revolution", is one of the most important drivers of the cultural and economic transformation of the 21st century and will change the lives of all of us in the future. The growing number of mobile and stationary devices that are digitally connected via the Internet and among each other can be summarized as the "internet of things" (IoT). Behind this term lies the omnipresence of the Internet, which can experience its next evolutionary stage and create added value by connecting countless everyday objects, machines, buildings, vehicles or even man himself. Such a development would obviously also be a significant economic value driver. Even though IoT is already used in several branches of industry, especially in the automation of production and logistics, applications and markets for consumer-related devices currently show relatively low market penetration and significant growth.

Application areas for Internet of Things

The forecasted market development of IoT requires a corresponding technical infrastructure, which will act as a lever for the spread of IoT devices. Three important technological changes (e-sim, 5G, NB-IoT) in the telecommunications industry will favour this development within the next few years.

Figure 1 shows the forecast growth in IoT devices in Germany described above, subdivided according to the classes of devices currently available on the market. It is clear that Smart Home and Connected Cars in particular will become significantly more important in the coming years.

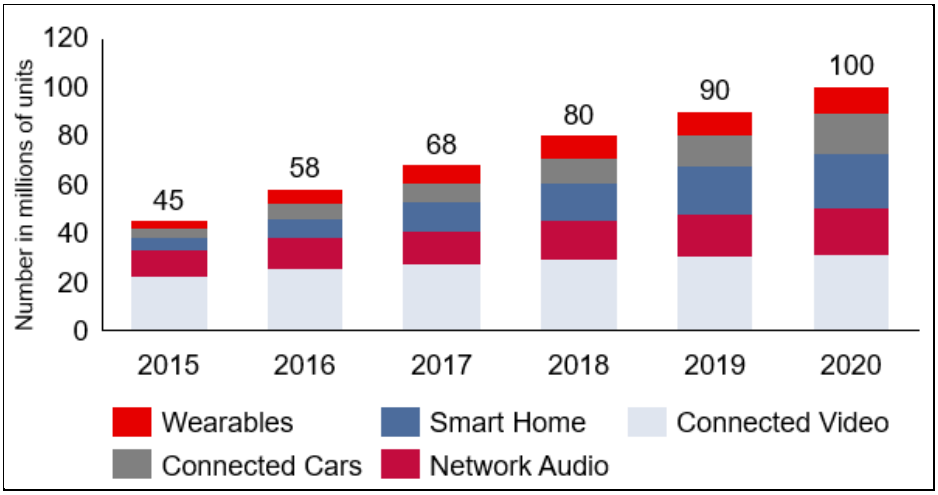

Fig. 1. Forecast for consumer IoT equipment inventory in Germany
Source: Own illustration based on Bitkom (2015)

Smart Home refers to applications and systems in living spaces and houses that are intended to increase the quality of life and living comfort of private individuals through networking with the Internet and among each other. In particular, objects from the areas of kitchen, sanitary, lighting, emergency equipment, home security as well as energy and water supply are connected. (cf. Strese et al. 2010: 8). The focus is on the automation of processes and additional security through new monitoring and locking systems. In 2018, smart home products already generated sales of around 2.8 billion euros in Germany and are expected to grow to around 7.3 billion euros in annual sales by 2023. (cf. Statista 2019). In principle, this part of IoT can be regarded as having the greatest growth potential within the next few years.

While digital technologies in the automotive sector have so far focused exclusively on storing and analyzing the internal data of the respective vehicle and thus ultimately optimizing its internal functions, the Connected Cars sector will open up numerous new application possibilities in the future. IoT will enable motor vehicles to communicate with the Internet and with each other. This will lead to a new generation of vehicles that will independently perform maintenance and checks, increase interior comfort, provide assistance with driving and parking, or ultimately take control of driving themselves. (cf. McKinsey & Company 2014: 11f.). Applications which are incorporated as electronic objects into clothing, accessories or medical devices and worn on the body can also be referred to as wearables. Due to the resulting variety of possibilities, various other subcategories of this subarea exist. Smartwatches, fitness bands, smart glasses, smart clothing and tracking devices can be differentiated, with smartwatches having by far the largest market penetration within the group of wearable owners with 62% and fitness bands with 45%. It can also be assumed that devices with medical functions in particular will become more attractive and gain market penetration. (cf. Pricewaterhouse-Coopers AG 2015: 5ff.).

Dimensions of new value creation models in the context of customer benefit

The term value creation model is defined heterogeneously within the current technical literature, analogous to the term value creation. (see Schuh 2011: 97; Zollenkop 2006: 40f; Nemeth 2011: 67). In addition, literature often uses the term "business model" synonymously. Bieger and Bickhoff define business models as a simplified description of the strategy and method for generating earnings of a profit-oriented company, which can show potential investors the usefulness of their commitment. (cf. Bieger et al. 2002: 35ff.). Osterwalder/Pigneur define a business model as a process that describes the reasons why a company creates, delivers and captures value. They combine the idea of value creation with that of the product life cycle. Particularly important is the value passed on from the company in question to the customer. The lifecycle of the product can be integrated into the company environment and thus illustrate the relationships with business partners. (cf. Osterwalder/Pigneur 2002: 2ff.) Afuah, on the other hand, focuses on the value creation activities of the company in question and describes business models as a bundle of activities that have to be limited according to the question of when and how they are carried out or configured. (cf. Afuah 2004: 10).

Both the Bieger, Bickhoff and Afuah elements mentioned above can be found in parts in Slywotzky's definition, which expands by the dimensions of the markets it serves and the products it offers. Business models are therefore the sum of all factors, how a company defines differentiating offers, allocates and configures its resources, chooses the market to be worked on, creates customer benefit and finally generates profit. (cf. Slywotzky 1996: 4). It becomes clear that business models can be described and delimited by the elements of product/market combination, implementation and configuration of value creation activities, and earnings mechanics.

From the point of view of the IoT market, Smarthome Services not only offer a corresponding market potential for the classic networking of electronic household

appliances or other devices such as radiators, locking systems or surveillance cameras, but also for TV and telecommunications providers who are increasingly offering new services via access to the usability of information data and could thus generate new sources of income; in their Value Based Adapotion Model, they refer to the advantageous criteria of increasing user friendliness or enabling a secure lifestyle, which are guaranteed above all by the telecontrol function of household appliances. From the point of view of the identified device segments, factors such as time savings, safety and control can be derived.

The customer benefit is defined in this article as the degree to which the needs are satisfied. The satisfaction of a customer is directly related to the fulfilment of its needs. (cf. Meffert et al. 2015: 16). The first question that arises is which different forms of customer needs exist and how these can be addressed. With its eight consumer value types, Holbrook is establishing an essential basic concept on which a large number of further research projects are based (cf. Jahn/Drengner 2014: 37ff.). These value types differ in the dimensions self-oriented or externally oriented, extrinsic or intrinsic, active or passive. As a result, Holbrook subdivides the possible customer needs into efficiency, excellence, pleasure, status, prestige, ethics, spirituality and aesthetics. (cf. Holbrook 1999: 5). If one compares these value types with other theoretical concepts, it is striking that although the number of different types of needs per approach varies, a high degree of overlap with Holbrook's value types can be observed. (cf. Jahn/Drengner 2014: 40).

It is noticeable that customer needs can basically be divided into four heterogeneous clusters. The first cluster subsumes all the needs which, by saving time, enables a more efficient achievement of one's own goals. Wittko supplements this needs cluster with the additional features of security and control, which can also be classified as components of efficiency in the context of services. (cf. Wittko 2012: 273; Jahn/Drengner 2014: 40).

The second cluster deals with the quality of the product or service. If the quality takes on a correspondingly perceived form, this can also be seen as a form of satisfaction of needs. (cf. Jahn/Drengner 2014: 40). If a product or service leads to a positive emotional reaction on the part of the consumer, this is classified in the third need cluster. The fourth and last cluster is made up of needs that are met by the appreciation of the company or external persons towards the consumer. This can manifest itself, for example, through the social status ascribed to the customer as a benefit. (cf. Jahn/Drengner 2014: 41). When implementing innovative value-added models, the question arises as to what customer benefit the planned products and services provide for the consumer and to what extent these can be distinguished from homogeneous offers within the market and from other market segments outside the market by the perceived customer benefit. The clusters resulting from the value types and value dimensions described will therefore serve in the following as a basis for the delimitation of value creation models and lay a theoretical foundation for the analysis of new business models by IoT.

Spread of innovations

In the literature, there are various methodological foundations that examine the spread of innovations and provide explanatory approaches against the background of sociological factors for the emergence of new value-added models. An essential prerequisite for the successful introduction and spread of new value creation models is the acceptance by the customer. (cf. Schmidt 2009: 17). Whether and at what point innovative products and services are accepted by consumers depends on various factors (cf. Gatignon/Robertson 1985: 850; cf. Rogers 2003: 19f; Schmidt 2009: 17; Königstorfer/Gröppel-Klein 2008: 10). These factors are considered within the framework of diffusion theory and combined in a model to explain structural processes of innovation propagation. (cf. Rogers 2003: 19). Therefore, diffusion theory is regarded as an essential cornerstone of general acceptance research. (cf. Arnold/Klee 2016: 10). The chronological sequence of an innovation can have an effective influence, for example, if new products are introduced to the market at the right time or if existing innovation barriers are broken down. A corresponding customer benefit is also highly relevant and can be described by the type of innovation. However, the extent to which the existing customer benefit can also be perceived by the customer is directly related to the communication channels used.

Within the framework of diffusion theory, consumers can be described as adopters of innovations who decide between the direct purchase of a new product or service immediately after its market launch, a wait-and-see and weighing attitude or a fundamental rejection. (cf. Schmidt 2009: 17). Here the adopter goes through different phases, which can be summarized by the innovation decision process. Rogers names the phases knowledge, persuasion, decision, implementation and confirmation for the innovation decision process. (cf. Rogers 2003: 170; Arnold/Klee 2016: 18). However, since this paper does not examine the individual purchasing decision process of a value creation model, but rather the overarching sociological developments, a closer examination of these phases will be omitted at this point. Instead, the model of the diffusion process is suitable for analysing the spread of innovation within social systems. Depending on the percentage of market penetration, a distinction can be made between five categories of adopters (cf. Rogers 2003: 22). The aim of the categorisation is to bring together demanders with a homogeneous degree of innovation or willingness to accept innovations in a group and thus to gain a better understanding of the course of innovations.

Roger's approach is based on the assumption that each individual would adopt an innovation sooner or later. This can also be referred to as "pro-innovation bias (see Götze 2011: 29; Molesworth/Suortti 2002: 157). Within the relevant technical literature, however, there are condensing indications that the recording of barriers and resistances is also of great importance for the success of an innovation. (cf. O'Connor et al. 1990: 69; Molesworth/Suortti 2002: 157).

Empirical analysis for the prognosis of innovation diffusion

With regard to the research gaps with regard to the prognosis of the propagation of IoT innovations, this paper uses the technology preview approach. As a sub-area of futurology, technology foresight comprises various quantitative and qualitative methods for determining developments, trends or future needs. (cf. Steinmüller 1997: 97). The Delphi survey technique is particularly suitable for forecasting future developments. (cf. Saren/Brownlie 1983: 52). Depending on its design, the Delphi survey can therefore have a quantitative and a qualitative share or be exclusively of a quantitative or qualitative nature. It can therefore also be seen as a synthesis instrument between quantitative questioning and qualitative expert interviews or group discussions. (cf. Hienerth 2010: 9f.). Three predictive theses are to be drawn up for the fundamental acceptance of IoT as well as for each of the four identified business areas, which serve as evaluation criteria for predicting the spread of each of the models. The theses developed in this way are then combined in a questionnaire and extended by three normative questions. Normative questions are used to check the desirability of the realization of particularly critical theses (cf. Steinmüller 1997: 77).

Data analysis

The evaluation of the collected empirical data is carried out in the following by three iterative statistical procedural steps, which are based on procedural techniques of descriptive and inductive statistics. First of all, it should be noted that all predictive theses of the survey use a heterogeneous ordinal scale (the ordinal scale designates a scale form which is used to form ranks. However, the distances cannot be interpreted homogeneously). The number of answers per scale also varies. Although this makes sense with regard to the respective theses, it makes it more difficult to compare the theses with each other. Therefore, each of the theses is to be made comparable and homogenized through the use of indices. Indices aggregate a range of response options into a single measure by averaging the weighted individual values of each range (cf. Mosler/Schmid 2006: 125).

The weighting of the response categories is now a second and final preliminary consideration. In order to be able to weight the nominal scale accordingly, it is to be converted back into an ordinal scale. For this purpose, a numerical value is assigned to each characteristic, which expresses the distance dimension to the extreme value "Will not occur". The selected values should show the distance of the change between two positions and the weighting of these categories in the index. The values 0 (will not occur), 0.5 (will occur slowly), 1 (will occur shortly) and 2 (will occur rapidly) were therefore chosen for the ordinal scale and the weighting of the response categories. The distance measure was not chosen linearly in order to take into account the barriers to a rapid spread of innovations within the weighting. The corresponding indices can now be calculated from this.

Selected findings and interpretation

The first thesis out of fifteen thesis all in all deals with the temporal prognosos of the occurrence of a possible IoT everyday life. 78% of the experts stated that they expected this thesis to become reality by 2025.. 22%, on the other hand, believe that the thesis is likely to come into force by 2030 only. Furthermore, the second thesis asked about the number of IoT devices used in the future. It is noticeable that 22% of the respondents forecast a number of more than 20 IoT devices in use. In contrast, 26% predicted a number between zero and five, and 39% a number between six and ten devices. The third thesis predicts the extent to which IoT can develop new market segments with new technical products and innovative services. Thus, within the first survey wave, 74% of the experts agreed with the thesis with a value of four or five on the answer scale (five corresponds to full agreement). The vast majority of experts are therefore convinced that the new business models and a large number of new useful devices will be created by IoT for private consumers. The fourth thesis deals with the area-wide realization of vehicles with self-driving function. All the experts agreed that this technology diffuses between the years 2026 and 2035. Thesis 5 covers the automation of everyday commodities and the resulting time savings for private consumers (e.g. kitchen appliances). 78% of the experts agreed completely to the realization of the thesis in the first round, while 61% in the second round agreed with an approval rating of four. The six thesis dealt with decreasing importance of the smartphone as the universal device to control IoT appliances – substituted by intelligent automation and voice control. In the second round of the survey, 61% of experts agreed gave an approval rating of three. 39%, on the other hand, tended to disagree with the thesis with a value of 2.

Conclusions

The aim of this contribution is to illuminate the three formulated research questions holistically and thus to provide a first contribution to basic research for IoT as a new scientific field. This work is intended as an attempt to make the research field of Consumer-IoT accessible for further conceptual research and to give an initial outlook on future developments. The resulting IoT business models can be described by four essential dimensions and can be distinguished from other business models.

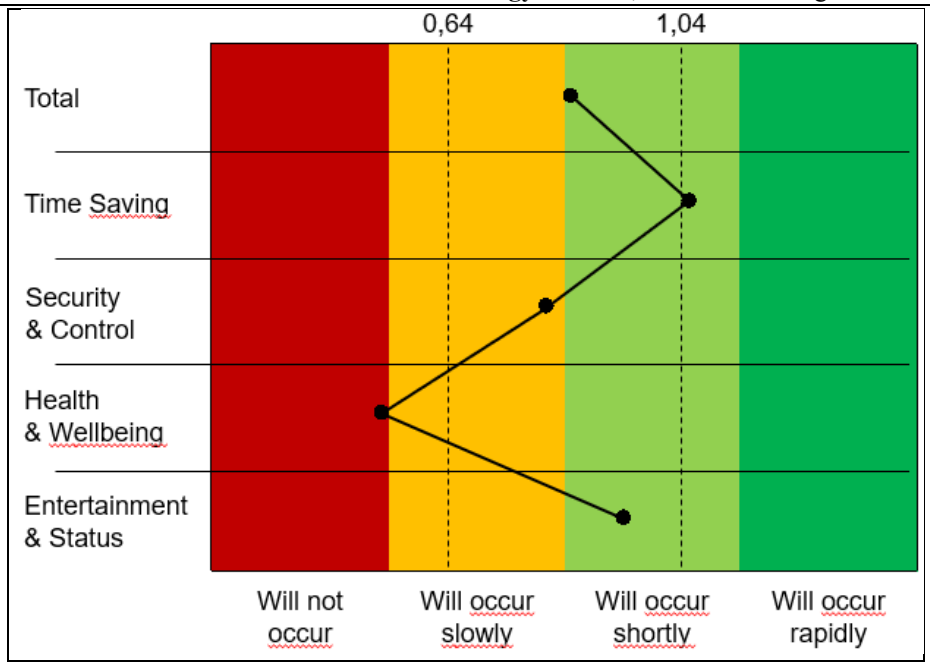

Fig. 2. Propagation velocity of IoT business models

Value creation models for IoT can therefore be defined by the sequence of activities described, a strategic form of product development or diversification, revenue sources from the combination of product, service and information as well as by the determined customer benefit of time savings, safety and control, health and wellbeing as well as status and entertainment.

The resulting typology of customer benefit also provides information on the differentiation between IoT business models. Accordingly, in contrast to current product clusters, customer benefit should be used as a heterogeneous criterion for differentiation, since it represents a central component of the success of IoT business models. In addition, the temporal spread of the business models identified in this way was predicted on the basis of an empirical survey. Overall, empirical research has shown that IoT will generally diffuse at a moderate rate within German society over the next few years. Business models that enable time-saving automation to be implemented and IoT devices with a focus on entertainment and status will expand at an above-average speed and thus realize new business models and revenue sources very quickly. In particular, technological automation in the areas of household appliances, domestic technology and automotive suggests a rapidly growing spread. On the other hand, medical and sports-related equipment from the health and wellbeing sector will diffuse very slowly or not at all and represent a relevant business model for companies. It is particularly up to the acting companies to successfully shape the new value chains and to concentrate on the relevant customer benefits of these innovative technologies in order to overcome the barriers on the demand side in order to be able to raise the numerous potentials.

Limitations and research outlook

The present study has limitations that offer various starting points for future research. Since this contribution covers a broad field of possible future technical innovations, a lack of clarity regarding the selection of the survey participants cannot be ruled out. It is advisable to examine the acceptance and spread of IoT business models by means of a representative customer survey within the framework of in-depth research. In addition, the study is based on identified value creation relationships and an identified typology of business models for IoT. This typology was derived on the basis of theoretical preliminary considerations and was therefore not empirically validated within this work.

The validity of the collected data is limited by the survey form of a Delphi survey, which allows estimations and forecasts, but does not aim at a value that can be operationalised - for a certain measurement criterion. The selection and participation of the experts in the Delphi survey indicate the representativeness of the population of all experts active in the economy and science who are reflected in the product and market development of IoT applications. However, a Delphi survey does not aim at representativeness either, but at the systematic recording of expert knowledge and expert assessments on a new business topic or trend. With regard to the reliability of the research approach, random errors are excluded or corrected with the repeated participation of the experts in the second survey error. On the other hand, a Delphi survey in terms of reproducibility of the data from the first round serves as a critical self-evaluation of his expert assessment and thus leads to a stronger objectification of the factors examined.

To test the business model types, a further empirical study is therefore recommended in order to determine the relevant customer benefit for IoT empirically and to supplement or change the identified typology if necessary. This should be done on the basis of a quantitative study to obtain a broad and representative sample.

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INTEGRATION OF CLIMATE CHANGE AND ADAPTATION MANAGEMENT INTO LEARNING CURRICULUM IN HIGHER EDUCATION

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Abstract
Climate change issues are of a major importance in the modern world and these problems to be monitored and examined on the national level involving national organizations, business and industry, research institutions, including the different education levels. The aim of this study was to discover the stakeholders' need of the experts in the given area and to determine the major professional and general competences, knowledge and skills the future graduates should possess in order to be successful in their future career. The research of students and alumni was carried out in order to understand their current knowledge on the environment and climate change management. The principles for the enhancement of experiential learning in higher education suggest how experiential learning can be applied throughout the educational and development programs including curriculum development and experiences in knowledge of climate change processes and necessary adaptation. Research has been done on what knowledge and skills are needed for the next generation to face the challenges of climate change. To the mind of research participants, the most important practical skills for future specialists would be knowledge of computer technologies, new technology application, practical skills, awareness about the latest achievement in the field of climate change and adaptation management.
KEY WORDS: Climate Change, Education for Sustainable Development, Knowledge, Practical Skills, Masters Programme , Curriculum.

Introduction

World community is concerned about the possible consequences of the global climate change. The knowledge of processes taking place in nature is one of the links that contributes to the successful environmental management and the appropriate evaluation of risk factors followed by the application of preventive measures.

In the last decades climate change has caused impacts on natural and human systems on all continents and across the oceans (IPCC 2014). Socio-economic costs, associated with climate change damage and need for adaptation, are expected to escalate (Christel et al. 2018). Adaptation to climate change has gained a prominent place next to mitigation on global, national, and local policy agendas. However, while an abundance of adaptation strategies, plans, and programs have been developed, it is argued, that future research on climate change adaptation would require the involvement of not only scientific stakeholders, but also, in the research enterprise so as to co-define societally relevant problems to co-produce or co-create relevant knowledge, and to co-learn from these experience (Swart et al. 2014),.

Previous studies indicate that identified climate services as the most developed in Europe and North America, on the other hand, the majority of responses and research indicate that climate services are least developed in Africa (Vaughana et al. 2016). Climate services need to meet users' needs, capabilities and decision framings and thus collaboration with potential users from an early stage of the service design process is necessary to provide products and services that are likely to be used, including in education levels.

The principles for the enhancement of experiential learning in higher education and suggest how experiential learning can be applied throughout the educational environment by institutional development programs, including longitudinal outcome assessment, curriculum development, student development (Kolb et al. 2005). The Erasmus platform offers the opportunity to enhance experiential learning by including international experiences. The link between education and sustainable development is being addressed by extensive debates and research (Makrakis and Kostoulas-Makrakis 2012, 2012a). The world continues to face various critical challenges such as: human-induced climate change, the rapid depletion of natural resources, the frequency of natural disasters, and all these are closely related to the objectives addressed by education for sustainability (UNESCO 2005, 2010; Wals 2009). Indeed, three of the major forces shaping and driving the XXI century education are: (a) the development and diffusion of Information and Communication Technologies; (b) the increasing demand for new educational approaches and pedagogies that foster transformative and lifelong learning and (c) the reorientation of educational curricula to address sustainable development (Makrakis and Kostoulas-Makrakis 2012). Through its Climate Change Education for Sustainable Development program, UNESCO aims to make climate change education a more central and visible part of the international response to climate change. The United Nations Decade of Education for Sustainable Development reports has raised high expectations among countries and stakeholders who are

committed to promoting and developing Education for Sustainable Development (Wals 2009).

According European Commissions reports the Bologna Process (2018) seeks to bring more coherence to higher education systems across Europe. Bologna reform is key to building the necessary trust for successful learning mobility, cross-border academic cooperation and the mutual recognition of study periods and qualifications earned abroad. Enhancing the quality and relevance of learning and teaching is also a core mission of the Bologna Process, however, implementation of these reforms is uneven across the 48 participating countries.

As part of the European Higher Education Area, all participating countries agreed to: introduce a three-cycle higher education system consisting of bachelor's, master's and doctoral studies ensure the mutual recognition of qualifications and learning periods abroad completed at other universities implement a system of quality assurance, to strengthen the quality and relevance of learning and teaching. Moreover, the new report outlines (Bologna Process Implementation Report 2018) the Bologna Process's most recent priorities: learning and teaching, social inclusion and employability.

The overall objective of these studies related with part of the Erasmus+ AdapTM project to continue the reform of the system of higher education in Egypt. Also to comply with the Bologna Declaration and according to the demands of the Strategic Framework for European Cooperation in Education and Training (ET 2020), aimed at improving the quality and efficiency of educational process, and to learn from experience and knowledge in the climate change, including growth in new technology application, adaptation in transdisciplinary knowledge and management.

The aim of the project is to ensure the design and implementation of an interdisciplinary degree study programme "Smart Environment and Climate Change Management" through conduction of joint interdisciplinary research, devoted to the synergy between theory and practice in sustainable development, in order to support Egypt with the integration of emerging technologies in environment management in a competence-based education system, hence advancing higher education according to the Bologna Process and European standards for quality of education.

The aim of this paper was to discover the stakeholders' need of the experts in the given area and to determine the major professional and general competences, knowledge and skills the future graduates should possess in order to be successful in their future career. The research of students and alumni was carried out in order to understand their current knowledge on the environment and climate change management. The aim of this survey was also to find out what knowledge and skills students require for the climate change mitigation and adaptation studies.

This paper reports the results of an international survey to gauge community perspective on research and education priorities for climate services, highlighting several areas in which respondents agree on the need for future work and knowledge.

Data and methods

This paper reports the results of an international survey to gauge community perspective on research and education priorities for climate services, highlighting several areas in which respondents agree on the need for future work and knowledge.

The survey of labour market and stakeholders has been carried out in the form of questionnaire that included a range of questions important for the future successful work of the graduates of Master degree study program "Smart Environment and Climate Change management ".

The aim of this survey was to discover the stakeholders' need of the experts in the given area and to determine the major professional and general competences, knowledge and skills the future graduates should possess in order to be successful in their future career.

This survey was also useful to find out the situation in the labour market, i.e. what changes and perspectives in the institutions are expected in the future, what is the demand of such specialists and what expertise is expected from the graduates, wishing to work in the climate/environment change management field.

The questionnaire was distributed to the stakeholders from different regions of Europe and Egypt and different institutions. The total number of stakeholder organisations that took part in the survey is 159. The number of staff in stakeholder organisations varies from tens to thousands, the part of specialists in Smart environment change management varies from 10% to 35% with respect to the size of the organisation.

The research of students and alumni was carried out in order to understand their current knowledge on the environment and climate change management. 149 students and alumni took part in the survey. The aim of this survey was also to find out what knowledge and skills students require for the climate change mitigation and adaptation studies. To get a better representation of the climate change understanding and to get a broader view of knowledge and skills needed for the future graduates, the questionnaire was given to the alumni and students from different universities.

The survey received responses from different study programs students. The majority responds (76%)The majority (76%) represent study programmes in Environmental sciences namely Chemistry, Oceanography. 69 percent of students study Physical sciences (namely Physics, Physical oceanography), 64 percent – Marine sciences (including Ship and Port Operation management); 56 percent – Engineering (including Civil engineering). Some part of the students represents study programmes in Agriculture (36%), Veterinary medicine (24%), Microbiology (22%), Food safety (12%).

Results

The survey results indicate an overarching interest in knowledge that can better connect climate information to users, particularly around the communication of climate information.

Analysis of data of research of labour market and stakeholders' survey. As survey results show, there are some perspectives of development in organizations, so the staff downsizing in environmental sciences is not foreseen in none of the stakeholder institutions. Moreover, the expansion of institution leads to new job opportunities so in the future demand for specialists is likely to increase. Organizations are going to develop, open branch offices and increase staff recruitment. Again, this fact means that universities should be ready to prepare new generations of specialists that would occupy new work places in Environmental sciences.

Modern technologies are improving all the time, so it was necessary to find out if modernization and application of new technologies in environment change management is foreseen in institutions, so that the students would be qualified for that. As survey results show, more than two thirds (62,7%) of employers indicated that new technologies will be installed and new specialists will be required. That means that the development of technologies forces modern organizations to search for well-qualified specialists in Smart management and consequently universities should be ready to prepare such specialists for labor market.

Survey results also show that participating organizations are not going to reduce the activity that could potentially lead the downsizing of experts in Smart environment change management.

Regarding the demand for certain kind of Smart environment change management subjects, participating stakeholder companies pointed "Climate change as a whole" (71%). More specifically, the respondents defined the need for such subjects as "Smart technologies and management", "Climate management and industry", "Climate monitoring technologies" etc.

To find out what employers consider about the current situation and what changes, taking into account their opinion should be taken, the additional questions were given. Summarizing the responses, we can claim that in the background employers are quite satisfied with the preparation of the students in universities.

More than three quarters (80%) of stakeholder representatives pointed, that university gave the training for graduates in Environmental sciences to work in their company to a high or to a great degree. Nevertheless, about 20% responders think, that training was sufficient not enough, but only to some degree, so some changes in training procedure should be made.

Employers were asked to evaluate in scores (where 1 is the lowest, 5 is the highest) the quality of training of graduates in Environmental sciences, based on their personal experience.

Data shows that the situation is quite ambiguous: the theoretical training was evaluated in highest points. Almost two thirds of respondents (64%) positively evaluated the degree of the theoretical training. However, majority of the employers (67%), survey participants, are not satisfied with practical skills of the graduates so some changes should be done here.

Representatives of stakeholder organisations were asked to provide their opinion on the main strong features of the university / programme that would be important while training the future experts in Smart environment change management.

Slightly more than a half of survey participants (52%) emphasized that the quality of teaching staff is one of the strongest features of university studies. Lower number of respondents (48%) agrees that university studies provide students with the sufficient number of necessary information and literature resources. These are the strongest features of the university programmes according to survey participants.

The evaluation of the university programmes allowed defining the weakest sides of the university preparation. Only one quarter (23%) of research participants thinks that universities provide their graduates with the sufficient practical training. Even lower number of respondents (20%) evaluate graduates' research skills as sufficient for independent activity. Almost the same part of research participants (18%) stresses that universities do not use modern material and technical resources in their study programmes. One tenth (12%) of respondents mentions that graduates do not receive enough of professional trainings. To conclude with, it could be said that universities have as strong as weak features in the preparation of specialists in Environment change management.

Survey participants were asked to evaluate the need to improve certain areas of graduates training in physical and environmental sciences.

Almost all survey participants (97%) emphasized that the level and organisation of practical training should definitely be improved in the universities. Three quarters of the respondents (76%) voted for the option to conduct professional trainings of the students in companies. That means that stakeholder organisations would be eager to accept students for field-practice. This fact shows the desire of stakeholder organisations to participate actively in the preparation of future specialists in Environment change management. Three fifths of the respondents (64%) stressed that universities should draw more attention to research projects and develop students' skill of carrying out research activity. More than a half of survey participants (53%) think that material and technical resources should be improved in the universities. To sum up, in the opinion of research participant, the most important field to be improved in university studies is practical training of students. Representatives of stakeholder organisations would take an active part in the optimization of the preparation of specialists in Environmental sciences by providing them with field-based practice. According to informants, material and technical resources should also be improved in order to train highly-qualified specialists in Smart environment change management.

Survey participants were asked to evaluate the degree of importance of the fundamental knowledge and skills for an expert in environment and climate change management. Respondents' evaluation is presented in the table 1.

As it can be seen from the table, all listed fundamental knowledge and skills have been in general evaluated by the respondents as important. Major part of the respondents (89%) considers graduates' holistic

understanding of environment change management through integration of innovative technologies, adaptation and mitigation as the most important knowledge to be developed in university programmes. Slightly lower number of the survey participants (86%) thinks that development of graduates 'essential technical skills is of a major importance. To sum up, it should be stated that university programmes have to focus on the development of fundamental knowledge and skills of students in order to prepare them effectively for the occupation in smart environment change management.

To the mind of research participants, the most important practical skills for future specialists in Smart environment change management would be knowledge of computer technologies, research skills, awareness about the latest achievement in the field of Environment change management. These practical skills were evaluated as "highly important" or "important" by almost all research participants. According to respondents, computational skills and knowledge of methods of data and information processing, skills of project development and management, leadership skills are also of a major importance for future graduates. These skills were considered as important by at least three quarters of survey participants. Small part of the respondents considered that skills of assessment of risks associated with the consumer use of presented information and produce, understanding of principles of quality assessment, control and management, ability to apply the principles of innovation management are not essential for the university graduates. So these skills could be developed directly during the professional activity if needed.

Analysis of student's questionnaire results. Almost all students survey participants (98%) stated that they have heard about the concept "climate change". Even more than two thirds of the respondents (64%) agree that the introduction of new technologies as well as sustainable management would help to preserve the climate and adapt to it. However, there is a small part of the survey participants who have never heard about the climate change (12%) or heard just partly (22%). It could be presupposed that some (16%) of this part of the respondents consider information about climate change irrelevant due to various reasons.

When answering to the question "Which sources of information about climate change appear reliable to you?" almost three quarters (73%) of respondents pointed that they would fully trust the government and some worldwide environmental organisations (72%). Approximately the half of the survey participants (54%) noted that they would believe mass media (TV, radio, newspapers, internet resources). So, only one third of students (32%) survey participants would ask scientists about climate change issues.

The answers to the question "What additional knowledge and skills do you require for climate change mitigation and adaptation studies?" are illustrated in figure 1.

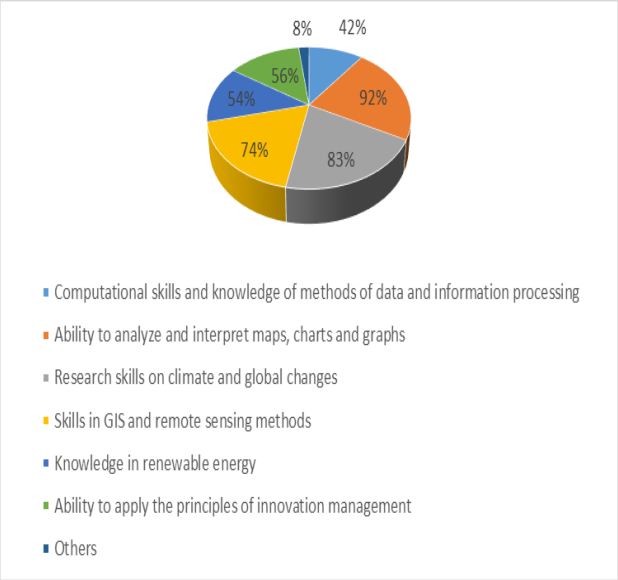

Fig. 1. Student's opinion on the knowledge and skills they require for climate change studies.

The major part of the survey participants (92%) expressed the need for the skills in interpreting of maps, charts and graphs to be developed. They also would like to acquire knowledge and skill in integration of all existing data for making a final diagnosis, conduction and monitoring of natural conditions in real time with the use of radar and satellite observations. Slightly more than three quarters (83%) of respondents pointed that they would require knowledge and skills in research on climate and global change. 74 percent of survey participants noted that they feel a need to develop skills of application of GIS and other remote sensing methods. Almost half of respondents mentioned the need for innovative management skills (56%) and knowledge on renewable energy (54%). To conclude with, it could be stated that potential Master students in Climate Change Management see the need in acquiring knowledge and skills in the most important fields such as analysis and research skills, application of new technologies.

More than four fifties (83%) of respondents stressed that climate change issues are very important and important to them personally. Probably this part of survey participants agrees that something should be done in order to tackle climate change (56%).

The answers to the question "Who do you think should have the main responsibility for tackling climate change?" are presented in figure 2.

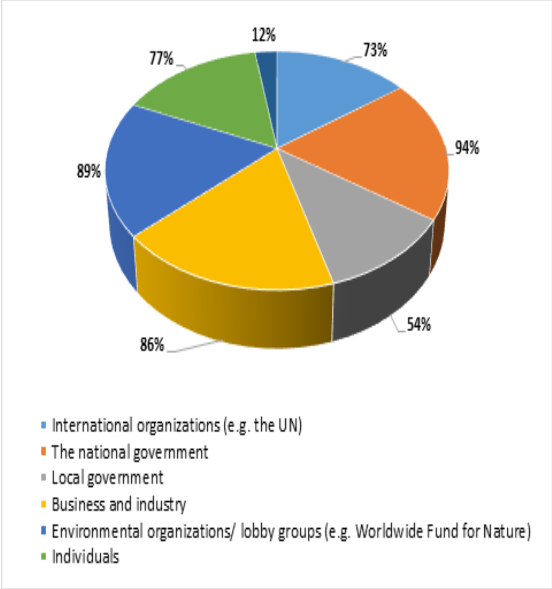

Fig. 2. Student's opinion on the responsibility for tackling climate change skills they require for climate change studies.

As shown in the chart (Fig. 2), the main part of research participants (94%) thinks that climate change tackling is the responsibility of National government. Three thirds of the respondents (89%) are sure that International organisations should be in charge of climate change issues. Whereas 86 percent of survey participants would delegate the responsibility for these problems to business and industry. To the mind of almost three thirds of respondents (73%) we ourselves are responsible for climate change. Summarizing the answers, it could be stated that students survey participants understand the importance of the issue of climate change and think that these problems should be monitored and examined on the national level.

Students were asked to indicate how much they agree or disagree with the statements about climate change management.

Almost all research participants (99%) strongly believe that climate change is an important issue and measures should be taken in order to tackle it effectively. Therefore, even more than two quarters (54%) disagree and strongly disagree that it is already too late to do anything about climate change.

96 percent of survey participants strongly agree or agree that human activity is responsible for climate change. However, two third (64%) of respondents think that natural variability has an impact on climate change. One third of research participants (31%) mentioned that climate change is just a natural fluctuation in earth's temperature.

Three thirds of respondents (92%) strongly believe that government should encourage initiatives on environment protection. However, even more respondents (97%) think that industry and business should be doing more to tackle climate change issues. 85 percent of respondents are sure that people can all do a bit to reduce the effects of climate change

Four fifths of the respondents (81%) think that pollution is the main cause that influences the climate change. More than a half of the respondents (54%) believe that energy consumption should be reduced in order to reduce the climate change.

In the opinion of the students (74%) recent floods or droughts in their country happened due to climate change. Moreover, 48 percent of respondents think that flooding (sea level) is tend to increase these days also due to climate change. The research results has also shown sociaty significant interest in understanding the drivers of climate extremes, that a warmer climate of world will lead to changes in the occurrence and magnitude of extreme events, including droughts, heavy rainfall and floods.

Table 1. Evaluation of the degree of importance of the fundamental knowledge and skills for an expert in environment and climate change management

Knowledge and skills	Very important	Important	Rather important	Neither important nor unimportant	Not important at all
Development of graduates' holistic understanding of environment change management through integration of innovative technologies, adaptation and mitigation	89%	11%	-	-	-
Development of graduates' conceptual and analytical skills to enable them to critically evaluate the projected impact of environment change on the economy and society, interconnections between natural and social geographical environment	73%	14%	13%	-	-
Development of graduates' skills of assessment of the solutions - at international, national and local level - that have been	54%	33%	13%	-	-

devised to address the impacts of environment change, either through technological change, policy, market mechanisms or regulation					
Development of graduates' essential technical skills (GIS, Remote Sensing, environmental engineering, modelling and monitoring, cartographical, mathematical and other geographical information receiving, analysis and interpretation methods)	86%	12%	2%	-	-

Conclusions

The survey results allow us to draw several broad conclusions about priorities within the climate change services and education field. Growing recognition on the part of the user community of the need to employ climate information to address challenges of variability and change.

Representatives of the stakeholder organizations, who participated in the survey, expressed the need for young specialists in Environmental sciences with Master level degree with climate change knowledge. Moreover, stakeholders pointed that in future the expansion of institutions will lead to new job opportunities so in the future demand for specialists is likely to increase.

When evaluating the degree of university training, stakeholder representatives stressed that usually it is more or less satisfactory, however theoretical training is of the better quality.

In their opinion, the most important field to be improved in university studies is practical training of students. Representatives of stakeholder organisations would take an active part in the optimization of the preparation of specialists in Environmental sciences by providing them with field-based practice.

According to respondents, uuniversity programmes, that prepare graduates in Environmental sciences, have to focus on the development of fundamental knowledge and skills of students in order to prepare them effectively for the occupation in smart environment change management. Graduates' holistic understanding of environment change management through integration of innovative technologies, adaptation and mitigation as the most important knowledge to be developed in university programmes.

The research of students and alumni was carried out in order to understand their current knowledge on the environment and climate change management. The aim of this survey was also to find out what knowledge and skills students require for the climate change mitigation and adaptation studies.

In the opinion of survey participants, climate change issues are of a major importance in the modern world and these problems should be monitored and examined on the national level involving national organisations, business and industry, research institutions and different education levels.

Moreover, according to respondents, human activity is responsible for climate change and adaptation. Therefore, government should encourage initiatives on environment protection and industry and business should be doing more to tackle climate change issues. Students mostly agree that the introduction of new technologies as well as sustainable management would help to preserve the climate and adapt to it.

To the mind of research participants, the most important practical skills for future specialists in Smart Environment and Climate Change management would be knowledge of computer technologies, practical skills, awareness about the latest achievement in the field of climate change sciences and adaptation management.

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IMPACTS OF HIGH SPEED RAILWAY ON TOURISM & TRAVEL INDUSTRIES IN EUROPE: POSSIBLE OUTCOMES FOR RAIL BALTICA

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Abstract
In the course of the development of European high speed railways (HSR) the assessment of their impact on the development of tourism and related industries has changed from the overoptimistic to a controversial one and even to the one raising concern.
In connection with the construction of a new high-speed railway Rail Baltica, which should connect Estonia, Latvia and Lithuania with the rest of Europe, the issue of planning the passenger traffic along the new corridor route should include the testing of provisional theories regarding the impact of new railway on the development of Tourism&Travel Industries.
Since the methodology of cost benefit analysis does not entail the above mentioned assessment, it is necessary to study the experience of other countries in this field in order to avoid repeating the same mistakes in the provisional assessment of HSR's impact on Tourism&Travel Industries.
The aim of the article: to organize and structure the available research dedicated to the quantitative assessment of the impact of European HSRs on tourism; to identify effective and negative types of the aforementioned impact; to make known this information to the interested parties of the Rail Baltica project, as well as to the officials, responsible for determining the policy in the field of tourism and transportation in the Baltic countries.
In the given research the author makes use of the methods of systematic approach, cluster analysis, comparative analysis of scientific literature and empirical studies, based on PRISMA Statement, as well as statistical methods.
Results: in the course of the analysis the author has found out that there might be the following impact of Rail Baltica on the development of tourism in the project's region: 1) redistribution of tourism markets among the member countries of the cross-border project; 2) the increase in the spatial competition in the Tourism&Travel Industries of the region; 3) the volume of induced passengers trips can exceed the forecast of investment assessments by at least three times.
Conclusions: the necessary methodological basis for the organisation of passenger traffic along the Rail Baltica route can be created only by studying the existing realities of the exploitation of HSRs in different regions. Due to the lack of research in this field, the given paper can comprise a source of information for the interested governmental institutions of the RB project's member countries, which might be useful for further detailed research. For example, it can concern the determination of cross-effects between the seasonality of tourism in the region and the organization of passenger traffic along the new railway corridor.
KEY WORDS: high speed railways; Rail Baltica; Tourism&Travel Industries; redistribution of tourism markets.

Introduction

The global concept of sustainable development has put forward the issue of reducing the impact of transport on the environment, as well as has brought to the fore the task of continuous modal substitution of the transport used by travellers. Governmental institutions and researchers increasingly rely on high-speed railways, since the ecological efficiency of such railways is perceived as a proven fact.

However, the issue of a wider use of high-speed railways for the purpose of tourism, "the logic of HSR's impact on tourism and related regional processes have not been studied profoundly yet" (Delaplace *et al.,*2014*)*. Currently, an impressive number of countries already have either an operating HSR or an HSR under construction, or plan to build a new network of high-speed railway. Therefore, the accumulated experience stemming from HSR's exploitation and the high cost of HSR's construction have given rise to a greater concern regarding prospective assessment of HSR's impact on tourism, inspite of the transport cost model of Prideaux (2000) 'that identifies the significance of transport as a factor in destination development as well as in the selection of destinations by intending tourists".The initial research carried out by Bonnafous (1987) showed the reduction of the number of over nights in the hotels located in the cities within the span of HSR's network. After a decade, Vickerman et al. (1999) expressed some reasonable doubt regarding the impact of HSR on tourism grounding his analysis on the connections between the expansion of HSR's network and regional development in Europe. Not a long time ago, in 2014, Ureña *et al.* came to the similar conclusion in respect to the Spanish region.

So far, the construction of high-speed railway Rail Baltica (RB) is the most massive cross-border project, which has been put into existence since the Baltic countries regained their independence. Despite the conclusion regarding the negative commercial results of the passenger traffic along the new railway corridor, which was drawn out in the investment justification of the project (Ernst & Young Baltic, 2017), the empirical assessment of the impact of the project on the development of tourism in the region in general and in each member state in particular has not been carried out. The author of the given article believes this fact to be a considerable limitation of the cost-benefit analysis, which is used to assess such significant cross-border infrastructural projects.

Schafer and Victor (2000) pointed out that "understanding of the interconnection between transport and tourism helps policy-making authorities to make decisions related to investments (directly or indirectly as infrastructure) and marketing measures (to encourage

interest in the use of transport for the purpose of tourism transportation). This needs to be done in order to interconnect transport and tourist experience, which would result in the increase of the demand on the type of transport profiting from the tourist influx.

The aim of the given article is to carry out the prospective analysis of the possible impacts of Rail Baltica's construction on the development of Tourism & Travel (T&T) Industries in the project's region, within the context of cultural and demographic peculiarities, the specifics of the industry regulation and the placement of railway stations in each of the member states of the RB project.

For this purpose the author has classified the empirical research, published from 2004 till to 2019, which assessed the impact of European high-speed railway transport on T&T industries.

On the basis of the carried-out analysis the author has put forward certain suggestions for further research. The results of such could be used efficiently by the interested governmental organisations and politicians for planning passenger traffic along the RB corridor, as well as for the working-out of long-term strategies of development for T&T Industries.

It should be pointed out that the given research is focused on the analysis of the existing empirical assessment of direct interaction between the development of high-speed railway transport and tourism. The given research does not cover the research works dedicated to the interconnection between HSR transport and tourism through the prism of the indirect factors, which are related to transport and can influence tourism in the long run. Such factors are the following: the ecological factor, the factors of modal shift and territorial planning.

Research methods

Primarily, the given paper aims at the classification and comparison of the research results dedicated to the assessment of the impact of high-speed railway passenger transport on tourism and the related industries in the European countries.

For the selection of the scientific publications the author has used three scientific databases: Scopus, ScienceDirect and Google Scholar, which do not have key words or language restrictions. The selection of research works was carried out on the basis of PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) Statement, the final version of which was given by Moher *et al.* (2009). The use of this approach ensures that the selection is carried out in technically concrete terms. Table 1 presents the criteria for the selection of the research works for the given review.

Table 1. Research selection criteria

Research element	Inclusion Criteria	Exclusion Criteria
Paper type	Article published in peer-review international journal (only with DOI); in Conference Proceedings (only with DOI)	Book chapter; Reports, "Grey literature"
Research region	Europe	
Research subjects	Influence of HSR on tourism or tourism-related industries	
Outcome measures	Influence performance	
Publication Period	2004-2019	
Paper language	English, Spanish	Paper published in other languages

Source: (created by the author)

To make predictive assessment of possible impact of the new route Rail Baltica on the development of Tourism & Travel (T&T) Industries in the project's region, the author uses methods of cluster analysis, the choice of which is induced primarily by the cross-border character of the project, thus, by the necessity of taking into account the regional aspects of the RB project in each member state.

Results and discussion

The results of the selection of publications from the leading economic scientific journals and the materials from the thematic conferences are provided in the Table 2. As we can see, the majority of works is dedicated to defining the specifics of a tourist profile who makes use of HSR (Delaplace *et al.,* 2014; Gutierrez and Ortuño, 2017; Gutiérrez *et al.,* 2018; Pagliara *et al.,* 2015a; Pagliara *et al.* 2015b). The studies also deal with the changes in tourist behaviour in the regions with HSR, the possibility of HSR to influence the choice of tourists to visit the chosen destinations for a second time, as well as with the possibility to increase the attractiveness of tourist landmarks. A number of articles is dedicated to the issues of boosting business tourism in the regions with HSR and the increase of competition between the cities within the HSR network .

The research analysis has shown: the lack of a unified model for the assessment of HSR's impact on tourism; a high dispersion of research results; the results of the ex-post assessment of HSR's impacts on T&T Industry are by far not as optimistic as the results of the

ex-ante assessment of investment justification (Gibb, 1986).

Moreover, it should be pointed out that only a very limited number of pay attention to the assessment of HSR's impact on the European tourism irrespective of bold statements made by many supranational and regional authorities about the need to develop sustainable tourism, which is, in fact, an important element of sustainable mobility.

Table 2. Review of empirical studies on the impact of European HSR on Tourism & Travel Industries

Author/title	Year	Region	Methodology of research	Finding
Albalate D, Fageda X./ *High speed rail and tourism: Empirical evidence from Spain*	2016	Spain	Differences-in-Differences evaluation method; timing effects model	"HSR accessibility does not promote tourist activity"; "…significant negative impact on tourism at the provincial level"; "…Leisure passengers are price sensitive"; "HSR does not affect the number of overnight stays"; "…the impact of HSR depends on the form of a network"
Albalate, D.; Campos, J.; Jiménez, J.L. / Tourism *and high speed rail in Spain: Does the AVE increase local visitors? Annals of Tourism Research*	2017	Spain	Differences-in-Differences evaluation method; panel data estimation	"HSR effects on tourism are extremely weak or just restricted to larger cities"
Bellet C, Ureña J-M/ *High-Speed Rail Transport and its Implications for Different Types of Cities and Territories*	2016	Spain	Survey of HSR passengers; logistic regression model	"…in a corridor with low demand HSR would tend to promote new flows"; "HSR has greater relevance for business trips…"
Campa, J.L., Arce, R., López, M.-E , Guirao, B./ *Can HSR improve the mobility of international tourists visiting Spain? Territorial evidence derived from the Spanish experience*	2018	Spain	New panel database; fixed effects model	"Foreign visitors on coastal touristic regions are reinforced by HSR"; "HSR network may profit central regions with cultural tourism"; "HSR network encourages further competition between the tourist destinations located at HSR network nodes"
Cascetta, E.; Papola, A.; Pagliara, F.; Marzano, V./ *Analysis of mobility impacts of the high speed Rome-Naples rail link using within day dynamic mode service choice models*	2011	Italy	Revealed Preference (RP) survey; Nested Logit model	"…the introduction of the High Speed service between Rome and Naples increases trip frequency (12.7% and 15.6% during the weekday, and on Saturday and Sunday respectively) and new trips never taken before". "Cities that are linked together into a band of cities by means of a HS train are transformed into an extended functional region".
Coronado JM, Garmendia M, Moyano A, Ureña JM. / *Assessing Spanish HSR network utility for sameday tourism*	2013	Spain	Time Geography principles	"While the visitors of central cities could make day-return trips to nearly all the HSR cities, HSR line endpoint cities and small intermediate locations offered considerably fewer viable options for tourists".
Dallen, J./ *The challenges of diverse visitor perceptions: rail policy and sustainable transport at the resort destination*	2007	South West of England	Revealed Preference (RP) survey	"Tourists who used rail to reach the destination were driven by congestion avoidance (for 54% of respondents) recommendations from friends or family, enjoyment and relaxation on the train, as well as environmental contribution".
Delaplace M, Pagliara F, Perrin J, Mermet S./ *Can High Speed Rail foster the choice of destination for tourism purpose?*	2014	Rom and Paris	Revealed Preference (RP) surveys of tourists; logistic regression model	"…the choice of young people is influenced by the presence of HSR". "…the HSR systems will definitely influence national and regional policies on rail".
Garmendia M, Ribalaygua C, Ureña JM./ *High speed rail: implication for cities*	2012	Europe	Urban and territorial approach	"HSR is most widely used for daily (or very frequent) commuting for travel"
Guirao B., Campa J.L. / *Cross Effects between High Speed Rail Lines and Tourism: Looking for Empirical Evidence Using the Spanish Case Study*	2016	Spain	Multivariate regression model for panel data	"…the effects on tourism demand caused by HSR are controversial and, thus, clear empirical evidence cannot be derived"

Guirao B., Campa J.L., López M.E. / *The Assessment of the HSR Impacts on Spanish Tourism: An Approach Based on Multivariate Panel Data Analysis*	2016	Spain	Multivariate Panel Data Analysis	"HSR in Spain has affected positively foreign tourism (especially revenue coming from foreign tourism)"; "In Spain, HSR serves mainly domestic trips, like in the other parts of Europe"
Gutierrez A, Ortuño A./ *High speed rail and coastal tourism: Identifying passenger profiles and travel behaviour.*	2017	Spain	Survey of HSR passengers; logistic regression model	"There is no unique profile for passengers using HSR services for tourism"; "…it is crucial to consider the specific characteristics of each destination and its current market"
Gutiérrez, A., Saladié, O., and Clavé, S. A./*High-speed rail and tourism destination choice: the role and significance of the Camp de Tarragona station for passengers visiting the Costa Daurada*	2018	Spain	Causal probabilistic method	"…the existence of the Camp de Tarragona HSR station generates a low impact in terms of attracting new tourists to the Costa Daurada (4%)"
Martín J., and Gutiérrez, J. / *Data Envelopment Analysis (DEA) index to measure the accessibility impacts of new infrastructure investments: The case of the high-speed train corridor Madrid-Barcelona-French border*	2004	Madrid-Barcelona-French border	Data Envelopment Analysis	"New economic geography (NEG) model"; "…polarizing effects of the HSR-cities depend on the index of location, the economic potential, the relative efficiency of the network and the daily accessibility".
Masson, S., Petiot, R./ *Can the high speed rail reinforce tourism attractiveness? The case of the high speed rail between Perpignan (France) and Barcelona (Spain)*	2009	France-Spain	New economic geography (NEG) model	"…the increased spatial competition may reinforce the phenomenon of the tourism activities agglomeration around Barcelona to the detriment of Perpignan"; "…to confront agglomeration forces it is necessary to differentiate tourism product".
Moyano, A., Rivas, A., and Coronado, J.M. / *Business and tourism high-speed rail same-day trips: factors influencing the efficiency of high-speed rail links for Spanish cities*	2019	Spain	Econometric models	"Large cities in peripheral locations of the HSR network are generally more favoured for business trips, while intermediary cities are more likely to achieve higher efficiency for tourism". "For tourism trips, timetables are the key factor in the efficiency measurement, while for business trips the location of HSR stations is more relevant".
Pagliara, F., and Mauriello, F. / *The Effects of Investments in New Transport Technologies such as HSR on the Tourism Industry*	2019	Italy	Pre-processed testing; multivariate analysis	"For the medium-sized cities, positive effects were registered on condition that they were "equipped" with tourist amenities, corresponding to a "basket of goods" among which tourists could choose". "City size is also an important factor to consider for the analysis of the relationship between the HSR and the tourism dynamics".
Pagliara, F., and Mauriello, F. Garofolo, A. /*Exploring the interdependences between High Speed Rail systems and tourism: Some evidence from Italy*	2017	Италия (77 Italian municipalities)	Panel data model; econometric model	"…the impacts of HSR on the number of Italian visitors and the number of nights spent at a destination are positive in all the municipalities served by HSR"
Pagliara, F., Delaplace, M., & Vassallo J.M. / *High-speed rail systems and tourists' destination choice: The case studies of Paris; Madrid*	2015	Paris and Madrid	Two revealed-preference (RP) surveys; logistic regression approach	"For Paris, TGV is considered to be a real transport mode alternative among tourists". "On the other hand, Madrid is chosen by tourists irrespective of the presence of an efficient HSR network"
Pagliara, F., La Pietra A., Gomez J, Vassallo, J.M. / *High speed rail and the tourism market: Evidence from the Madrid case study*	2015	Spain	Logistic regression model	"Spanish HSR system seems to have a significant effect on the tourists' choice to visit other cities close to Madrid, but the choice of Madrid as a tourist destination is not influenced by the presence of HSR". "HSR, connecting urban centres with neighbouring cities, impacts the choice of these destinations for tourism purposes".
Ureña, J.M, Menerault, P., Garmendia, M./ *The high-speed rail challenge for big intermediate cities: A national, regional and local perspective*	2009	Spain	Case-study approach, taking account of specific circumstances and contexts	"HSR increases regional disparities and reinforces existing core-periphery patterns"; "HSR tends to induce the relocation of certain activities (typically office-based)"

Source: (created by the author)

It has to be said that for the last fifteen years only two empirical researches in Europe have been dedicated to cross-border HSR projects (Martín & Gutiérrez, 2004; Masson & Petiot, 2009). In the author's opinion, the neglect that the scientific world exhibits towards the given topic is one of the contributing factors for the following phenomenon: "*European high-speed rail network: not a reality but an ineffective patchwork"*(European Court of auditors, 2018).

In his own turn, already in 2015 Vickerman argued that "the creation of the high-speed rail TEN-T has not met the primary objectives of reducing regional disparities in accessibility or reducing the effect of national borders on regional integration."

Unfortunately, there is no research on the capability of HSR to generate new trips related to T&T Industry; as well as there is no quantitative assessment of HSR's impact on the industry. The above mentioned capability of HSR is registered only as an additional outcome of the conducted research (Gutiérrez *et al.,* 2018; Cascetta *et al.,* 2011; Bellet and Ureña, 2016).

Most of the above mentioned research works emphasize a definite necessity for the efficient and complex governmental and regional policy, which is aimed at securing the successful implementation of HSR based on the profitable tourist flows (Martín & Gutiérrez, 2004; Dallen, 2007; Pagliara & Mauriello, 2019; Masson & Petiot, 2009; Delaplace et al., 2014; Cascetta *et al.,*2011). Intrinsic characteristics of the cities within the RB project's span will have an enormous influence on the capability of a new railway corridor to boost tourist market in the region. For instance, after researching 77 Italian municipalities, Pagliara & Mauriello (2019) concluded that "positive effects were registered on condition that they [cities] were "equipped" with tourist amenities, corresponding to a "basket of goods" among which tourists could choose".

On the basis of the available European scientific research, the author assumes that in order to make predictive assessment of possible Rail Baltica's impact on the development of T&T Industries in the project's region, the following contextual differences should be taken into account:

1) while in Estonia the development of transport, regional and tourism policies is supervised by a single state authority, in Lithuania and Latvia these policies are monitored by three different ministries. Most probably, such coordinated approach towards making decisions is reflected in the extent to which the governments of member countries of the RB project actively promote and orchestrate the development of the T&T sector. According to "The Travel and Tourism Competitiveness Report 2019" under the index of "Prioritization of Travel & Tourism" Estonia is ranked number 20, whereas Latvia and Lithuania are ranked 78 and 89 respectively.

2) a modest number of inhabitants in the capitals of member countries and low density of population along the new railway corridor of the project. These factors can introduce significant amendments into the assessment of the possibility of the RB project to influence the development/change of tourist environment in the project's region in comparison with other European HSR projects.

Table 3. Key tourism indicators in the countries with HSR network

Country	**Population**	**Density of population**	**HSR lines' length**		**T&T competitiveness Index**	**T&T industry in GDP**		**international tourist arrivals**
			in operation	**under construction**				
unit	thous. people	people./ km2	km	km		US $ mln	%	thous. people
1	2	3	4	5	6	7	8	9
Spain	46.736	92	2852	904	1	78,464.0	5,4	81.869
Great Britain	67.530	278	113	230	6	105,283.6	3,7	37.651
France	65.129	118	2734	-	2	109,404.9	3,9	86.918
Germany	83.517	234	1571	147	3	138,987.8	3,5	37.451
Italy	60.550	201	896	53	8	117,336.8	5,6	58.253
Belgium	11.539	378	209	-	24	11,829.4	2,2	8.358
Sweden	10.036	22	-	161	22	13,472.0	2,4	6.865
Latvia	1.907	30	-	870	53	1,230.2	3,6	1.950
Lithuania	2.759	42	-		59	948.0	1,8	2.523
Estonia	1.326	29	-		46	1,110.6	3,8	3.245
Data source:	UN	UN	UIC		UNWTO	UNWTO	UNWTO	UNWTO

Source: (created by the author)

As follows from Table 3, the density of population in the regions of RB project is 3-4 times lower than in the countries with operational HSR. Whereas the gap between the number of foreign tourists coming to the region of RB project is ten times lower compared to the number of such tourists in the European countries with the operational HSR network.

On the other hand, taking into account the results of the empirical research made by Bellet and Ureña (2016), Cascetta *et al.* (2011); Pagliara *et al.*(2017) the stakeholders of the RB project should reconsider the amount of the induced demand on passenger trips in terms of its increase from 5% from the total passenger flow (Ernst & Young Baltic, 2017; p. 116) to 25-30% in the first year of its operation, with the subsequent gradual decrease to 15-17% by the third year of the operation of the new railway corridor. It should be pointed out that the general increase in the level of mobility would give a short-term negative ecological effect, which, at the same time, could be compensated by a higher energy efficiency of transportation due to an increase in the occupation rates.

3) in the last decade the research works dedicated to the given topic have discussed the importance of the type of the HSR network for the development of T&T Industry. For example, it is reflected in the research works of Albalate &Fageda (2016) and Pagliara *et a*l. (2015). One of the most profound academic research works in this field was made by Perl & Goetz (2015) and it "identifies and explores three strategic models of HSR development: exclusive corridors (e.g., Japan), hybrid networks – both national (e.g., France and Germany) and international (e.g., European Union), and comprehensive national networks (e.g., China and Spain)". The most positive assessment regarding the ranking of all the data, chosen for the purpose of comparison, refers to the corridor model of HSR network. The layout of the RB project's railway is analogous. The only exception is that the RB railway will have cross-border corridors instead of exclusive corridors. This fact could undermine the overall efficiency of the chosen network type due to the increase in competition between the regional sections of the RB project especially on a tourist market. This is manifested in the results of the research made by Martín & Gutiérrez (2004); Masson & Petiot (2009).

Moreover, the difference in the layout of the stations of a new railway corridor will contribute to the increase in the competition for tourist flows among the regions of the project. For instance, three railway passenger stations – Kaunas, Vilnius and Panevezys which are to be built in Lithuania, in their own turn, would create the largest agglomeration effect from RB's exploitation among all the sections, thus, increasing the number of domestic trips related to business and weekend leisure. The Y-shape of the Lithuanian section of the project would enable the tourists to make one day return trips from Kaunas to Vilnius and *vice versa*. The general number of over nights within the country will not be reduced, whereas general expenditure on entertainment, restaurants and museums would make an increase according to the conclusions made by Guirao *et al.* (2016).

In Latvia the location of railway stations under the RB project is planned only in Riga Airport and Riga itself, with the distance of 13 km between the stations. Such location would only increase the gap between Riga and other regions of Latvia due to the opportunities for tourism that Riga can offer. Furthermore, such location, as Albalate *et al.* (2015) claim, "can feed air demand, thus partially compensating effects from competition."

One of the positive factors of the railway stations' location on the Latvian section of RB route is their central location in between the end of the line stations of the whole corridor. There is a definite possibility for Riga to win over a number of over nights consumed by tourists, who will have an opportunity to visit Kaunas, Vilnius, Parnu and Tallinn during a one day trip from Riga. In order for this to happen two factors have to be taken into account. The first is the implementation of timetables with high frequency of passenger trains, which according to Moyano et al. (2019) is "the key factor in the efficiency measure". The second one is the maintenance of high speed regime of passenger traffic promised by the stakeholders of the RB project.

The Latvian section of the RB project can become one of the most attractive sections in the whole corridor for international tourism, only in case certain preconditions are met, for instance, such as a well-coordinated policy of both Riga Airport, aimed at attracting a larger number of low-cost carriers and expanding the geography of their routes, and governmental bodies responsible for the development of the Latvian section of RB.

Two railway stations, in the cities of Tallinn and Parnu, are planned to be built in Estonia to organise passenger traffic. The data from Table 3 shows that, currently, the highest number of incoming tourist among the member countries of the RB project is in Estonia. The Estonian section of RB exhibits the highest tourist potential, secured by the legislation and readiness to offer a tourist product, which integrates tourism and transport in a single package (Schiefelsbusch *et al*., 2007).

4) All the countries in the RB project are characterized by a high level of tourism seasonality, which significantly influences both the labour market (people have to find another place of employment in the winter) and the quality of tourists' service (it is not always possible to employ qualified personnel during the peak season).

Among European research dedicated to the assessment of HSR impact on tourism development there is practically no research on the empirical assessment of the impact of HSR on the seasonality of tourism.

As railway passenger transportation does not depend on weather conditions, the author assumes that putting RB corridor into exploitation would positively influence and increase the tourist activity in the region during the low season. Furthermore, the main increase would concern business trips and domestic trips for leisure. Nevertheless, in order to make definite conclusions

regarding the reduction of the seasonality of tourism in the region of the RB project, it is necessary to carry out serious empirical research involving all the interested parties of the project.

Conclusion

Existing studies considering HSR impact on the tourism industry are based on various methodologies and do not allow to develop a common model for different countries.

Results of such studies largely complement each other, however, differ in tasks, aspects and methods of assessment. This indicates that the area in question remains debatable and it is necessary to take into account a wide range of factors in it, especially those related to the territorial context.

The lack of the research regarding interdependence between HSR and tourism seasonality does not allow to have clear conclusions when it comes to reduction of the main problem in the regional T&T Industries of the area covered by the RB project, so it is suggested by the author that serious empirical research is conducted involving stakeholders as well as all other interested parties.

Following important problem is the inaccuracy and incompleteness of statistical data (not all models include non-hotel overnight stays of tourists and indirect income from restaurants, museums and trade).

In order to assess the impact of the RB railway route under construction on T&T Industries of the project's region it is necessary to increase the awareness of policy-makers about this systematic process, which depends on multi-sectional interaction and related institutional and social networks. Only in this case it is possible to secure the coordination of local-regional policies with the strategies for the development of transport and tourist sector.

In its own turn it would allow to work out certain approaches and tools to ensure and maintain the sustainable mobility and the development of tourism in all of the Rail Baltica project's regions.

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