

ISSN 1648-7974

**LIETUVOS VERSLO KOLEGIJA**  
**LITHUANIA BUSINESS UNIVERSITY OF APPLIED SCIENCES**



# VADYBA

**2016 Nr. 1 (28)**

*Journal of Management*



KLAIPĖDOS  
UNIVERSITETO  
LEIDYKLA  
Klaipėda  
2016

Name of publication: **Journal of Management** (ISSN: 1648-7974)

Issue: Volume 28/Number 1/2016

Frequency: Semianual

Languages of articles: English,

Office of publication: Klaipeda University Press

Herkaus Manto 84

LT-922294, Klaipėda

Lithuania

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**Journal of Management Homepage:** <https://www.ltvk.lt/VADYBA>

The journal is reviewed in:

Index Copernicus (IC) database <http://www.indexcopernicus.com>,  
<http://jml2012.indexcopernicus.com/VADYBA,p24783103,3.html>

Central and Eastern European online Library (CEEOL) database  
<http://www.ceeol.com/>

EBSCO Publishing, Inc. Central & Eastern European Academic Source  
<https://www.ebscohost.com/titleLists/e5h-coverage.htm>

<http://www.mab.lt/lt/istekliai-internete/mokslo-zurnalai/282>

Every paper is revised by two reviewers.

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ISSN 1648-7974 (Print)

ISSN 2424-399X (Online)

Leidinio pavadinimas: **Vadyba** (ISSN: 1648-7974)  
Leidimas: Volume 28/ Number 1/2016  
Periodiškumas: Leidžiamas dukart per metus  
Straipsnių kalba: Anglų  
Leidėjo adresas: Klaipėdos universiteto leidykla  
Herkaus Manto g. 84  
LT-922294, Klaipėda

Redakcijos adresas: doc. dr. Jurgita Martinkienė  
Mokslo-taikomųjų tyrimų skyrius  
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Faksas +370 46 314 320  
Elektroninis paštas: jurgita.martinkiene@lrvk.lt

**Žurnalo internetinio puslapio adresas:** <https://www.lrvk.lt/VADYBA>

Žurnalas referuojamas:

Index Copernicus (IC) database <http://www.indexcopernicus.com>,  
<http://jml2012.indexcopernicus.com/VADYBA,p24783103,3.html>

Central and Eastern European online Library (CEEOL) database  
<http://www.ceeol.com/>

EBSCO Publishing, Inc. Central & Eastern European Academic Source  
<https://www.ebscohost.com/titleLists/e5h-coverage.htm>

<http://www.mab.lt/lt/istekliai-internete/mokslo-zurnalai/282>

Kiekvienas straipsnis yra peržiūrimas dviejų recenzentų.

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ISSN 1648-7974 (Print)  
ISSN 2424-399X (Online)

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## Editorial

“Journal of Management“ is periodically published applied sciences journal by Lithuanian Business University of Applied Sciences. It is being published since 2002 and already has solid experience. During this period there was a change in journals form, structure and content. Journal has been positively evaluated by foreign scientists, as number of them publishing is constantly increasing. Articles in the journal can only be published in English. Currently, 28<sup>th</sup> number of the journal is being released to readers. Only thoroughly selected articles by editorial board are being published. Authors of these articles represent various Lithuanian and foreign countries science, education and business institutions, such as Lithuania Business University of Applied Sciences, Kaunas University of Technology, Vilnius Mykolas Romeris University in cooperation with London Middlesex University, Szent István University (Hungary), Baltic International Academy (Latvia), Dubnica Technology Institute (Slovakia), University of Security Management in Košice (Slovakia), Czech Technical University in Prague (Czech Republic), Grigol Robakidze University (Georgia), Alexander Dubček University of Trenčín (Slovakia) and other institutions.

The journal provides opportunity for academics and professionals to interact and communicate in international forum. Applied research journal „Journal of Management“ Editorial Board goal is to achieve that published articles will analytically describe foreign countries economical, business and technological environment. These criteria will be evaluated while selecting articles. So, we expect that when readers get familiar with published articles, they will be able to find new and thoughtful material.

Multiple articles in the journal are presented by foreign scientists. It is worth mentioning the article by Hungarian scientists K. O. Agu and M. Fekete-Farkas where authors thoroughly describe creativity and innovation importance in an organization.

This particular case study regards the topic of creativity and innovation from a perspective of having culturally diverse organization and how it can impact these factors. The paper also examines the effects of homogenous and heterogeneous workforces of an organisation in order to be innovative and competitive. These topics must be addressed in an organisation as an increase in creativity and innovation may gradually lead to ability to surpass the existing economic propensity, with the opportunity to take on new market, add more customers, discover new market niche, make profits and as well as satisfy shareholders.

Another distinctive research in the journal is made by few Lithuanian authors V. Gružasuskas, D. Karosevičiūtė together with Slovak scientist P. Srovnalíková as they analyse the importance of labour and machine efficient utilization to the profits of the enterprise.

Journal also presents some researches made solely by Lithuanian scientists, as in their article D. Melėnaitė and R. Remeikienė analyses the assessment of the impact of foreign direct investment on Lithuanian's competitiveness.

Undoubtedly all researches in the Editorial could not be reviewed, so we encourage familiarizing with them in the journal.

We invite scientists to actively publish in the journal, share their research results and methodological insights. We expect for close cooperation.

Prof. Dr. (HP) Valentinas Navickas  
Editor-in-Chief





## RISKS IN THE SHIPBUILDING AND SHIP REPAIR INDUSTRY IN LATVIA

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### Annotation

It is impossible to run business without facing any risk. Improper attitude by the senior management of a company to risks may lead to serious consequences: financial losses, decline in stock prices, and loss of business reputation or even bankruptcy. The task of the research is to assess the situation of risks in the industry of shipbuilding and ship repair in Latvia. The novelty of the research is determined by the fact that for the first time the main risks have been identified and analysed in the industry of shipbuilding and ship repair in Latvia. The object of the research is the most important risks in the shipbuilding industry in Latvia. The goal of the research is to identify, analyse and rank the main risks in the shipbuilding industry in Latvia by the probability of undesirable results and the extent of possible damage. Methods of the research are the analysis of statistical data, systems analysis of shipbuilding industry and its environment. Within the framework of the research, it was found out that most risks in the shipbuilding and ship repair industry in Latvia could be attributed to very small, small and medium risks. There are virtually no risks of a magnitude of 0.6 to 1.0. By the extent of possible losses, risks occupy the entire range of values starting from negligible to catastrophic damage. The final decision on the adoption and optimisation of risks at the companies of the industry should be the prerogative of the senior management of a particular company. Senior management of companies of the industry should devote particular attention to the operation of marketing departments, as their responsibilities include commercial and financial risks. Commercial risks are very small in magnitude, but can have a very large extent of possible damage. Financial risks are large enough in magnitude – to 0.6 and have a great extent of possible damage. It is necessary to devote constant attention to political risks, especially at the international scale, as well as to monitor changes in the tax legislation of Latvia.

KEY WORDS: shipbuilding branch, risk, matrix of risks, tolerance zone, risk appetite.

### Introduction

In a market economy, companies operate under conditions of uncertainty. At the beginning of the 20th century, these uncertainties have increased significantly, as apart from economic crisis, political ones appear; the world economy has become global, and there has been much more competition nowadays. Any organisation, regardless of products it manufactures, is constantly exposed to risks. It is impossible to run business without facing any risk (Boulton 2000). The risk is introduced to the business by uncertainties. The term “risk” refers to an event or action that may adversely affect the company’s ability to achieve its objectives and may also prevent the successful implementation of its strategy (The Economist ...1995). Risk is one of the important concepts, which is always associated with the vigorous activity of people in all walks of life. Improper attitude by the senior management of a company to risks may lead to serious consequences: financial losses, decline in stock prices, and loss of business reputation or even bankruptcy.

When the senior management of a company decides to invest in a particular project, it is always the task of choosing the most optimal and best solution out of many options under given circumstances. Generally, in the simplest case, each solution has two main characteristics: the average expected return and the average expected risk. Thus, a two-criterion optimisation problem is solved in order to choose the best solution (Малыхин 1999). When choosing the best variant of solution, one should strive to ensure the effectiveness of solution, i.e. income should exceed potential risks that may arise. There are different ways of setting these optimisation problems. For

example, the company has an opportunity to implement several projects. Each project, for example  $\alpha$ , has its own two characteristics:  $E(\alpha)$  – efficiency and  $R(\alpha)$  – risk. Projects differ from each other by at least one characteristic. It is assumed that project  $\alpha$  is dominated by project  $\beta$ , if  $E(\alpha) \geq E(\beta)$  and  $R(\alpha) \leq R(\beta)$ .  $\alpha$  – a dominant project, and  $\beta$  – a dominated project. The best project should be found among non-dominated projects. The set of non-dominated projects is called the Pareto optimal set. If the project belongs to the Pareto set, then by any of its characteristics it is always possible to find the other characteristic.

**Subject and relevance, theoretical basis.** Modern investment theory studies sets of projects, i.e. “portfolios” taking into account both the returns and the risks of individual projects and the portfolio as a whole. The probabilistic non-deterministic nature of the variables under consideration is also taken into account. Different models of portfolios are developed, such as the Markowitz model, Black model, Tobin model etc. (Малыхин 1999). These models allow reducing the risk of portfolio as a whole compared with the risks of projects included in it. It is possible to set and solve the problem of portfolio optimisation. This optimisation problem has multiple criteria. Different approaches are used to solve these problems. The three most common methods are as follows:

1. As it is almost impossible to find the best solution taking into account all criteria at once, the most effective solution is found in the given situation.

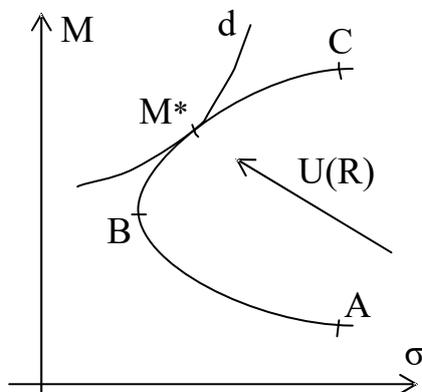
2. One of the criteria is assumed to be the main one, the rest of the criteria are used to set critical values. For

example, the risk should be minimal, and the income should not be below a certain value.

3. Convolution of all criteria in one is used.

As a measure for the formalisation of the concept “expected return”, the mathematical expectation of income  $M$  is used, around which the random values of income are scattered. A measure of risk is assumed to be the degree of dispersion of project results – the variance of income  $\sigma^2$ . These measures were proposed by G. Markowitz in the middle of the 20th century. At present, instead of variance  $\sigma^2$  the standard deviation of random income  $\sigma$  is commonly used since it has the same dimension as the income. The analytical solution to a multi-criteria optimisation problem, for example, by using the second or third method requires a large amount of statistical data that are almost impossible to obtain under the present conditions of the shipbuilding industry in Latvia, as well as demands complicated calculations. Similar calculations are performed by the world’s largest companies that have a long experience and well-functioning system of risk management: E.I. Du Pont de Nemours and Co, United Grain Growers Limited etc. (Barton 2002). For companies operating in the shipbuilding and ship repair industry in Latvia, it is more appropriate to use the system of assessment of risk-to-revenue ratio by leading experts of companies, perhaps, also by attracted external experts in order to make decisions regarding investment in projects.

The process of finding the optimal solution to invest in projects can be represented graphically in the criterion plane  $M, \sigma$  (Fig. 1) (Трояновский 2002).



**Fig. 1.** Determination of the point of optimal solution  $M^*$  to the problem of selecting the best project geometrically.

Figure 1 depicts a typical curve ABC – the set of efficient portfolios of projects. The region BC is the Pareto optimal set, the region AB is the set of dominant projects.  $U(R)$  is a vector of the utility function, which is represented by the indifference curve  $d$ . The investor’s indifference curve  $d$  represents a set of equivalent portfolios. The higher the indifference curve  $d$ , the greater the utility function. When the curve  $d$  approaches the vector  $U(R)$ , the last tangency point of the curve  $d$  and the region BC of the Pareto optimal set is  $M^*$ . This will be the point of optimal solution to the project selection problem.

*The task of the research* is to assess the situation of risks in the industry of shipbuilding and ship repair in Latvia. *The novelty of the research* is determined by the fact that for the first time the main risks have been identified and analysed in the industry of shipbuilding and ship repair in Latvia. *The object of the research* is the most important risks in the shipbuilding industry in Latvia, which can occur with a certain probability and result in significant losses of companies. *The goal of the research* is to identify, analyse and rank the main risks in the shipbuilding industry in Latvia by the probability of undesirable results and the extent of possible damage. *Methods of the research* are the analysis of statistical data, systems analysis of shipbuilding industry and its environment.

### Main risks of companies of the industry and their ranking

Companies of the shipbuilding industry in Latvia, likewise firms of other sectors of national economy, are constantly exposed to numerous risks. So far, the issues of comprehensive and integrated approach to risk management in the industry have been given little attention; however, there have been cases when companies suffered very heavy losses. For example, at Liepaja shipyard a customer suddenly refused to accept and pay for the order already made – the yacht worth about 1.5 million €. At the beginning of the 21st century, the issues of risk management are no longer only the concern of the company financial experts. Previously, it was believed that negative consequences of unforeseen events were limited to a certain area, for example, administrative or financial. But in fact, they affect several different areas of business. Therefore, an integral approach to risks that takes into account all the relationships and mutual interaction is considered to be more appropriate and accurate.

In accordance with a new paradigm of risk management, companies are beginning to use the integrated rather than fragmented approach to risk. It should be noted that in the world’s leading companies (Microsoft Corporation, Du Pont de Nemours and Co, UGG, etc.) the analysis of risks and their ranking have become the responsibility of top managers – president, vice-president of a company, etc. (Stewart 2000). Microsoft is a “pioneer” in a comprehensive integrated approach to risk management (Teach 1999, Moules 1999). All the work with risks is coordinated and controlled by the top executive management of company; it becomes a continuous process, involving almost all the top and mid-level employees of companies. Both internal and external risks faced by the company are considered and controlled to the extent possible. The approach to risk management should be structured and consistent. It should combine strategy, processes, people, technologies for the assessment and management of uncertainty factors that may affect the achievement of objectives both negatively and positively (De Loach 2000).

It is known that there is no single universal approach to the organisation and implementation of risk management in different companies of the same industry. Much depends on the attitude towards it by the senior management of a company and the level of cultural

environment of a company. In general, the primary responsibility for the identification and monitoring of risks should be assigned to the senior management of a company, as eventually the entire responsibility for the unfavourable impact on the company due to consequences of risks unaccounted and not taken into account lies exactly on the senior management of a company. In today's rapidly changing international business, risk is not always obvious. Therefore, almost all the management staff of a company should always be engaged in risk identification. For this reason, the world's leading companies often use the scenario analysis and self-assessment. Identification of risks is carried out on a regular basis; risks are also correlated with real events at the related enterprises in a home country and abroad. In some foreign companies, leading specialists use the method of brainstorming. To identify the risks, leading foreign companies often attract external consultants as the so-called "fresh mind" for the impartial view of the situation. Identified risks should be ranked taking into account their importance, severity of consequences and their probability. Experts of Microsoft Corporation consider that more information is usually available about repetitive events and risks associated with smaller extent of possible negative consequences. At the same time, there is less information about infrequent events but with serious consequences (Callinicos 1999, Microsoft 2000).

In the present research, in order to identify, analyse and rank the main risks by the possibility of undesirable effects on companies operating in the shipbuilding and ship repair industry in Latvia, a group of senior specialists of a number of leading industry companies was gathered. The external consultant of RTU was also interviewed to found out the viewpoint on the risks and their possible negative impact. The final decision on the ranking of risks was entrusted to chief executives of certain enterprises by analogy with Microsoft Corporation (Callinicos 1999, Microsoft 2000). The scenario analysis method was used, including a study of long-term perspectives, as well as the procedure of individual assessments. In the process of scenario analysis, not only possible scenarios of development of situations associated with risks and their negative effects were considered, but also the real events and their negative effects on other companies in Latvia and abroad were taken into account. It is almost impossible to forecast situations and be ready to face all possible business risks (McCarthy 2004). The study identified and analysed only the following main risks.

1. Political risks: various economic sanctions; upheaval, terrorist attacks in countries where there are ordering companies (customers). The magnitude of the risk (probability of an undesirable outcome) is 0.3–0.4.

2. Social risks: the possibility of strike of workers at a particular company or in solidarity with other organisations. The magnitude of the risk is 0.05–0.1.

3. Commercial risks: refusal of customers from already finished products and to pay for all work performed. The magnitude of the risk is 0.05–0.1.

4. Financial risks: partial or total refusal of customers to pay in time for the work carried out due to various reasons; currency risks due to changes in exchange rates. The magnitude of the risk is 0.4–0.5.

5. Production risks: the inability to execute the order in time due to various reasons (project documentation is not ready; raw materials are not received in the required time frame, lack of specialists, etc.). The magnitude of the risk is 0.2–0.3.

6. Risks of innovation: refusal to perform initiated projects due to various reasons (lack of money, suppliers failed, defects revealed in new equipment, etc.). In this group of risks, it is taken into account that innovations are always associated with an increased risk of 15–20% (Fathutdinov 2000). The magnitude of the risk is 0.3–0.35.

7. Technical risks: violation of technology, defect, failure to comply with safety regulations, technological accidents, the effect of weather conditions (low air temperature). The magnitude of the risk is 0.05–0.1.

8. Transportation risks: damage occurred to units and materials as a result of transportation, transportation delays, loss or theft of cargo, etc. The magnitude of the risk is 0.1–0.2.

9. Ecological risks: technogenic accidents; fuel, lubricant spills, etc. The magnitude of the risk is 0.1–0.15.

10. Risks of changes in legislation: changes in the tax system may reduce the competitiveness of companies, lead to direct financial losses. The magnitude of the risk is 0.1–0.2.

After identifying the main risks and determining their magnitude, ranking of risks, depending on the extent of possible damage, was performed. Based on the assessment results, the authors built the matrix of risks, which were classified according to the probability of their occurrence and severity, i.e. the extent of possible damage (Preston 2002). To construct the matrix, the author used a 6-point empirical scale of probability of risks and their ranking, as well as a 6-point scale of severity of possible damage (Waring 1998, Williams 1998). In accordance with the ranking results, the matrix cells demonstrate risk numbers from the given list (Table 1). The ranking shows that the greatest (catastrophic) extent of potential damage is characteristic of commercial risks (3) and risks associated with changes in legislation (10). However, the magnitude of these risks is very small and small, respectively. By the magnitude of risks, the most serious risks are financial risks (4) – "a large risk" and political risks (1), as well as the risks of innovation (6) – "medium risks". By their magnitude, most risks refer to the group of "small" and "very small risks", and by the possible damage they do not exceed the medium extent.

Based on the experience of successful companies of the world, it is possible to state using the matrix of risks that risks of innovation (6) and commercial risks (3) are in the so-called "tolerance" zone – it is the diagonal of the matrix of risks coming from cell a6 to cell f1 (Table 1) (Borge 2001). Tolerance or propensity for risk is a concept that is associated with people, decision-making and characterises the severity of risks the senior management of a company is able to adopt, sustain and successfully optimise. These risks are most acceptable to a company; in case of these risks profit will be the greatest possible under the given conditions. The desire to

obtain even more profit will increase risks to the extent unacceptable to the senior management of a company.

Optimisation of risks being outside the tolerance zone, in principle, should be performed as follows (Preston 2002, McCarthy 2004). From the zone of the most dangerous critical risks that can lead to considerable losses of a company and are concentrated in the corner cell f6 of the matrix and around it, it is necessary to move to the tolerance zone in the direction of the second diagonal a1–f6 of the matrix of risks. This would correspond to a shift on the curve of Pareto set from point C to point B on the criterion plane (M,  $\sigma$ )(Fig. 1). Thanks to the activities providing such a shift, the risk will reduce, and the amount of potential revenue will also

decrease. From the zone of very small risks and negligible possible damage that is around the cell a1 of matrix of risks, for the purpose of optimisation it is necessary to move in the same direction to the diagonal a1–f6 approaching the tolerance zone. This would correspond to the movement along the Pareto curve from point B to point C. For these risks, their magnitude will increase, and the expected returns will also increase. Ideally, in both situations with very low and critically high risks, the displacement on the Pareto optimal set should be terminated in the zone of point M\* corresponding to the optimal value of the utility function for a given set of project portfolios.

**Table 1.** Matrix of risks in the shipbuilding and ship repair industry in Latvia

№	Probability of undesirable outcome	Gradation of risks	Extent of possible damage					
			negligible	small	medium	large	very significant	catastrophic
			a	b	c	d	e	f
1	0.0 – 0.1	very small		2; 7				3
2	>0.1 – 0.3	small	9	8	5			10
3	>0.3 – 0.4	medium				6	1	
4	>0.4 – 0.6	large					4	
5	>0.6 – 0.8	maximum permissible						
6	>0.8 – 1.0	critical						

For each particular company of the shipbuilding and ship repair industry in Latvia, the process of risk optimisation, of course, will have its own individual character depending on the existing circumstances and the risk appetite of the senior management of a company. Among the dangerous risks mentioned above, it is necessary to highlight the external risks associated with changes in legislation as in Latvia these changes occur very often and need to be constantly monitored. Commercial and financial risks, work with clients, as well as political risks deserve permanent attention. These risks should be thoroughly monitored, first of all, by employees of marketing departments.

## Conclusions

Within the framework of the research, it was found out that most risks in the shipbuilding and ship repair industry in Latvia could be attributed to very small, small and medium risks. There are virtually no risks of a magnitude of 0.6 to 1.0. By the extent of possible losses, risks occupy the entire range of values starting from negligible to catastrophic damage. Each company of the industry should establish its own level of risk tolerance in accordance with its own characteristics of risk perception and risk appetite of the senior management of a company. The final decision on the adoption and optimisation of risks at the companies of the industry should be the prerogative of the senior management of a particular company. Senior management of companies of the

industry should devote particular attention to the operation of marketing departments, as their responsibilities include commercial and financial risks. Commercial risks are very small in magnitude, but can have a very large extent of possible damage. Financial risks are large enough in magnitude – to 0.6 and have a great extent of possible damage. It is necessary to devote constant attention to political risks, especially at the international scale, as well as to monitor changes in the tax legislation of Latvia. The latter risks are small in magnitude, but the extent of possible damage can be very considerable.

## References

- Barton, Thomas L., Shenkir, William G. and Walker, Paul L. (2002). *Making Enterprise Risk Management Pay off*. London: Prentice Hall PTR.
- Borge, Dan. (2001). *The Book of Risk*. New York: John Wiley & Sons.
- Boulton, Richard E.S., Libert, Barry D. and Samek, Steve M. (2000). *Cracking the Value Code – How Successful Businesses Are Creating Wealth in the New Economy*. New York: Harper Business.
- Callinicos, Brent. (1999). Trimming Risk from Microsoft's Corporate Tree. *Case Studies in Corporate Risk Management*. London: Risk Books, 349-366.
- De Loach, James W. (2000). *Enterprise-Wide Risk Management – Strategies for Linking Risk and Opportunity*. London: Financial Times.
- Fathutdinov, Rais A. (2000). *Innovatory management*. Moscow: ЗАО “Бизнес-школа “Интел-Синтез”. [In Russian].

- Малыхин, В. И. (1999). *Финансовая математика*. Москва: Юнити-Дана. [In Russian].
- McCarthy, Mary Pat and Flynn, Timothy P. (2004). *Risk from the CEO and Board Perspective*. New York – London – Sydney: McGraw-Hill.
- Microsoft – Togetherness. (2000). *The Economist*, January, 65-66.
- Moules, Jonathan and Horowitz, Jed (1999). Guts and Glitter. *Journal Treasury and Risk Management*, November, 20-29.
- Preston, Sharalyn. (2002). Establishing an Integrated Enterprise Risk Management Solution. *KPMG LLP*, April.
- Stewart, Thomas A. (2000). Managing Risk in the 21<sup>st</sup> Century. *Fortune*, February, 202-209.
- Teach, Edward (1999). The Finest in Finance: Gregory B. Maffei. *Journal CFO*, October, 48-57.
- The Economist Intelligence Unit, Arthur Andersen & Co. (1995). *Managing Business Risks – An Integrated Approach*. New York: The Economist Intelligence Unit.
- Трояновский, В.М. (2002). *Математическое моделирование в менеджменте*. Москва: Издательство РДЛ. [In Russian].
- Waring, A. and Glendor, A. J. (1998). *Managing risk*. London: International Thomson Business Press.
- Williams, C. A., Smith, M. L. and Young, P. C. (1998). *Risk Management and Insurance*. New York: McGraw-Hill.

## RISKS IN THE SHIPBUILDING AND SHIP REPAIR INDUSTRY IN LATVIA

### Summary

The risk is introduced to the business by uncertainties. Improper attitude by the senior management of a company to risks may lead to serious consequences: financial losses, decline in stock prices, and loss of business reputation or even bankruptcy. When choosing the best variant of solution, one should strive to ensure the effectiveness of solution, i.e. income should exceed potential risks that may arise. Modern investment theory studies sets of projects, i.e. “portfolios” taking into account both the returns and the risks of individual projects and the portfolio as a whole. The probabilistic non-deterministic nature of the variables under consideration is also taken into account. As a measure for the formalisation of the concept “expected return”, the mathematical expectation of income  $M$  is used, around which the random values of income are scattered. A measure of risk is assumed to be the degree of dispersion of project results – the variance of income.

*The task of the research* is to assess the situation of risks in the industry of shipbuilding and ship repair in Latvia. *The*

*novelty of the research* is determined by the fact that for the first time the main risks have been identified and analysed in the industry of shipbuilding and ship repair in Latvia. *The object of the research* is the most important risks in the shipbuilding industry in Latvia, which can occur with a certain probability and result in significant losses of companies. *The goal of the research* is to identify, analyse and rank the main risks in the shipbuilding industry in Latvia by the probability of undesirable results and the extent of possible damage. *Methods of the research* are the analysis of statistical data, systems analysis of shipbuilding industry and its environment.

In the present research, in order to identify, analyse and rank the main risks by the possibility of undesirable effects on companies operating in the shipbuilding and ship repair industry in Latvia, a group of senior specialists of a number of leading industry companies was gathered. The scenario analysis method was used, including a study of long-term perspectives, as well as the procedure of individual assessments. The study identified and analysed only the main risks. After identifying the main risks and determining their magnitude, ranking of risks, depending on the extent of possible damage, was performed. Based on the assessment results, the authors built the matrix of risks, which were classified according to the probability of their occurrence and severity, i.e. the extent of possible damage.

Within the framework of the research, it was found out that most risks in the shipbuilding and ship repair industry in Latvia could be attributed to very small, small and medium risks. There are virtually no risks of a magnitude of 0.6 to 1.0. By the extent of possible losses, risks occupy the entire range of values starting from negligible to catastrophic damage. Each company of the industry should establish its own level of risk tolerance in accordance with its own characteristics of risk perception and risk appetite of the senior management of a company. The final decision on the adoption and optimisation of risks at the companies of the industry should be the prerogative of the senior management of a particular company. Senior management of companies of the industry should devote particular attention to the operation of marketing departments, as their responsibilities include commercial and financial risks. Commercial risks are very small in magnitude, but can have a very large extent of possible damage. Financial risks are large enough in magnitude – to 0.6 and have a great extent of possible damage. It is necessary to devote constant attention to political risks, especially at the international scale, as well as to monitor changes in the tax legislation of Latvia. The latter risks are small in magnitude, but the extent of possible damage can be very considerable.

KEY WORDS: shipbuilding branch, risk, matrix of risks, tolerance zone, risk appetite.

RECEIVED: 30 JANUARY 2016

ACCEPTED: 20 APRIL 2016

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## THE ASSESSMENT OF THE IMPACT OF FOREIGN DIRECT INVESTMENT ON LITHUANIAN'S COMPETITIVENESS

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### Anotation

The article through the raised aim overviews the assessment of the impact of foreign direct investment on Lithuania's competitiveness. In order to identify the factors which attract and repel FDI in Lithuania and to assess the impact of FDI on the competitiveness of Lithuania the expert survey was conducted and 11 different investors from various foreign countries who have established their business in Lithuania have answered the questionnaire. Empirical research has revealed that the positive impact make the following factors in attracting FDI to Lithuania: the most important factor was talented and skilled (mean value 4.36) and work related experience (mean value 4.09) among *labour force factors*. The highest mean value in *cultural factors* group scored the following factors: open to foreigners (mean value 4.45), motivated (mean value 4.27) and tolerant (mean value 4). Foreign investors ranked all *infrastructure factors* more or less the same: flight connections to major world capitals (mean value 3.64) and trade connections (mean value 3.82). Foreign investors ranked possibility of production growth (mean value 4.18) and lower salary in Lithuania (mean value 4) as the most important among *economic factors*. Foreign investors ranked *business environment factors* relatively similar however possibility for innovations (mean value 4.27) is prevailing in this sub group and stands out as a factor which makes a positive impact on the country's competitiveness. The least important factors which repel FDI to Lithuania the experts ranked the following. The least important was education of potential employees among *labour force factors* where university graduates scored mean value 2.91. Foreign investors were least interested in the religion (mean value 2.55) of potential employees among *cultural factors*. *Infrastructure factors* were not the priority for foreign investors in attracting FDI to Lithuania. Moreover, financial incentives from Government (mean value 2.36) were ranked as the least important among *Economic factors*. Less bureaucracy (mean value 3.18) was ranked as the least important among *Business environment factors*. Based on the results of expert recommendations the suggestions how to attract more FDI to Lithuania are provided at the end of the article: be visible and known worldwide, expansion of investor's search geography, diversification of sectors for investment, flexible work relationships, education system cooperation with investors, encouragement of Lithuanian communities, decrease of bureaucracy, invitation of current investors to share good experience.

**KEY WORDS:** foreign direct investment, country's competitiveness, Lithuania, attractive factors of FDI, impact of FDI on Lithuania's competitiveness

### Introduction

Foreign direct investment (further FDI) is recognized and associated with the phenomenon that brings wealth, growth and new opportunities to the host country. FDI provides the host country with numerous benefits such as sources of new technologies, management skills and strong impetus to economic development, creates spillovers of technology, contributes to the integration into international trade and assists in creation of a competitive business environment. All these factors contribute to higher economic growth, which is the most powerful tool for combating poverty. FDI also may improve environmental and social conditions in the host country by transferring advanced technologies and creating socially responsible corporate policies. UNCTAD states in "World Investment Report 2014" that global FDI flows could rise to \$1.75 trillion in 2015 and \$1.85 trillion in 2016. The report declares that the growth will be driven by the investments in developed economies due to the spread of their economic recovery. However, the risks associated with regional market conflicts, unfavorable policies could slow down FDI flows.

Competitive enterprises drive a country's competitiveness. Regardless of globalization, scientific literature emphasizes the role of each nation within the local environment where enterprises function. The

management of FDI becomes easier and more convenient due to liberalization of regulations. The main objectives of investment incentives are the creation of new working places, attraction of innovations and technology transfer. However, Governments should not only promote incentives but also establish efficient monitoring procedures to mitigate the risks.

**The scientific level of the research.** FDI and its impact on the country's competitiveness have been a widely studied topic in recent researches however there are still questions concerning the real effects of FDI. The scientific studies regarding FDI can be classified into the following areas:

- the debates whether the impact of FDI on a country is only beneficial were conducted by Keller and Yeaple (2003), Haskel et al. (2007), Görg and Strobl (2001), Lipsey (2002), Epstein (1999), Han X. Vo (2004);
- the impact of FDI has been researched by Moran (2014), Kinda (2014), Nicolini and Resmini (2010), Javorcik (2014), Blanc-Brude et al (2014);
- the concept of FDI has been studied by Navickas (2008), Hajzler (2014), Milner (2014) however scientific literature lacks of a universal concept of the examined phenomenon;

- overviewed literature provides with the factors which attract the FDI, Dunning (1988) “Oli paradigm”, Campos (2003), Hornberger et al. (2011);
- the national competitiveness has been researched by Anastassopoulos (2007), Green (2012), Paziienza (2014);

Lithuanian scientists have also researched FDI phenomenon. Valodkiene and Snieska (2012) emphasized, that national competitiveness can be increased through innovations with the help of FDI. Kuliaviene and Solnyskiniene (2014) stated that FDI has a significant impact on the country’s increased welfare. The existing scientific studies lack of researches which would focus on the impact of FDI on the competitiveness of the country through the factors which attract and repel FDI.

**The problem of the scientific research:** The impact of FDI can be both positive and negative therefore it is essential to assess the case of Lithuania formulating the problem: what is the impact of FDI on Lithuania’s competitiveness?

**The object of the article:** The impact of FDI on Lithuania’s competitiveness through the interaction of FDI components and the most or least attractive factors for the investment.

**The aim of article:** To assess the factors which effect FDI attraction to Lithuania and their interaction with the level of Lithuania’s competitiveness.

In order to answer the raised aim the following tasks were formulated:

- 1) to analyse the theoretical aspects of FDI impact on the country’s competitiveness;
- 2) to define the methodology of empirical research for the impact of FDI on country’s competitiveness;
- 3) To assess the impact of FDI on Lithuania’s competitiveness through the interaction of FDI and the most or least attractive factors for the investment.

**The methods of the research:** systematic literature analysis, comparative analysis, expert survey.

### **The positive and negative impact of FDI on country’s competitiveness: theoretical background**

OECD enumerates quite a comprehensive list of positive impact on a host country competitiveness which includes but is not limited to advanced trade and investment, technology transfers, human capital enhancement, robust competition within local market, social and environmental benefits.

The empirical evidence on the impact of FDI on a host country’s competitiveness differs among the countries. However, it is stated consensually that there is a broader impact of FDI other than only on imports and exports. Developing countries certainly benefit from FDI due to FDI contribution in integrating the host economy to the global economy and increasing exports and imports. Trade and investment are increasingly recognized as mutually reinforcing channels for cross-border activities.

The impact of FDI on human capital significantly depends on the government policies and efforts to attract FDI into the country. Governments seek to attract FDI, which would enable knowledge spillovers, bring technology innovations and improve job related education. Individuals, who are employed by MNE subsidiaries, can benefit from enhanced on-the-job training and learning. Such benefits can have broader effects as labor moves to other firms and spreads their knowledge. Investment in education is one of the most important aspects of creating an enabling environment for FDI.

In order to use the human capital spillovers at a maximum level, it is paramount to reach a certain level of education and trainings in order to attract FDI and to benefit fully from the presence of the foreign enterprise.

Domestic economic development and competition within the local market can be increased and assisted by the presence of foreign enterprises leading to higher productivity, lower prices and more efficient allocation of resources. On the other hand, competition can be damaged due to the entry of MNEs through increased levels of concentration in host-country markets.

According to Barrios et al., (2004), FDI can be positive for local firm’s expansion and that positive externalities are more likely to occur when the larger is the amount of capital transferred through FDI and the greater is the efficiency of local firms. Local firms need to adapt to new competitors since FDI represents a greater competition factor than imports due to the factor market size limitation.

Positive influence of spillover effects are discussed in the scientific literature of Keller and Yeaple (2003) and Haskel et al. (2007), Görg and Strobl (2001) and Lipsey (2002). Host economies benefit from FDI through the spread of good practices and technologies, subsequent spillovers to domestic businesses. Foreign investment may help to reduce poverty and improve social conditions. Training prevents people from moving to local competitors. FDI spreads knowledge and superior technology “spill over” to domestic firms, assisting them in improving their efficiency and productivity. “FDI inflows create a potential for spillovers of knowledge to the local labor force, at the same time as the host country’s level of human capital determines how much FDI it can attract and whether local firms are able to absorb the potential spillover benefits” (Blomstrom and Kokko 2003).

FDI introduces local Governments, local businesses and citizens to the new management techniques, business practices, economic concepts, and technology that will help them develop the competitiveness of local businesses and industries. Empirical researches indicate that MNEs do more training to technical workers and managers than local firms do according to Görg et al., (2007).

FDI is primarily a flow of technological and organizational know-how knowledge. FDI also brings access to information, the culture of advanced markets, market institutions.

**Table 1.** Positive impact of FDI  
(source: compiled by the authors)

Author year	Country and duration	The impact of FDI identified	FDI evaluation method	Variables examined
Benacek et al, 2000	Central and Eastern Europe 1989-1998	Inflows of FDI have improved the overall growth potential of the economies.	Surveys, statistical analysis.	Labor costs in the host country relative to the investor country, labor costs in the host country relative to other potential host countries, GDP, skill level of the workforce, trade barriers, transaction costs or positive externalities of the country, countrywide risk and its exposure to an institutional failure, agglomeration affects, private ownership, degree of economies of scale, extent to which intangible assets are important within a given industry, capital intensity of production, special incentives.
Zhang, 2014	China 2005-2010	Increased industrial performance.	IC index to measure multidimensional industrial performance.	Assessment of 21 manufacturing sectors for 31 regions in six years.
Kinoshita and Campos, 2003	25 countries in transition 1990-1998	Positive impact on competitiveness and growth.	Regression analysis and estimation method.	Annual growth rate of GDP per capita, initial GDP per capita, enrollment ratio in primary education, government consumption as a percentage of GDP, population, FDI, percentage of domestic investment in GDP.
Balasubramanyam, 1996	46 developing countries 1970-1985	Increase competitiveness.	Statistical data analysis.	GDP, employment, exports, domestic and foreign capital stocks.
Krifa-Schneid, 2010	33 developing countries 1996-2008	Favorable business conditions are significantly and positively associated with FDI inflows.	Fixed effect model and a dynamic panel model using the Arellano-Bond GMM estimator.	FDI inflows in percentage of GDP for country, Gross national income per capita, Growth rate of GDP in percentage, Ratio of exports and imports to GDP, The GDP deflator.
Iqbal et al, 2014	Pakistan 1983 to 2012	Positive impact to GDP and labor force development.	Descriptive statistics, correlation model.	GDP, FDI, Openness of trade.
Chen, Geiger and Fu, 2015	Rwanda and Ethiopia 2008-2014	Increased employment.	Statistical data overview.	Employment rate, GDP.

Higher salary is another advantage that FDI brings along. MNEs have often been found to pay higher wages than domestic firms for similar job positions (Lipsey, 2002). If a new factory is created in a host country, it is obvious that labor force will be hired to perform daily activities. New working places will burst local market together with foreign money being pushed into the

economy. The newly constructed object will hire local employees and will utilize some local materials and services. This will create even more jobs and new businesses. New businesses will create more new jobs, and local people will have more money to spend and local economy operate to the fullest.

Markusen (1990) stated that once a firm decides to invest in a country, it could act as a promotion to other potential investors reinforcing investment attractiveness, signaling about micro and macro-economic stability within the country and creating the country's competitiveness among neighboring countries. Snieska and Simkunaite (2009) explored the impact of infrastructure on countries development and found positive correlation between infrastructure and growth in the host country.

Most empirical studies conclude that FDI provide positive results and contribute to both factor productivity and income growth in host countries. However, FDI seems to have smaller effect in less developed economies. Developing countries must achieve a certain level of development of education, technology, infrastructure and health before being able to benefit from a foreign presence in their markets. Imperfect and underdeveloped financial markets, weak financial intermediation hits domestic enterprises much harder than it does multinational enterprises (MNEs) so the host country must be prepared before attracting the investments in order to benefit fully from them.

Table 1 provides the summary of scientific studies which have revealed positive impact of FDI on the host countries. The performed studies are collected within different time frame which shows that the question of the impact of FDI was raised quite long time ago. The selected cases are important since each contains different number of observed host countries in distinct geographical locations, where the countries have different level of economic development.

The cases are performed from different statistical perspective as distinct methods have measured not the same variables, however the outcome revealed to be the same, positive one.

Summing up the cases listed in Table 1, the conclusion can be drawn that in various countries within different time frame positive impact of FDI was identified measuring different variables through a wide range of statistical methods. Common benefit of FDI noticed within the countries was increased competitiveness and increased GDP.

Scientific literature discusses not only positive but also negative effects of FDI. The competition of MNEs with local producers on their product market is called competition effect. Some researchers have found evidence of crowding competition effect through which multinationals may force domestic firms to exit the market. As Markusen and Venables (1999) point out, the result comes from the high degree of similarity between local and multinational firms, and it is not easy to imagine circumstances which would permit to survive both counterparties.

According to numerous literatures (Lipsey 2002, Epstein, 1999, Han X.Vo, 2004), effort to attract investment by subsidies and tax breaks can lead to substantial

reduction of government revenues but also a way of acquiring a certain control, both economical and political, in the host country. Major control taken over on strategic local assets through FDI can expose local country to the threat of security and independence. The government loss of tax payments, when the profits are repatriated to the investors' home country is another drawback of FDI. The lack of positive ties with local communities can potentially create a harmful environment especially in heavy industries, social disruptions in less developed countries, and the effects on competition in national markets. The summary of negative impact of FDI in scientific literature is provided in Table 2.

**Table 2.** Negative impact of FDI  
(Source: compiled by the authors)

Author	Country and researched timeframe	The impact of FDI identified	FDI evaluation method	Variables examined
Han X. Vo, 2004	The US, 1980-1990	Negative effect if no appropriate conditions in the host country's economy.	Direct income effect by Euler's theorem.	Capital, management, labor, material input.
Epstein, 1999	Various cases	Host countries might become dependent on FDI, possible capital mobility.	Literature overview	Overview of conducted studies.
Hisarcikilar et al, 2014	Turkey 2000-2007	Unemployment did not decrease.	Dynamic panel data analysis.	FDI, unemployment rate.
Figlio and Blonigen, 1999	The US (South Carolina) 1980-1995	Lower per capita government budgets.	Econometric analysis.	Wages, local budget, employment, manufacturing industry, annual wage, deflated by the consumer price index.
Lipsey, 2002	Various cases	Trade links reduce the freedom of action of a country's government domestically, the larger productivity gap, the smaller wage spillover.	Literature overview.	Wage, productivity spillovers.
Arbatli, 2011	46 countries, 1990 to 2009	Depends on the host country conditions.	Econometric analysis	Real GDP, Inflation, Export to GDP, Real exchange rate, education, political risk.
Markusen and Vernon, 1997	Single domestic economy	Sales of firms reduce due to competition effect and leads to exit.	Shephard's lemma, econometric analysis.	Domestic, foreign and multinational firms, price index, product differentiation, profit.

Moreover, internationally operating enterprises can impact the loss of political sovereignty in host country and the dependence of local authorities on foreign investors. FDI can create a more monopolistic industry

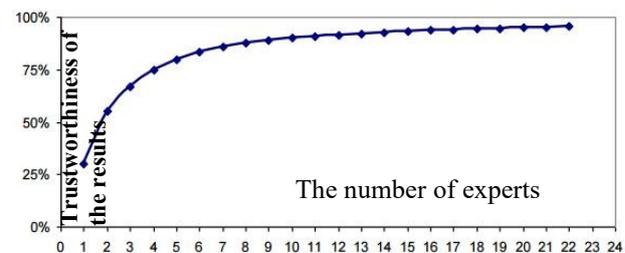
structure, depending on the strength and responses of the local firms. The benefits of FDI in such cases will not be significant, on the contrary, can prove to be elusive and the host economy in its current state of economic development will not be able to take advantage of FDI. Summarizing Table 2 could be concluded, that FDI will bring less beneficial or even negative impact on the economies with weaker initial conditions. Weak economies with less attractive conditions will experience smaller inflows of FDI, and those foreign firms are likely to use technologies which are less developed and contribute only marginally to the development of local labor force skills.

**Methodology for Expert survey**

Statistical data analysis cannot ensure the full coverage of the topic therefore one more method, expert opinion survey was included to the research. The results of experts' questionnaire complemented to the assessment of FDI on Lithuania's competitiveness. The expert survey using individual questionnaire was presented to experts in order to disclose their opinions and identify the factors which attracted the investment to Lithuania and as an outcome to determine the framework how to attract more FDI to Lithuania.

The expert is a person who has certain experience and knowledge. One common criterion was applied while selecting the group of experts. The experts had to be able to resolve the raised problem in an effective and reliable way (Rudzkiene et al., 2009). The main requirements for the experts were competence and experience in the researched area. Rudzkiene et al. (2009) provide the relationship between the number of experts and the trustworthiness of the results, see Fig. 1.

Trustworthiness of the results



**Fig. 1.** The number of experts and trustworthiness of the results (Source: Rudzkiene et al. 2009)

In order to receive accurate and precise evaluation from the experts, the estimated number of selected experts has to be methodologically correct. The area of the research is FDI in Lithuania therefore the respondents of the survey were selected based on the investment origin countries and size of the project in order to make the research more complete and to provide with different point of views of the investors. The top leaders of the established companies through foreign direct investment were chosen for survey. Their qualification, experience, expertise and knowledge allow qualifying them as experts. According to Rudzkiene et al. (2009, p 202), starting with the number of experts from 9 to 10 and up,

the trustworthiness of experts' evaluation is growing not so significantly, see Fig. 1.

Rudzkiene et al. (2009) recommends that the optimum number of experts is 10 therefore the decision was made to receive at least 10 completed questionnaires from the top leaders of established companies in Lithuania through FDI.

**The structure of the expert survey.** The expert survey was conducted in two months, October and November, 2015 by distributing the questionnaires to the experts via electronic email or scheduling a phone call and filling in the questionnaires life. The questionnaire was composed of five parts based on the results of scientific literature review. The questions were closed ended and the answers were set in Likert Scale. The respondents had to rate the importance of the factors in the scale from 1 which means strongly disagree or least important, to 5 which means strongly agree or very important.

The first part of the expert survey was dedicated to the origin country and the name of FDI project in Lithuania. The second and third parts were dedicated to the core questions of the research allowing identifying the factors which attract FDI to Lithuania and how FDI impacted the competitiveness of Lithuania. The fourth part was devoted to find out if the respondents have undergone through any negative experience. And the last part was composed for future improvements in order to attract more FDI to Lithuania. The chosen structure of questionnaire brought the clarity to the essence of the researched topic and answers of the experts allowed easier to analyze and summarize the results.

**The evaluation of expert survey results.** The evaluation of expert survey results is based on the assumption that the answers will be anonymous among the experts. Therefore, assessing the agreement among the experts Kendall's coefficient of concordance will be used. Kendall's W ranges from 0 to 1 ( $0 < W < 1$ ), where 0 means no agreement and 1 means complete agreement (Rudzkiene et al., 2009). When Kendall's W is bigger than 0,6, the experts' opinion is said to be in moderate accordance (Pukenas, 2009). Cronbach's alpha coefficient is used to assess the internal consistency reliability of questionnaire scores with the following means:  $\alpha \geq 0.9$  – excellent;  $0.9 > \alpha \geq 0.8$  – good;  $0.8 > \alpha \geq 0.7$  – acceptable;  $0.7 > \alpha \geq 0.6$  – questionable;  $0.6 > \alpha \geq 0.5$  – poor;  $0.5 > \alpha$  – unacceptable.

The data of expert survey results are processed and analyzed using SPSS (Statistical Package for the Social Sciences), software package used for statistical analysis where average means of answers, Kendall's W and Cronbach's alpha were calculated. MS Excel was used for graphical analysis of data.

### **The determination of factors which attract/do not attract FDI through expert survey**

The survey was performed among experts, including the top management of investment projects and direct investors. The survey and the answers were distributed and collected in two months from October to November, 2015. Expert survey was conducted in order to identify the factors which attract or do not attract FDI to Lithuania based on real life examples, to find out the impact of FDI on the competitiveness of

Lithuania, to disclose any negative experience related with foreign investment and finally provide with the suggestions how to attract more FDI to Lithuania. The total number of expert survey participants was 11. The recommendation for expert survey is to get 10 respondents therefore the number of the experts who have participated, exceed the recommendations.

The respondents were chosen according to their title and position within foreign establishment, the aim was to contact the directors and top leaders of the companies because they were the subject matter experts and were able to answer the expert survey questions the best based on their experience, knowledge and expertise within the particular company. 11 experts from 10 different countries replied to the survey such as Belgium, China, India, Ireland, Israel, Italy, Lebanon, Norway, Russia, the U.S. Two experts answered from the U.S. and this represent the huge size of the country's market and significant number of established companies in Lithuania. As results show, Lithuania could potentially focus in attracting more foreign investors from other more distinct geographical locations, such as South America.

**The limitations of expert survey.** It was very difficult to get in touch with the directors and the top leaders of foreign capital establishments in Lithuania. The top management are always busy and have tight working schedule, therefore getting in touch with them was really challenging. Within two months more than 70 the most famous foreign capital establishments in the entire world who have their branches in Lithuania were contacted by e-mail or phone. Two forms of the contacts (e-mail and phone number) for the top managers of foreign capital branches were searched in available internet databases. However, it has been noticed that the bigger the player is, the more known the brand is, the less willing to answer the questionnaire is and the less willing to get into contact at all. No reply was received from the respondents to the majority of the e-mails sent, some respondents answered that they would not provide such information. The majority of the phone calls resulted in the reply that the director is busy or is out of the country and cannot pick up the phone. Possible justification for such behavior is the strict confidential rules and security standards set for such companies.

The significance of this research is the possibility to present to wide audience the facts, numbers and figures which are not easily available for the public even though the topic of the research is actual and widely discussed among various layers of the society. Once the contact was established, the conversation was performed in three languages: English, Italian and Lithuanian. The expert survey was completed in two different ways: by e-mail or on the phone in order to respect the experts' tight time schedule, perform quick and efficient survey and to make the experts feel comfortable.

In order to estimate reliability of the survey, Cronbach's Alpha needs to be calculated. Required result should be at least 0.70 or higher in order to have acceptable results.

The result of Cronbach's Alpha for expert survey calculated is 0.783 which shows a credibility of the survey and acceptable internal consistency of the questions.

Kendal's W coefficient of concordance was used to assess the agreement between the respondents. The closer

the result to 1, means the respondents were unanimous. Kendall's W is statistically significant when  $p = < 0.05$ . Kendall's W coefficient was calculated for each different group of questions, see Table 3.

**Table 3.** Kendall's W for each questions group

Factors	Kendall's W	P value	Observation
Workforce factors	0,178	0.004 < 0.05	Experts' opinions were different, however statistically reliable
Cultural factors	0,326	0.006 < 0.05	Experts' opinions were moderately similar and statistically reliable
Infrastructure factors	0.008	0.003 < 0.05	Experts' opinions were different, however statistically reliable
Economic factors	0.434	0.001 < 0.05	Experts' opinions were moderately similar and statistically reliable
Business environment	0,142	0.002 < 0.05	Experts' opinions were different, however statistically reliable
Competitiveness levels	0,184	0.003 < 0.05	Experts' opinions were different, however statistically reliable
Suggestion for FDI attraction	0.231	0.005 < 0.05	Experts' opinions were different, however statistically reliable

Expert opinions were quite different for each group of questions, as Kendall's W coefficient of concordance reveals. Different opinions can be expressed due to distinct background of the foreign investors, diverse origin country, multiple investment areas and overall different expectations and needs set by the foreign investors. However, the experts were the most unanimous answering the questions about economic and cultural factors in Lithuania, as seen from Table 3. Concluding, can be noted, that those categories are commonly regarded among multinational investors.

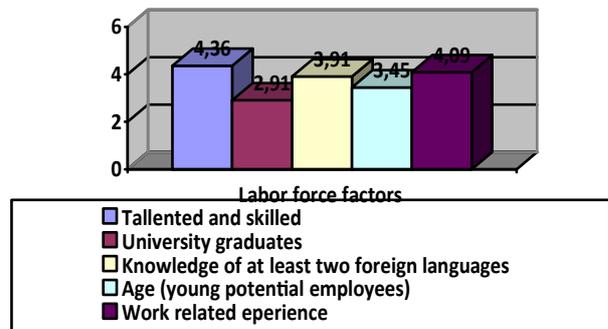
The first part of the questionnaire provided basic information about the investment, origin country and the name of the investment. The aim of the research was to get in touch with the directors of as more diverse investments in terms of origin country and the services provided as possible in order to portray the more comprehensive picture of the investment landscape in Lithuania.

In order to identify the most important factors which attracted FDI to Lithuania, experts were asked to evaluate them in a scale from 1 – which is not important to 5 – which is very important. The analysis of the results was performed the following: factors which accumulated the ranking 2.5 and less, were treated as not important; factors which accumulated 2.5 – 3.5, were treated as moderately important; factors which totaled to 3.5 – 4.5, were treated as important, factors which accrued 4.5 and more, were treated as very important. This is the starting point for the factors which are considered to be important and very important for the experts is considered 3.5 and up.

The second part was dedicated to the determination of the factors which were the most and least important for the investors while choosing Lithuania as a destination country for their investments, see Table 3. Kendall's W coefficient was calculated for each group of sub factors. Kendall's W coefficient shows that the respondents did not agree among themselves about the importance of

labor force factors, cultural factors, infrastructure factors, economic factors, business environment. However p value for each sub group was  $p = < 0.05$ , which means that the results are statistically significant.

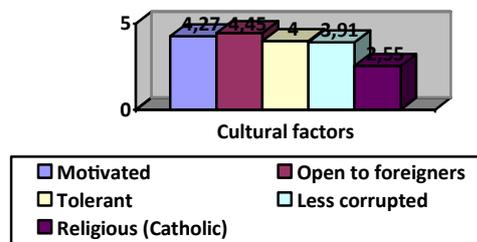
The mean value, average ranking for labor force factors reveals, that the most important factor was talented and skilled, mean value 4.36 and work related experience, mean value 4.09. The least important factor for the experts was university graduates, expressed through mean value 2.91, see Fig. 2.



**Fig. 2.** The most/least attractive Labor force factors for FDI in Lithuania

The research reveals that foreign investors are least interested in education of potential employees and search those employees who have work related experience and are talented and skilled, see Fig. 2.

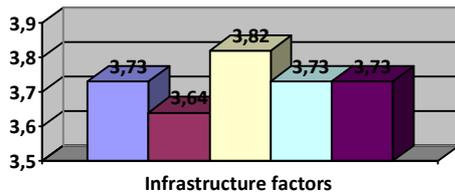
The highest mean value in cultural factors group scored the following factors: open to foreigners, mean value 4.45, motivated, mean value 4.27, and tolerant, mean value 4.0. Foreign investors were least interested in the religion of potential employees among cultural factors, mean value 2.55, see Fig. 3.



**Fig. 3.** The most/least attractive Cultural factors for FDI in Lithuania

The results of expert survey reveal that foreign investors do not consider religion of potential employees among most attractive factors, instead openness to foreigners is prevailing in this sub group, see Fig. 3.

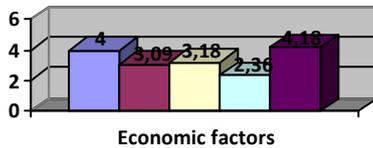
Infrastructure in Lithuania appeared to be not among the priority factor in attracting FDI to Lithuania according to expert survey results, see Fig. 4. All infrastructure factors were ranked relatively the same.



**Fig. 4.** The most/least attractive Infrastructure factors for FDI in Lithuania

Foreign investors ranked all infrastructure factors more or less the same, the lowest mean value 3.64 for flight connections to major world capitals and the biggest mean value 3.82 for trade connections, see Fig. 4.

Possibility of productivity growth is the leader in economic factor sub group, see Fig. 5.



**Fig. 5.** The most/least attractive Economic factors for FDI in Lithuania

Foreign investors ranked possibility of production growth as the most important among economic factors, mean value 4.18, and lower salary in Lithuania, mean value 4. What is more, financial incentives from Government were ranked as least important, mean value 2.36, see Fig. 5.

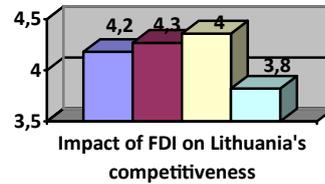
Business environment is important for the foreign investors. They ranked possibility for innovations as the most important in this sub group, mean value 4.27, and less bureaucracy was ranked as least important, mean value 3.18, see Fig. 6.



**Fig. 6.** The most/least attractive Business environment factors for FDI in Lithuania

Foreign investors ranked business environment factors relatively similar, as seen from Fig. 6. However innovations are prevailing in this sub group.

The third part evaluated the impact of FDI on the competitiveness of Lithuania, see Fig. 7.

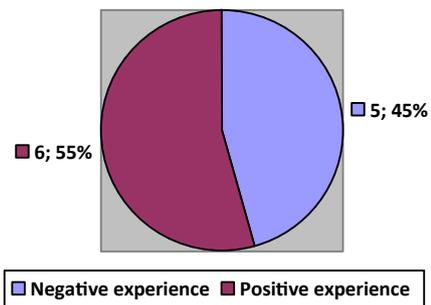


**Fig. 7.** The impact of FDI on Lithuania's competitiveness

Kendal's W concordance coefficient for this sub group was 0.184 which means that the respondents did not agree among themselves about the reply. However the result is statistically significant, since  $p$  value is  $p = 0.003 < 0.05$ .

What is more, all respondents ranked these factors as important, meaning that the competitiveness of Lithuania due to FDI increased within all levels: nation (country), industries, companies (the highest mean value in sub group 4.36) and employees (the lowest mean value in sub group 3.82). All experts believe that FDI drives the competitiveness on Lithuania, as shown in Fig. 7 and creates value added within all four levels of competitiveness.

The fourth part revealed if any negative experience was encountered during foreign investment period. The situation of the investment climate in Lithuania could be improved as 5 out of 11 investors have gone through negative experience within foreign investment period, see Fig. 8.



**Fig. 8.** Negative experience with FDI in Lithuania

The experts have mentioned bureaucracy, strict work relationships, miscommunication among Government institutions and tax system as challenges in Lithuania which resulted in negative experience within investment period, as expressed in Fig. 8. These areas for improvement will be addressed in conclusions and recommendations part.

The fifth part presented the suggestions how to attract more FDI to Lithuania, improve investment climate in order to eliminate possible negative investors' experience

and become the country of FDI destinations. Kendal's W concordance coefficient for this part was 0.231 which means the respondents were not unanimous in ranking the suggestions, however the results are statistically significant as  $p = 0.005 < 0.05$ . Moreover, all the respondents ranked this part the highest points, meaning as important and very important because they believe that all actions are meaningful in order to attract FDI. The highest rank was dedicated to invite current investors to share good experience, mean value 4.82, the lowest mean value was dedicated to greater attention to regions and smaller towns, mean value 3.36. Fig. 9 presents the suggestions how to attract more FDI to Lithuania.

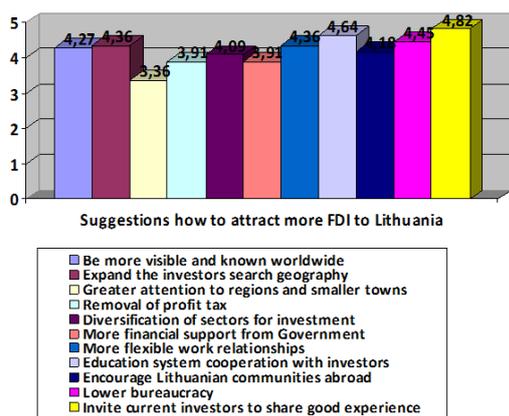


Fig. 9. Suggestions how to attract more FDI to Lithuania

A conclusion from Fig. 9 can be drawn, that the experts reassured and confirmed that Lithuania has to do all what it takes to attract more FDI since it is the engine which drives the competitiveness of the country. The suggestions were evaluated positively and this is expressed by the average of ratings, high mean value of each suggestion.

**Conclusions and recommendations**

Summarising it could be concluded that the impact that FDI brings, depends on many factors, including the motives of the investor, the reasons why the host country and the foreign investor are looking for the possibilities for mutual interaction to fulfill each party's demand for FDI and the conditions that a host country offers to the investor. The investor is in search for the new opportunities to expand the business at maximum return with minimum costs. Whereas the host country, who is accepting FDI, looks for the opportunities to access the international markets, increase the economy and welfare of the country and finally increase the country's competitiveness. However, the intentions from both parties not always bring the forecasted outcomes and results.

Based on the results of empirical research the following original conclusions are drawn. The novelty of this research is an exceptional way of researching the variables: conducting expert survey from the existing foreign investors in Lithuania which is the primary and original source for the assessment of the researched topic. Based on the expert survey results and the disclosure of

least attractive factors for FDI, the elimination of the least important factors could be a solution since the experts ranked them as not attractive for FDI. As a result these factors attract less FDI and the competitiveness of Lithuania decreases. Experts also disclosed the most attractive factors which determined FDI to Lithuania, as a result the competitiveness of Lithuania increases. The following actions are recommended in order to attract more FDI to Lithuania:

**Be visible and known worldwide** through international media sources because the creation of positive image and sound declaration about proper destination for FDI will result in numerous foreign investors coming to Lithuania.

**Expansion of investor's search geography** maintaining good relationships with potential business partners will allow providing business opportunities to totally new investors.

**Diversification of sectors for investment** will allow the Government of Lithuania to plan and forecast the areas where FDI is more needed and where the benefits could be executed at the maximum level.

**Flexible work relationships** through the liberalization of labor code will allow foreign investors to manage the work flow during the seasons and different periods of the day and allowing the employee to get more flexible vacation time as well.

**Education system cooperation with investors.** Skills was the most important factor for current investors, informing education institution about the needs of employer will fulfill the necessary labor force gap and people will have already acquired job skills.

**Encouragement of Lithuanian communities** abroad to spread the information about the business opportunities in Lithuania and contribute to the attraction of foreign capital to home country.

**Decrease of bureaucracy** through the implementation of clear institutions and services provider for foreign investors will allow foreign investors functioning easier in a new country.

**Invitation of current investors to share good experience.** Once the evidence of success is seen from current investors, the new potential investors will be inspired of impressive successful examples and get interested in new business opportunities to transfer their business to Lithuania.

**References**

Anastassopoulos, G. (2007). Countries' international competitiveness and FDI: an empirical analysis of selected EU member-countries and regions. *Journal of Economics and Business*, Vol. X, No 1, p. 35-52.

Arbatli, E. (2011). Economic policies and FDI inflows to emerging market economies. *IMF Working Paper*, 11/192.

Blanc-Brude et al (2014). The FDI location decision: Distance and the effects of spatial dependence. *Elsevier*, Vol. 23, Issue 4, p. 797-810.

Balasubramanyam et al. (1996). Foreign direct investment and growth in EP and IS Countries. *Economic Journal*, Vol.106, p. 92-105.

Barrios et al. (2004). Foreign direct investment, competition and industrial development in the host country. *Research Paper*, No 66.

- Benacek et al. (2000). The determinants and impact of foreign direct investment in central and eastern Europe: a comparison of survey and econometric evidence. *Journal of United Nations*, Vol. 9, No 3, p. 163-212.
- Blomstrom, M. and Kokko, A. (2003). Human capital and inward FDI. *Working Paper*.
- Chen, G. Geiger, M. and Fu, M. (2015). Manufacturing FDI in Sub-Saharan Africa: Trends, determinants and impact. *World Bank*.
- Dunning, J. H. (1988). *Explaining International Production*. Harper Collins Academic, London.
- Epstein, G. (1999). *The role and control of multinational corporations in the world economy*. The handbook of globalization, 2nd ed. Edward Elgar Publishing Limited, Cheltenham.
- Figlio, D. N. and Blonigen, B. A. (1999). The effects of direct foreign investment on local communities. *NBER working papers*, 7274.
- Görg, G. and Strobl, E. (2001). Multinational Companies and Productivity Spillovers: A Meta-analysis. *Economic Journal*, No 111, p. 723-739.
- Görg et al. (2007). Why do foreign owned firms pay more? The role of on the job training. Kiel Institute, 2007.
- Green, A. E. (2012). Skills for Competitiveness: Country Report for United Kingdom. *OECD Working papers*, No 05.
- Hajzler, Ch. (2014). Resource-based FDI and expropriation in developing economies. *Elsevier*, Vol. 92, Issue 1, p. 124-146.
- Han X. Vo (2004). *Research Host country income effects of foreign direct investment: an analytical framework*. *Journal of Economics and Economic Education*.
- Haskel et al. (2007). Does inward foreign direct investment boost the productivity of domestic firms. *Review of economics and statistics*, 89 (3).
- Hisarciklilar et al. 2014. Can FDI Be a Panacea for Unemployment? The Turkish Case. *Labor and Employment Relations in a Globalized World Part of the series Contributions to Economics*, p. 43-70.
- Hornberger et al. (2011). Attracting FDI, how much does investment climate matter. *The World Bank*, No 327.
- Iqbal et al. 2014 Impact of foreign direct investment (FDI) on GDP: A Case study from Pakistan. *International Letters of Social and Humanistic Sciences, SciPress Ltd., Switzerland*, Vol. 16, p. 73-80.
- Javorcik, B. (2014). Does FDI Bring Good Jobs to Host Countries? *World Bank Policy Research Working Paper*, No 6936.
- Keller, W. and Yeaple, S. (2003). Multinational Enterprises, International Trade, and Productivity Growth: Firm-Level Evidence from the United States. *NBER Working Paper*, No 9504.
- Kinda, T. (2014). The Quest for Non-Resource-Based FDI: Do Taxes Matter? *International Monetary Fund WP*, No 14/15.
- Kinoshita, Y. and Campos, N. F. (2003). Why does FDI go where it goes? New evidence from the transition economies. *William Davidson Institute Working Paper*, No. 573.
- Krifa-Schneider, H. (2010). Business climate, political risk and FDI in developing countries: evidence from panel data. *International Journal of Economics and Finance*, Vol. 2, No 5.
- Kuliaviene., A and Solnyskiniene J. (2014) The Evaluation of the impact of FDI on Lithuanian economy using LAG analysis. *Economics and management*, Vol 19(1).
- Lipsey, R. E. (2002). Home and host country effects of FDI. *NBER Working Paper*, No 9293.
- Markusen, J. R. (1995). The Boundaries of Multinational Enterprises and the Theory of International Trade. *Journal of Economic Perspectives*. No 9 (2).
- Markusen, J. R. and Venables, A. J. (1997). Multinational firms and the new trade theory. *Journal of International Economics*, Vol. 46, p. 183-203.
- Markusen, J. R. and Venables, A. J. (1999). Foreign direct investment as a catalyst for industrial development. *European Economic Review*, Vol. 43(2), p. 335-356.
- Milner, H. V. (2014). The Global Economy, FDI, and the Regime for Investment. *World Politics*, Vol. 66, Issue 01, p. 1-11.
- Moran, T. H. (2014). Foreign Investment and Supply Chains in Emerging Markets: Recurring Problems and Demonstrated Solutions. *Peterson Institute for International Economics Working Paper*, No 14/12.
- Navickas, V. (2008). *Europos Sajungos rinkų ypatumai*. Technologija, Kaunas.
- Nicolini, M. and Resmini, L. (2010). FDI spillovers in new EU member states. *Economics of Transition*, Vol. 18, Issue 3, p. 487-511.
- Pazienza, P. (2014). The relationship between FDI and the natural environment. *Springer Briefs in Economics*. Switzerland.
- Pukenas K. (2009). *Kokybių duomenų analizė SPSS programa*. Lietuvos kūno kultūros akademija, Kaunas.
- Rudzkiene et al. (2009). *Lietuvos e. valdžios gairės: ateities išvalgų tyrimas*. MRU, Vilnius.
- Snieska, V. and Simkunaite I. (2009). Socio-economic impact of infrastructure investments. *Engineering Economics*. (3), p. 63.
- Valodkiene, G. and Snieska, V. (2012). Tarptautinis konkurencingumas ir ji lemiantys veiksniai ekonomikos nuosmukio laikotarpiu. *Economics and management*, 17 (2).
- Zhang, K. H. (2014). How does foreign direct investment affect industrial competitiveness? Evidence from China. *Elsevier*, Vol. 30, p. 530-539.
- OECD FDI in figures (2014). [viewed on 17-01-2015] <http://www.oecd.org/daf/inv/FDI-in-Figures-Dec-2014.pdf>
- UNCTAD World investment report 2014. (2014). [viewed on 17-09-2015] <http://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=937>
- UNCTAD World investment report 2015. (2015). [viewed on 17-09-2015] [http://unctad.org/en/PublicationChapters/wir2015ch3\\_en.pdf](http://unctad.org/en/PublicationChapters/wir2015ch3_en.pdf)

RECEIVED: 18 March 2016

ACCEPTED: 20 April 2016

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## KEY COMPETENCES ON THE LABOUR MARKET

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### Annotation

Competences that employees should have can be found most explicitly in advertisements for job vacancies. The aim of our research is to study key competences, competences of leaders and of their employees, and competences linked to specific work areas based on advertisements for jobs, thus representing the demands of the labour market. The theoretical background is the competence framework of József Nagy (2000). His theory defines 4 subcategories of competence: personal, social, cognitive and specific competence, and closely resembles the key competence framework of OECD published in 2005. Our research was carried out in 2013. We have systematically selected 300 job advertisements from a pool of 5000 ads. These 300 advertisements were then studied by collecting the terms that referred to personality traits, skills and competence, and the categorization of these terms into competence categories by experts. We used the subcategories of József Nagy (personal, social, cognitive and specific competence) in the process and listed competences based on the frequency of other variables (e.g. competence of a leader / employee; area of specialty of the job mentioned in the advertisement), as well. A clear innovation of the study is that key competences and specific competences, which are linked to a specific area of expertise, could be differentiated. In accordance with our hypothesis our findings suggest that the labour market demands few of the key competences from employees and leaders.

KEY WORDS: Labour market, employer, employee, key competences, suitability

### Introduction

The needs of the management towards employees are most explicitly stated in job adds. Therefore it is reasonable to study, what skills, personality traits and other attributes employers look for from time to time. By studying job adds we can get a clear picture of job-related competences (linked to occupations and jobs) that employers want to 'get', thus we can see what competences should a job-seeker have to find the job that suits him the most, making him successful in it.

Studying competences in the world of work became popular in the 1960s. That was the time when it was stated that the correlation between personality traits that can be tested, and work performance is much smaller, than it would fit for predicting the success of one's performance in a given job position (Mischel, 1968). After this revelation they started to first study behavior (McClelland & Daley, 1973), then competences in the field of success at work. In the last 50 years many competence models were formed that are applicable for the world of work (Spencer & Spencer 1993, Bartram, 2005, Kurz, 1999, Borman és Motowidlo, 1993, Hogan & Holland, 2003, Campbell, McCloy, Oppler, & Sager, 1993, Scullen, Mount, & Judge, 2003). At our faculty, at Szent István University of Economics and Social Sciences, we regard studying competences linked to work and labour market to be of high importance, resulting in many publications in the topic (Bajor et al. 2001, Mészáros et al., 2007, J. Klér, Budavári-Takács, 2010, Varga, Vas, Szira, Bárdos, 2013, Csehné Papp, 2007). The metaanalysis carried out at the university (Bajor et al. 2001) listed communication, the ability to quantify,

teamwork, problem solving, learning and performance as pivotal key competences on the labour market.

In our research we have used the competence model of József Nagy (2000) as our theoretical background, as it makes competences expected from employees easy to apprehend. This theory resembles closely the key competence framework of work that was introduced by OECD (Organization for Economic Co-operation and Development) in 2005.

The theoretical framework specifies four competence categories that are built up from subcategories. It distinguishes personal, cognitive, social and specific (work related) competences. In our previous study (Budavári-Takács, Suhajda, 2015) we defined what competences were included in each of these categories and what they meant based on competences found in job advertisements (Table 1.)

### The Survey

In our study we used two different scientific methods to study competences that employees should possess. The first method was to examine advertisements of jobs on a national website. Job advertisements were collected in three waves of data collection (Mészáros, 2013) in a 3-months time frame on given days (11.01., 11.02., 11.03.), that allowed us to get an overview of ads in the first quarter of the year. The sample only included ads for Budapest and for full-time jobs. At each sampling time we collected in every area of specialty four- four ads (if available) at ISCED 3- 5 level (referred to as 'secondary' education) and at ISCED 6 (referred to as 'university degree') level or higher. We analyzed 311 job ads, with 132 ads at ISCED 5, and 179 ads at ISCED 6 level

education in their requirements. We analyzed the content of each ad’s requirements section. Words used here were collected, listed and clustered based on József Nagy’s

competence model. Two independent experts participated in this job.

**Table 1.** Definitions of personal, cognitive, social and special competences based on analyses of job advertisements (n=311)

Personal	Social	Cognitive	Special
<b>Activity:</b> energetic, dynamic and agile personality <b>Adaptability:</b> flexible personality, adaptability to changing work conditions, willingness to be mobile <b>Outcome orientation:</b> outcome, solution, performance and success oriented personality <b>Liability:</b> precision, thoroughness and liability in work <b>Creativity:</b> creative and constructive thinking <b>Self-confidence:</b> confident and firm appearance <b>Responsibility:</b> responsible personality <b>Independence:</b> the ability to work alone, high range of independence <b>Proactivity:</b> proactive and energetic personality, being an originator <b>Stamina:</b> the ability to work hard and enduring,	<b>Cooperation:</b> the ability to cooperate, be part of teamwork and cooperate with others <b>The ability to make contact:</b> open, easy-going personality, the ability to connect to other people <b>Communication:</b> good communication skills <b>Management:</b> the ability to organize, coordinate, plan and manage <b>Empathy:</b> amiable, friendly, helpful approach to others, client-oriented approach	<b>Analytic thinking:</b> the ability to analyze and integrate, analytic thinking <b>The ability to bear monotony</b> <b>Problem solving:</b> problem solving thinking <b>Strategic thinking</b>	<b>Foreign language literacy :</b> knowledge of foreign languages (on different levels) <b>Digital competence</b> <b>Entrepreneurship:</b> business 'spirit', sales approach

Our second method was an online survey, where employees were given a list of competences found in job ads. Subjects had to rate how important they think each given competence is for employers. The questionnaire was filled out by 112 persons, 42% of them were men, 58% of them women. Their age division :11% 17-20 years old , 69% 20-30 years old, 10% 30-40 years old and 9 % 40-50 years old. The mean age of the sample is 26 years, which means that our study represents the attitudes of young adults the most. 65% of the subjects in our sample completed secondary education or is currently studying there and 35 % graduated university.

**Hypotheses**

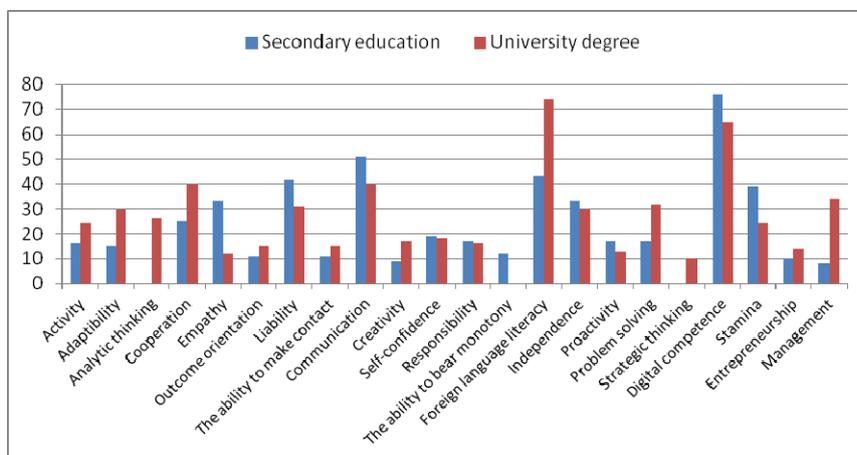
We have 4 suppositions, we hypotyse that:

1. Competences mentioned in job ads will have a moderate number and they will mostly be key-competences.
2. There will be differences in the competences of managers and other employees mentioned in the ads (e.g. management, coordination).

3. There will be a distinctive pattern of personal, cognitive and social competences linked to the area of expertise.
4. Competences stated by employers in the ads and competences that employees think they should have are the same.

**Results**

We gathered the words for the requirements of the 311 job advertisements in a previous research (Budavári-Takács, Suhajda, 2015). Based on József Nagy’s competence framework we clustered requirements into four groups according to their content. We listed 23 competences this way (Table 1.). For every competence gathered from the job ads we computed frequencies, and then ordered a frequency rank to the competence (Budavári-Takács, Suhajda, 2015). To be able to do that we computed the percentage of job ads that included a given competence (Fig 1).



**Fig. 1:** Percentage of job ads that included a given competence by education level. (n=311)

Foreign language literacy (with more than 70% in job ads for university degrees) and ICT skills (with more than

70% in job ads for secondary education) ranked first. In ads for secondary education communication came second

(with slightly more than 50%). The first five competence also include liability and cooperation. These all are competences that Siegrist (1993) already empathised as important requirements for a job.

We analyzed the competences that employers look for in job ads, based on the level of education and found some differences. First we listed competences sorted by education level based on rank (see table 2). This ranking

gave relatively few information, we could only detect some differences in the lists. One of the profound differences was that stamina and empathy are preferred more at the 'secondary education' level, while management and analytic thinking is more looked for jobs than require university degree.

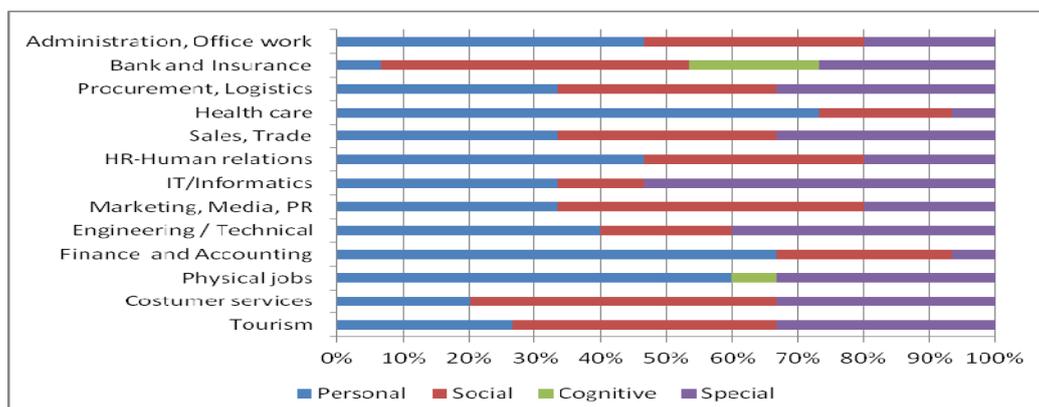
**Table 2:** Rank order of competences listed in job ads with 'secondary education' and university degree requirements (n=311)

Secondary education	rank	University degree
ICT skills	1	Foreign language literacy
Communication	2	ICT skills
Foreign language literacy	3	Communication
Liability	4	Liability
Stamina	5	Independence
Independence	6	Cooperation
Empathy	7	Management
Cooperation	8	Problem solving
Confidence	9	Adaptability
Problem solving	10	Analytic thinking
Proactivity	11	Stamina
Reliability	12	Activity
Activity	13	Self-confidence
Adaptability	14	Creativity
The ability to bear monotony	15	Reliability
The ability to make contact	16	The ability to make contact
Outcome orientation	17	Outcome orientation
Entrepreneurship	18	Entrepreneurship
Creativity	19	Proactivity
Management	20	Empathy
		Strategic thinking

Leading competences (foreign language literacy, communication, ICT skills) are the same in the two lists based on rank, but they differ somewhat in the least preferred competences: for 'secondary level' education they are creativity and management, for university degree level strategic thinking, empathy and proactivity.

**Features of areas of specialties based on job ads**

We listed competence needs that were presented in the job advertisements in competence categories of József Nagy's (2000) competence framework, resulting in these frequencies by education level (Fig 2 and Fig 3).



**Fig. 2.** Frequencies of competences in job ads on the 'secondary education' level

When studying the proportion of competences in the different categories, we can state that for jobs with 'secondary education' training, cognitive competences are demanded the least. The other three competence categories' ratio is dependent on the area of specialty: personal competence is most looked for in 'Health care', 'Finance and accounting', 'Physical jobs' and

'Administration and assistance', while social competence is prominent in 'Bank and insurance', 'Customer service', 'Tourism' and 'Marketing/PR'. Special competence is most needed in the fields of 'IT/ Informatics' and 'Engineering/ Technical'.

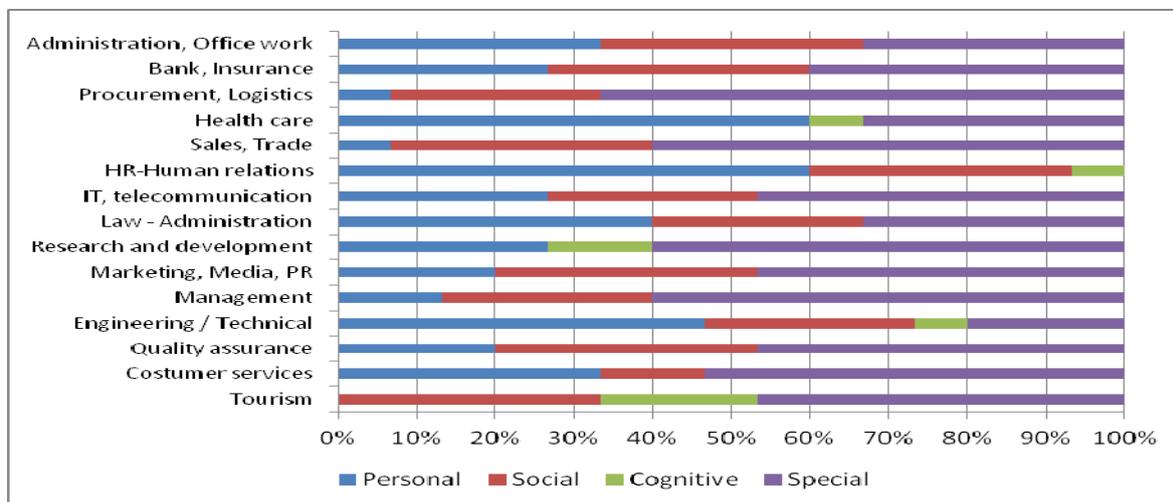


Fig. 3. Frequencies of competences in job ads for university degree jobs

When we look at the ratio of different competence requirements for positions with university degree, we can see that the importance of special competence has increased: from the 15 specialties of areas 9 has this category with most competences belonging to it. Parallel to this personal competences become less important, they are only dominant in the field of 'Health Care', 'HR/' and 'Engineering/Technical'. It would be reasonable to suspect that cognitive competences are important with jobs that require a university degree, but it is only in the top five within five area of specialties with a relatively low ratio.

### How employees and employers think about competences

When cross-examining competences desired by employers in job advertisements and the beliefs of employees about competences that employers look for (Table 3.), we can state that the level of career-management skills is not as low among employees as we hypothesized. Both persons with secondary school diplomas and the ones with university degrees listed competences in their top 10 list that employers mentioned in their advertisements as important ones.

Table 3. Frequency rank of competence needs of employers based on content analyses of job ads (n=311) and the beliefs of employees about the needed competences, divided by necessary education level (secondary/ university degree)

Persons with secondary education			Persons with university degree		
Job ads- needs of employers	rank	Survey- beliefs of employees	Job ads- needs of employers	rank	Survey- beliefs of employees
communication	1	problem solving	communication	1	literacy in foreign language
liability	2	responsibility	literacy in foreign language	2	problem solving
digital competence	3	stamina	liability	3	communication
independence	4	ability to bear monotony	independence	4	digital competence
literacy in foreign language	5	cooperation	digital competence	5	cooperation
stamina	6	liability	cooperation	6	decision-making
cooperation	7	independence	problem solving	7	competitiveness
empathy	8	digital competence	analytic thinking	8	independence
self-confidence	9	willingness to learn	stamina	9	willingness to learn
problem solving	10	communication	activity	10	stamina

One major problem though is that persons with secondary school diplomas still- even after 25 years after

the change of regime and despite the openness of the country-, do not realize the importance of literacy in

foreign language(s), as they did not list it in their top ten. Persons with university degrees have not mentioned one of the most commonly (rank 3) expected key competence: liability in their top ten competences they believe employers look for (Table 3.). This result is extremely interesting as this group consists of young adults and the most important psychological criteria of adulthood is liability.

## Conclusions

In our study we were looking at how key competences are presented in job ads, and how informed employees are of these requirements, so how consciousness they are.

We had four hypotheses. We hypothesized that Competences mentioned in job ads will have a moderate number and they will mostly be key-competences. We formed 23 categories of the requirements mentioned in 311 job ads, most of them were key competences related to employment, so we regard our hypothesis to be proven.

In our second hypothesis we were stating that there will be differences between competences of employees and managers (e.g. planning, coordination). Our results

show that despite that there are some differences between education levels, they are not relevant, they have more features of an ad hoc thing than trends. Given this our hypothesis is only partly proven.

We hypothesized that there will be distinct pattern of personal, cognitive and social competences for areas of specialties. Results show that there are some differences between areas of specialty, but they are not representative for them. So our hypothesis was only partly proven. We hypothesized finally that competences stated by employers in the ads and competences that employees think they should have are the same. Our results confirmed our suppositions. Employees are more conscious in this field than in knowing other features of the labour market (Budavári-Takács, Csehné Papp, Jekkel, 2014).

Based on the study we can see what competences are most desired by employers in an employee. It is clear from the analysis that job ads operate with relatively few requirements, most of them being key competences related to employability. Special features for areas of specialty could barely be detected. Further studies should be carried out on the topic.

## References

- Bajor Tamás, Berki Erzsébet, Erdeiné Horváth Klára, Fekete Rita, Kertész János, Komor Levente, Vekerdy Ida, Pörzse Katalin (2001): „Az Európai gyakorlathoz illeszkedő munkaerő-piaci készségigény felmérés a magyar oktatás-képzés fejlesztése szolgálatában”, Tempus Közalapítvány-SZIE GTK, Vezetéstudományi Tanszék, Gödöllő
- Bartram, Dave, (2005): „*The Great Eight Competencies: A Criterion-Centric Approach to Validation*”, In: Journal of Applied Psychology, Vol. 90, No. 6, 1185–1203
- Borman, Walter C., Motowidlo, Stephan. J. (1993): „*Expanding the criterion domain to include elements of contextual performance*”. In N. Schmitt & W. C. Borman (Eds.), *Personnel selection in organizations* (pp. 71-98). San Francisco: Jossey-Bass.
- Budavári-Takács Ildikó, Suhajda Csilla Judit, (2014): „*A munkavállalóktól elvárt kompetenciák vizsgálata álláshirdetéselemzések alapján*”, In: Csehné Papp Imola, Budavári-Takács Ildikó, Mészáros Aranka, Poór József, (szerk.) *Innováció Növekedés Fenntarthatóság*, Budapesti Kereskedelmi és Iparkamara Gazdasági Szolgáltatások Tagozat, XX. Tanácsadó Osztály, Budapest
- Budavári-Takács Ildikó, Csehné Papp Imola, Jekkel Orsolya, (2014): „*Karrier építési tudatosság vizsgálata fiatal felnőttek körében*”, In: Csehné Papp Imola, Budavári-Takács Ildikó, Mészáros Aranka, Poór József, (szerk.) *Innováció Növekedés Fenntarthatóság*, Budapesti Kereskedelmi és Iparkamara Gazdasági Szolgáltatások Tagozat, XX. Tanácsadó Osztály, Budapest
- Csehné Papp Imola (2007): „*The link between education and the state of the labour market in Hungary*”, *Gazdálkodás*, english special edition, pp. 157-163.
- Campbell, John P., McCloy, Robert A., Oppler, Scott. H., Sager, C. E. (1993): „*A theory of performance*”. In N. Schmitt & W. C. Borman (Eds.), *Personnel selection in organizations* (pp. 35-70). San Francisco: Jossey-Bass.
- Hogan, John, Holland, Brent (2003): „*Using theory to evaluate personality and job-performance relations: A socioanalytic perspective*”. *Journal of Applied Psychology*, 88, 100-112.
- Kurz, Reiner (1999): „*Automated prediction of managerial competencies from personality and ability variables*”. In: *Proceedings of the BPS Test User Conference* (pp. 96–101). Leicester, UK: British Psychological Society
- J Klér Andrea, Budavári-Takács Ildikó, (2010): „*A study of the problem solving strategies of university students*” *Practice and theory in systems of education* 5:(4) pp. 399-406.
- Mészáros Aranka, Bíró Gyula, Buda Béla, Cseryik Póth Ágnes, Drimál István, Fodor László, Járó Katalin, Kovács Ildikó Éva, Lipták Erzsébet, Magyar Judit, Németh Erzsébet, Páskuné Kiss Judit, Sallay Hedvig (2007): „*Kommunikáció és konfliktuskezelés kezelése a munkahelyen*” ELTE - Eötvös Kiadó, Budapest
- Mészáros Róbert (2013): „*Az ideális munkavállaló*”, Szent István Egyetem, Gazdaság- és Társadalomtudományi Kar, Gödöllő
- Nagy József (2000): „*XXI. század és nevelés*” Osiris Kiadó, Budapest
- OECD (2005): „*Definition and Selection of Key Competencies: Executive Summary*”, letöltve: <http://www.oecd.org/dataoecd/47/61/35070367.pdf> (elérés ideje: 2014.11.28)
- Scullen, Steven E., Mount, Michael K., Judge, Timothy A. (2003): „*Evidence of the construct validity of developmental ratings of managerial performance*” *Journal of Applied Psychology*, 88, 50-66.
- Spencer, Lyle M., Spencer, Signe M., (1993): „*Competence at Work: Models for Superior Performance*”, John Wiley and Sons, Inc. New York
- Varga Erika, Vas István, Szira Zoltán, Bárdos Ilona (2013): „*Kompetencia alapú humán erőforrás-menedzsment területek és a munkapiaci kompetencia-felsőoktatás kapcsolata egy primer vizsgálat tükrében*”. *Humánpolitikai szemle* 7-8: pp. 132-140.
- Working group on employability report to ministers bologna conference Leuven/Louvain-la-Neuve 28-29 April 2009. URL: [http://www.ehea.info/Uploads/LEUVEN/2009\\_employability\\_WG\\_report.pdf](http://www.ehea.info/Uploads/LEUVEN/2009_employability_WG_report.pdf) (letöltés ideje: 2016. március 20.)

**RECEIVED: 1 April 2016**

**ACCEPTED: 20 April 2016**

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## MODERN AND CLASSIC DIPLOMACY IN POLITICAL CRISIS COMMUNICATION MANAGEMENT

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### Annotation

The foreign communities, organizations and institutions in all forms exposed of the many challenges and crises, and appear in multiple images lead to accountability or prosecution from the affected a government or public, which affects negatively on their images, nor the likelihood of crisis on public and private foreign institutions which accredited in a host country and one of these institutions are a diplomatic missions accredited to it. It is incumbent upon practitioners diplomatic many skills to deal with the crisis and prepare necessary measures to create a good atmosphere and positive communication to deal with their secretions, and enhance its reputation and maintain a mental image, through the perspective of modern diplomacy in the crisis communication. Most researchers believe that theories and practices of modern diplomacy can change the classic diplomacy to modern diplomacy and help it to shift from being just a tool of foreign policy in the recruitment and planning to the basic functions of management for the purpose of building long-term relationships with the host country. So an example the unmasking of a spy who passed on internal documents of the German foreign intelligence service (BND) to the CIA for money has led to unusually sharp attacks by German politicians in the United States because the last still use classic diplomacy.

KEYWORDS: Modern diplomacy, gather information, preventive policies, crisis strategy, evaluate.

### Introduction

On the 2<sup>nd</sup> of June 2014, The German intelligence agency (BND) employee was arrested and later that evening of the same day made a comprehensive confession to the Federal Prosecutor in Karlsruhe. The first details of the affair were leaked to the press. According to what has been published, the detainee is a man with mobility and speech impediments who worked in the registry of the BND "Intervention Areas/Foreign Relations" department in Pullach, near Munich. Allegedly he contacted the US Embassy in Berlin via email at the end of 2012 to offer his services. Since then he has passed on more than 200 documents classified "confidential" to "top secret" to the CIA in return for €25,000 (Schwarz 2014).

The problem of this crisis is not referred only broken trust between Germany and USA but broken trust of any relationship between two counters through their embassies (Ivančík, Nečas 2010).

We know the States establish diplomatic missions and send both diplomatic and non-diplomatic staff abroad in order to represent and protect their interests and those of their nationals. Such missions and personnel are granted different privileges and immunities in the receiving states so that they can perform their official functions as independently and efficiently as possible. If the mission completed its duties without involving the responsibilities of internal issues of the host country, was able to give reassurance in the performance of enforcement authorities relevant of the Host country. But If a diplomatic mission stumbles on its function performed

within the limits of international diplomatic conventions, it will lose the confidence of the same entities that deal with it.

It is one of the reasons that a diplomatic mission failure on its function performed is not having modern diplomacy skills, especially in crisis communication management skills to improve its mental image.

### Management Issues Before the Crisis

The possibility of interaction with the surrounding external environment successfully is not only the existence of a sound internal management in order to manage the surrounding external issues. Administration issues is the ability to understand and move, coordinate and direct all the functions of strategic and political planning towards achieving one goal is to participate in the creation of modern policy that have an impact on the future and destiny of personal and institutional (Almajid 2008).

Scan the external environment helps to manage any potential crisis will happen because the mind works in a survey of environments, and trying to find meaning to realize and recognize the development of future alternatives and decide what should be done. So the expectation or the discovery of a crisis in the diplomatic mission doesn't come out of being a framework to think about the future (Nur al-Din 2008).

But It cannot be discovered only after conducting operations followed by the diplomatic mission to gather information and the facts surrounding the mission issues that could be affected by them or affect them. These information needs interpret and analyze with precision

and identified so that it can be controlled and take immediate proper measures to resolve it and to understanding the trends modern opinion toward the issue (Almulyki 2010).

Investigation of the information is a source of strength to deal with the external environment and control it, then "why nations spy on each other? Why baptizing professionals of football to study the discount plans and the way of the game? Because the information is form of power, mean any party got more information about other, he has increased his chances of catching a victory" (Dawson 2008).

It is better for any diplomatic mission is working as an open system to increase the chances of survival. Diplomatic missions should have a balance between the existing systems to able of continuing and re-create itself in addressing environmental challenges in an open system. So if the diplomatic missions operate in a closed system and in isolation from the environment, will be collapsed for lack of ability to understand the surrounding external environment and interact with it (Smith 2007).

The case management stage is one of the important stages in contacts crisis management, and the most important thing to distinguishes it as an exploratory stage that provide information Bank of the mission sources of capacity and capability in dealing with all spectrums of the host community, and find out his interests and trends about the various issues that will help the mission in the decision-making and which contributes to the strengthening of mutual relations between the country's envoy and the host country.

### **Planning Before the Political Crisis Start**

The importance of this second step, that comes after the information collection, analysis and imagination, this step of crisis planning, lies in being basically an innovative but reasonable development, as for finding out accurate detailed preventive deliberations prepared for facing the crisis potential consequences (Paul C 2007).

Planning forms the basic pillar for any raised crises' active administration. Despite of these crises types, where planning principals can be applied to any potential crisis type, there is no guarantee that the crisis' site plan will achieve a complete success. However, any provisional set plan may complicate the crisis or lead to failure in facing this crisis (Harrison 2005).

The planning stage provides the decision maker requirements with stable policies introduced into research and an analysis table for adopting the proper ones to secure the mission vital affairs and the possibility of maintaining them through applying the major proper preventive policies for any potential crisis, as follows:

### **Legal Preventive Policies**

The preventive legal policy preparation lies on the general map holding all parties and powers, which the crisis makers and resisters have crowded, locating tension spots and struggle areas (Aloise 2005). Pursuant to that map, planning is made for moving into confrontation through abiding by the safest and most fortified international conventions and norms to be taken as

fulcrum points and set out the basis (Nofal 2007), and setting a legal information framework for absorbing current pressures without causing an intervention in any reactive power demands of the host country and their government in a certain case (Harrison 2005).

### **The Ethical Preventive Policy**

The mission puts in their priorities the ethical and professional principals as a method in their various transactions and their explicit or implicit messages to the host country crowds and the government along with setting ethical conditions that help in defining the separating lines for dealing with the host country sensitive situations that may cause a crisis if they are violated (Aloise 2005).

### **The Proactive Preventive Policy**

Providing formal entities or information media with information from the diplomatic mission, at the proper time and in a form that does not affect their independent entity, will make them avoid falling into crises. This is called the Proactive Policy which means "following up an effective method, as soon as possible, for introducing information to the active entities at the host country." Ron Levi says: "as soon as the crisis initial consequences start "Don't keep information for yourself" and you have to confide all your new information not only to the concerned information media, but also to the employees, community and crowds". "Disclosing the mission information renders a service to the modern community affairs and maintains the organization credibility and helps in keeping trust on the long run. Non- abiding by this principle will lead to pernicious consequences" (Shaaban 2008).

The researcher sees that it is necessary, for every mission, to adopt permanent preventive and stable policies in making their decisions either in normal or exceptional circumstances. However, these decisions must be liable to revision, update and change according to the developments and changes in the diplomatic mission host country, whatever the size of the political, economical and cultural relations that connect the two countries in the international organization.

### **The Stage of the Political Crisis Containment**

The stage of the crisis containment is the third stage. It comes after depleting all the prevention efforts and the diplomatic mission is in the crisis confrontation situation. The method of dealing with the crisis, by the mission side, will be defined on the basis of having strategies, managing the crisis communications or handling or dealing with the situation. This stage indicates the failure of the executive directors in managing the crisis in the two previous stages.

The similarity between Macbeth fall, in the Shakespeare, classical works, and the tragic failure of some executive directors of the diplomatic mission is clearly apparent when they face a crisis. Their end was not only like the ambitious Macbeth fall, but also with the collapse of his relentless self-trust despite of his deeds.

Many executive directors believe that their administrations may remain out of the explicit criticism, but their erroneous belief is revealed to them after their being too late upon introducing their actions justifications during the crises (Smith, 2007).

Embassies or diplomatic missions must work as one team in setting, innovative methods enabling them to contain the crisis and alleviate its severity and reflections on threatening their abstract or personal entity. These methods are implied under the strategy concept and they are out of the current concepts in all various human activities. They are used to indicate the target which the action seeks. This framework has scientific comprehensive dimensions connecting successfully business organization and its future. It is vastly used by researchers and thinkers in political, social, economic, military and scientific affairs (Fahmy 2006).

The researcher sees that the crisis containment strategies depend basically on the official speaker skills in composing the message content suitable for the population awareness and incessantly updating their information along with introducing the facts which are often intentionally concealed by some diplomatic missions without considering the fact that information travels quickly during the crisis by various communications technology which became available for everybody along with the importance of creating a website by diplomats for the diplomatic mission on the internet to be used for instant messages and discussing daily news through the news groups, contacting personal and governmental organizations and institutions at the host country and the world.

### The Stage of Political crisis End

Not all diplomatic crises have similar ends. Some crises end successfully by their holders' skills, some end suddenly and disappear by themselves and others lead to the diplomatic relations cut between two countries. Moreover, the success of any diplomatic crisis end is connected with the diplomatic missions can maintain their mental image in the external crowds' minds.

Ali Ajwa defines the mental image as: "The ultimate product of the auto impressions formed by individuals or groups towards a certain individual, system, nation, nationality, firm, local or international organization, trade or any other thing that may affect the human being's life. These impressions are formed through direct or indirect experiences. These experiences connect to individuals' emotions, trends and creeds. In spite of the accuracy or the inaccuracy of the information included in these outline experiences, its representatives, in their holders points of view, a true fact through which they see and understand their surroundings" (Ajwa 1983).

The crisis targeted mission may commit a serious mistake by concentrating on the internal operations and ignoring the crisis effect on the external parties or pay attention thereto lately.

Therefore, in this stage, a short or long range programs are prepared and implemented for maintaining the natural situation during the crisis occurrence and they restore, to the diplomats, the mission good mental image

through taking the following modern policy imaginations into consideration (Osman 2010).

- The mission external and internal crowds must not be left to search, by themselves, for information from the information media. The mission must take the initiative of responding to all enquiries.
- Restoring the mission, reputation through two points: first, not to ignore crowds, and the second is to have confidence in the mission. The keywords are trust and credibility (Ibid, p 137). As the mission, reputation is connected to practicing the modern diplomatic skills through their diplomats for boosting or maintaining their positive image, this positive building will not be achieved without realizing a group of strong bonds with the mission external crowd based on mutual trust (Delatte 2003).

The previous relations with the external crowds illustrate the reasons of their reactions to the crisis and assess the current mental image that stick into the crowd memory minds concerning the mission. The individuals' trends and behaviors towards a certain thing are largely related to their former concepts about this thing (Al-Sahin 2004).

The researcher sees that the diplomat must follow up the modern diplomatic methods upon evaluating their skills, activity and performance upon the crisis, various stages starting with evaluating the plans and preventive policies including evaluating the effect on the internal and external diplomatic mission crowds. They're dealing with the information media is measured by specific targets for containing the crisis and, also, an evaluation of the crisis and the lessons extracted from the crisis.

The process, of ending the crisis successfully, depends on several connectors including restoring the mental image of the internal and external crowds, plus measuring the time factor in the procedures taken capable of solving the crisis in a form that does not affect the nature of the normal diplomatic mission activity, their abstract entity and their leader safety through evaluation and revision at every crisis stage.

### Conclusions

The traditional diplomacy is still going according to instructions reproduced and not according to cope with changes in communities of all aspects of life, which affects the nature of their work to convince others of his point of its consideration during crises.

Modern diplomacy coupled with strong knowledge and information about the nature of people, and close to their awareness when simulated different cultures and put her weight is more important than their own interests, and this does not take place unless approached the modern diplomatic skills to complete her art to deal with the contradictions and the outcome maintain or improve the image of mind with other peoples.

Mixing between the classic diplomacy and modern diplomacy is the evolution itself, because it strengthens the identities of the states on a permanent basis and the plans for their relationship lines more clearly and to consolidate because they rely on open communication systems, do not engage in dialogue with the Governments of the States, but continue with their people culturally

without having this communication political dimension affecting the prestige of the state and sovereignty .

If we can foster a better understanding of the very different political mindsets and the resulting very different legal frameworks in both countries. We can understand the fundamental nature of the differences between Germany and the United States with respect to the way our countries seek to balance security and liberty. At their core, they are differences in historical experience, political culture and legal culture. Those differences are the source of the dismay and disillusionment felt by Germans and Americans. They are also a significant barrier to the authentic and constructive conversation we must have to move beyond the current malaise.

## References

- Agwa, Ali. (1983). *Public relations and mental image*. p. 3. The world of the book, Cairo.
- Almajid, Kadre Ali Abd. (2008). *Crisis communication and crisis management*. p. 142. The new algamia Dar, Alexandria, Egypt.
- Aimulaki, Fahad Bin Abdu Raman. (2010). The concept of crisis management. In *Diplomatic magazine*. Ministry of Foreign Affairs of Saudi Arabia, number 53, p. 25.
- Aloise, Mario. (2005). *Negotiating the Crisis Response: Faculty of Communication Sciences A Negotiation Approach to Crisis Response Management*. p. 64. University of Italian, Switzerland.
- Al-Sahin, Fareed. (2004). *Public relations (principles and application)*. p. 233. University House, Alexandria.
- Bučka P., Šiposné K.: NATO partnerships challenges, values and interests In: *Národná a medzinárodná bezpečnosť 2015: 6. Medzinárodná vedecká konferencia* . 666 p. Liptovský Mikulas: Akadémia ozbrojených síl generála Milana Rastislava Štefánika, 2015. pp. 52-63. ISBN:978-80-8040-515-1
- Dawson, Roger. (2008) *The secrets of negotiating power*. P. 243. Jarir library, Saudi Arabia.
- Delatte, Jamie Mabile. (2003). *How Should Sports Organizations Handle a crisis*. p.10-11. Afocuse on Collegiate institutions, Louisiana Statute university, USA.
- Fahmy, Abdulqader Muhammad. (2006). *Introduction to The Stratigies Studies*. p.17. Dar Majdalawi, Amman.
- Harrison, Gorden Alan. (2005). *Communication Strategies as A basis for Crisis Management Including Use of The Internet as A delivery Platform*. p.243. Georgia State University, USA.
- Nofal, Ahmad Sa'eed. (2007). Diplomatic and Consular Fundamentals. *Jordan Magazine for International*. p. 98. volume 1, no. 1. The Jordanian Diplomatic Institute of the Jordanian Ministry of Foreign Affairs.
- Nur Al-Din, Tawfiq Ahmed. (2008). *Decision-making in the management of the crisis*. p. 85. Arabian of alnahdha dar, Cairo.
- Osman Faruk Al-Saeed. (2010). *Negotiation and crisis management*. p. 136. Alteba organization for publishing and distribution, Cairo.
- Paul, C. Light. (2007). *Predicting organizational crisis readiness*. p.24. New York University: center for catastrophe preparedness and response, USA.
- Shaaban, Hamdi. (2008). *The function of public relations (fundamentals and skills)*. p. 226. The United Arab company, Topchi Foundation for printing and publishing, Cairo.
- Schwarz, Peter. (2014). *Following CIA spy revelations, German politicians turn on the US*. Accessible online: <https://www.wsws.org/en/articles/2014/07/08/bnd-j08.html>
- Smith, Joshua Lee. (2007). *When It This The Fan: A Public Relations Practitioners Guide to Crisis Communication*. p.15. Georgia: State University, USA.

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RECEIVED: 18 March 2016

ACCEPTED: 20 April 2016

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## EVALUATION OF OUTSOURCING RELATIONSHIP IN ELECTRICITY SUPPLY SECTOR: LITHUANIAN CASE

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### Annotation

Although the analysis of the relationship between a customer and a vendor (an external service provider) has earned sufficient scientific attention while researching private sector, what concerns public sector, there is a tendency to focus on the analysis of the efficiency of outsourcing relationship rather than concentrate on the nature and peculiarities of the relationship itself. This determined the aim of the article – to evaluate outsourcing relationship in electricity supply industry in Lithuania. The methods of the research include the systematic analysis of the scientific literature and the expert evaluation. The theoretical analysis of the scientific literature has enabled to form the structural model of outsourcing relationship between a customer and a vendor and this way identify the theoretical determinants of outsourcing relationship from customer and supplier's point of view. Considering the subject of the research – Lithuanian electricity supply sector, the directions of outsourcing relationship in electricity supply chain have been defined. The empirical part of the research (expert evaluation) has revealed the most significant negotiation, contract making, contract performance and confirmation, observation (monitoring), partnership and dissatisfaction factors that have the impact on outsourcing relationship in Lithuanian electricity supply sector. The main causes of outsourcing relationship problems in the analysed sector have also been identified. They include such internal issues as the lack of clear goals and objectives and lack of coordination between management teams. Incompatibility of the parties is also attributed to extremely significant causes of outsourcing problems in the analysed sector. The main external causes of outsourcing relationship problems include economic and market changes, which are not directly influenced by the operating entities. With reference to the research results, it can be concluded that for qualitative outsourcing collaboration in Lithuanian electricity supply sector, strategic goals and objectives must be defined, contract performance standards must be followed and smooth operation must be ensured, focusing on the constant contract performance control as well as observation of the policy efficiency.

KEY WORDS: outsourcing, outsourcing relationship, relationship problems, electricity supply, Lithuania.

### Introduction

The development of short and long-term outsourcing relationship, which means contracting with companies specializing in the performance of particular processes or functions, has seen its growth during the recent decades. Inter-organisational cooperation based on outsourcing contracts is comprehensively examined from a wide range of theoretical points, including strategic management (Brege et al. 2010; Davies 2011; Perez-Reyes, Tovar 2010 and others), organisation theory (Herrala, Haapasalo 2012; Mutiganda 2014), economic and industrial analysis (Tanskanen et al. 2010; Vilko 2011; Vilko 2013; and others). Analysing the advantages of outsourcing, it can be summarized that outsourcing is considered to be beneficial due to the economy of scope, access to new technologies and flexibility of outsourcing relations (Bin et al. 2007).

The analysis of the relations between a customer and a vendor (an external service provider) has earned sufficient scientific attention while researching private sector (Mathew 2011; Davies 2011; Qi, Chau 2013; Nuwangi et al. 2014 and others). However, what concerns public sector, there is a tendency to focus on the analysis of the efficiency that outsourcing relationship can bring to public sector (Barbatunde et al. 2012; Chodzaza, Gombachika 2013; Gerstlberger, Schneider 2013 and others) rather than concentrate on the nature and peculiarities of the relationship itself. The aim of this article is to evaluate outsourcing relationship in electricity

supply industry in Lithuania. In order to fulfil this aim, the following objectives were raised: 1) with reference to the analysis of the scientific literature, to form a structural model of outsourcing relationship; 2) to establish the directions of outsourcing relationship in electricity supply chain; 3) to present the methodology of the research; 4) applying the method of expert evaluation, to evaluate the outsourcing relationship in Lithuanian electricity supply sector. The methods of the research include the systematic analysis of the scientific literature and the expert evaluation.

### Towards true partnership: a structural model of outsourcing relationship

After the decision to outsource has been made, it is essential to form the right relationship with a vendor. According to Zineldin and Bredenlow (2003), creating and enhancing a sustainable relationship has both a cost and a value since it has the impact on profitability of both parties of an outsourcing contract.

Outsourcing relationship factors analysed in the scientific literature fall into the following groups:

- negotiation and contract making (Webb, Laborde 2005; Bolat, Yilmaz 2009);
- contract performance and confirmation (Webb, Laborde 2005; Perunovic et al. 2012; Davies 2011; Lee et al. 2010);
- monitoring (Ren et al. 2010; Vitasek, Manrodt 2012; Kotha, Srikanth 2013);

- partnership (dissatisfaction) in supply chain
- (Zineldin, Bredenlow 2003; Indridason, Wang 2008; Qi, Chau 2013).

Integrating the empirically tested outsourcing relationship factors presented above, a structural model of

outsourcing relationship has been developed taking into account the rationales and the potential pitfalls of an outsourcing contract. The model aims at addressing the links between a customer and a vendor in all stages of outsourcing relationship (see Fig. 1).

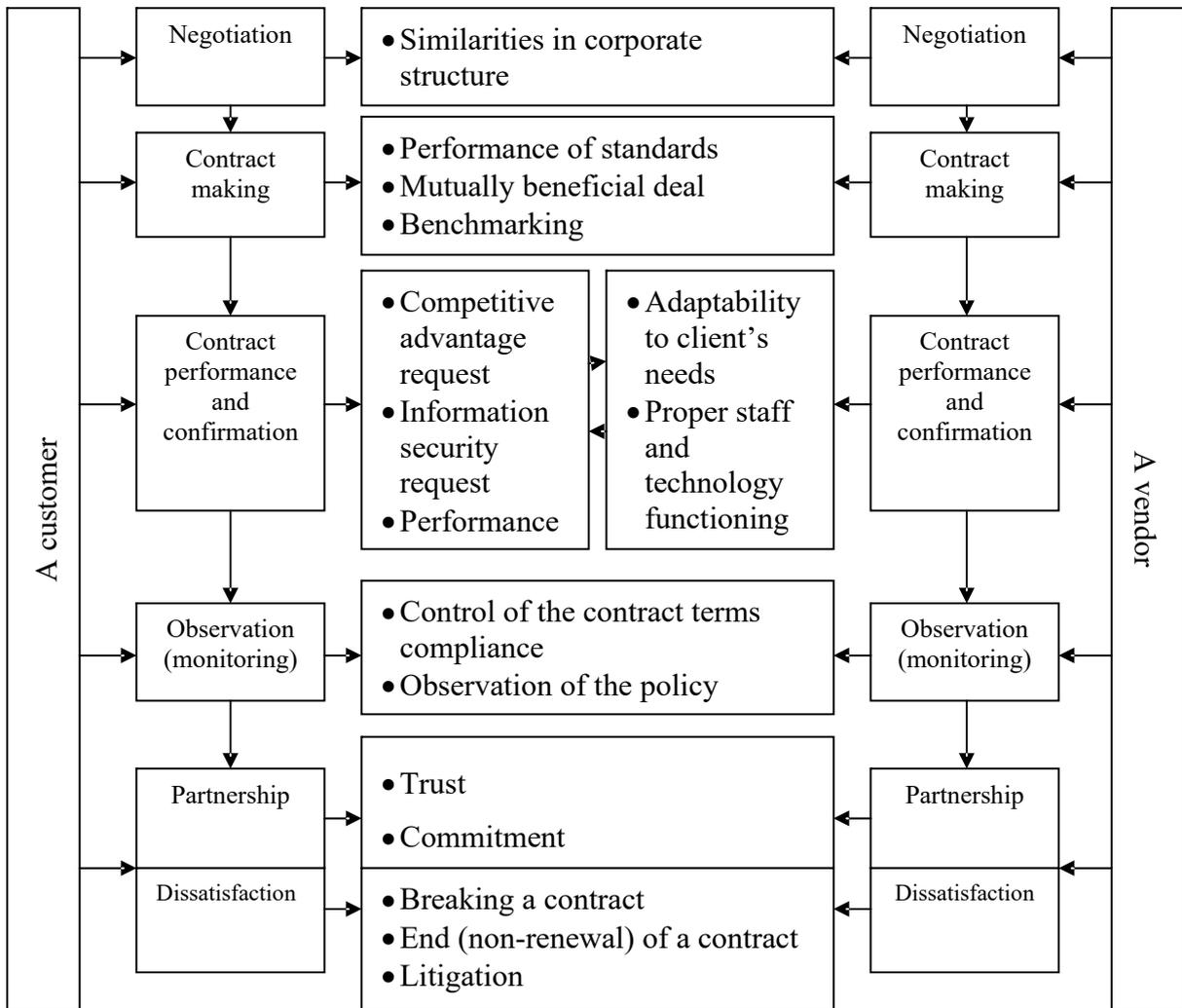


Fig. 1. Structural model of outsourcing relationship between a customer and a vendor (source: compiled by the authors)

Once the market has been researched thoroughly and information about available vendors has been collected and analysed, a customer selects a vendor who may be able to meet customer's needs, and the relationship between the both parties is started to be formed from the first stage – negotiation. Perunovic et al. (2012) call this stage “the entry phase”, where similarities in corporate culture as well as similar strategic decisions are important since the interrelation is facilitated if both companies are moving in the same strategic direction. The focus is on people, cultural fit and corporate processes.

In the second stage - contract making, the relationship between a customer and a vendor is based on the definition of the terms particular products and services are going to be delivered, information accessibility, the authority and resolution of the conflicts, so it stays rather formalized, although both parties aim at making a mutually beneficial deal. According to Indridason and Wang (2008), in the process of outsourcing contract

formation, both companies try to cater for their interests. The relationship that is based on opposite interests is usually short term while mutual values, as a rule, enable long-term relationship formation.

The third stage of the relationship – contract performance and confirmation – can be considered to be the basis of forming successful outsourcing relationship since the proper contract performance lays the foundation for trust and potential partnership between the parties. It requires a vendor to be flexible and adaptable to customer's needs considering the fact that not all customers demand for the same level of assistance for every outsourcing contract. “Some clients may wish to relinquish all control of a program, while some may prefer to retain some aspect of a staff function or technology. Different clients may have vastly different preferences, thus outsourcers will need to allow for flexible arrangements to accommodate these preferences and increase the comfort level of clients” (Webb, Leborde

2005, p. 440). According to Kavcic, Tavcar (2008), a vendor is likely to be successful if it constantly offers its partners bigger and better benefits than its competitors. "Basic capabilities of an organisation can be all components of corporate strategy or synergistic combinations thereof, which contribute to the performance of the company – its aims, strategies used to achieve those aims and any of the components of the company strategy, i.e. activities, structure and resources" (Kavcic, Tavcar 2008, p. 243). Anyway, making outsourcing contracts, all customers aim at increasing their competitive advantage at the same time maintaining the confidentiality of their corporate information. Thus, seeking for long-term relationship, a vendor has to assure the customer of information security and provide properly functioning staff and technology.

Regardless of how well outsourcing contract terms have been defined and how successful a vendor is ensuring the rise of customer's competitive advantage, the whole performance has to be monitored and adherence to the contract terms must be evaluated. Unanticipated changes can negatively influence the relationship between the customer and the vendor. As a rule, the larger is the project, the more difficult it is to monitor due to disparate systems, locations or resources, so it needs even closer cooperation of the two contract parties which, in case the project is successful, contributes to forming long-term relationship whereas successful performance of small projects does not usually cause such deep commitment between the parties. Apart from monitoring the course of the contract, both parties will also be evaluating the efficiency of the selected policy (for a customer it is the increase of competitive advantage whereas for a vendor it is a profitability of the contract).

The last stage of outsourcing relationship is bidirectional: the parties can either form a partnership or end their relationship (break a contract, end it without a renewal or one of the parties can be sued). According to Kavcic, Tavcar (2008), trust is the main factor making the basis of the partnership between the outsourcing company and the outsourcer. In combination with compliance to the contract terms and outsourcing policy efficiency, trust causes commitment of both parties to each other. In the case of long-term trust-based partnership, long-term commitment can even develop into mutual emotional attachment. Analysing the outsourcing relationship, Zineldin and Bredenlow (2003) compare successful customer – vendor relationships with the ones in best marriages since in both cases true partnerships are formed.

The criterions that are necessary to meet for true outsourcing partnership formation researched in the scientific literature can be divided into the following groups:

- motivation (individual willingness, strategic fit – Zineldin, Bredenlow 2003; outsourcing readiness - Ren et al. 2010);
- compatibility of the parties (cultural fit - Zineldin, Bredenlow 2003; human characteristics, perceived outsourcing benefits – Ren et al. 2010; aligned incentives, high degree of collaboration –

Vitasek, Manrodt 2012; adaptability and synchronization – Jain, Khurana 2013);

- institutionalization (organizational arrangements - Zineldin, Bredenlow 2003; normative rules – Vitasek, Manrodt 2012; visibility of actions and knowledge – Kotha, Srikanth 2013);
- interdependence (integration, effective communication system - Zineldin, Bredenlow 2003; mutual trust, commitment in managing the relationship, investment – Tafti 2010).

Motivation is interpreted as a strong wish of outsourcing parties to enter the relationship due to the opportunity to achieve their long-term goals. Compatibility of the parties means partners' similar values and attitude to their commitments. Institutionalization is giving the relationship a formal status (including resolution of possible conflicts). Finally, interdependence can be treated not only as a contractual duty to comply the agreed terms but also building an effective communication system and possible investment the parties might need to make in each other.

On the other hand, dissatisfaction experienced as a result of the poor contract performance (usually – vendor's failure to provide competitive advantage due to improper adaptation to customer's needs and provision of improper staff and technology), may end the relationship between the parties appearing as drastic forms of breaking a contract or litigation or the contract can be ended (not renewed) without taking any special measures or interference of the third parties (court officials, bailiffs). Anyway, whether special measures are taken or not, the feeling of dissatisfaction will prevent the parties from forming new outsourcing relationship in the future whatever party has experienced this feeling.

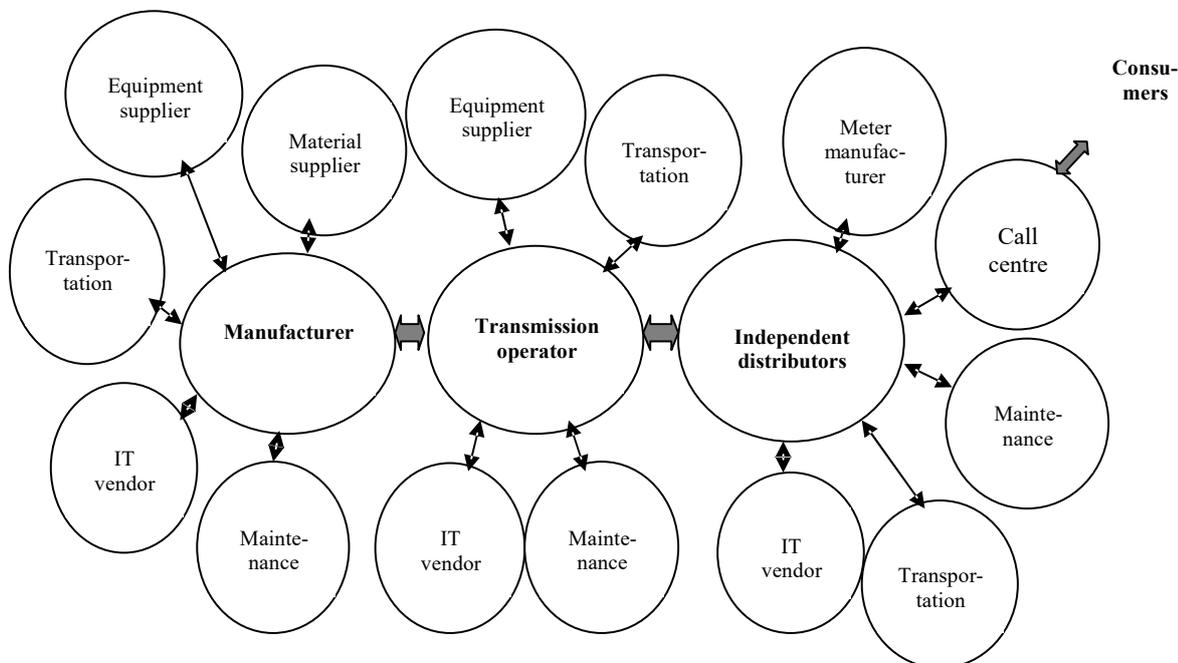
The analysis of the scientific literature (Zineldin, Bredenlow 2003; Webb, Laborde 2005; Kavcic, Tavcar 2008; Perez-Reyes, Tovar 2010) has revealed that the problems in outsourcing relationship are caused as a result of:

1. Internal factors:
  - a. lack of clear goals and objectives;
  - b. clash of cultures;
  - c. incompatibility of the parties (in operating procedures, attitudes, lack of partnership experience, opportunistic behaviour);
  - d. lack of coordination between management teams;
  - e. too high coordination and control costs;
  - f. too high performance risk and uncertainty of investment;
  - g. power and independence loss (giving up control over the process and/or resources).
2. External factors
  - a. economic changes (upheavals, crises, currency or exchange rate changes);
  - b. changes in legal regulation of the field outsourcing partners work in;
  - c. political changes (changes of political preferences or government in the country);
  - d. market changes (changes of customers' needs, appearance of a more attractive vendor in the market).

Summarizing, the development of a long-term strategic outsourcing relationship requires motivation, compatibility of the parties, following moral and ethical standards, definition of normative rules and trust. Although, according to Kavcic and Tavcar (2008), the course of the relationship is impossible to foresee and every incident cannot be anticipated, the issue that the parties have to focus on is commitment and relationship management.

## Directions of outsourcing relationship in electricity supply chain

In case the electricity supply system is liberalized, outsourcing relationships are formed not only between the participants inside electricity manufacturing and supply chain, but also with external vendors (see Fig. 2).



**Fig. 2.** Directions of outsourcing relationship in electricity supply industry (source: compiled by the authors with reference to Trygg et al. 2010)

As it can be seen from Fig. 2, an electricity manufacturer is not usually involved in direct relationship with a final consumer. Manufacturers engage in long-term relationship with a transmission system operator, who, in turn, is linked with independent electricity suppliers providing electric energy to final customers. However, outsourcing relationship in the chain is formed not only for the direct purpose of electricity supply, but also for the support services such as equipment and material supply, transportation, IT, maintenance and others. Thus, the general model of outsourcing relationship in electricity supply industry includes two-level relationship – between the primary participants of the electricity supply chain (manufacturer, transmission operator and independent distributors) and between the primary and supporting participants. Anyway, since at both levels outsourcing services are provided by a vendor at the request of a customer, the relationship at each of the levels are formed on the basis of similar factors.

### The methodology of the research

The empirical research is based on the method of expert evaluation. This method was selected for the research since it is a procedure that enables to unify the opinions of different experts and make general conclusions. This method is advisable to be engaged while analysing particular problem or phenomenon, an

access to specific knowledge and abilities are necessary, and the results of the research are presented in motivated conclusions and recommendations (Rudzkiene, Augustinaitis et al. 2009).

Free Lithuanian electricity supply market ensures competition among the suppliers, and the consumers are provided the opportunities to select the services of an independent competitive supplier. Managers of four basic enterprises currently operating in Lithuanian electricity supply industry – joint stock company “Litgrid”, companies of limited liability “Enefit”, “InterRao Lietuva” and “Imlitex” – with sufficient experience and competence in the researched field were selected as the experts for the research. It should be noted that half a year before, Lithuanian electricity supply system included 10 active participants. However, during the process of the research, 2 of them were announced to be bankrupt, and 4 started changing the nature of their operations. Since questioning of such participants would not match the defined aim of the research, they were not included in the expert evaluation.

The experts were presented the questionnaire, composed of 6 questions that would enable to evaluate outsourcing relationship in electricity supply industry in Lithuania. Selection of the factors, included in the questions for the evaluation of the experts, was based on the analysis of the scientific literature. The experts were asked to evaluate each of the presented statements in

Likert evaluation scale, where the ranks from 1 to 5 would reflect experts' agreement or disagreement with the particular statement (marginal ranks 1 and 5 respectively meaning "Completely disagree" and "Completely agree"; depending on the strength of agreement or disagreement, intermediate ranks 2, 3 and 4 could be selected).

The data collected during the expert survey was processed using Statistical Package for Social Sciences (SPSS) and "Microsoft Excel" software.

### Evaluation of outsourcing relationship in Lithuanian electricity supply sector

The research has enabled to identify the factors that have the impact on outsourcing relationship in Lithuanian

electricity supply sector and establish the main causes of outsourcing relationship problems in the analysed sector.

The value of the calculated Cronbach alpha coefficient equal to 0.896 shows that the questionnaire is properly formed. i.e. the questions reflect the researched phenomenon with sufficient accuracy. Kendall's coefficient of concordance ( $W^a$ ) equal to 0.675 proposes that the opinions of the experts were rather unanimous, researching the relationship between a customer and an external service provider. The research can be considered statistically important since value  $p$  is lower than 0.05 ( $p = 0.044$ ). The main factors that have the impact on outsourcing relationship in Lithuanian electricity supply sector have been systematized in Table 1.

**Table 1.** The factors that have the impact on outsourcing relationship in Lithuanian electricity supply sector (source: compiled by the authors with reference to the results of the expert evaluation)

The factors influencing outsourcing relationship from outsourcing customers' point of view		The factors influencing outsourcing relationship from outsourcing providers' point of view	
Negotiation factors:	Mean rank	Negotiation factors:	Mean rank
1. Similarities in consumer and supplier's corporate structure	1.5	1. Similarities in consumer and supplier's corporate structure	1
2. <i>Similar consumer and supplier's strategic decisions</i>	4.5	2. <i>Similar consumer and supplier's strategic decisions</i>	4
<b>Contract making factors:</b>		<b>Contract making factors:</b>	
1. <i>Performance of standards</i>	5	1. <i>Performance of standards</i>	5
2. <i>Mutually beneficial deal</i>	4	2. <i>Mutually beneficial deal</i>	4
3. <i>Benchmarking</i>	5	3. <i>Benchmarking</i>	5
<b>Contract performance and confirmation factors:</b>		<b>Contract performance and confirmation factors:</b>	
1. <i>Competitive advantage request for a customer</i>	3.5	1. <i>Adaptability to client's needs</i>	4.5
2. <i>Information security request</i>	5	2. <i>Proper staff and technology functioning</i>	5
3. <i>Performance based payment</i>	4.5	3. <i>Flexibility</i>	5
		4. <i>Transparency</i>	4.5
<b>Observation (monitoring) factors:</b>		<b>Observation (monitoring) factors:</b>	
1. <i>Control of the contract term compliance</i>	4.5	1. <i>Control of the contract term compliance</i>	5
2. <i>Observation of the policy efficiency</i>	4.5	2. <i>Observation of the policy efficiency</i>	4.5
<b>Partnership factors:</b>		<b>Partnership factors:</b>	
1. <i>Trust</i>	5	1. <i>Trust</i>	5
2. <i>Commitment</i>	4	2. <i>Commitment</i>	4
3. <i>Emotional attachment</i>	1.5	3. <i>Emotional attachment</i>	2.5
<b>Dissatisfaction factors:</b>		<b>Dissatisfaction factors:</b>	
1. <i>Breaking a contract</i>	4	1. <i>Breaking a contract</i>	4
2. <i>End (non-renewal) of a contract</i>	3	2. <i>End (non-renewal) of a contract</i>	3.5
3. <i>Litigation</i>	4	3. <i>Litigation</i>	4

The factors with mean rank equal or higher than 4.5 points are considered to be extremely significant, with mean rank from 3.6 to 4.4. points – significant, and with mean rank 3.5 or lower – insignificant. The data presented in Table 1 proposes the following conclusions:

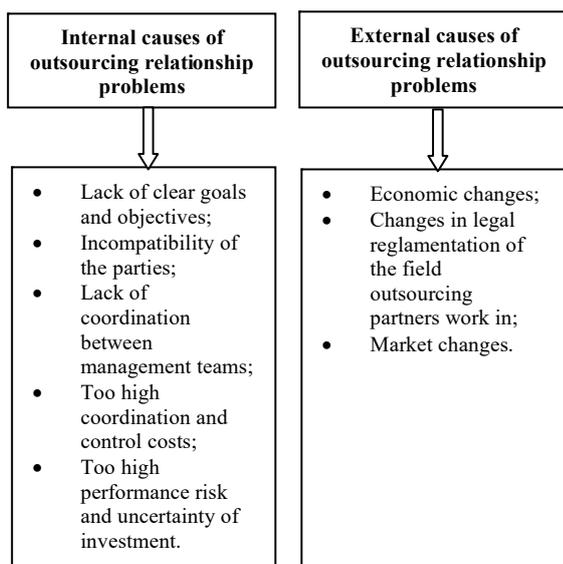
- **in the group of negotiation factors**, to form outsourcing relationship, both outsourcing customers and service providers recognise the significance of *similar consumer* (mean rank 4.5) and *supplier's* (mean rank 4) *strategic decisions*, i.e. similar strategic assessment is considered to be significant to both negotiating parties. Similarities in consumer and supplier's corporate structure is topical for neither negotiating party;
- **in the group of contract making factors**, performance of standards and benchmarking (mean ranks are equal to 5 for both) are the extremely significant factors having the impact on outsourcing relationship in Lithuanian

electricity supply sector. Mutually beneficial deal has also been recognised as significant (mean rank 4);

- **in the group of contract performance and confirmation factors**, extremely significant factors while forming outsourcing relationship with a supplier (from customer's point of view) are information security (mean rank 5) and performance based payment (mean rank 4.5). Competitive advantage request for customer is not considered to be a priority factor in this group. From outsourcing supplier's point of view, successful outsourcing relationship is determined by the variety of extremely significant factors such as adaptability to client's needs (mean rank 4.5), proper staff and technology functioning (mean rank 5), flexibility (mean rank 5) and transparency (mean rank 4.5);

- **in the group of observation (monitoring) factors**, both control of the contract term compliance and observation of the policy efficiency have been acknowledged to be extremely significant for both parties – outsourcing service customer and supplier;
- business relationship is not based on emotional attachment, which has been revealed having analysed the group of outsourcing **partnership factors**. Following both – outsourcing service customer and supplier's – positions, predominant factors that influence outsourcing relationship are trust (mean rank 5) and commitment to another party of the contract (mean rank 4);
- in case of **dissatisfaction** with relationship, both parties prefer breaking a contract or litigation. The end (non-renewal) of a contract has not been approved as a significant factor of dissatisfaction (mean rank 3.5).

Apart from the factors that have the most significant impact on outsourcing relationship in Lithuanian electricity supply sector, the research has also enabled to identify the main causes of outsourcing relationship problems in the analysed sector. Following the results of the research, the causes of outsourcing relationship problems are similar to both an outsourcing contract customer and a supplier (see Fig. 3).



**Fig. 3.** The main internal and external causes of outsourcing relationship problems in Lithuanian electricity supply sector (source: compiled by the authors with reference to the research results).

As it can be seen in Fig. 3, the main internal outsourcing relationship problems in Lithuanian electricity supply sector, pointed out by the experts, include the lack of clear goals and objectives (mean ranks for both consumer and supplier parties make 5 points) and lack of coordination between management teams (mean ranks for both parties make 5 points). Incompatibility of the parties (mean rank 4.5) is also attributed to extremely significant causes of outsourcing problems in the analysed sector. The main external causes of outsourcing relationship problems include economic

and market changes (mean ranks for both relationship parties make 4.5 points), which are not directly influenced by the operating entities.

Summarising, the empirical research has enabled to reveal that outsourcing relationship formation in Lithuanian electricity supply sector is basically influenced by strategic decisions of both outsourcing contract parties. Standard performance and benchmarking as well as information security, performance based payment, ability to adapt to client's needs, proper functioning of staff and technologies, flexibility and transparency are the factors that contribute to the maintenance of outsourcing relationship during the period of the contract performance and after it. However, relationship maintenance can be ensured only on condition of constant monitoring and analysis of the policy efficiency. In case of dissatisfaction with outsourcing relationship, both contract parties are inclined to end (not to renew) the contract or litigate. The main problems with outsourcing relationship are determined by internal rather than external factors.

## Conclusions

Summarising the results of the research, it can be stated that successful long-term outsourcing relationship requires thorough coordination of the overall external service acquirement (provision) process, starting from negotiation and ending with the completion of transaction. For qualitative outsourcing collaboration in Lithuanian electricity supply sector, strategic goals and objectives are recommended to be defined, contract performance standards must be followed and smooth operation must be ensured, focusing on the constant contract performance control as well as observation of the policy efficiency. Under the conditions explicated above, reliance on an outsourcing partner, which directly contributes to the formation of successful long-term outsourcing relationship, can be achieved.

## References

- Augustinaitis, A., Rudzeikiene, V., Petrauskas, R.A., Dagyte, I., Martinaityte, E., Leichteris, E., Malinauskiene, E., Visnevskaja, V., and Zilioniene, I. (2009). *Lietuvos e.valdzios gaires: ateities izvalgu tyrimas: kolektyvine monografija*. Mykolas Romeris University Publishing Centre: Vilnius.
- Barbatunde, S.O., Opawole, A., and Akinsiku, O.E. (2012). Critical success factors in public-private partnership (PPP) on infrastructure delivery in Nigeria. *Journal of Facilities Management*, vol. 10(3), pp. 212 – 225.
- Bin, Y., Belohlav, J.A., and Young, S.T. (2007). Outsourcing impact on manufacturing firm's value: evidence from Japan. *Journal of Operations Management*, vol. 25(4), pp. 885 – 900.
- Bolat, T. and Yilmaz, O. (2009). The relationship between outsourcing and organizational performance: Is it myth or reality for the hotel sector? *International Journal of Contemporary Hospitality Management*, vol. 21(1), pp. 7 – 23.
- Brege, S., Brehmer, P.-O., and Lindskog, H. (2010). Sourcing, insourcing and two times outsourcing: four phases of procurement of telecommunications services within the Swedish public sector. *Strategic Outsourcing: An International Journal*, vol. 3(2), pp. 144 – 162.

- Chodzaza, G.E. and Gombachika, H.S.H. (2013). Service quality, customer satisfaction and loyalty among industrial customers of a public electricity utility in Malawi. *International Journal of Energy Sector Management*, vol. 7(2), pp. 269 – 282.
- Davies, S. (2011). Outsourcing, public sector reform and the changed character of the UK state-voluntary sector relationship. *International Journal of Public Sector Management*, vol. 24(7), pp. 641 – 649.
- Gerstlberger, W.D. and Schneider, K. (2013). Outsourcing and concession models as door opener for public-private partnerships in the European health sector? *International Journal of Public Sector Management*, vol. 26(7), pp. 554 – 575.
- Herrala, M.E. and Haapasalo, H.J.O. (2012). Effect of governance models on enhancing water service delivery. *International Journal of Public Sector Management*, vol. 25(5), pp. 373 – 390.
- Indridason, T. and Wang, C.L. (2008). Commitment or contract: what drives performance in public private partnerships? *Business Strategy Series*, vol. 9(2), pp. 78 – 90.
- Jain, D.M. and Khurana, R. (2013). Need for sustainable global business model in software outsourcing: The Indian perspective. *Business Process Management Journal*, vol. 19(1), pp. 54 – 69.
- Kavcic, K. and Tavcar, M. (2008). Planning successful partnership in the process of outsourcing. *Kybernetes*, vol. 37(2), pp. 241 – 249.
- Kotha, S. and Srikanth K. (2013). Managing a Global Partnership Model: Lessons from the Boeing 787 'Dreamliner' Program. *Global Strategy Journal*, vol. 3(1), pp. 41 – 66.
- Lee, J.W.C., Mohamad, O., and Ramayah, T. (2010). Outsourcing is the social exchange theory still relevant in developing countries? *Journal of Research in Interactive Marketing*, vol. 4(4), pp. 316 – 345.
- Mathew, S. (2011). Mitigation of risks due to service provider behavior in offshore software development: A relationship approach. *Strategic Outsourcing: An International Journal*, vol. 4(2), pp. 179 – 200.
- Mutiganda, J.C. (2014). Circuits of power and accountability during institutionalisation of competitive tendering in public sector organisations: A field study in public care of the elderly. *Qualitative Research in Accounting & Management*, vol. 11(2), pp. 129 – 145.
- Nuwangi, S.M., Sedera, D., Srivastava, S.C., and Murphy, G. (2014). Intra-organizational information asymmetry in offshore ISD outsourcing. *VINE*, vol. 44(1), pp. 94 – 120.
- Perez-Reyes, R. and Tovar, B. (2010). Explaining the inefficiency of electrical distribution companies: Peruvian firms. *Energy Economics*, vol. 32(5), pp. 1175 - 1181.
- Perunovic, Z., Christoffersen, M., and Mefford, R.N. (2012). Deployment of vendor capabilities and competences throughout the outsourcing process. *International Journal of Operations & Production Management*, vol. 32(3), pp. 351 – 374.
- Qi, P. and Chau, Y.K. (2013). Investigating the roles of interpersonal and interorganizational trust in IT outsourcing success. *Information Technology & People*, vol. 26(2), pp. 120 – 145.
- Ren, S.J-F., Ngai, E.W.T., and Cho, V. (2010). Examining the determinants of outsourcing partnership quality in Chinese small- and medium-sized enterprises. *International Journal of Production Research*, vol. 48(2), pp. 453 – 475.
- Tafti, M.H.A. (2010). Emergent changes in IT outsourcing client vendor relationships. *Proceedings for the Northeast Region Decision Sciences Institute (NEDSI)*, vol. pp. 271 - 276.
- Tanskanen, A., Raussi, T., Partanen, J., and Lohjala, J. (2010). Cost and benefit analysis for a distribution management system in electricity distribution networks. *International Journal of Energy Sector Management*, vol. 4(2), pp. 256 - 272.
- Trygg, P., Toivonen, J., and Järventausta P. (2010). Changes of business models in electricity distribution. [revised 2015 09 30], <http://www.vaasaett.com/wp-content/uploads/2010/05/Petri-Trygg-Networked-business-model.pdf>
- Vilko, J. (2011). Outsourcing in electricity distribution industry. *International Journal of Procurement Management*, vol. 4(2), pp. 223 - 239.
- Vilko, J. (2013). Assessing the impact of outsourcing in the electricity network industry. *Baltic Journal of Management*, vol. 8(1), pp. 27 – 44.
- Vitasek, K. and Manrodt, K. (2012). Vested outsourcing: a flexible framework for collaborative outsourcing. *Strategic Outsourcing: An International Journal*, vol. 5(1), pp. 4 – 14.
- Webb, L. and Laborde, J. (2005). Crafting a successful outsourcing vendor/client relationship. *Business Process Management Journal*, vol. 11(5), pp. 437 – 443.
- Zineldin, M. and Bredenlow, T. (2003). Strategic alliance: synergies and challenges: A case of strategic outsourcing relationship "SOUR". *International Journal of Physical Distribution & Logistics Management*, vol. 33(5), pp. 449 – 464.

RECEIVED: 8 October 2015

ACCEPTED: 20 April 2016

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## EDUCATION AS RETURNABLE INVESTMENT FOR BOTH INDIVIDUALS AND SOCIETY

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### Annotation

University education plays an important role in overall achievements and prosperity of society. Therefore it should be the most crucial agenda on political table to prioritise the financing of the education system.

Description of particular parts of the article: economic growth of the country in the so called new economy, position of young people in the job market, noneconomic contributions of university education, importance of tuition fees

KEY WORDS: job market, unemployment, university education, school system financing.

### Introduction

Economic analyses provide relatively convincing conclusions that investment in university education belongs in developed countries to an essential factor contributing to the economic growth which is the condition for common increase in prosperity of individual countries. The analysis published by professor Bano from Harvard University shows that one year of education plus in the average length of education given to the population of a particular country brings a raised level of economic output by 19 %. The real return of investment in education neglecting amortization and provided that one scholar year costs roughly the equivalent of GDP per capita (overvalued fact and more likely upper border) is 7 % per year, which means effectively invested funds from the point of view of public funds investment.

Economic analyses of “new economy” effects, economic environment created by coordination of new technologies and mostly university qualified staff, show the substantially changed characteristics of Philips curve of relation - inflation and unemployment rate. The increase in US job productivity in the 90’s contributed to lower so called natural unemployment rate by one third and the calculations show that a half of the decrease will keep a new level due to a long-term economic stabilization. The high degree of mutual interconnection between introduction of new technologies and requirements on highly qualified staff causes the disappearance of non-creative and routine jobs, and in many cases where few decades ago the secondary school qualification was sufficient, the university qualification, bachelor’s degree at least, is a must. The increase in percentage of university qualified population is one of the basic requirements of economic growth and the prosperity of the whole society that depends on it. The higher qualification means in long terms a higher employment rate for all, not only the prosperity for those who were successful. The analysis of unemployment of

secondary school and university graduates is included for the illustration.

### Position of young people on job market

The position of secondary school and university graduates on job market is significantly related to overall situation and development of job market and also to economic conditions. The fresh secondary school and university graduates in the Czech Republic, as well as elsewhere in the world, belong to them who are the most endangered with a downgrading development of job market. The employers are generally less interested in employing fresh secondary school and university graduates because they have mostly little or no experience with particular jobs.

The most endangered group in the Czech Republic is the group of young people under 18. The cause of considerable age handicap of young people under 18 is a great competition of those who left school prematurely. In the Czech Republic, this fact correlates additionally with average short time spent in education (ca 15 years in comparison with ca 17 years in developed countries) which means that a lot of young people end up very early on job market. Although they have accomplished their secondary education, they cope with considerable risks of being unemployed due to their immaturity and insufficient experience. These handicaps are decreasing with growing age (Nováček,1999)

The ratio of unemployed secondary school and university graduates to the total unemployment is cyclically changing within a year. The highest figure is always in September, when the graduates of previous school year start looking for jobs, the lowest figure is in spring months, on the contrary, lately in May. The average value of unemployed secondary school and university graduates share in the total unemployment has been 15 % since 1996. The development in recent years has shown a relative decrease in the share of unemployed graduates in the total unemployment as compared with last years.

*Unemployment rates of graduates in accordance with accomplished education*

The employment of graduates, from secondary schools above all, is often assessed according to total numbers of unemployed graduates of corresponding branches. But this assessment results into incorrect interpretations because the branches regarded as the riskiest are those where the number of unemployed graduates is the highest one. But there is one fact being neglected - these branches have the highest number of graduates. Their specific unemployment rate can be low. If we want to precise the risk for graduates of specific branches on job market, it is necessary to consider both total number of secondary school/university graduates and specific unemployment rate of them.

*Long-term unemployment*

It seems to be much more important to consider the length of unemployment than the total unemployment rate when considering risks of being unemployed. The ratio of people aged from 19 to 24 years in the long term of unemployment (over 6 months) has increased considerably in the last years. Due to the fact that the position of these people has not deteriorated on job market, it seems more certain that the unemployment is probably concentrated on a smaller group of people. In April 2012 the long-term unemployment (over 6 months) of graduates in the register of Employment Office was in the case of apprentices 59 %, apprentices having secondary school-leaving exam 56.2 %, vocational schools graduates 56 %, higher vocational schools graduates 47.6 % and university graduates 49.9 %. From the point of view of the total number of graduates and youngsters the ratio of long-term unemployment (over 6 months) is 54.3 % with the male and the unemployment with the female is lower - 52.2 %. (SR CSU, 2010,2011).

The apprentices with apprenticeship certificate and graduates from secondary vocational schools are the most endangered group on the job market. These people are also the most affected by long-term unemployment. The unemployment in the case of secondary school and university graduates has a considerably regional character. The regions with higher unemployment also have a higher number of unemployed graduates. The highest figures are noticeable in Moravian-Silesian District, Ustecký and South-Moravian Districts.

The main goal of educational system is to prepare the students so that they are able to prove successful on job market and become employable. It does not mean anyway that the educational system as a whole should be subordinate to the world of labour. These areas – education and job market are more likely in mutual relation influencing each other, both are autonomous to some extent, but depending on each other.

The OECD project dedicated to macroeconomic conditions of growth has shown a substantial contribution of length of education to the pace of economic growth. D. J. Johnson, OECD general secretary, expressed it in the following words: *“The latest analyses done within the frame of OECD are very clearly and empirically based and prove that the education plays an important role in encouraging the growth. It is necessary to emphasize that*

*a minimum of one year of education plus in a particular country means that a year production per person is rising by 4 – 7 % percent.”* (České vzdělávání...,1999)

The average time of school attendance is an adequate criterion of the level of human resources development in a society and there are empiric data showing that the university education gives the graduates further and essential competences, and the university diploma does not provide only the indication of general capabilities which are independent on the accomplished educational grade. Our often repeated doubt about the need of university education for more and more secondary school graduates is in relation to macroeconomic parameters very questionable because of a high degree of saturation from the point of view of the volume of studying population.

According Škoda and Sláviková (2015) the character of university study is changing everywhere in the world from elite study of a small part of population to a mass study of a half of one population year. The economic benefits exceeding individual return for each graduate are one of essential driving powers of these changes and their political support. According to the last statistics 45 % of one population year join university study in OECD countries. More than 60 % of one population year study university programs in Finland and Sweden, more than 50 % in Poland, Hungary, Norway, Iceland, Holland, and Argentina, an average value of 45 % is exceeded in Korea, the USA, Great Britain or Israel. In the Czech Republic there were only 23 % of one population year entering university studies in 1999, which is the worst published figure among OECD countries, even worse than in Mexico with 24 %. One quarter or even one third of population year get the first university diploma in 17 OECD countries whereas in the Czech Republic less than 11 % manage to get university diploma. (OECD, 1996)

There are also economic benefits which cannot be neglected. These are direct expenses which the students and their families spend during the study. It also applies to the return of public expenses that seem at first sight as a loss. The fact that the law system enables Slovak students to study in the Czech universities and colleges is not only the benefit for the quality of students and create good conditions for Slovak students to remain and work in the Czech Republic, but it also brings a direct economic profit. Considering that the state budget spends roughly 40 thousand Czech crowns on each student per year, thus the direct expenses of these students at a place of study estimated at 100 thousand Czech crowns per year represent an immediate return of this export function of university study.

**Noneconomic contributions of university education**

Noneconomic contributions of university education are more difficult to be quantified than those which can be measured economically. The British research that was sponsored by Council for University Education Financing in England and Smith Institute shows the following results which have been evaluated mainly for population at the age of 33 and adjusted for influences of family environment and former education influence in the range between birth and 33 years old.

- In 10-year period, university graduates showed more significant qualification improvements than people who did not attend university (a good foundation for further studies is most significantly demonstrated in the use of information technologies, organizational skills and teaching).
- University graduates show better health conditions.
- University graduates are less inclined to depressions than people without secondary education.
- Men who attended university education are less likely to be victims in accidents or violent offences than nongraduates. Women who attended university education are in less risk to become victims of domestic violence in the process of relationship break-ups.
- Parents who attended university education have fewer problems with their children's education; these children also have more books on average than children of less educated parents. And preliminary analysis indicates that experience gained through university education is sufficient for compensation of former disadvantage in educational sphere.
- Although there is no substantial difference in election participation, university graduates are more active in civil issues and are less cynic in politics (it does not apply for unsuccessful students).
- University graduates are more tolerant to gender equalities and less likely to accept racism (without the consideration of a current position). University graduates have more confidence in political processes as compared to the people without university education including high school graduates.

These university education impacts are often neglected in discussions about Czech universities and too much attention is paid to the relevance of completed studies for a specific placement or actual position in the job market (or in a subconsciously planned structure, which is an idea that is still too commonly used among people who substantially influence political attitudes and strategies in education).

#### *Financing*

The quality of a university is necessary to compare with standards of comparable institutions in the world. The reason for that is, firstly, the comparability of education quality and experience gained from attending the university. Secondly, from the point of view of competitive ability, which require mobilization of academic staff, which should not be limited to trips to universities in wealthy countries. When assessing the quality of financing it is necessary to proceed from international comparisons and measure expenses in university sphere with comparable expenses in developed countries. This comparison is indeed not possible without considering the whole economic capacity and overall

possibilities of public finances or other private sources for financing.

For comparing university expenses it is possible to use mainly two parameters, which are described in connection with economic possibilities of individual countries. The main one is the portion of expenses according to the size of GDP in a particular country. A lower level of GDP on a person in the Czech Republic in comparison with other developed countries should be the reason for higher expenses in universities because reaching a higher portion of university education level would in return mean faster increase of GDP and smaller gap between other developed countries. We assume that there is an effect of previous losses in the economy, which decreased factual economic capacity of the whole country and which does not allow to use the portion of GDP for the necessary investments in university education. This is because a part of public expenses has to be used somewhere else. It would be possible to accept that the wanted portion of GDP for school system cannot be reached (parodical explanation would say that the economy is growing too fast and its efficiency is too high that we cannot manage the required portion of public finances to reinvest). In this case, an adequate measurement of comparable expenses in university education would be the portion of expenses of national budget. However, not even here, the Czech Republic performs well as compared with other countries' contributions in universities. In the Czech Republic it is approximately 1,6 % of overall public expenses, meanwhile the average figure in OECD countries is 3 %. For example, in Austria even 3,2 %. ([www.budovani statu.cs](http://www.budovani statu.cs), 2004-2011)

The above mentioned parameters of the amount of total university financing from the budget of Ministry of Education indicate that universities should get two times more of current funds so that the average level of financing with regard to economic situations of the countries, in which the university exists, is maintained. The argument of university education as power of economic growth would show the need of higher investment from Ministry of Education.

#### *Financing of university education within school system*

In 1994, the number of 19-year old students reached the peak and at the same time the number of grammar school graduates and university students rose as a result of more unbounded environment in universities and their development. In 1990-94, financial pressure on university institutions substantially contributed to their restructuring (similar effect of crisis as for the financing of university institutions was possible to notice for example in Great Britain after 1981 or in Finland after 1993) and to the establishment of new universities which reacted to the increased demand for universities studies. After this phase, however, the financing stabilization did not follow, but there was a permanent decrease of real level of student funding.

The development of actual expenses per one university student, during the second half of the 90's, illustrates that all declarations of education priorities or university education priorities are completely unpractical. This is the problem of not only the current government

but also the problem of all political parties. No political party in the government offers useful solution (or it does not take any practical steps), which would contribute to an increase of university education level that is necessary to achieve. The access to university education is a crucial problem, not financing of specific institutions; the current situation leads to the fact that the access is limited so that the institutions are possible to be financed from the state budget. The overall number of students during the 90's was not very impressive as compared with other developed countries.

The long term lasting deficit of university education financing must indeed influence on the quality of university education of Czech students. Deterioration of the education quality will be gradual but concerning the striking differences in financial resources compared with other developed countries, the deterioration will be inevitable. In fact, universities will not be the only victims. Rather the victims will become the university erudition and the access of young generation to education.

The way the state transformed the university education to public institutions contributed to the state getting rid of the responsibility. This is particularly noticeable in salary increase in state institutions (no matter they are regional schools or it is the Academy of Science) where the structure of salary tables is connected with automatic salary growth. This is in contrast with access to public universities financing because the financing parameters do not contain the parameter of a number of teachers related to the number of students. Expenses on salaries decide on the quality of academic staff who are willing to work at universities and at the same time determine the number of students who can be taught at our universities. The current salaries are not high enough to ensure the adequate payment for university staff and it is no wonder that young people are not willing to work in such situation.

The critical situation with financing the salaries of young academic staff in public universities cannot be possibly solved by creating special salary conditions for young researchers within the Science Academy. These people get around the natural environment which is characterized by a symbiosis of research and university teaching. It is not possible to permanently build on the fact that academic staff fluctuate between the Science Academy and universities or between other universities and thus lose their time and energy. We cannot accept a situation in which two employment contracts of our academic staff, one at university and the other in the Academy, become a norm, and this situation is considered to be an ideal solution of the relation between two kinds of institutions. Double or multiple employment contracts which are necessary in order to compensate the insufficient financial rewards in regular academic work threaten the quality of university environment. The effect of this situation is much worse than effects which are connected with an increase in number of students caused by the transformation from elite to mass university education.

### *Tuition fees*

The substantial increase in the number of undergraduates cannot be done without introducing tuition fees. The aim of the tuition fee introduction is not only the considerable reduction in the budget of universities that depend on public finances. It is known that tuition fees increase the responsibility of all who are integrated into study process (university staff, teachers and students) and it also increase the quality of education. It can be expected that the tuition fees help determine "value of education" with regard to job market. Properly determined tuition fees should reflect "value of university diploma" on job market. Reasonable tuition fees will be also an important motivation factor.

A certain calculation of "costs" and expected "effects" will make the choice of university and its study program more rational. The tuition fees together with teachers' evaluation by students can play a role of an important mechanism of how to distinguish between quality, average and below-average teachers. It would increase teachers' mobility among the schools of different levels. (<http://www.vsfs.cs>, 2005)

The tuition fees must go along with the option to get students loans with the possibility to repay them in instalments after receiving an adequate salary. The tuition fee system must not install higher inequalities in the university education access for the children from families having low incomes. The loans, on the contrary, have to play the role of a tool eliminating unfavourable family environment (low income, low parents' motivation to let their children study, etc.) for those who are strongly motivated to study at universities. Together with tuition fees and students loans, it is necessary to start creating scholarship funds which enable the excellent students from families with low income to study at lower costs. In addition to scholarship, a system of social aid budget to help undergraduates has to be formed. It can be easily achieved without high expenses if the current system of overall subsidizing some student services (hostels, meals, transport benefits, etc.), which is less effective, will be transformed into a system of targeted social aids for those who really need them. All above mentioned measures, which will be integrated into the law of tuition fees, loans and social aids for students, should contribute to diminish social inequalities and chances to go through university education. The new law proposal of university financing was rejected in January last year, because of clearly ideological reasons and it means the continuation of public universities budget crises and also stronger enforcement of other reform elements of higher and university education (rationalization of demand for university study, responsibility of universities towards students, responsibility of students for their study, quality of tuition, etc.)

In current law system, the main factor restricting the access to university studies is the deficiency in state budget. The universities cannot offer commercial services and use the profit for subsidizing students who cannot be subsidized by the state. This financing and reinvestment out of university sphere would rapidly cause failing of competitive ability of these services.

One of the possibilities how to improve this unfavorable situation of universities is to introduce compulsory tuition fees. The proposals based on so called "Australian system" make use of the fact that individual return for graduates is high enough and thus a part of undergraduates can subsidize a broader access to tertiary education. The undergraduates are not obliged to pay tuition fees instalments during their study but the state will ensure their recoverability after the graduates start working and their income is over the average income in the country. The tuition fees of 15 thousand Czech crowns per year might be repaid within a ten-year period. The postponement of payment does not bring more money into the monetary system immediately but in the course of few years the tuition fees financing can stabilize and add a quarter plus to the total amount of money for university education. It means the considerably increased number of undergraduates especially in bachelor's programs.

Since in the Czech Republic the salaries of university graduates are on average 70-80 % higher than salaries of grammar school graduates, the ability of the graduates to pay up the debts resulting from their studies is pretty high. Opponents of tuition fees often argue that some groups of university graduates, especially teachers or doctors, do not reach such amount of income. In these situations the state has the possibility to intervene and help the graduates of certain professions to pay up the debts (in other words contribute to the stabilization of graduates placement in these professions) instead of current global study subsidizing regardless the graduate retention in an appropriate position. In fact, salaries of Czech teachers are absolutely lowest among other OECD countries in comparison with purchasing power parity or the level of GDP per individual. But their real value is a little higher than usually being said. The average salary in the Czech Republic was 25,128 Czech crowns in 2013. Nearly 206 thousand people worked in regional school system, in kindergarten, primary and secondary schools, higher vocational schools, music and art schools or after school care and 146 thousand out of them were teachers. The sum for salaries was 56.5 billion which means the increase by 0.8% in comparison with the year 2012. The average bonus part of a salary rose from 1884 to 2103 Czech crowns. The highest salaries are at higher vocational schools and they are 29,500 crowns. Teachers at grammar schools and educators of specialized pedagogical centers earn over 28 thousand crowns, teachers at secondary vocational schools earn a little bit less, teachers of primary schools get about 27 thousand crowns. Teachers in kindergarten have one of the lowest salaries, in average 23,200 crowns, but the lowest payment is in school administration where the average income ranges from 14 to 13 thousand. In private and religious schools are the salaries in average 25,200 Czech crowns, nonpedagogical employees get 18,200 crowns. OECD analysis (2011) offers one of a few international comparisons (Graph 1) of teachers' costs of lost salary opportunities. Czech teachers' incomes are among the lowest in OECD countries according to the analysis. Czech teachers having from 15 to 64 years of practice get only a half of the income of other university educated people. In other words, the profession of teachers in the

Czech Republic is related to high costs of lost salary opportunities due to low salaries compared with other professions. These costs are little higher in Iceland, Hungary and Slovakia. (SR CSU, 2010)

The discussions about tuition introduction do not negate the fact that the university education would not be an important public good. In a modern society exposed to a multicultural existence and a high rate of global effects fastly influencing local conditions and requiring a smarter reaction to these changes, the higher quality of education plays an important role in the development of responsible citizenship. Racism and intolerance are easier to overcome with a greater degree of a general view. The educated population is more responsible and less susceptible to political party demagogy. The education is also an important condition for creating equal chances in society and the whole society will profit from higher level of university education. The quality of life of population will improve, people will have better conditions for creative jobs and employment, people will be more informed and more responsible to influence public affairs and will understand better the complexity of modern democratic society administration. (<http://www.euroaktiv.cz>, 2010)

Even if we do not consider the effect which the tuition fees should have for the broader admission to university studies, the other effect of increasing students motivation to graduate in due time and teachers motivation to be more responsible to their students as clients of their educational institutions means that tuition fees can help to a faster change in the university educational structure. This seems to be even more important possible contribution to this change. The students paying the tuition and even the ones committed to future instalments will be more motivated to exert pressure on the change of offered study programs so that it corresponds to the real demand for study.

University education plays an important role in overall achievement of individuals and prosperity of the society. If we do not deal with these questions in a more complex way, we are likely to create problems in the future which will not hurt the ones who were accepted to university studies, because these people are the most mobile labor force and are willing to leave their countries for more developed ones where they can get good jobs. These problems will paradoxically hurt the socially disadvantaged and the retirees because it will be difficult to introduce a sound system of financing for them.

Developed countries critically depend on an increased share of university educated population. The number of graduates in the more developed countries is twice as big as in the Czech Republic. In the Czech Republic the tuition fees introduction can be one of the factors which help remove the barriers to better access to education, but the tuition fees can never replace the need of higher expenses for education. On the other hand, it can help considerably make effective use of these expenses and the total amount of money from tuition fees could represent a considerable contribution to Czech state budget.

### **Possible trends of the development of university education**

*To adapt factually consistent and courageous problems solutions of a society to fit political goals only means to degrade policy to technology of power. The sooner the citizens understand such a policy and will refuse it, the better for them and the future of their country as well.*

We are facing the change being denoted as the transition to knowledge economy. Based on the latest studies on this subject and experience of the countries where the competitive ability has been growing for many years (Ireland, Finland, the Netherlands), this change raises significantly the importance of human capital and the research related to innovative entrepreneurship.

We must admit that after 25 years of transformation, our university education, science, and research end up in critical situation. More and more professionals, in contrast with fewer and fewer politicians, become aware of severity of this situation and political, economical and social linkage. The problems of university education, science, research and development are either played down or put away with provably populist promises by the leading representatives of political parties.

If we want in the future to achieve the turnover in the unfavourable development of the Czech economy competitive ability and stop the outflow of brains, the politicians have to change radically their attitudes to the problems of university education, science, research and development. It would not be an exaggeration saying that the decisions related to this area will have the key importance for the success of the Czech Republic in global economic situation.

Setting favourable conditions for the development of human capital and for the acceleration of innovative cycle in research and development cannot be carried out within the short-sighted policy oriented towards short-term goals. The policy oriented towards the increase in competitive ability is, on the contrary, characterized by the fact that its goals go beyond the time horizon of one election term. But the experience of transforming countries including the Czech Republic show that the development of human capital, transformation of educational system, modernization of research system and its funding, transformation of scientific and research institutions and finally the establishment of conditions for development of innovative entrepreneurship based on the partnership among universities, research institutions and business companies are key factors for the future development, but they are still on the margin of Czech policy interests oriented mostly towards short-term goals. (<http://www.budovani.statu.cz.>, 2011)

The competitive ability of our economy is still very low considering starting conditions and as compared with other countries. In that regard, in the frame of OECD countries we come under the last. In 2000 we were the 28<sup>th</sup> out of 29<sup>th</sup> countries where we descended from the 21<sup>st</sup> place in 1996. The comparison with Finland, the Netherlands and Ireland is very interesting since their competitive ability is still rising. The common strategic feature of these countries is the orientation of institutions and population towards education, flexibility and

adaptability of labor force. In other words, it is about countries which based their strategy of success on the development of human resources and human capital.

The tertiary education in the Czech Republic suffers chronic shortcomings which can complicate the favourable development of human capital in longer perspective. For many years, the unbearable excess of demand for university education over supply of university study has made the acquiring of university education impossible for a great amount of young people. They could have acquired easily such level of education in other EU countries due to their aptitudes. In fact, the tertiary education is in contemporary society a prerequisite of good chances for employment and success in life.

Statistical data show that the educational structure of Czech population is improving, but much more slowly than in the countries which set off a way up the ladder of competitive ability. According to the latest data published by OECD, we are gradually losing a relatively good position whereas the countries where the competitive ability has been rising for several years are reaching slowly top positions. From the point of view of educational structure, the group of old people (over 50 years old) belonged to relatively developed countries, certainly above Ireland and close to Finland and the Netherlands, while the group of the youngest (under 35) ranks among the poorest countries. But in fact, our main deficit arises from the sphere of tertiary education.

The majority of studies dealing with our educational system and its development after 1989 agree on the fact that our system is very inaccessible and highly selective. It applies especially to university system. Whereas in the countries that set off the way of economic growth based on the development of human capital, the inequalities in the admission to university study were going down (the Netherlands, Sweden and Ireland), they were rising in this country. When compared with developed countries, the chances of children of diversely educated parents to join university study are very poor and are getting even worse. According to the latest data, a wider admittance to universities after 1989 has not brought any distinctive change.

The main cause of great social inequalities in the admission to tertiary education is provably a huge excess of demand for higher education over a small supply of study opportunities, and tertiary education inaccessibility. This proves a known factor of the application of results of scientists, research teams and institutions in technological progress and innovative entrepreneurship (Lajčín, Pasternáková, 2010).

The support and development of partnership of private and public sectors are failing. Such a partnership has become the base on which the innovative entrepreneurship is founded. There is a lack of courage to open the door for the co-operation between state subsidized research and technologically oriented entrepreneurship. It results into one of the reasons why we are failing to modernize universities and colleges. Moderne universities are known to be able to balance the abstract seeking of the truth with the participation in commercial activities and production of economically valuable know-how. The experience of developed

countries shows that this situation can be achieved without giving up traditional mission of universities. The discussion about the change of university culture seems to be a taboo subject even for universities and colleges themselves. The representatives of most universities feel the applied research and the co-operation with industries as something inappropriate for universities. But this is exactly the co-operation of universities and business companies where new sources of funding, new occasions for graduates, and in some branches also new trends of research can be discovered.

The university education, research, development, and innovative entrepreneurship must form a complex of mutually interrelated activities, the main goal (not the only one) of which is the growth of competitive ability based on the development of human capital and innovative cycle acceleration. The essential problem is that after years of shuffling around and failing to fulfill political promises, it is necessary to solve the crisis in both university funding structure and institutional structure, and research and development funding.

It means namely:

- to stop the decrease in real values of public expenses in tertiary sphere and to achieve the OECD average (1.1 % GDP) of public expenses on tertiary sphere;
- expenses on one undergraduate (ca 5 thousand USD/PPP) approximate as much as possible to the average level in OECD countries (ca 10 thousand USD/PPP) ;
- to accomplish the university system reform (transformation of higher vocational schools into colleges, to create a hierarchical university education system, consistent transition to structured study, wider space for universities, industries, business companies being active in innovative entrepreneurship co-operation, etc.) ;
- to change the system of tertiary sphere funding (strengthen multi-source funding, to determine expenses for university education system in multi-year cycles, to introduce tuition fees, student loans, scholarship, and financial aids for the students whose families have low incomes, to permit for tax saving investment into education, to create the system of innovative entrepreneurship development in universities, and to support the establishment of spin-off firms, etc.). (Priority, 1999)

According to developed countries experience, the broadly shaped pyramid of diversely demanding university education cycles is able to react much better to the demand for university education. For majority of students, the bachelor's degree will become target education which can react flexibly to job market. The postgraduate education, provided by research universities, will keep on the contrary the continuity of elite education more resistant to job supply changes. The programs of lifelong learning will complete this structure with higher education opportunities which enable elderly people to complete university qualification and also continuous updating of knowledge and skills of bachelor's degree graduates with regard to changing needs for jobs and requalification.(see appendixes in detail)

The clear structure of tertiary sphere study programs is a necessary condition for introduction of tuition fees. The student who shares tuition expenses must have the possibility of the choice between differently long study programs and between different majors in the course of study.

The tuition fees cannot be introduced into the system in which long master's degree programs predominate. The amendment to the law of universities, which was accepted despite the opposition of government, sets the principal parameters of transition to structured scholar system. It means the first important step in the above mentioned course and it opens the door for those who should prepare the law of tuition fees.

In higher education hierarchical system, the admission of university applicants must be changed from current type of admission using admission exams to testing applicants' scholastic aptitudes. This testing should be performed out of universities and it can be a part of a standardized secondary school leaving exam. Universities and colleges can determine different levels of admission requirements on their students, they can require, if need be, further specific testing of skills and talent. It is also important that these specific tests for particular majors (e.g. mathematics, law, languages, etc.) are a maximum of standardization and shared with other universities and colleges. This can be achieved if they are prepared and administered by independent institutions issuing anonymous assessment and with a prior determination of required level of success for different types of schools and study programs.

As far as research and development are concerned, all strategically important steps start implementing a much stronger interconnection of research and tuition at universities (especially research universities). Institutional separation of university tuition and academic basic research is an anachronism being typical for communist time and it prevents immediate and secondary effects from influencing on the prosperity of society and competitive ability of its economy.

It is necessary to commence without delay the evaluation of current colleges and universities and their profile programs of study on the basis of several criteria (results of the accreditation of branches of habilitation, publishing activity of teachers and impact factors, standardized students' evaluation of courses, study programs, and teachers, success in obtaining research grants, number of lectures for foreign students, etc.). The results of such evaluation should serve as one of the main sources for accreditation process the result of which would be the gradual transformation of quality universities into research universities.

At the same time, it is necessary to create legal framework for the transformation of the Academy of Science institutes or its professional groups to basic research centers and postgraduate courses, and this is how to create equal conditions for their further possibility to join the group of research universities as the institutions focused on advanced studies. The current Academy of Science staff will be enabled to compete with current university teachers.

The consistent differentiation of university system and the accomplishment of Academy of Science

transformation by gradual integration into newly established research universities are the conditions for the commencement of real scientific schools/universities where the great part of staff will be formed by young generation who is in the research the most dynamic element all over the world. If individual institutions carrying out basic research are not able to integrate their research assignments into university postgraduate, alternatively master studies, the activity of such institutions financed by national funds should be principally suppressed.

This method will mean the contribution to required competitive environment, weakening of solutions of power, personal or group interests and it will create a more transparent environment for real creative competition and viable development in our basic research.

According to other countries pattern, it would be good to establish an independent executive body (e.g. Ministry of Research, Development, and Tertiary Education) being responsible for funds spent on tertiary education, research and development. This body within its authority would provide the co-ordination of research, development, universities, and entrepreneurship in the area of innovations and technological development (Lajčín, Sláviková, Várkoly, 2014). Proposed sequence of main steps:

- to accelerate the structuralization of tertiary sphere programs and achieve the definite predominance of structured programs as soon as possible;
- to accelerate, by means of law, the transformation of higher vocational school system into institutions providing tertiary education (to introduce credit system, to transform gradually a part of higher school into “colleges of science and technology” providing bachelor’s degree programs);
- using the same law, to determine various types of higher education (colleges of science and technology, universities, and research universities);
- to introduce tuition fees, student loans and system of social aids, found scholarship funds, prepare and put into practice the system of savings for education with state subsidy;
- to cancel current university admission exams and introduce standardized testing of scholar aptitudes, establish the institution for testing in education;
- to pass laws following each other which determine the position of research and development, research and development funding and protection of intellectual property in research and development;
- by the change of authority law, to establish executive body (ministry) that executes state administration in tertiary education, research, development, and innovative entrepreneurship;
- by means of a new tertiary education law, besides other things, to create space for innovative

entrepreneurship of university teachers and students;

- to create an effective system of public and private sector partnership, provide tax stimuli for the development of innovative entrepreneurship, create funds for risk business, enable formation of regional clusters – co-operation of firms, schools and research institutions.

## Conclusions

University education is an essential factor that contributes to the prosperity of all population in the country, not only of the high educated individuals. Higher qualification in long term means higher employment rate for all.

Young people under the age 19 are at the highest risk of long term unemployment. Due to their short time spent in studying environment (about 15 years) their insufficient experience and immaturity leads to lower opportunity of employment. Such disadvantage leads to a long term unemployment (over 6 months). Secondary school graduates are the most endangered group on the job market. The main goal of educational system is to prepare students for successful future and their employment. These two aspects (education and job market) are in direct relation.

There are also noneconomic contributions of university education.

- Uni graduates show significant qualification improvement in use of IT, organisational skills, teaching.
- They show better health conditions
- Less inclined to depression
- Less likely to fall for victims in accidents, in domestic violence
- Uni parents have less problems helping their kids with education.
- Uni graduates are more tolerant to gender equalities, less likely to accept racism

University education plays an important role in overall achievements and prosperity of society. Therefore it should be the most crucial agenda on political table to prioritise the financing of the education system. More financial stability in the school system, the better prosperity of the whole society. University that is financed accordingly will have better salary options for their staff (teachers, students, uni staff). Employing experienced academic teachers will result in better educated students. Students seek those universities that provide better teachers. Better equipped university (with better teachers) will result in high demand for such institution. Young people will be motivated to study here rather than seek education overseas. Current critical situation of financing, the salaries of academic staff leads to seeking other forms of financial rewards. Tuition fees should be introduced. The Australian system uses the fact that the individual return for graduates (income) is high enough. The undergraduates are not obliged to pay the fee in advance or during their studying time. Rather they pay the tuition fee back as soon as they are employed. The postponed payments are not available to

the university right away, however they secure a long term stability in the finances.

## References

- Analýza vzdělávací politiky (2010). Praha: ÚIV a OECD.
- Baláž, O. (1991). Sociálna pedagogika - problémy a perspektivy. *Pedagogická revue*, 43 (8), 608–615.
- Bauman, Z. (1997). Glokalizacja czyli komu globalizacja a komu lokalizacja. *Studia sociologiczne*, 3 (146): 53-69
- Beck, U. (1997). Was ist Globalisierung? Frankfurt am Main
- Beck, U. (1996). Weltrisikogesellschaft, Weltöffentlichkeit und globale Subpolitik. In: A. Diekmann und C. C. Jäger (Hrsg.): *Umweltsoziologie, Sonderband 36 der Kölner Zeitschrift für Soziologie und Sozialpsychologie*. Opladen: Westdeutscher Verlag, 119-147.
- Courtioux, Jones al. (1996). *Socialpedagogue in Europe - Living with others as profession*, FICE, UNESCO, Zürich.
- České vzdělání a Evropa. (1999). *Sdružení pro vzdělávací politiku*, Praha.
- Delors, Jacques et al. (1996). *Learning: The treasure within*. UNESCO, European Commission. White Paper on education and training: Teaching and learning – towards the learning society. Paris.
- Havlová, J. (1996). *Profesní dráha ve 20. století. Úvod do sociologie povolání*. Praha.
- Koncepce vzdělávání a rozvoje vzdělávací soustavy v České republice. (1999). MŠMT ČR, Praha.
- Nováček, P. (1999). *Křižovatky budoucnosti. Směřování k udržitelnému rozvoji a globálnímu řízení*. Praha.
- OECD. *Lifelong learning for all*. (1996). OECD, Paris.
- Pedagogický výzkum a vzdělávací politika. (1997). ÚIV, Praha.
- Priority pro českou vzdělávací politiku. (1999). OECD. UK. Praha.
- Robertson, R. (1992). *Globalization*. London.
- Statistická ročenka České republiky. (2010). ČSÚ, Praha.
- Statistická ročenka České republiky. (2011). ČSÚ, Praha.
- Statistická ročenka České republiky. (2012). ČSÚ, Praha.
- Statistická ročenka České republiky. (2013). ČSÚ, Praha.
- Lajčin, D. and Sláviková, G. and Várkonyi, L. (2014). Changes in function and competence of universities. *Edukacja ustawiczna doroslych*. Radom. 14, (2014), 473-478.
- Škoda, M. and Sláviková, G. (2015). Exploring the links between fair value accounting and financial crisis. *Vadyba Journal of Management*, 27(2), 13-20.
- <http://www.budovani.statu.cz/vzdelavaci-politika-statu-v-letech-2004-2011>
- <http://www.msmt.cz/file/hlavni-smery-strategie-vzdelavaci-politiky-2020>
- <http://www.euroaktiv.cz/vzdelavani/vzdelavaci-politika-se-nema-menit-s-každou-vládou.2010>
- <http://www.vsfs.cz/prilohy/konference/metl.doc/vzdelavaci-politika-v-kontextu-reformy/2005>
- <http://www.hzscr.cz/csu/redakce-2012,2013>

RECEIVED: 7 March 2016

ACCEPTED: 20 April 2016

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## THE POSSIBILITIES FOR ELIMINATION OF THE DETERMINANTS OF EMPLOYEE TURNOVER IN THE BUSINESS COMPANY

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### Annotation

Employee turnover takes place in any organization. The article formulates the problem that the reasons of employee turnover and its effect on the company have not been appropriately assessed or even have not been analysed at all. Therefore, analysis of current situation in the company is made in terms of human resources turnover as well as its determinants. Having systemised the results of the theoretical analysis, a model was formed of three groups of factors: the company's external and internal factors and personal factors. They are supplemented by the determinants of employee turnover, such as *the economic situation of the country; motivation system, interpersonal relationships, workload, moral values; job satisfaction, self-fulfilment opportunities, etc.* It can be maintained that the model for reduction of employee turnover was created that includes the following tools: adaptation programme, closer communication between managers and subordinates, teamwork, management style of managers, adequate work tasks, workload, career, development-improvement system, organizational culture, labour agreements, business development, programme for increase of employee loyalty, pre-employment and exit interviews; this model would become a possibility for elimination of the determinants of employee turnover in a business company. Various combinations of the above tools would help a manager of the company to manage the internal and external turnover of employees. The results of the analysis give rise to new ideas, decisions for initiated changes that become a guideline for further implementation of the company's objectives.

KEY WORDS: *employee turnover, adaptability, regions.*

### Introduction

The changes in the Lithuanian labour market, in view of increasing emigration of highly-qualified labour force to other, more prosperous countries as well as increasing competition among companies in headhunting, force managers to look for tools and methods for optimisation of human resources management. In the business world, it's important for business companies to be able timely respond not only to ongoing external changes, but also to internal ones. In addition to preparation of a strategy, it is necessary to monitor employee turnover on continuous basis.

Very high turnover of the staff – when some employee come to the company, others leave it – have negative implications (Žukauskaitė, 2008, p. 154). Business group sustains loss, starting with exit of an employee from the company and ending with employment of a new employee (Ozyer, 2011). It results in fear about today and future, disappointment, feeling of unsatisfied needs. (Viningienė, Ramanauskas, 2012). Increased turnover of the staff can have long-term effect on behaviour and attitudes of those, who stay to work at the company (Žukauskaitė, Bagdžiūnienė, 2012). When leaving the company, employees often take their customers away from the company thereby decreasing income of the company (Nazelskis, 2010). The resigned employees increase turnover, which under the situation of economic crisis, in turn, increases social tension and requires additional investments into the staff training (Bagdanavičius, Jodkonienė, 2008; Jasinskas et al., 2011).

The aim of every employer is to form well-balanced, efficient staff, corresponding with the company's needs, therefore, it is particularly important not only to properly

select, employ, train the staff, but also to retain its current useful member (Carmeli, Weisberg, 2006). Not so many managers think that achievement of all these aims is impossible without a properly created system that is one of the tools to ensure cohesion and social responsibility of the organization. Most often the major focus is made only on profit gaining instead of solving the problems of human resources management. Losing of employees is costly to organizations; it implies not only financial loss, but also impaired image of the organisation, its internal climate and loss of knowledge that an employee "takes out" with himself.

There are many different approaches towards the determinants of turnover of human resources. There is no single standard system, which would disclose the factors inherent to the process of employee turnover (Ozyer, 2011). Ability of managers to manage human resources within the business group would prevent potential problems of turnover of human resources. The above referred issues are becoming both practical and scientific problem that requires comprehensive research.

**The problem** is that the possibilities for mitigation of negative impact of the determinants of employee turnover have been insufficiently analysed and applied.

**The object of the research** - the determinants of employee turnover in a business company.

**The goal of the research** - having analysed the determinants of employee turnover in a business company, to provide possibilities for mitigation of the negative impact of these factors on employee turnover in a business company.

#### The tasks:

1. to identify the determinants of employee turnover.
2. to conduct a research of the determinants of employee turnover in a business company.

**The research methods.** Comparative analysis of research literature, a questionnaire-based survey; the gathered data was systemised, grouped and summarized. Statistical Package for Social Sciences SPSS was used to process the research data. Having made a preliminary analysis, the methods of descriptive statistics were used: a) the data is presented in graphical form; b) mean values were derived (M). The research was conducted in March, 2015 by the method of an individual survey. The surveyed business company has 69 employees. The sample size was determined referring to Paniott formula. Number of the respondents: 65 employees, including 56 men, 9 women. The survey data was gathered by sending e-mails (70 e-mails in total) to the business company. The company was randomly selected from the companies

listed in the on-line classified business directory <http://www.visalietuva.lt/>.

### The theoretical framework for the research of the determinants of employee turnover

Turnover of human resources is a form of redistribution of labour force, when an employee exits from the organisation leaving his position vacant for another employee (Nazelskis, 2011). Such turnover of employees results in unstable, constantly changing structure of staff. Research literature discerns the following determinants of employee turnover, which are presented in Table 1.

**Table 1.** Determinants of employee turnover

GROUPS OF DETERMINANTS		
I. The company's external factors	II. The company's internal factors	III. Personal factors
1. Economic situation in the country 2. Labour market	1. Motivation system 2. Career/development opportunities 3. Interpersonal relationships 4. Management style of a manager 5. Workload 6. Moral values 7. Safe work environment	1. Job satisfaction 2. Self-fulfilment 3. Respect to employee

Source: prepared by the authors according to Klupšas, F. (2009), Stankevičienė, A. et al. (2010) and Wang H., et al. (2011).

The determinants of employee turnover:

- **The company's external factors.** When unemployment level is high and supply of job vacancies is very low, an employee will try to keep his current job, even if not being satisfied with it. (Viningienė, Ramanauskas, 2012). Upon the situation of economic instability in the country, emigration of labour force significantly is increasing (Urbonavičienė and Tvaronavičienė, 2008). Labour market – is the relationships of supply and demand of job vacancies and their changes (Tütlys, 2006; Laužackas, 1999).

- **The company's internal factors.** According to A. Stankevičienė et al. (2010), a salary is one of the most important determinants of employee turnover. A lot of important aspects of life depend on earned salary, therefore, an employee seeks for „the best” price for his performed work (Legenzova, 2012). The system of adequate work pay selected in the company is of key importance in order to retain the staff (Levanaitė, Raubickas, 2010). Fairly - in terms of contributed efforts - appropriated work pay stimulates effectiveness of performance, creates preconditions for formation of competitive reward system (Lazauskaitė- Zabielskienė, 2012). The author also maintains that remuneration of certain members of the staff should not significantly differ, as it helps the company to avoid conflict situations, worsening of interrelations among the staff members and to maintain harmony in the work group. Being unable to employ his available knowledge and to strive for advancement, an employee tends to make a decision to change the employer (Kavaliauskienė, 2011 p. 213). This statement is also supported by I. Žukauskaitė (2008). She maintains that employees tend to prefer such jobs, which provide for possibility to employ their available skills, knowledge and abilities, offer creative and decision-

making freedom and ensure feedback as to how well the employees are doing. The companies, which open career opportunities for an employee, encourage his development and implementation of his ideas at work, provide him with the above advantages (Danilevičius, 2008). Responsibility for assigned tasks as well as assignments that require diverse skills increase motivation. An employee feels higher satisfaction with the job and the company, which promotes professional development; helps to prepare for future profession, increases opportunities of an employee in the labour market. Thus, being disappointed with restrictions, an employee does not see future in such a company and, therefore, tends to look for alternative job offers, where his initiative and strivings will be appreciated (Inčiūraitė, Žilinskas, 2010). An adopted decision to seek for a job in other company creates a hope that in another company everything will be different. He expects that with the new employer he will be able to climb up the career ladder, will achieve his set goals and will satisfy his needs (Stankevičienė et al., 2010). The quality of interpersonal relationships determines job satisfaction and makes impact on lesser extent of emotional burnout (Legauskas, Mazilauskaitė, 2013, p.50). Good relationships both with colleagues and management build trust and the norms of mutual relationships, which become more important over time, than the legal relationships. (Kavaliauskienė, 2008 p.214). Interpersonal relations help to deal with job-related negative factors, role ambiguity and uncertainty about future job. According to S.P.Robbins (2006, p.122) negative interpersonal relationships among employees result in conflicts in the company, competition among the staff members and emotional abuse – mobbing. J. Pacevičius, E. Jaunulytė (2009) discern the following outcomes of mobbing: absenteeism, incapability for work; loss of productivity; employee turnover. According to R.

Žakaitienė (2008, p.27), employee's satisfaction directly depends on competence and management style of a manager. According to J. Sondaitė (2009, p. 135), formal communication between a direct supervisor and an employee is evaluated negatively. When an employee feels burnt out, the probability of leaving the job is increasing (Žukauskaitė, 2008). It results in fatigue, negative psychological emotions, anxiety; work tasks are performed inappropriately and in low-quality manner. According to R. Levanaitė, L. Riaubickas (2010), an employee always enjoys the job if he is not being exploited at work, i.e. workload does not exceed his capabilities. However, on the contrary, employers most often do not agree to reduce workload. (Pacevičius, 2007). According to J. W. Hink (2006), appropriately chosen work time - schedule is of key importance for companies. Due to the resulting lack of time, an employee starts considering whether it's worth „sacrificing” so much for the sake of job, perhaps, it's better to look for other company, where the job would be more flexible in terms of a time-frame (Marčerinskienė, Žiogelytė, 2012). According to V. Baršauskienė (2011), an employee places very a high importance on flexible schedule of work. Physical work environment is also very important; negative effect of this factor contributes to dissatisfaction of employees with the job and at the same time – to employee turnover (Stankevičienė, 2010). Each person wants to feel safe both in personal life and at his workplace (Žaporius, 2007). Adequately arranged work environment is very important, as it has impact on employee's health, productivity, performance results (Robbins, 2006). According to Kučinskis (Bosas et al., 2004), appropriate work conditions contribute to retaining good employees.

- **Personal factors.** The personal factors are attributed to an employee's own attitudes and related with internal motivation. By giving more attractive job offers and better conditions competitors buy over employees for work with their companies (Korsakienė, 2015). One of the approaches applied to explain employee turnover is employee's satisfaction with the job in the company. Job satisfaction is directly related with life satisfaction (Bražienė, Merkys, 2012). Job satisfaction has key importance for an employee, as it affects his well-being, health and psychological state (Bakanauskienė et al., 2010). According to R. Pilkauskaitė - Valickienė et al. (2007), the identified the level of job satisfaction can serve as a forecast on employee turnover. This statement is confirmed by A. Carmeli, J. Weisber (2006) and K. Ozyer (2011), who made a research and found out that employees, who are not satisfied with the job, tend to leave the company. Job satisfaction is important because of its particularly significant impact on employee's well-being, health, psychological state (Žukauskaitė, 2008). Job satisfaction helps to reduce employee turnover, to develop loyalty of the staff (Lazauskaitė-Zabielskė, 2010). The results of research conducted by R. Pilkauskaitė- Valickienė et al. (2007) showed that satisfaction with job, its contents is important for an employee. K. Vitkauskas (2012) maintains that enjoyable job is the main internal incentive for work. In order to achieve self-fulfilment at work, employee strives to use his knowledge, which is appropriate to his job,

profession, also to implement his initiatives, thoughts, ideas at work and to continuously develop as a person. However, I. Zabelavičienė (2009, p. 87) notes that for most companies in Lithuania such employees are not a sought-after priority. Employees become a tool for task performance, whose opportunities for self-fulfilment and creative freedom is restricted. The author's opinion is also supported by F. Klupša (2009, p. 21), who adds that employees who strive for self-fulfilment at work have strong need for continuous development: they strive for advancement, raise qualification, etc. Employee wants to have his work appreciated and to be respected for his aspirations. Being recognised in this way, an employee has internal motivation for work, because he knows that his efforts will be appreciated and understood (Klupša, 2009, Martinkienė, 2014). According to Bakanauskienė and Brazaitytė (2014), it is important for employees to be recognised not only by managers, but by subordinates and colleagues as well. Lack of recognition decreases productivity of an employee, makes him to look for other environment, where he will be recognised and understood (Stankevičienė et al., 2010).

Analysis should be made in order to make an assessment of the company's current situation in terms of human resource turnover and its determinants. The results of the analysis give rise to new ideas, decisions for initiated changes that become a guideline for further implementation of the company's objectives. Therefore, it is particularly relevant to have a model enabling to evaluate the competency maturity of employees and to strive for perfection of the company's performance.

## The procedure of the research and its results

*The purpose of the research* – to analyse the determinants of employee turnover in a business company. *The method of research* – a quantitative, written survey. Its instrument – a questionnaire, which was prepared after having generalised the theoretical aspects of formation of the above mentioned determinants of employee turnover. Herein below the authors of the present article build a model of the research, with the aid of which a questionnaire survey was conducted (Table 2). Having systemised the results of the theoretical analysis, a model is formed of three groups of factors, i.e.: the company's external and internal factors and personal factors. They are supplemented by the determinants of employee turnover, such as *the economic situation of the country, motivation system, interpersonal relations, workload, moral values; job satisfaction, self-fulfilment opportunities*, etc. Each formulated factor is extended by the statements, which are designated to find out an employees' approach towards the job, career, what specific work make them feel best, and to identify reasons that would make employees to change job. The questionnaire also included statements aimed at revealing what particular aspects of the job give the highest job satisfaction and what motivation tools result in better performance at work. Importance of the questions is rated on Likert scale (from 1-absolutely disagree to 5-absolutely agree). The questionnaire ends with questions aimed at collecting the respondents' demographic data.

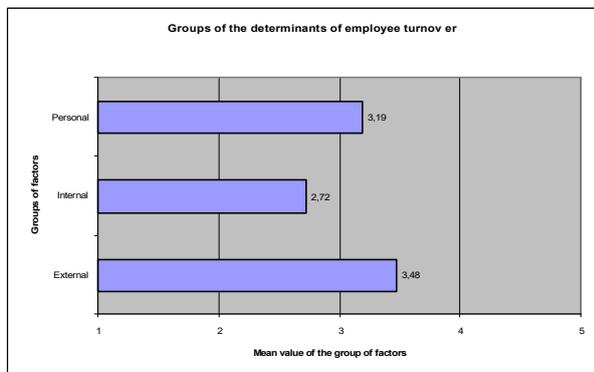
**Table 2.** The model of research of the determinants of employee turnover

GROUPS OF FACTORS	FACTORS	MITIGATION OF THE NEGATIVE IMPACT OF THE FACTORS
The company's external factors	1. Economic situation in the country	To use feedback and to act referring to its results. To establish the rules of conduct applicable in solving of the feedback-raised issues.
	2. Labour market situation	To create a programme enabling better satisfaction of various needs and interests of the staff thereby retaining highly qualified and competent staff in the company, with a view to market changes.
The company's internal factors	1. Motivation system	To motivate the best employees who contribute the most to the company's success. To find out what motivates the staff and how to create inspiring work environment. On regular basis to identify underperforming employees.
	2. Career/development opportunities	To prepare a long-term career plan providing for the staff involvement into career-related training, active performance of assignments that contribute to skill improvement and enable acquiring more knowledge.
	3. Interpersonal relations	To analyse why and what particular differences of personalities result in complicated situations. To use effective communication and negotiation methods to solve conflict situations.
	4. Management style of a manager	To prepare a strategy enabling better understanding of the aims of a manager and his work/management style. To adjust the management style to the performance needs of a team/group or sub-division.
	5. Work load	To foster employees' willingness to understand and exceed the expectations related with performance of the organization and work duties.
	6. Moral values	To instil the system of employee's values, as one of the major aims for building of the value system is to develop the workgroup members' awareness of the group identity.
	7. Safe work environment	To adapt environment for work, as it has impact on health, productivity and quality of employee's performance.
Personal factors	1. Job satisfaction	To present the importance of the factor of employee's job satisfaction, as it make impact on well-being, health and psychological state.
	2. Self-fulfilment opportunities	To provide conditions for each member of the organisation to create his own „sense of meaningfulness” as self-fulfilment allows a person to be creative.
	3. Respect for a personality	To develop respect for personality, as it has impact on employee trust and the quality of interpersonal relationships.

Source: prepared by the authors referring to research literature

*Results of the research*

The main objective of the research – to identify the determinants of employee turnover in a business company. Fig. 1 shows distribution of three major groups of determinants. The factors of the external ( $\bar{x} = 3,48$ ) and the personal ( $\bar{x} = 3,19$ ) groups make the biggest impact on employee turnover in the business company, while the group of internal factors has less impact on employee turnover ( $\bar{x} = 2,72$ ).



**Fig. 1.** The groups of the determinants of employee turnover

The results of the research presented in Fig. 2 show large divergences among the listed 11 factors comprising of the company's external and internal factors. The figure shows that the following determinants are more significant in terms of employee turnover in the company: economic situation of the country ( $\bar{x} = 3,78$ ), workload ( $\bar{x} = 3,58$ ), labour market situation, the factors of the inner satisfaction group ( $\bar{x} = 3,19$ ). While the following factors have the least impact on employee turnover: career/ development opportunities ( $\bar{x} = 2,46$ ), moral values ( $\bar{x} = 2,41$ ), interpersonal relations ( $\bar{x} = 2,40$ ).

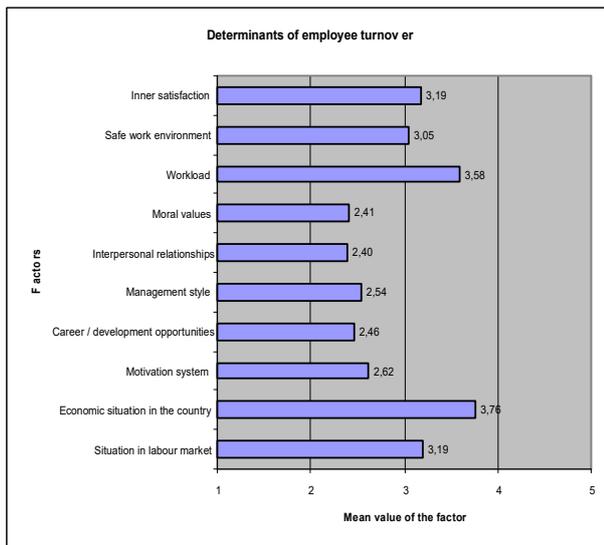


Fig. 2. Staff turnover factors

In-detail analysis of the company's external factors – *the economic situation of the country* reveals the reasons that make the major negative impact on employee turnover: *I worry about my future in the company, because of instability of the current economic situation in Lithuania* ( $\bar{x} = 4,18$ ). The research revealed a desire of the respondents to move to another country due to low standard of living ( $\bar{x} = 3,34$ ). Analysis of the group of factors – *Labour market situation* revealed a negative trend – *I do not have other job offers* ( $\bar{x} = 3,62$ ), see Fig. 3 for more details.

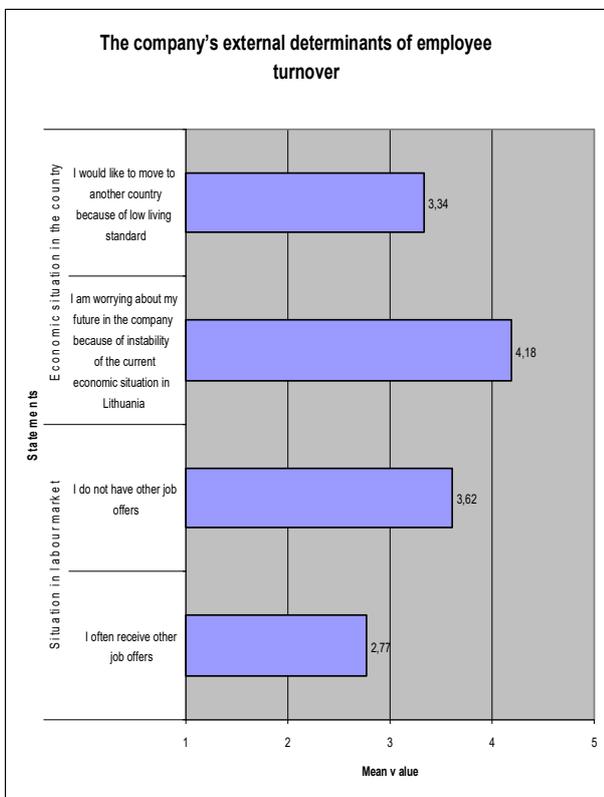


Fig. 3. The group of the company's external factors

While analysing the problems of employee turnover in the business company, in-depth analysis was made of the group of the company's internal factors – *Motivation system*, because of the revealed reasons that make the major negative impact on employee turnover: the respondents contradict to and disagree with the following statement – *The salary I earn satisfies my personal needs* ( $\bar{x} = 2,00$ ). Respondents partially agree with the statement that *They feel appreciated in the company through the earned pay* ( $\bar{x} = 2,15$ ). An employee of this company who has relevant qualification and is able to employ his current knowledge as well as to acquire new one, would not be interested in changing the employer, if his performance were properly evaluated and adequate award were paid ( $\bar{x} = 3,11$ ).

A negative trend that respondents do not associate their future job with this company was revealed in the group of *Moral values* factors ( $\bar{x} = 1,98$ ). Such an answer was determined not only by a financial reward, but also a strive to satisfy their competence needs; even more that the employees do not doubt easy transfer of their professional competence to another (foreign country) system.

As *interpersonal relations* also contribute to employee turnover, a criteria of teamwork absence was formulated within this group, because teamwork is important in order to retain an employee in the company and to reduce employee turnover. There are a lot of conflicts among co-workers ( $\bar{x} = 3,05$ ). A successfully performing team that maintains good interrelations among its member as well as their high compatibility creates added value, which is generated by joining diverse knowledge and skills.

While analyzing the determinants of reduction of employee turnover, it's also appropriate to take a look at the factors of employee career, development, expectations and personal self-fulfilment. As the results of the research show, the conditions for professional growth have been ensured to insufficient extent. ( $\bar{x} = 2,54$ ), see Fig. 4 for more details.

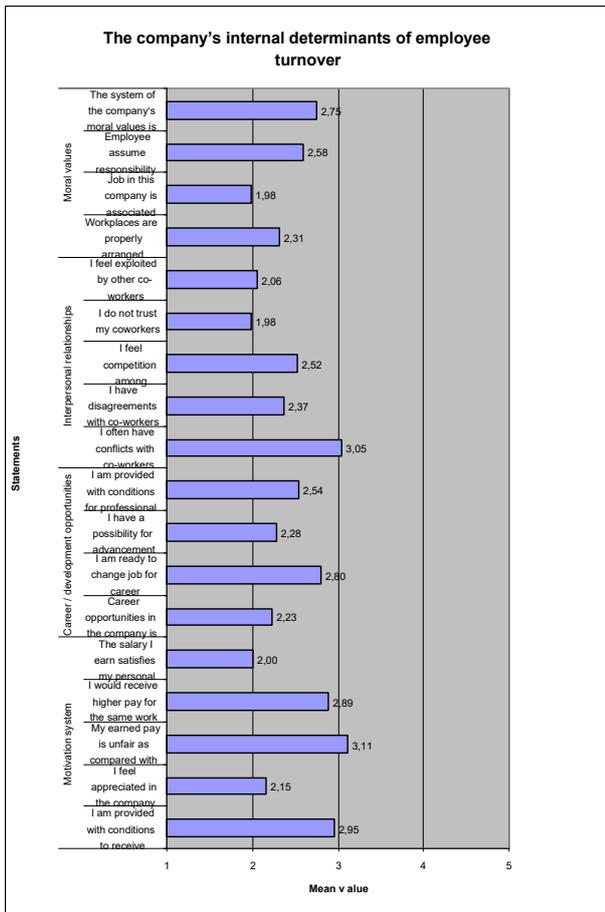


Fig. 4. The group of the company's internal factors

The group of *Management style* factors shows a trend that the employees do not maintain good relationships with his manager ( $\bar{x} = 2,03$ ). Analysis of the group of factors – *safe environment* – revealed that the respondents gave a negative answer to the statement, because the employees do not feel safe in this company ( $\bar{x} = 2,23$ ). It's helpful to find out the most important factor that makes a negative impact on employee turnover in the business company; in this case it is overwhelming workload ( $\bar{x} = 3,52$ ) and the need to work overtime. A number of research shows that the above factors correlate with quality of life and its evaluations, see Fig.5 for more details.

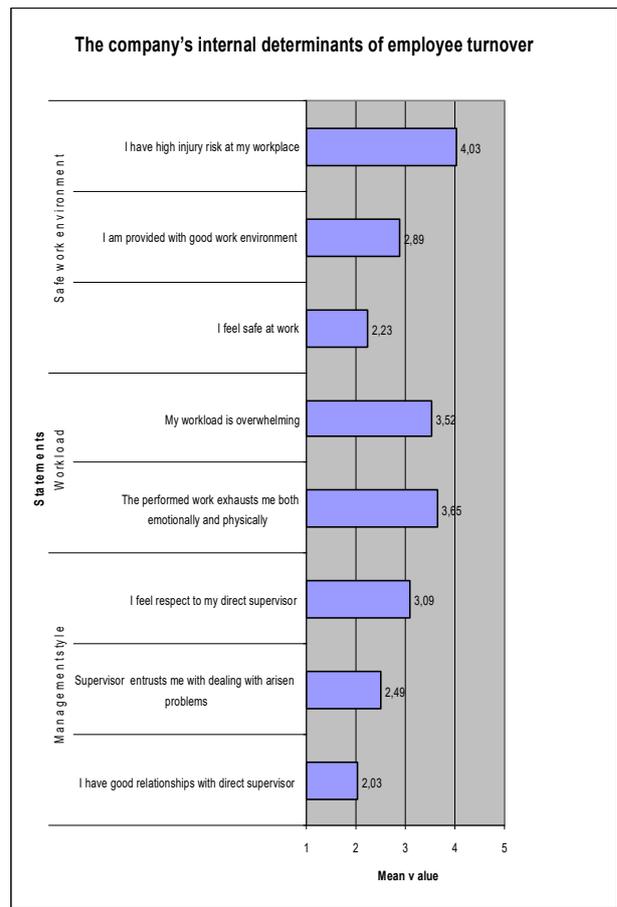


Fig. 5. The group of the company's external factors

Another analysed aspect of the research is the group of the company's *Personal factors*, which includes *Job satisfaction* factor. The respondents indicated the following negative factors: that they are only partially able to implement their ideas at work ( $\bar{x} = 2,42$ ), *do not feel being appreciated by managers* ( $\bar{x} = 2,92$ ), partially answered that the nature of the work is interesting ( $\bar{x} = 3,40$ ) – these are the particular factors that determine employee turnover in the business company. The respondents also indicated some positive factors, their more detail distribution by significance is presented in Fig. 6.

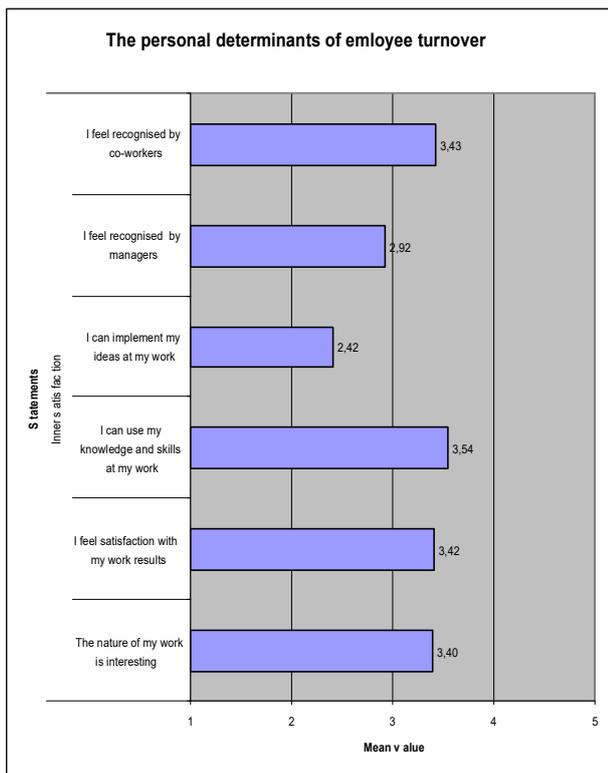


Fig. 6. The group of the company's personal factors

The results presented in Fig. 6 imply that the more aware an employee is of various aspects of his role in the organisation, the more this factor can ensure job satisfaction and lower employee turnover in the business company.

The research results revealed that negative migration of employees is always caused mostly by economic motives. Notwithstanding the importance of job change due to economic motives, it's always a personal decision of an employee. The reasons of employee turnover falls into two large groups: macro-level and micro-level migration factors; it also depends on demographical profile of an employee, his personal qualities.

The conducted questionnaire survey revealed that the negative aspects of the following factors: work pay, work environment, job contents, teamwork, recognition, self-fulfilment, future prospects (career opportunities), management style of managers and relationships with managers usually determine employee turnover in this particular business company. The above mentioned determinants of employee turnover are closely interrelated and determine an employee's decision to stay in the company for a longer period.

## Conclusions

Summarizing the theoretical aspects of the concept of employee turnover, it can be stated that the turnover of human resources in companies is determined by three groups of factors: external, internal and personal, which show a ratio between incoming and exiting employees of the organization.

The conducted research disclosed that the biggest impact on employee turnover in the business company is made by low work pay, overwhelming workload,

employees feel unfairly evaluated and paid for the performed work. It is stated that most often employees leave the company due to personal (natural/voluntary) reasons, while others tended to emphasise the company's internal (controlled) and (or) external (scantly controlled) reasons.

It can be maintained that the created model of the tools for reduction of employee turnover, i. e.: adaptation programme, closer communication between management and subordinates, teamwork, management style of managers, adequate work assignments, workload, career, development-improvement system, organizational culture, labour agreements, business development, programme for increase of employee loyalty, pre-employment and exit interviews, would become a possibility for elimination of the determinants of employee turnover in the business company. Various combinations of the above tools would help a manager of the company to manage internal and external employee turnover.

The research confirmed that in order to successfully implement corporate and personal aims, to comply with the established requirements, to avoid employee turnover, the staff formation needs to be done considering the whole set of external, internal and personal factors.

## References

- Baršauskienė, V. (2010). Žmonių santykiai organizacijose. *Kaunas: Technologija*.
- Bosas Antanas, Venckutė V., Seilius A., Šimanskienė L., Knašas A. B., Kučinskas V., Grublienė V. - Valdymo problemos: teorija ir tendencijos. - 2004, Klaipėda: KU I-kla; 244 p. ISBN 9955-585-86-2 – 2004.
- Carmeli A., Weisber J. 2006. Exploring turnover intention among three professional group of employees. *Human resources development international [interaktyvus] Vol 9, No 2; [žiūrėta 2015 gruodžio 2d.]*191-206 p. *Prieinga per Taylor & Francis*
- Danilevičius E. 2008. Karjeros plėtros modeliavimas. Tiltai [interaktyvus] Nr.3 [žiūrėta 2015m. gegužės 5d.] 145- 159 p.
- Korsakienė, R., Diskienė, D., Smaliukienė, R. 2015. Institutional theory perspective and internationalization of firms. *How institutional context influences internationalization of smes*. p. 142-159.
- Laužackas R. (1999). Sistemotorinės profesinio rengimo kaitos dimensijos. *Kaunas: VDU leidykla*.
- Legkauskas V., Mazilauskaitė R., 2013. Psichosocialinių veiksnių įtakos darbuotojų lojalumui tyrimas dirbančiųjų Lietuvoje pavyzdžiu. *Management of Organizations: Systematic Research [interaktyvus] Nr. 65 [žiūrėta 2015 balandžio 14 d.]* 45-61 p.
- Nazelskis E. 2010. Profesinio informavimo ir konsultavimo priemonių taikymas darbuotojų kaitai mažinti. *Profesinis rengimas: tyrimai ir realijos [interaktyvus] Nr. 19 p. [žiūrėta 2015 m. spalio 28d.]* 119 – 130 p.
- Ozyer K. 2011. The relationship between job satisfaction, subdimensions of job satisfaction and turnover intention: a survey in turkis business context. *Vadyba*. Nr.2 (19), 67-74 p.
- Pacevičius J. 2007. Profesinio „Perdegimo“ sindromas ir jo raiška banko darbuotojų veikloje. *Ekonomika ir vadyba: tarptautinės mokslinės konferencijos pranešimų medžiaga [interaktyvus] Nr. 12 [žiūrėta 2015 m. gegužė 6 d.]* 629-635 p.
- Tūtlys V. (2006). Darbo rinkos tyrimai. *Modulio knyga*. Kaunas: VDU.

- Bagdanavičius, J., Jodkonienė, Z. (2008). Brain drain from Lithuania: the attitude of civil servants. *Inžinerinė Ekonomika-Engineering Economics*, Vol. 2 (57), p. 55-60.
- Bakanauskienė, I., Bendaravičienė, R., Krikštolaitis, R. (2010). Pasitenkinimo darbu tyrimas universiteto darbuotojų grupių atvejui. *Management theory and studies for rural business and infrastructure development*. 2010. Vol. 22 (3), p. 1-14.
- Bakanauskienė, I., Brazaitytė, G. (2014). Analysis of young people expectations in Lithuanian labour market. *Organizacijų vadyba: sisteminiai tyrimai*. Vol. 69, p. 55-69
- Bražienė, R., Merkys G., (2012). Jaunimo ir jaunų suaugusiųjų socialinė atskirtis ir gyvenimo sąlygos: stebėsenos indikatorių paieškos problema. *Filosofija. Sociologija*. Vol. 2012. T. 23. No. 2, p. 119–127.
- Inčiūraitė, L., Žilinskas, J. (2010). Personalo darbo skatinimą lemiančių veiksnių tyrimas reanimacijos ir intensyviosios terapijos skyriuje. *Economics And Management*. Vol. 15, p. 530-540
- Hink, J. W. (2006). Lankstaus darbo laiko diegimo įmonėse prielaidos. *Business: Theory and Practice*. Vol VII, No 1, 22–26
- Jašinskas, ir kt., Simanavičienė, Ž., Noreikaitė, N. (2011). Skirtinguose karjeros etapuose esančių darbuotojų motyvavimo ypatumai turizmo ir rekreacijos sektoriaus įmonėse. *Economics and management*: Vol.16, p. 521-526.
- Kavaliauskienė, Ž. (2011). Employee commitment to the organization as an assumption of functionality of the organization. *Profesinės studijos: teorija ir praktika (Professional Studies: Theory and Practice)*. Šiauliai: Šiauliai State College, No. 8, p. 213 - 219.
- Klupša, F. (2009). Gamybos darbuotojų motyvacijos stiprinimo aktualijos besikeičiančiomis sąlygomis. *Vadybos mokslas ir studijos – kaimo verslų ir jų infrastruktūros pletrai*. Nr. 19 (4)
- Legenzova, R. (2012). Atlygio už darbą formos Lietuvoje – informacija atskleidžiama Lietuvos bendrovių finansinėse ataskaitose. *Organizacijų vadyba: sisteminiai tyrimai*. p. 55-69
- Levanaitė, R., Raubickas L. (2010). Personalo kaitos mažinimo galimybių tyrimas. *Socialiniai mokslai. Ekonomika ir vadyba*. Vol. p. 104-114.
- Marčerinskienė, A., Žiogelytė, L., (2012). Viršvalandinio darbo ir jo apmokėjimo patirtis, problemos ir galimybės Lietuvoje. *Organizacijų vadyba. Sisteminiai tyrimai*. Vol. 2012.61, p. 85-99.
- Martinkienė, Jurgita. (2014). Vadybinių kompetencijų tipologijų erdvė. *Vadyba/ Journal of Management*, No. 1 (24). p. 51-63.
- Pacevičius, J., Janulytė, E. (2009). Mobingas kaip organizacinio gyvenimo problema: priežasčių, raiškos ir pasekmių įvertinimas ir analizė. *Ekonomika ir vadyba: aktualijos ir perspektyvos*. Nr. 1(14).
- Pilkaukaitė Valickienė R., Valickas A., Sinkevič B. 2007. Darbuotojų ketinimo keisti darbą pasitenkinimo darbu sąsajos Lietuvoje. *Socialinis darbas [interaktyvus]* Nr. 6(2): [žiūrėta 2013 lapkričio 1d.] 115-123p.
- Robbins, S. P. (2006). Organizacinės elgsenos pagrindai. *Kaunas: Poligrafija ir informatika*.
- Sondaitė, J. (2009). Konflikto su vadovu patyrimo egzistencinė fenomenologinė analizė. *Socialinis darbas*. Nr. 8 p. 135
- Stankevičienė, A. ir kt. (2010). Personalo kaitos stabilizavimo galimybės Lietuvos statybos sektoriuje. *Business: Theory and practice*. Vol. 11(2), p.151–158
- Urbanavičienė, I., Tvaronavičienė, M. (2008). Polinkis emigruoti: priežasčių paieškos. *Verslas: teorija ir praktika*. Nr. 4 (9), p. 253–260.
- Morkevičius, V. (2013). Viešojo ir privačiojo sektoriaus darbuotojų darbo sąlygų vertinimai: Europos socialinio tyrimo duomenų analizė. *Public policy and administration*. Vol. 12, No 3, p. 417–429
- Viningienė, D., Ramanauskas, J. (2012). Motyvacijos ir pasitenkinimo darbu sąsajos žmogiškųjų išteklių valdyme Klaipėdos ir Kaliningrado įmonėse. *Scientific journal. Management theory and studies for rural business and infrastructure development*. Vol. 33. Nr. 4. p. 104-112
- Vitkauskas, K. (2012). Lietuvos policijos pareigūnų motyvacinių veiksnių analizė. *Public policy and administration*. vol. 11, No 3, p. 377–389
- Žukauskaitė, I. (2008). Naujų darbuotojų kaita: ryšys su organizacine socializacija. *Organizacijų vadyba: sisteminiai tyrimai*. p. 154
- Wang X., Wang H., Wang H., Zhang L., Cao X. 2011. Constructing a decision support system management of employee turnover risk. *Information technology and management interaktyvus*] Vol. 12, No. 12 p [žiūrėta 2015 m. lapkričio 28 d.] 187-196 p.
- Zabieliavičienė I., (2009). Komandinio darbo specifika inovacijų sferoje. *Current Issues of Business & Law [interaktyvus]* Vol. 3 [žiūrėta 2015 balandžio 14 d.] 87-103 p.

RECEIVED: 1 April 2016

ACCEPTED: 20 April 2016

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## THE IMPORTANCE OF EDUCATIONAL CASE STUDIES FOR MEDICAL DEVICES MANAGERS' EDUCATION

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### Annotation

Case study is an important tool for teaching of economics and managerial disciplines in the education of medical devices managers. Application and use of case studies in teaching are widely discussed, praised or criticized, not only in the academic literature. Far less attention is paid to problems of the creation of case studies. The article presents the steps, limitations and approaches associated with creation of educational case studies for medical devices managers' education.

KEY WORDS: Medical devices managers, methodology, educational case studies, managers' education.

### Introduction

Education of medical devices managers is methodically designed into a comprehensive profiling of executives in terms of increasing of managerial or technical skills (hard skills), strategic planning, improving of methods and techniques of leadership (soft skills), communication and presentation skills indispensable for the discharge and function of managerial functions in the context of social and personal development. Education of these managers is mostly based on the principles of company management, namely:

- planning,
- organizing,
- leadership and management of human resources,
- financing and control activities.

For commonly used methods of manager's education are obligate considered active problematic and participatory methods based on solving non-standard tasks by using modern didactic resources and information technologies, especially computer technology. In most cases in educational programs at MBA schools are beyond lectures used to study management games, simulation modelling, staging, but primarily popular and professional public required case study that support the development of expertise, executive managerial activities, including the authority of manager's personality in the summary context.

Case studies entered into the vocabulary of academia sphere primarily with activation and application-oriented forms of tertiary teaching, which is applicable in both executive and non-executive forms of managerial education. Their use in tertiary education dates back to 1870 when it started using after the First World War by Harvard Law School, thus it became part of the general

education in medicine, law, business and management (Lynn, 1999).

Case studies occupy among methods of qualitative research irreplaceable role as a tool for expanding scientific disciplines, especially on the theoretical site but also practical use as a tool of education of practical skills for students, as well as experienced practices of the study field. Educational case studies describe real or fictional situation of the business world in order to capture the complexity of organizational phenomena or demonstrate the application of a particular theoretical apparatus. Educational case study is typically written as a story in which perform specific individuals and / or which is seen from the position of the person speaker (Liang and Wang, 2004).

Generalized results serve as so-called instruction for use or otherwise analyze deviations with reference to the potential risk of their occurrence. According to Marcici and Pendergast (1993) is an instructional importance of case studies in the Czech environment accepted generally.

The contribution of the authors is focused on the clarification of requirements of educational case studies. The following lines are devoted to the professional audience, who are interesting in the production or publication side of case studies, not the side of the user, which is described in e.g. Wassermann (1994).

This paper is an output of the KEGA project No. 001DTI - 4/2015 "Proposal behaviorstrategiesin difficult. The social situation inthe management of secondary school using innovative predictive software tools" supported by the Ministry of Education Slovakia Republic.

### Education of Managers

Education of medical devices managers can be considered as a specific area of business education, especially with regard to the demands placed on

managers of individual business department, their specificity and expertise, strict demands, but also placed requirements.

Education of managers (managerial education) is according to Paln (2002, p. 238) *"part of a continuing education for a specific group of workers that can decisively affect the level of competitiveness and development of the company. This is a group of workers who must master a wide range of expert disciplines and in addition to their abilities, knowledge and skills undergoing continual confrontation with the development of the company as well as varying situations around the system."*

Bbek (2009, online) highlights the fact that the concept of manager education must be based on the fact that each person is individuality; therefore, education must be an individual process. Concept of manager education and development consists of the following areas such as career planning, training courses, learning, self-education and business consulting. Bbek adds: *"for development of business management, it is essential that its leadership consider training an important business activity. Concept of programs and teaching methods must be based on the nature of manager's development and training must be viewed as a continuous process of blending of work experience and the use of learning opportunities. Education must also be systematically evaluated to make it clear that the spent money was not spend in vain and that all efforts should make some sense."*

### **Requirements for Medical Devices Managers' Education**

Currently in the 21<sup>st</sup> century is talking about the transition from an industrial society to a post-industrial society, or knowledge, when there are numerous changes and increasing demands on each individual. For competitiveness of individual on labour market is necessary to constantly educate, manage requirements and demands, problem situations that occur in professional as well as personal or family life. Area of management enters into post-industrial time, which is characteristic of turbulent business environment through mature culminating globalization, substantial importance of science, technology and research, particularly in the area of knowledge management. 21<sup>st</sup> century requires from successful managers a wealth of experience, expertise, knowledge and information.

To the manager stand in competition with other, they must continually educate. Possible areas of specialization and focus in are of manager's education is a wide variety of managers in general can appoint:

- the development of professional knowledge and skills,
- development of personal and social skills, sometimes also called as managerial skills,
- as well as procedural knowledge of corporate management.

For education of medical devices managers we can find a wide range of methods and techniques that are in currently period of the 21<sup>st</sup> century implemented. These are classic methods, such as seminars, conferences or

lectures but also interactive methods e.g. solving of model situations, workshops, managerial games, case studies, outdoor programs, playing role supports development of social skills, but also very popular, and by society reference coaching technique.

In the field of management education, we can meet with topics such as personal development and the development of social skills, often in business practice referred as soft skills development, i.e. the development of soft skills. Personal development of managers can be seen as the development of personal potential in relation to the cultivation and self-fulfilment, self-realization of every individual in the labour market and job opportunities. In managerial practice, we are often encountered the view that managers have lack of development of soft skills, absence lies in the limitations of social skills.

Medzihorsky (2008, online) in his article describes current trends in manager's education. *"Current trends reflect subsequent shifts that do not concern only the content and methods, but also the forms as well as the whole paradigm of education. Today it is obvious that business results are from a crucial part in direct proportion with the quality of management, and so the big attention is focused on how to optimize the education and training of managers, especially top managers."*

Magazine for HR managers (Chief Learning Officer Magazine) states on its website the results of international study which is occupied with the trends in manager's education. At the beginning of the study is mentioned that today's organizations changing their approach to the development of TOP managers. This process, however, according to them is not easy. On the one hand, there is a significant need to improve managers to they can promote changes and new strategies, on the other hand, there is present the fact that education budgets are in comparison to previous years considerably lower.

In the study of an international organization Institute of Executive Development titled Cost Effective Executive Development are described the trends that are now in the area of manager's education developing. The authors of that study state that the problem of many entrepreneurial subjects is inadequate distribution of investment into education, hence the cost of education with regard to career growth and development of managers they also do not see a possible compromises, and feel obligation to stick to existing programs and approaches to the development and education of managers.

The above requirements for education of medical devices managers undoubtedly fulfils the use of case studies as the method simulate or describe the situation, the that has arisen problem with regard to various areas of research such as area of management and marketing, human resource management etc., which the hearers are preoccupied and actively solved. The main claim is given to the analytical analysis of case studies, the diagnosis of the problem and ways of solving, teamwork, listening, empathy and sharing of information and values.

The choice of method is one of the most important things which affecting the effectiveness of the entire manager's education. Inappropriate selection method can result among others manager's reluctance to participate in

any other courses. Urban (2009, p. 61) in his article points out the fact that *"the effectiveness of development methods is the higher the closer they are to the real nature of labour tasks. Development of managers is necessary seen as a tool of output counselling, aimed at removing specific barriers which defend of improvement of performance or achievement of their goals. Prerequisite for effective manager training is always an opportunity to try new methods, procedures and techniques."* The above author adds that unless education is not coupled with the possibility of practical experience, e.g. even in a model situation, cannot bring full effect, appropriate with resources to it expended. Urban (2009) in his paper also presents methods of manager education of which correspond to the above mentioned. This is especially about:

- solution of the case studies,
- role-playing used to develop social skills,
- writing tasks,
- manager's games,
- as well as coaching.

Another view to splitting of methods and techniques of manager education offers Prokopenko and Kubr (1996). It concerns about following overview:

- self-learning techniques,
- learning from experience and learning activities,
- group work and discussion methods,
- simulation methods,
- case studies,
- lectures and recitation methods.

### Specifics of Educational Case Studies

A case study is used primarily for us to understand the complex social phenomenon. Let's look at four different definitions, as the following case study authors define:

According to Eisenhardt (1991, p. 534) is a case study *„research strategy that focuses on understanding of the dynamics which is presented on a single file“*.

Stake (1995, p. 67) defines case study as *„an exploration of the specificity and integrity of the case that allows to understand its functioning within important circumstances“*.

A Yin (2003a) case study defines as a method specified by three dimensions:

1. It is empirical research that examines the current phenomenon in the context of real life,
2. to case study is necessary to proceed when the boundaries between phenomenon and context are not very clear,
3. it is a method that uses a lot of resources to support its conclusions.

Conversely Simons (2009, p. 21) defines case study as *„an in-depth exploration of the diverse perspectives the intricacy and complexity of a particular project, policy, institution or system in the context of reality. It is based on research, covers various methods and it is based on facts. Its primary purpose is bringing a deep understanding to the subject, program, policy, institution or system to generate knowledge and / or shaped the development of policies, technical procedures and civic or social activity“*

Note on what these definitions coincide. All point out that this is a research approach, which aims for a detailed examination of one or a few cases, which achieves different methods and ultimately leads to a deep understanding. A case study is not thus defined by the object to which it focuses, but the fact that it is a comprehensive research strategy, for which is characteristic a specific data collection and analytical approaches to explore the phenomenon in the context of real life.

Criticism, misunderstanding, unsuitable use or refuse of case studies on the level of education (e.g. Shugan, 2006) appears to be a persisting problem. Very strict criticism of manager's education at Harvard Business School through case studies published in her book Cain (2012).

Educational case studies are now a normal part of most teaching texts in its brief and more extensive form. Comprehensive educational case studies are then offered to education in the collection of case studies or to purchase in databases (i.e. case clearing houses). Educational case studies illustrate the significant situation or offer an opportunity for problem solving (Jennings, 1996).

Educational case studies are also part of the broader efforts of economic-management schools by intensifying the use of experiential methods of instruction (McCarthy and McCarthy, 2006, Prince and Felder, 2006) or the more modern methods of examination (Rees and Porter, 2002b, O'Conneide, 2006). Case studies also increase students' motivation for further study, support the development of discussion skills and teamwork (Rees and Porter, 2002a).

Case studies aimed at solving problems include material to the application of specific techniques or theories and to application of capabilities to solve problems (Jennings, 1997).

Educational case studies are written for students in order to draw them into stated decision-making problems and answer the questions "what would you do in a given situation." Some case studies, given especially for advanced courses in economics-management subjects, leave it to the students to define the problem situation and aspects that need managerial attention. Although the reality is subject to a large amount of educational case studies, complexity of practical examples is often limited for didactic purposes. However, it is empirically proven that teaching with the help of case studies lead to the improvement of students' abilities to solve problems (Smith, 1987).

The procedure for compiling of educational case studies is in the literature variously described (e.g. Jennings, 1996; Cockburn, 2000). Also, the variability and the type diversity of educational case study can be considered high (Lundberg et al., 2001). Important requirements for quality educational case studies, however, comprise its authenticity, i.e. the credibility and believability. For this reason it is necessary the compilation of educational case studies considered a time and resource-demanding process which must respect certain specifications and general rules described in Jennings (1997) and specified in Hrazdilová Bočková and Vaničková (2015).

Initially is necessary to answer to the question: "What will solve the case study and who will be determined." Educational case study is compiled to solution of the decision-making situation related to the demands, the type of training course and specific topic of focus. Educational case study purposeful encourage pupils and students to assess of the nature of the task and the behaviour of the participants of model situation, suggest solutions according to theoretic apparatus, determination of the factors and resources required for the proposed solution or repeated effort to produce bigger amount of alternative solutions of the situation (Nelson, 1996). Case studies for a higher level of education and advanced training courses usually involve more peripheral material, and provide more comprehensive information about economic reality. Their preparation is usually more complicated and time-consuming.

Many of educational case studies are based on real life situations, whose components were the authors themselves, or that were mediated them through direct contact with participants in model situations. the source of the subject and information about research of educational case studies can be e.g. the information provided by participants of executive education appearing during corporate training or coming from a advisory work of authors of the paper. In some cases, the information as well comes from anecdotal evidence, e.g. an analysis published publicly available information in professional journals or on social networks. The purpose of collecting data for the case study is necessary to obtain an objective and comprehensive picture about examine situation with regard to the target group. For study educational purposes or with regard to preserving of participants anonymity of case studies some data can be modified while maintaining the requirement of authenticity.

Evaluating of obtain information often cause necessity to re-contact participants given situation or combine different sources to get a more accurate picture of a model situation. Contact with the participants often takes place by informally way. Making detailed notes from contacts or personal visits are necessary, but the structure and nature of the making record is usually in the competence of the author of the case study. Case studies so called Harvard type mostly usually more presents a model situation from the perspective of participants in order to increase of the involvement of pupils and students to solve a given problem. In other cases are the educational cases and model situation described particularly for the general. In the conclusion of educational case studies we often find questions that help increase the concentration of pupils and students on the problem area in relation to the interconnection of the final part with the opening. Conversely, a study of Harvard type is ultimately the final part does not focus on additional questions to solving case studies; it is not limited to the use of specific theoretical tool. According to McKenna (1999) is more suitable for advanced students.

Evaluation obtained evidence can be made with regard to the expected set of final questions or to the ability of capturing a sufficient number of factors operating in a given situation. In developing the case study, it is necessary to not change periodic replacement

and improvement of the text. Preliminary testing and evaluation can be performed through a peer review or (and perhaps more often) trial using of case studies in teaching. Author of case study should ask himself whether the questions asked at the conclusion of the study are not suitable or even confusing and do not limit students in the possibilities of finding alternative solutions. The testing process often leads to review and adjustment of the case study. From the perspective of the periodic adjustment of the study Rees and Porter (2002b) suggest that educational case study do not include data determination of the situation, as many concrete examples remain valid for many years and the solving problems do not quickly become obsolete.

The component of collections of case studies, supplements to textbooks or case studies mediated through the clearing house is often called teaching note - a guide for teachers, as didactic approach to teaching and what the model answers from the attender of training course expect. Manual for teacher should familiarize with the topic of educational case studies, briefly discuss the key aspects, to emphasize the educational learning goals, offer methods of organizing lessons applicable in the particular study, e.g. discussion, personal presentations or home preparation with specifying the appropriate theory solving of case studies and provide answers to questions expressed in the final part of text of the case study.

In some cases, to teachers are provided links to the websites describing the model situation, entrepreneurial entity or state of solution of the problem (Lundberg and Winn, 2001). Some authors suggest that the production of educational case studies began drafting a detailed teaching note, because teaching note can serves as a detailed outline of case study.

## Conclusions

Czech but also foreign medical devices place high demands on the qualification requirements of managers in terms of regular and continuous improvement and replenishment, when during determining of the requirements for the job that the manager takes, plays a vital role specialization and its management method. If we were to summarize the list of required managerial skills, in particular are the following:

- Specialization (expertise) in direct relation to knowledge of business processes of medical device.
- The capabilities and their development, particularly social (behaviour), interpersonal relationships and communication skills, mental toughness.
- Flexibility, innovation and responsiveness to change.
- Personal characteristic of the manager, the authority towards subordinates.
- Ability of strategic planning, critical and creative thinking, creating a crisis scenario.

In the general context we can say that the medical device manager should be completely focused on hard area but also soft skills.

The purpose of the case study is to highlight the themes of studies of company practices, elimination of

static situations and increase of situational dynamics methods, particularly the method of resolving incidents. Based on practical experience of contribution authors highlight to the following procedure:

- familiarization with the case,
- finding information,
- problem definition,
- individual solutions,
- dividing into groups,
- analysis (breakdown) and possibility of solution,
- general conclusions.

During teaching of medical devices managers is necessary emphasize on the experience of the teacher (trainer) applied in the case studies and educational methods, active listening of hearer (managers) and their mutual participation. The priority are undoubtedly the focus to case studies in relation to employment and use in practice, to model situations and problems that listeners of case study practice or realistically according to the facts of solution in their medical device. Case methods have a indisputable advantage in that they develop analytical and critical thinking, creative imagination, collective correlation of individual solutions or comparison of proposed solutions with business practice. The disadvantage of this method is time-consuming for the preparation as well as the implementation phase particularly input costs for education.

Criticism of educational case studies is often associated with resistance to pupils (students) who are used to traditional methods of education such as training for case studies (Rees and Porter, 2002a) or manager shadowing (McCarthy and McCarthy, 2006). It can meet with the opinion that case studies divert the attention of pupils and students from learning of the necessary theoretical principles towards the concept of practice without theory (Shugan, 2006).

In summary it can be concluded that the educational case study normally presents a particular situation that has occurred in an environment of business practice and for which, on the basis of theoretical knowledge and information gained from the study of the subject of discipline can find an appropriate solution. Educational case study has primarily didactic aim for the purpose of development and promotion of knowledge-based activities for pupils and students in the fields of study in terms of expansion opportunities and ability to solve the problems and situations through case studies on illustrative examples from corporate practice. That's the reason, why it is suitable method for medical devices managers' education.

## References

- Bábek, J. (2009). *Vzdělávání manažerů*. Bosston: ECS Edconsia, s.r.o.
- Cain, S. (2012). *Quiet: The power of Introverts in the World That Can't Stop Talking*. United States: Crown Publishing Group.
- Cockburn, A. (2000). *Writing effective use cases*. Upper Saddle River, Addison-Wesley.
- Eisenhardt, K. M. (1991). Better stories and better constructs: The case for rigor and comparative logic. *Academy of Management Review*.
- Hrazdilová Bočková, K. et al. (2015). *Kompetence manažerů národních a mezinárodních vzdělávacích projektů*. Dubnica nad Váhom: Dubnický technologický inštitút v Dubnici nad Váhom.
- Hrazdilová Bočková, K. and Vaničková, R. (2015). Creation of Educational Case Studies for Management Education at Dubnica Technology Institute. *Open-Online-Journal R&E-SOURCE*. Pädagogische Hochschule Niederösterreich. Baden. Austria.
- Hrazdilová Bočková, K. Sláviková, G. and Porubčanová, D. Use of game theory in economy and management with the focus on Czech environment. *Advances in Business and Economic Development*. Dubaj.
- Jennings, D. (1996). Strategic management and the case method. *Journal of Management Development*.
- Jennings, D. (1997). Researching and writing strategic management cases: A systems view. *Management Decision*.
- Liang, N. and Wang, J. (2004). Implicit mental models in teaching cases: An empiric study of popular MBA cases in the United States and China. *Academy of Management Learning & Education*.
- Lundberg, C. C. et al. (2001). Case writing reconsidered. *Journal of Management Education*.
- Lynn, L. E. (1999). *Teaching and learning with cases*. New York: Chatham House Publisher.
- Marcic, D. and Pendergast, C. (1993). Perceptions of faculty and students towards case teaching in Czechoslovakia: A coming Velvet paradigm shift? *Journal of Management Development*.
- McCarthy, P. R. and McCarthy, H. M. (2006). When case studies are not enough: Integrating experiential learning into business curricula. *Journal of Education for Business*.
- McKenna, S. (1999). Organisational learning: „Live“ case studies and the consulting process. *Team Performance Management*.
- Medzihorský, Š. (2008). *Nové trendy ve firemním vzdělávání současnosti*. Fokus.
- Nelson, E. (1996). Producing and using case material for research and teaching: A workshop for partners in know-how transfer projects. *Journal of European Industrial Training*.
- O' Cinneide, B. (2006). Developing and testing student oriented case studies: The production process and classroom/examination experiences with "entertaining" topics. *Journal of European Industrial Training*.
- Palán, Z. (2002). *Lidské zdroje: výkladový slovník*. Praha: Academia.
- Prince, M. J. and Felder, R.M. (2006). Inductive teaching and learning methods: Definitions, comparisons, and research bases. *Journal of Engineering Education*.
- Porubčanová, D. and Vojteková, M. (2014). *Development of emotional intelligence in teacher's diagnostic work*. In Edukacja ustawiczna dorosłzch. Polish Journal of Continuing Education.
- Prokopenko, J. and Kubr, J. (1996). *Vzdělávání a rozvoj manažerů*. Praha: Grada.
- Rees, W. D. and Porter, C. (2002a). The use of cases studies in management training and development: Part 1. *Industrial and Commercial Training*.
- Rees, W. D. and Porter, C. (2002b). The use of cases studies in management training and development: Part 2. *Industrial and Commercial Training*.
- Rousová, E. (2009). *Trendy ve firemním vzdělávání*.
- Simons, H. (2009). *Case Study Research in Practice*. London: Sage.
- Shugan, S. M. (2006). Editorial: Save research – Abandon the case method of teaching. *Marketing Science*.
- Smith, G. (1987). The use and effectiveness of cases study method in management education: Acritical review. *Management Education and Development*.

- Stake, R. E. (1995). *The art of cases study research*. Newbury Park: Sage.
- řtur, M., Vanikov, R. and Kmecov, I. (2014). Finann gramotnost ako zkladn pilier konkurenceschopnosti. Vysok škola polytechnick v Jihlav. *Konkurence: sbornk prispvk*. Jihlava: College of Polytechnics Jihlava, Department of economic studies.
- řtur, M., Vanikov, R. and Kmecov, I. (2014). Podnikatelsk potencil a vlohy pre podnikanie u řk a student vysokch řkol. College of Polytechnics Jihlava, Department of economic studies, *Konkurence: sbornk prispvk*. Jihlava: College of Polytechnics Jihlava, Department of economic studies.
- Urban, J. (2003). *Řzen ld v organizaci: personln rozmr managementu*. Praha: ASPI.
- Urban, J. (2009). Jak zvyřt prınos manařerskho vzdelvn. *HRM: human resources management: časopis vydavatelství ECONOMIA*.
- Vank, J. and Vanikov, R. (2015). Management of the innovation in the company: knowledge sharing or autonomy? *Human Resource Management & Ergonomics*. řilina: University of řilina, Faculty of Management Science and Informatics.
- Vanikov, R. and Kmecov, I. (2014). Firemn školen a vzdelvn zamstnanc. *Rozvoj lidskch zdroj ve vd a vzkumu*. Liberec: Symposium: Inovan a technologick centrum pri VUTS a.s.
- Vanikov, R. and Zeman, R. (2014). The applicaton of coaching skills by middlle and top management managers. *Socilno - ekonomick revue*, Trenin: Fakulta socilno - ekonomickch vztahov, Trenianska univerzita Alexandra Dubeka v Trenin.
- Vanikov, R., Andrejak, I and Smoligov, J. (2015). *Manařerstvo kvality v tovaroznalectve*. Prešov: COFIN, a.s.
- Wassermann, S. (1994). *Introduction to case method teaching. A Guide to the Galaxy*. New York, Columbia University Press.
- Yin, R. K. (1993). *Applications of cases study research*. Newbury Park: Sage.
- Yin, R. K. (2003a). *Case Study Research: Design and Methods*. Thousand Oaks: Sage.
- Yin, R. K. (2003b). *Applications of cases study research*. Newbury Park: Sage.
- Yin, R. K. (1994). *Case Study Research: Design and Methods*. Thousand Oaks: Sage.

RECEIVED: 7 March 2016

ACCEPTED: 20 April 2016

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## CREATIVITY AND INNOVATION EXPLORATION: THE IMPACT OF CULTURAL DIVERSITY OF AN ORGANIZATION

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### Annotation

The perception of creativity and innovation are a vital tool of an organization survival is a top priority for managers especially of today's global and technological environment. Creativity and innovativeness has no boundary and exist only in a free wheel atmosphere where diverse cultural workforces interact and free ideas are nurtured. Practically, the need for an inclusive approach is highly required by the organisation.

The main purpose of the study is to demonstrate that different people can solve problems differently due to different characteristics and different personality aptitude.

When an organisation implement a wide dimensional approach into the corporate culture to embrace different cultural diversity, would nurture-out creative solutions, which means innovation. In this way a company's culture, meaning its unique capabilities to manage and create value from its people, attitudes, shared values and cooperative behaviour, becomes an increasingly important strategic weapon.

Corporate culture as a term used to characterize how the managers and employees of particular companies tend to behave. This terminology or rather sub-cultural scenario helps to shape the senior management leadership styles to proactively categorize the kind of behaviours that would nurture innovativeness, openness, dynamic and better communication to achieve its objectives. Accordingly, when a firm promotes and setup distinctive corporate culture that enhances the sense of community, diversity and shared identity, it is definitely building a sustainable synergic tool to overcome problems.

The paper examined the effects of homogenous and heterogeneous workforces of an organisation to create innovation and be very competitive. This is because creativity and innovativeness increases an organisation ability to surpass the existing economic propensity, with the opportunity to take on new market, grow more customers, discover new market niche, make profits and as well as satisfy shareholders.

KEY WORDS: creativeness, innovativeness, diversity, homogenous and heterogeneous culture, organisational culture

### Introduction

In the past two-three decades the concept of creativity and innovation has gained wide attention by the theoretical researchers and in the management practice. However, little or no attention has been paid to the cultural influences and backgrounds of employees of firms and organizations. The research paper would like to review what influences creative and innovative firms and organizations. What influences the employees of those companies to be creative and innovative in nature? Is it the effect of different cultural backgrounds and characteristics of team working or as a function of heterogeneity of the organization work force?

We live and breathe in digital world where economic and social interaction has changed as functions of globalization and technology. We are living in a world many could have not imagined some years ago. Globalization and technological integration created a kind of workforce demographics and these are transforming the way we work, where we work and how we share business information, which is heterogeneous workforce scenario. This means multiple challenges facing managers of organizations. But most important of it all is that this is creativity and innovativeness in making, which are improving business processes and the way we solve problems at work places.

On this frontline, the most challenging part is to measure if these innovation and creativity are functions

of different cultural groups interaction and or of its own a natural tendencies of organizational evolvement.

These days of tight competition among organization create the willingness to embrace culture of innovation. According to Schumpeter (1942) innovation is a process of making new combinations and complement. Complementarity can be said to exist between two elements. This means when additional effort in either element increases the marginal returns of effort in the other element. The complementarity in innovation activities can refer to the multiple objectives, development methods and different knowledge sources, where the diverse parts are integrated in a way that benefits the whole system. The idea of complementarity is closely related to the theories of heterogeneity and diversity.

### Problem Statement

These days, researchers and business focus more on innovation achievement but less attention is paid to measure and access to what degree has different cultural interaction has within an organization in order to achieve innovative solutions of competitiveness. Therefore, it's worth researching and would help policy makers and business managers in nurturing and scooping talents in order to achieve optimal output of creativity and innovations solutions. In return, consumers would be better off because the cost of doing business would reduce and extra capital would be deployed for useful projects. These solutions help free up resources and assets

to be re-directed for revenue generating initiatives and make organizations more responsive to customers and market needs. Also, there would be value oriented creativity that firms and organizations management would opt to deliver through its hiring practices and policies towards multicultural and diversity creation. As a result, firms and organizations today can do far more by hiring and mixing employees across the globe to form heterogeneity.

In an increasingly competitive marketplace, firms and organizations cannot afford to carry any additional weight that doesn't help them to succeed, therefore the research paper would like to examine to what degree and level heterogeneous team would help firms and organizations be very creative and innovative. In addition, can we measure their ability to be creative and innovation based on their cultural background and or based on natural tendencies of humans?

Innovation signifies the ability of an organization to utilize disposable resources and new technologies available. Authors such as Johnson et al, 2008 wrote that innovation is more complex than just invention. According to him, invention involves the conversion of new knowledge, while innovation adds the critical extra step.

### Aim and Objective

The objective is to bring this hot topic to forefront of business managers and policy makers. Also to test if creativity and innovation are primarily culturally driving factor and or have other input within an organization.

Therefore, the hypothesis of the research paper is to test whether "organizations achieve creativity and innovation because of heterogeneous structure of the workforce or homogeneity of the workforce forms the part of innovativeness".

Many social scientists amongst them are Mintzberg, H. (1979), Chandler, A. D. (1962/1998) and Lazonick, W. (1990), have sourced the best practice for innovativeness by recognizing that it consist a structural formation and also a cognitive foundations. All in all, emphasize is to show how organization can resist and still be profitable in today's competitive environments by deploying properly its organizational and management capabilities. These internal capabilities help organizations responds and shape its external environmental stimulus and identify their clusters of opportunities in other to be competitive. To identify their clusters of opportunities is only building innovation culture.

Therefore, the study would focus and analyze the following topics:

Homogenous and heterogeneous effect and social contest of a firm and organization

Modern organization and information sharing pattern – organization culture

### Method

Collecting the main guidelines and evaluate the connected literature regarding the later use of views and research.

### Results

Innovation is main purpose of organizational creation and signifies the ability of the organization to utilize disposable resources and new technologies available. In essence, deployment of new technology presents complex opportunities and challenges of organizations, leading to managerial approach and emergency of new organizational forms. Organizational and technological innovations are intertwined; prompting Schumpeter (1950) to describe organizational changes, together with new products, processes and new market as factors of "creative destruction." However, to be creative and innovative needs inclusive approach and methodology that leads organization to be heterogeneous in workforce. Because of the approach, the paper would examine what drives what, in the sense that does it mean that different interaction of cultures are provoking creativity and innovativeness or organizational tendencies.

A workforce with four dimensions of Hofstede keeps a comfort zone and would be not easy to get innovation rather, believes in supremacy. However, it is quite obvious that to maintain the status quo leads to believe in value consensus which is arguably irrelevant to the organisation and organisational culture of looking for excellence, thereby going outside the homogeneous cultural value to all other cultures out there. Organisations have in the recent years designed structures which try to achieve a balance between co-operation (same value consensus: homogeneity) and competition (external effects), which combine team behaviours and individual motivation, is one of the hardest parts of building organisations and or designing economic systems.

Also the impact of diversity workforce to reach innovative goals and objectives placed on the centre of the management interpretation and integration of group working related issue such as age, education and gender diversity.

According to clusters of skills-led-opportunities the innovativeness and creativity implies that they are reactive; and surely, it often is a reaction to problems or challenges, and also a contribution to change and evolution. Yet creativity is also one of the engines of cultural evolution that does has root in cultural diversity – its relationship with education, age and gender levels of the workforce creates clusters of skills-led-opportunities.

Innovation is a vital process today's organisation and organisational culture and that innovation requires change, so as organisational culture requires change. The basis for such change comes down to the stimulating effects of new ideas.

The formalised control systems, measurements and reward systems that monitor and therefore emphasise what is important in the organisation, and focus attention and activity.

Power structures are also likely to be associated with the key constructs of the paradigm. The most powerful managerial groupings in the organisation are likely to be the ones most associated with core assumptions and beliefs about what is important.

In turn the formal organisational structure, or the more informal ways in which the organisations work are

likely to reflect power structures and, again, delineate important relationships and emphasise what is important in the organisation.

Organisational culture also needs to be a process that allows for the varied perspectives, priorities and styles of various types of individuals from different social backgrounds and cultural roots. The only way these voices and creativity and innovativeness can be expressed and heard and seen is to treat people fairly, which means to treat people differently and not as collective groupings.

## Discussion

### Hofstede's 4 Dimensions of Culture-Related Values Consensus

Many social scientists have sorted various elements that drive individual life and attitude to life itself. According to Schneider S. C. & Barsoux J. L. (2003), there are two main school of thought known as espoused theory and theory in use. These are particularly concern on what people say, how they explain their behaviour – and what people mean - what really drives their behaviour. Overall, the assumption of cultures from outsider is hard to detect even though it is hard for insider but with a similar value consensus, there makes it a bit easier for an insider to detect. Because of the complexity surrounding cultural detection and to demystify the complexity within an organisation, management theories worked hard to sort answers. Schneider S. C. & Barsoux J. L. (2003), amongst other authors recommended Hofstede 4 dimension findings on culture and structure. These dimensions are power distance, individualism verses collectivism, uncertainty avoidance, masculinity verses femininity and long versus short term orientation.

There are more and more directions to understand homogeneous cultural approach and work related attitude with these dimensional interpretations. Therefore it is worth mentioning whenever behaviour comes up.

The power distance dimension can be defined as the extent to which less powerful members of a society accept and expect that power is distributed unequally. In large power distance cultures, everyone has his or her rightful place in a social hierarchy. The rightful place concept is important for understanding the role of homogeneous workforce within the organisation. In large power distance cultures, one's social status must be clear so that others can show proper respect and this style, one cultural workforce serve that purpose.

The contrast individualism/collectivism can be defined as people looking after themselves and their immediate family only versus people belonging to in-groups that look after them in exchange for loyalty. In individualistic cultures, one's identity is in the person. People are "I"-conscious, and self-actualization is important. Individualistic cultures are universalistic, assuming their values are valid for the whole world. Individualistic cultures are also low-context communication cultures with explicit verbal communication. In collectivistic cultures, people are "we"-conscious. Their identity is based on the social system to which they belong, and preserving harmony and avoiding loss of face are important. Collectivistic

cultures are high-context communication cultures, with an indirect style of communication. A profile of homogeneous workforce and behavioural with high power distance leaderships validates other cultures as inferior and irrelevant.

The masculinity/femininity dimension can be defined as follows: The dominant values in a masculine society are achievement and success; the dominant values in a feminine society are caring for others and quality of life. In masculine societies, performance and achievement are highly valued; and achievement must be demonstrated. In masculine cultures male and female roles are differentiated, whereas in feminine cultures roles overlap.

Uncertainty avoidance can be defined as the extent to which people feel threatened by uncertainty and ambiguity and try to avoid these situations. In cultures of strong uncertainty avoidance, there is a need for rules and formality to structure life. This translates into the search for truth and a belief in experts. People are less open to change and innovation than people of low uncertainty avoidance cultures.

Long- versus Short-Term Orientation is the extent to which a society exhibits a pragmatic future-oriented perspective rather than a conventional historic or short-term point of view. Values included in long-term orientation are perseverance, ordering relationships by status and observing this order, thrift, and having a sense of shame. The opposite is short-term orientation, which includes personal steadiness and stability, respect for tradition, and the pursuit of happiness rather than pursuit of peace of mind. Long-term orientation (LTO) implies investment in the future.

### Different Context - Group Work and Effect

There are inconclusive reports and analysis whenever scholars and management scientist try to review the empirical evidence regarding the impact of labour diversity on productivity and studies on wage effects are exceedingly. Furthermore, research findings must often be interpreted with cautiousness because of methodological and data limitations implied. Only few papers examine how specific work environments influence the diversity – productivity relationship. This is problematic because the optimal degree of diversity is likely to depend on the characteristics of the production unit, for instance the knowledge-intensity and technological content of production or the size of the firm matters a lot and influence the research findings (Ilmakunnas Pekka and Ilmakunnas Seija 2011).

As a matter of fact, the relationship between labour diversity (heterogeneous workforce) and interaction of homogeneous workforce vis-à-vis productivity measurement matters a lot on education, age and gender of the workforce and including firm characteristics and organisational culture.

Different cultural context are multi-faceted and multi-dimensions and considers elements such as social similarity for interaction, communication and cohesion among the workforces. For instance, diversity in terms of age, education, or gender decreases social similarity and could hamper job satisfaction, communication, and firm performance. In contrast, social comparison theory posits that people evaluate and compare their opinions and

abilities with those of similar others, like individuals of the same age, education, or gender. More precisely, individuals may strive to outperform the members of their comparison group – leading to innovativeness and creativity in which organisations may tap into. This sort of attitude may lead to rivalry and conflict that could undermine organizational performance. In many cases, social similarities are beneficial and produce innovative solutions.

Productivity effects of workforce diversity may also differ in relation to the size of the firm and management style. In principle, workers are likely to be somewhat more reactive to the divergence of their close co-workers with whom they intermingle more frequently. As a result, the effects of diversity might be more noticeable in smaller firms in which all workers intermingle with each other more often than bigger organisations.

Generally, bigger organisations can manage diversity workforce while smaller firms may be less efficient regarding diversity management as their HR departments (if they exist) may typically screen workers less systematically during the hiring process, allocate workers to less optimal positions, face more difficulties to recruit diverse workers and devote fewer resources to diversity management. The possibilities to relocate workers inside the company in case of disputes are also likely to be more limited in smaller organizations.

The principle impact of the organisational interactions (homogeneous or heterogeneous workforce), the argument boils down to age, educational or gender diversity may impact firm innovativeness, creativity and productivity. On age related argument, many instances we supposed that younger workers learn faster because they have better cognitive and physical abilities. Conversely, age is positively correlated with job experience and knowledge about intrafirm structures, relevant markets, and networks. Younger workers tend to be more prone to technological advancement, enhancement and techno related processes and automations. These sets of skills are complementary in many production processes but mainly innovation space, so that age diversity may generate innovativeness, creativity and productivity gains for firms able to harness various age-specific skills. Even though age related diversity workforce is a critical innovation tools in today's business environment and at global stage, the impact of age diversity is also sensitive to firms working environment. It has notably been argued that the complementarity between younger and older workforce is higher in knowledge-intensive firms. Therefore a conflict may arise in which could affect innovation and productivity, especially in a smaller firm with fewer opportunities as compared to bigger firms who has able HRM tools and challenging jobs to manage such issues. The net effect on innovativeness and creativity is positive depends on whether the gains of age complementarities outweigh the costs that come with a more diverse workforce. We could argue that in a workforce where age is notably significant as a diverse workforce, the net cost would be higher and would impact innovativeness due to increase in communication and reduction of social cohesion within the group.

Educational diversity is the main value-add and value-creation capabilities a firm could have to innovate new things and be very productive. Education is the capability and act of acquiring new or modifying and reinforcing, existing knowledge, behaviours, skills, values and preferences and may involve synthesizing different types of information and knowledge-ability. Educational diversity enhances firm productivity if there is sufficient mutual learning and collaboration among workers with different educational backgrounds. The gains associated to educational diversity to achieve innovation are typically greater if the skills of different educational groups are both pertinent and complementary for the tasks performed within the firm and the organisational objectives. Arguably, the effect of educational diversity may also depend on work environments, group social behaviours, management style, leadership capabilities, organisation behaviours and other social factors.

Furtherance to potential impact is the potential relationship between gender diversity and firm innovative, creativity and productivity notably refer to concepts of group efficacy and identity. Social cognitive theory examines how the efficacy of a group, which is a group's belief in their conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments affects its performance. So social scientist and authors such as Lee and Farh (2004) argue that mixed-gender groups can foster the impact of group efficacy on performance. The argument is that gender diversity is likely to increase the heterogeneity in the values, beliefs, and attitudes of the members of a group, which in turn may stimulate critical thinking and prevent the escalation of commitment; that is, inflated perception of group efficacy resulting in poor decision making. There is the other side of identity, which is (a person's sense of self) into an economic model of behaviour that exists between man and woman identity that influences economic outcomes. This is because there are prescribed behaviours and ideally physical characteristics that signify the expected behaviour. In many instances, as a result, women in male-dominated occupations might be exposed to strong hostility from and be discriminated against by their male counterparts and can have a negative impact on innovativeness and creativity, therefore affect firm performance, especially if men constitute a socially "dominant" group. The potential impact try to mull tasks and roles towards gender related. As for soft skill task related, women tends to be more in number as compared to macho task related where men tends to be in size.

### Cluster of Skills Led Opportunities

The primary goals of cultural differences are economic benefits, which comes as a function of clustered skills within organizations that leads to innovativeness. As cultural diversity takes hold of organizational attitude, this is enabling long-term creativity and innovation driving approach due to intermingling diversity workforce. But economic theory suggests that the effects of diversity on business performance and innovativeness are ambiguous. First, culturally diverse leadership teams may be better at generating new ideas or solving problems, particularly in

knowledge intensive environments but diverse organizations may face higher communication costs and lower trust, hindering innovation if not managed properly by the management and setup as organizational culture.

Just as cultural norms may shift due to many factors such as organization structures, functions, operations and team interactions, perhaps better known as “organizational culture”, motivational values also shift, such that team members develop a shared set of motivational values that guide their work as a team. Like “work culture” in a multicultural organization, such team cultures are emergent and situated— they are activated and salient when one is working in one’s team (Brannen & Salk, 2000; Leung, Bhagat, Buchan, Erez, & Gibson, 2005).

All of this implies that innovativeness and creativity are more important now than ever before. This is because they are very useful and effective responses to evolutionary changes. In addition to what may be its most obvious function, namely as part of the problem solving process, competitive and comparative advantages multiplied into the organizational culture through the skill-set of flexibility and some sort of clustering – through hiring and engaging diversity workforce, clusters of skills-led-opportunities are formed.

The charisma of innovation and creativity is a syndrome and complexity and flexibility is an important part of it. The flexibility of creative persons is what gives them the capacity to cope with the advances, opportunities, technologies and changes that are a part of our current day-to-day lives.

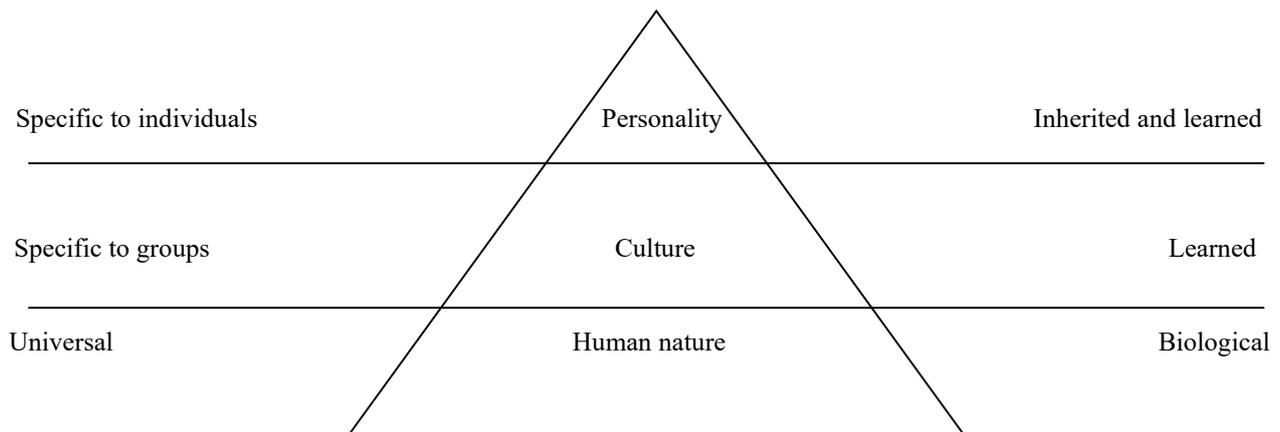
### Homogeneous Workforce

Homogeneous is a Medieval Latin words used to describe ‘same’ that’s goes into things like atoms, populations and galaxies. Sociological perspective describes homogeneity as a group of population with the

same cultural characteristics, behaviour pattern, elements, principles and particularities.

Same cultural values are defined as guiding principles that are shared by a recognizable social group and that define what is desirable and important in life (Kluckhohn & Strodtbeck, 1961; Schwartz, 1992, 1994), in other words, homogenous culture. According to Bardi & Schwartz, 2003; Rokeach, 1973, human tenets are motivational in nature and express what is important to us. Decades of research demonstrate that national cultures vary according to the guiding principles that are motivating in nature and life. Schneider, S. C. & Barsoux, J L. (2003) argue that many managers are ready to accept that national cultures may influence the way people relate to each other or the “soft stuff”, they are less convinced that it can really affect the nuts and bolts of organization: structure, systems and processes. What matters are individual values that define what end-states are important to us and motivate us to act in a goal directed manner, and basically a value consensus of homogeneity. This motivation can be called same culture, which could be defined as “a shared system of meaning” (Hoecklin, L. 1997). Culture dictates what we pay attention to, guides how we perceive the world, how the self is experienced and how life itself is organized. Individuals of a group share patterns that enable them to see the same things in the same way and this holds them together. As a matter of facts, each individual in the group carries within them learned ways of finding meaning in their experiences, leading to what is perceived as ‘homogeneity’.

Author and scholar Geert Hofstede describes culture as the ‘collective programming of the mind’ and explains that it is structured between human nature on one side and individual personality on the other (Hofstede, 1991). The notion of inter-relationship between personality and social context are elaborated in the figure 1.



**Fig. 1.** An illustration of human mental programming by Hofstede, 1991: three levels of human mental programming

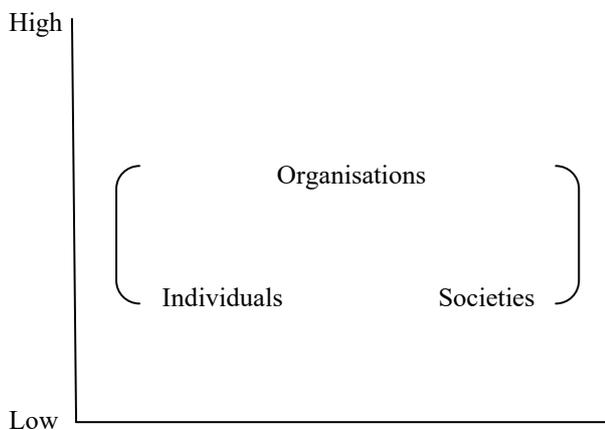
As individuals act as a collective programming attitude, so they become same, primarily transcend into a homogeneous culture. A homogeneous group or workforce is a configuration of same group, society and workforce with no or little ethnic or racial diversity. The same group or workforce share same value consensus. There are many benefits of value consensus, defined by

agreement on the importance of values, including increased cooperation, stability, coordination, and goal achievement. According to Gibson & Earley, 2002; McGrath, Berdahl, & Arrow, 1995, equally, teams with shared values benefit from less conflict and a stronger group identity and improved team performance.

Benefits of value consensus could be explained briefly in an animal kingdom as to why do animals live in groups and help each other to hunt a major competitor?

Collective hunting is a common form of animal cooperation which appears with different levels of complexity, ranging from being at the same place at the same time to cooperation in complementary actions with role differentiation. The cooperation of multiple hunters presumably allows them to successfully capture prey that none of them would be able to capture on their own; this is the benefit of cooperation. On the other hand, those hunting together have to share their spoils; this is the cost of cooperation. Thus, there is a nonlinear relationship between the individual portion of food available after the hunt and the number of individuals participating in the hunt. The trade-offs that are involved here are not the only challenges in explaining hunting cooperation. In fact, uncertainty surrounds the advantage of cooperation (the benefit-to-cost ratio) when hunting in group is of a different topic outside the scope of the research work rather the benefit of value consensus is our main focus.

As organisations are born and start to live up to their expectations, there comes the interaction of different kinds of expansions, of different geographies, countries, including different groups of workforce with different personalities and cultures – leading to emergency of cultural duplicability or heterogeneity. The cultural inter-link of the organisation, society and individual are shown in the figure 2.



**Fig. 2.** An overview of organization cultural duplication method: Change capability by Evans, Doz, and Laurent, eds., 1989

### Heterogeneous Workforce

Societal changes and organizational demands driving by globalization and competitions amongst other factors create difficulty in having a homogeneous workforce. Today's labour force is becoming more and more heterogeneous: aging, migration, women's increased labour participation, and technological change are key drivers of this phenomenon. Moreover, in many countries companies are under legislative pressure to diversify their workforce either through quotas or affirmative action. Workforce diversity has thus become an essential business concern. Firms have to manage diversity both internally (i.e., among management and staff) and

externally (i.e., by addressing the needs of diverse customers, suppliers, or contractors).

As accordingly, heterogeneity compose of different cultural background – mainly having different cultural backgrounds and motivational values tend to vary by national culture for example, with Eastern nations endorsing more collectivism and Western nations endorsing more individualism (Hofstede, 1980; Schwartz, 1992).

As a result of these structural changes, an increasing number of firms employ a “diversity manager” whose task is to ensure that diversity does not hamper productivity but may contribute to attaining the firm's objectives. From the workers' point of view, labour diversity may also generate benefits or losses. The latter may be the result of a more (or less) enjoyable working environment, but may also derive from a higher (or lower) wage. According to competitive labour market theory, workers are paid at their marginal revenue products. Hence, if labour diversity affects productivity, it may also influence workers' earnings.

Heterogeneous workforce is simply a mix of diverse individuals. As diverse group, individuals of the group have already in-born different cultural orientation. Diversity could be in form of the followings:

gender, age, ethnic origin, physical abilities, educational qualifications, practical skills level, educational background, sexual orientation, religious beliefs, work experience, physical characteristics, upbringing as a child, geographic location, family circumstances, income source, language(s) spoken, physical appearance, personality, learning ability, ancestry and accent.

### Organisational Culture and its Impact in Innovation

The culture of organisation is often likened to the personality of individual (Mullins, L. J. (2010). The author argued that organisational culture is a general concept with many different meanings and it is difficult to define or explain precisely but his words, organisational culture means “how things are done around here”. Organisational culture reflects the underlying assumptions about the way work is performed, what is acceptable and not acceptable, and what behaviour and actions are encouraged and discouraged.

Generally, organisational culture is the collection of traditions, values, policies, beliefs and attitudes that constitute a pervasive context for everything we do and think in an organisation (Mullins, L. J., 2010).

Culture as we know is a powerful influence and when linked to the overall business aims, coupled with an espoused commitment from senior leaders, offers a powerful organisational resource. That's why organisational culture enshrined certain doctrines in terms of guiding principles that include being mission-driven, result-oriented, improvement-directed, relationship-centred and participation-base. Therefore, understanding the organisational culture is very important and one of the practice leadership functions, basically a system of management authority and or ‘culture’. Mullins, L. J. presented 3 levels of organisational culture in figure 3.

**Level 1:** Artefacts: the most visible level if culture is artefacts and creations – the constructed physical and social enviroment such as physical space and layout, the technological output, written and spoken language and the overt behaviour of group members.

**Level 2:** Espoused values: cultural learning reflects someones original values. Solutions about how to deal with a new task, issue or problem are based on convictions of reality. If the solution works, the value can transform into a belief. Values and beliefs become part of the conceptual process by which group members justify actions and behaviour.

**Level 3:** Basic underlying assumptions: when a solution to a problem works repeatly it comes to be a taken for granted. Basic assumptions are unconsciously held learned responses. They are implicit assumptions that actually guide behaviour and determine how group members percieve, think and feel about things.

Fig. 3. A presentation of levels of organizational culture by Mullins, L. J. 2010

This is because if the organisational culture is accepted by employees, then the cultural values become the power and the authority of the management, that is, the guiding principles. The employees identify themselves with the organisational values, they internalise the values and get motivated to achieve the objectives of the organisation. This process is known as system of management authority.

Mullins also highlighted different types of organizational culture – power culture, role culture, task culture and person culture. These different types of organizational cultures puts emphasized on the followings:

**Power culture:** concentrated of central power sources with ray of influence from the central figure throughout the organization – leading to power held by few selected individuals.

**Role culture:** often stereotyped as bureaucracy and works by logic and rationality – leading to position power.

**Task culture:** related to job-oriented or project-oriented – leading to expert power.

**Person culture:** where an individual is the central focus and structure exists to serve the individuals within it – leading to personal power.

The development of organizational culture lies in historical elements of the owners, primary function and technologies, strategies and size of the organization, including location and management and leadership styles. These elements forms what could be called “cultural web” of the organization and could have positive and negative impact in its cultural diversity, to creativity and innovativeness.

Another author, Johnson, G. et al (2008) took the organizational culture as Mullins presented. Gerry Johnson presented that culture of an organization consist of four layers presented in figure 4.

- |  |            |               |
|--|------------|---------------|
| 1. Values                                      | 2. Beliefs | 3. Behaviours |
| 4. Paradigm (or taken-for-granted assumptions) |            |               |

Fig. 4. An overview of the four factor groups of organizational culture by Johnson, G. et al, 2008

Values according to Gerry Johnson may be easy to identify in an organization and are often written down as statements about an organization’s mission, objectives or strategies. These statements could sometimes be very vague such as ‘service to the community’ and or ‘honouring equal employment opportunities’.

Beliefs are more specific, however could be interpreted in various forms but in both values and beliefs lies mainly on collective culture rather than individual culture.

Behaviours are a day-to-day way in which operations and activities are managed in an organisation both from inside and outside environments.

Take-for-granted assumptions are quite main frame of organisational life stream, but many people find it very difficult to identify and explain. Because of its complexities but its intrigues within the organisational life, it is referred to as ‘paradigm’. Gerry Johnson presented paradigm as the set of assumptions held in common and taken for granted in an organisation.

In seeking to understand the relationship between culture, organisation and the individuals that work for the organisation, there comes the organisational ‘cultural web’ which both authors, Mullins and Gerry Johnson presented in their respective books. According to Gerry Johnson, cultural web shows the behavioural, physical and symbolic manifestations of a culture that inform and are informed by the taken-for-granted assumptions or paradigm of an organisation. At its most basic this might be assumptions about what the organisation is there to do, or the reasons for its success historically. As culture can be also 'artefacts' of the organisation - such as organisational routines, systems and structures. However, these are likely to be taken for granted as the 'way things are done here' paradigm. Figure 5 presented the cultural web of an organisation in the context of individual.



Fig. 5. Presentation of the cultural web of an organization by Johnson, G., Scholes, K., and Whittington, R., 2008

The paradigm is the set of assumptions about the organisation which is held in common and taken for granted in the organisation.

The routine ways, in which members of the organisation behave towards each other, and that, linked different parts of the organisation. These are the "way we do things around here" which at their best lubricate the working of the organisation, and may provide a distinctive and beneficial organisational competency. However they can also represent a taken-for-granted-ness about how things should happen which is extremely difficult to change and highly protective of core assumptions in the paradigm.

The rituals of organisational life, such as training programmes, promotion and assessment point to what is important in the organisation, reinforce "the way we do things around here" and signal what is especially valued.

The stories told by members of the organisation to each other, to outsiders, to new recruits and so on, embed the present in its organisational history and flag up important events and personalities, as well as mavericks that "deviate from the norm".

Other symbolic aspects of organisations such as logos, offices, cars and titles; or the type of language and terminology commonly used: these symbols become a short-hand representation of the nature of the organisation.

### Organizational Cultural Web Impact of Diversity Workforce

It is necessary to understand the conceptual basis of the cultural web and its links to strategy development within the organisation. This is because culture impacts most aspects of organisational life, such as how decisions are made, who makes them, who hires and whom to be hired, how rewards are distributed, who is promoted, how people are treated, how the organisation responds to its environments, and so on. The covert set of organisational culture can be quite dysfunctional and also costly. This is because organisational culture – the assumptions, beliefs, values and norms that drive 'the way we do things here', is the largest and most controlling of the systems because it affects not only overt organisational behaviour but also the covert, that is the shadow-side behaviour adopted as the culture of the organisation and as the social system. Culture tells what kind and sort of politics are allowed and just how members of an organisation are allowed to the political game.

As diversity focus on the multiplicity of differences among people – on the variety of people as heterogeneous groupings, while individual differences are the basis of diversity. In some what elements of cultural map on the front line of 'power structures' mapping could impact diversity within the organisation. Most cases the top management where the whole decisions are made could believe in expert from a single race, gender, nationality, and so, there hiring could be considered normal within that considered race, gender, nationality, and so. This kind of culture could practically impact the climate in which men and women, people of different ethnicities (in case the organisation have any or small in proportion) and so on conduct their work-based interactions.

According to Hill L. A. (2000), the creative and innovative process demands a mix of diverse individuals. The organisational culture of treatment of diversity culture as individual culture rather than collective culture that favour the most powerful culture of the organisation are mainly set up by the top management.

### Conclusions

Innovation is main purpose of organizational creation and signifies the ability of the organization to utilize disposable resources and new technologies available. In essence, deployment of new technology presents complex opportunities and challenges of organizations, leading to managerial approach and emergency of new organizational forms. Organizational and technological innovations are intertwined; prompting Schumpeter (1950) to describe organizational changes, together with new products, processes and new market as factors of "creative destruction." However, to be creative and innovative needs inclusive approach and methodology that leads organization to be heterogeneous in workforce. Because of the approach, the paper would examine what drives what, in the sense that does it mean that different interaction of cultures are provoking creativity and innovativeness or organizational tendencies.

At the end, the paper would like to show what the driving forces are and make its recommendations to firms and organizations going forward.

### References

- Agu Kenneth Obinna, Maria Fekete Farkas, (2011), *Cultural Conflict Management Program for Firms and Organizations*: INTERNATIONAL JOURNAL OF BUSINESS AND MANAGEMENT STUDIES 3:(2) pp. 1-10.  
[http://www.sobiad.org/eJOURNALS/journal\\_IJBM/archives/2011\\_Vol\\_3\\_n\\_2/01agu\\_kenneth\\_obinna.pdf](http://www.sobiad.org/eJOURNALS/journal_IJBM/archives/2011_Vol_3_n_2/01agu_kenneth_obinna.pdf). p. 10
- Ajen, I. & Fishbein M. (1980), *Understanding attitudes and Predicting Social Behavior*: Pearson Prentice Hall: U.S.A.
- Amoroso B., (2003), "Globalization and Welfare", *Working Paper*: University of Roskilde. An Empirical Investigation", *American Economic Review*, 91 (5), pp. 1369-1401.
- Bardi, A., & Schwartz, S. H., (2003), *Values and Behaviour: Strength and structure of relations*: Personality and Social Psychology Bulletin, 29, 1207-1220.
- Bernanke, B. S. & Frank, R. H. (2009), *Principles of Economics*: 4th Ed.: McGraw-Hill Irwin: U.S.A.
- Bilton, et al. (1996), *Introductory to Sociology*: 3rd Ed. U.S.A.: Macmillan Press Ltd, p. 273.
- Chandler, A. D. (1962/1998), *Strategy and Structure*: MIT Press: U.S.A.: Cambridge, MA
- Chandler, A. D. (1990), *Scale and Scope: The Dynamics of Industrial Enterprise*: Harvard University Press: U.S.A.
- Cooke, P. and Morgan, K. (1998), *The Associational Economy: Firms, Regions, and Innovation*: Oxford University Press: England.
- Edit Feher-Toma, Agu Kenneth Obinna, Maria Fekete Farkas, (2015), *Role of cultural differences in financial investment decision*: JOURNAL OF INTERNATIONAL SCIENTIFIC PUBLICATION: ECONOMY AND BUSINESS (eISSN: 1313-2555):8 pp. 1014-1023
- Evans, P. A. L., Doz, Y., and Laurent, A., (1989), *Human Resource Management in International Firms: Change, Globalization, Innovation*: London: Macmillan.

- Flamm, K. (1988), *Creating the Computer: Government, Industry, and High-Technology*: Brookings Institution: U.S.A.
- Gibson, P. C., & Earley, C. B., (2002), *Multinational work teams*. Mahwah, NJ: Lawrence Erlbaum.
- Harrison, L. E. & Huntington, S. P. (2000), *Culture Matters*: Basic Books: U.S.A.
- Hill, L. A., (2000), "Leadership As Collective Genius" Financial Times, Prentice Hall p. 53. 68
- Hoecklin, L. (1997), *Managing Cultural Differences. Strategies for Competitive Advantage*: Pearson Edu. Ltd.: England
- Hofstede, G., (1980), *Culture's consequences, international differences in work-related values*: Sage: Newbury Park, CA. U.S.A.
- Hofstede, G., (1991), *Cultures and organizations, software of the mind*: McGraw-Hill Irwin: U.S.A.
- Hofstede, G., Bond, M. H., (1988), *the Confucius Connection, From Cultural Roots to Economic Growth*: McGraw-Hill Irwin: U.S.A.
- Ilmakunnas, Pekka & Ilmakunnas, Seija (2011), *Diversity at the workplace: Whom does it benefit?*: De Economist: June 2011, Volume 159, Issue 2, pp 223-255.
- Jankowicz, A. D. (2005), *Business Research Projects*: 4th Ed.: Thomson Learning: London England
- Johnson, G. et al (2008), *Exploring Corporate Strategy*: 8th Ed.: Pearson Education Limited: England
- Kirton, G. & Greene, A M. (2005), *The Dynamics of Managing Diversity. A critical Approach*: 2nd Ed.: Elsevier Butterworth-Heinemann: England.
- Kluckhohn, F., & Strodtbeck, F. (1961), *Variations in value orientation*: Westport, CT: Greenwood Press
- Lawrence, H. E., (2002), *Culture matters, how values shape human progress*: Basic Books: U.S.A.
- Lazonick, W. (1990), *Competitive Advantage of the Shop Floor*: Harvard University Press: U.S.A.
- Lam, A. (2000), "Tacit knowledge, Organizational Learning, Societal Institutions: an Integrated Framework": Organization Studies 21, pp. 487-513.
- Lam, A. (2002), "Alternative Societal Models of Learning and Innovation in the Knowledge Economy": International Social Science Journal 17, pp. 67-82.
- Lee Cynthia and Farh Jiing-Lih (2003) "Joint Effects of Group Efficacy and Gender Diversity on Group Cohesion and Performance": Applied Psychology Journal, Volume 53, Issue 1, pages 136–154, January 2004
- Mintzberg, H. (1979), *The Structuring of Organization*: Prentice Hall: U.S.A.
- Mullins, L. J. (2010), *Management & Organizational Behaviour*: 9th Ed.: Pearson Prentice Hall: U.S.A.
- Newstrom, J. W. & Keith, D. (1993), *Organizational Behaviour - Human Behaviour at Work*: Graw-Hill Irwin: U.S.A.
- Page, S. (2007), *The difference: How the power of diversity creates better groups, firms, schools and societies*: Princeton, N.J.: Princeton University Press.
- Rugman, A., & Collinson, S. (2009), *International Business*: 5th Ed.: Pearson Prentice Hall: U.S.A.
- Schneider, S. C. and Barsoux, J L. (2003), *Managing Across Cultures*: 2nd Ed.: Pearson Prentice Hall: U.S.A.
- Schwartz, S. H. (1992), *Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries*: San Diego, CA: Academic Press.
- Schwartz, S. H. (1994), *Beyond individualism/collectivism: New cultural dimensions of values*: In U. Kim, H. C. Triandis, Ç. Kâğıtçıbaşı, S. Choi, & G. Yoon (Eds.), Individualism and collectivism: Theory, method, and applications (pp. 85-119). Thousand Oaks, CA: Sage.
- Storey, J. (2001), *Cultural Theory and Popular Culture*: 3rd Ed.: Pearson Education Limited: England.
- Taylor Cos, Jr. (1994), *Cultural Diversity in Organizations*: Berrett-Koehler Publishers, Inc.: U.S.A.
- <http://chinalabourmarket.com/china-will-maintain-labor-cost-advantage-in-foreseeable-future.html>
- <http://www.doingbusiness.org/data/exploreconomies/united-states/>
- <http://abcnews.go.com/blogs/politics/2011/09/federal-regulations-are-american-businesses-unduly-burdened/>
- <http://economyincrisis.org/content/american-manufacturing-can-no-longer-compete>
- <http://www.forbes.com/sites/pascalemanuelgobry/2013/05/07/the-jobs-of-the-future-dont-require-a-college-degree/>
- <http://www.forbes.com/sites/erikaandersen/2012/01/18/why-top-talent-leaves-top-10-reasons-boiled-down-to-1/>
- <http://www.heritage.org/research/reports/2008/03/americas-unstable-health-insurance-system-recommendations-for-increasing-stability-and-coverage>

RECEIVED: 27 January 2016

ACCEPTED: 31 March 2016

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## RISK MANAGEMENT IN INFORMATION SECURITY

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### Annotation

This papers deal with basics operational procedures of information security risk management. It briefly describes recommendations for managing the information security in order to minimize the risk occurrences in companies as well as in individuals. The individuals can also protect his/her data applying the basic principles of the standardized procedures of the information security risks management.

KEYWORDS: social engineering, risk analysis, audit, security policy

### Introduction

Identification of security risks lies in a detection of probable, unwanted, negative incidents and phenomena occurring in various forms in security environment, which can lead to sensitive information leakage (NBÚ, 2014).

It is necessary that the identification is process-oriented and divided into areas of potential threats. The aim is to have a summary of all the major areas that could be affected, to process the information about an internal and external security environment and to find the reason which motivates an intruder to acquire sensitive information. It also represents a marking of a loss and damage possibility or accomplishment of another result as was originally expected.

For example, a company A sends an email to a client with a price offer on the project, but a company B manages to get the e-mail and sends a better offer or another bargain to the very same client.

Besides assessment and perception of the risks it is important to monitor these risks for the identification, such as data leakage, hard disk crashes, filtering of outgoing sensitive information (personal identification numbers, classified information) of corporate mails etc. The risk assessment is closely related to risk management.

### Risks analysis

Risk analysis in the IS is the basis for development of a more efficient method of the IS protection. The aim of the risk analysis is to properly identify and assess the threats which the information system is exposed to in order to select adequate measures. The risk analysis identifies the threats and risks that can still be accepted or corrected and analyses a status of the information security system in details (Šimák, 2006).

When identifying the risks, it is appropriate to focus on the problems and threats that can disrupt the availability, integrity and confidentiality of the data.

If there is a possibility of a risk in terms of an unauthorized manipulation with personal data, we have to observe possible weaknesses, for example changes in programs caused by so called malwares - software used to disrupt computer operations.

If we want to identify the risks of the unauthorized manipulation with the personal data, we must at least identify and monitor the present state of security and check whether:

- Virus protection is installed and updated;
- Network is properly connected and configured;
- Content is shared with only specific intended users;
- Sensitive data are stored on a computer that is connected to the Internet;
- There are data transmitted from removable media to your computer or vice versa;
- Router has activated the firewall, it is turned on and also protected against DOS attacks;
- Default passwords are not used for information equipment;
- In the case of a separate firewall it is set to the correct configuration, and rules;
- The operating system is outdated, without the support of the manufacturer, such as Windows XP;
- Operating system is regularly updated;
- Risk applications, such as Adobe Flash Player, Adobe Reader and Java are regularly updated.

The identification of the unauthorized, local access to sensitive data in the IS – we have to observe the threats by means of monitoring the assets of the system with the following programs Dude, Zabbix, Splunk, Nagios, Elastic Search and so on, so that there will not be any integrity, confidentiality, availability, performance and utilization breaches.

Potential weaknesses: an unauthorized person manages to gain an unauthorized access to the data due to using unauthorized hardware or software or moving away from the computer allowing an unauthorized person to read the data from the screen.

Minimizing risk includes:

- Checking the computer for ensuring antivirus and anti-malware protection;
- Controlling the portable media;
- Secure your computer from unauthorized persons. (Strnad, 2010)

In the context of information system security the risk analysis includes:

- Assets' modules analysis;
- Threats analysis;
- Protection measures' vulnerability analysis.

The risk analysis should be carried out repeatedly and after every change in the assets or at least within a year since the last risk analysis.

The risk analysis is a subjective assessment and also it does not mean that after not detecting any threat, there are no such threats at all.

The risk analysis is closely related to the process known as the risk management. This process includes the identification, selection, implementation and monitoring of protective measures in the information system.

Protective measures reduce:

- Probability of a security incident;
- Vulnerability of the information system;
- Consequences of the security incident.

Protective measures increase:

- Detecting the security incident;
- Faster recovery the whole system to its original state after the security incident. (Loveček, 2007)

## Risk management

Risk management is focused on analysing and decreasing the risks using various methods and techniques of prevention, which eliminate existing problems or estimate future risks.

The risk management is a constant, repeating collection of interlinked activities, whose aim is to control the potential risks or to limit a probability of risks and decrease their influence and in the same time prevent the negative problems or incidents.

If it is possible to assess the risks based on the quantitative or various analytical methods we must control this risks and provide monitoring of these risks. The risk management gives us an opportunity to choose what measure to adopt in crisis which can be developed due to a failure of a technical or human factor.

## Information system audit

An information system audit can be seen as a professional and independent assessment of this conception, a solution and a routine operation of the information system or one of its parts (for example, audit of an user's connection to the Internet and its use), in terms of its ability to meet security requirements.

The information security has not developed together with development of the first computers. Initially, there were very few computers and they required special knowledge to work with and were therefore limited to a small group of specialists.

The information security, if it ever existed, was rather seen as the physical protection of the entire computer systems. This perception of safety did not vanished with the development of computers and gradual processing of huge amounts of data, for example the first computers were normally operated in designated areas with controlled access.

For the actual protection of data we must ensure that:

- Only authorized persons have access to them;
- The data to be processed is not falsified;
- We can find out who has created, changed or deleted the data;
- The data has not been released in an uncontrolled manner;
- The data is available when needed.

## Security policy

A content of security policy is defined by some organizations such as the International Organization SANS (SysAdmin Audit Networking and Security), which proposes specific security policy on its website <http://www.sans.org/resources/policies/> for each individual issue separately in the following categories:

- General security policy;
- Network security;
- Security server;
- Application security. (SANS, 2014)

A summary of security rules and regulations define the way how to secure organizations in terms of physical protection through privacy protection to human rights protection. In general it defines a secure usage of the information systems in the organizations (Hudec, 2014).

The security policy and the security management can be applied after the risks are analyzed, that means that the threats and likelihood of their occurrence are defined. According to STN ISO 27000 risk can be seen as a function of factors, assets, threats, vulnerability and protective measures (safeguard). Implementation and managing according to STN ISO 27000 is based on the PDCA cycle - Deming Cycle, which says: plan, act, scan and update.

The risk analysis and risk management belong to the competencies of strategic management which chooses what kind of approach to use. Information security is strategically controlled because a different method of the risk management varies in expanses. This level of management includes BCM, financial management, project management and organizational standards. The following table shows the possible implementation of individual security tactics, according to a security policy with regard to the job position.

**Table 1.** Implementation of individual security tactics, according to the security policy

Job Position	Tasks
Management	Provide training for the heads of departments. Track the number of working hours on the basis of employee ID card. Monitoring time of entry / exit of the employees from / to the building. Divide workers by the corporate hierarchy. ...
Security division	Change passwords at least once a month. Secure access to all corporate systems. Monitor the entrance to the building. Secure protected area against fire. ...
IT	Monitor unauthorized access. Record unauthorized access. Prevent the data loss. ...
Security guards	Secure entrance to the building. Patrolling the premises. ...

### Security project

Security project is a process of planning and controlling large-scale operations. It is not only about the result - project documentation, but also about a creative process. There are number of definitions of "project", which can in some way be summarized in the following definition: The project is a plan for certain changes within a specific period of time in a specific object. This definition implies the intention, which has the following attributes:

- To monitor a predetermined target;
- To define the strategy, which makes possible to achieve the predetermined goal;
- To determine the necessary resources and costs, including expected revenue;
- To set the beginning and the end.

It should be noted that each project is unique, and this uniqueness lies in the monitoring of the objectives in the specific conditions and environment in which the project is conducted. Security guidelines should include:

- General and binding conclusions of the document;
- Technical - operational defense (scale of responsibilities and jurisdiction);
- Based on the circumstances, the links should be created between another security documents, not only in the field of information security (such as work and organizational rules);
- Individual security policies or methodologies such as:
  - o The policy of data backup and archiving;
  - o The policy of making and allocation of passwords;
  - o The policy of protection against unauthorized access to the IS;
  - o The policy of access to the IS as an individual;
  - o The policy of protection against malware;
  - o The methodology for disposal of redundant data;

- o The methodology for reporting of suspicious events and security incidents (Doseděl, 2004).

### Conclusion

Finally, it should be noted that victims of social engineering do not have to necessarily be big companies, but also an ordinary man. The development of information technologies is very dynamic and constantly evolving field and therefore we should adopt efficient measures to minimize our chances of becoming the victim.

### References

- DOSEDĚL, T. 2004. *Počítačová bezpečnost a ochrana dat*, Brno: Computer Press, 2004, 190s. ISBN 80-251-0106-1
- HUDEEC, L. 2014. *Základy počítačové bezpečnosti, aktiva, hrozby, zranitelnosti a riziká* [online]. 2015. [cit. 2015-01-14]. Dostupné na internete: <[http://www2.fiit.stuba.sk/~lhudec/CS/1\\_prednaska.ppt](http://www2.fiit.stuba.sk/~lhudec/CS/1_prednaska.ppt)>
- GREGA, M., BUČKA, P.: Blended simulation - not only as an effective military training commanders and staffs in ICM operations. In: *Výstavba, rozvoj a použití AČR 2012*. - Brno: Univerzita obrany, 2012. - ISBN 978-80-7231-909-1. S. 1-11.
- IVANČÍK, R.: Kybernetická bezpečnosť – neoddeliteľná súčasť národnej a medzinárodnej bezpečnosti. In *Národná a medzinárodná bezpečnosť 2012 : zborník príspevkov z medzinárodnej vedeckej konferencie*. Liptovský Mikuláš : Akadémia ozbrojených síl generála M. R. Štefánika. 2012. s. 173-182. ISBN 978-80-8040-450-5.
- IVANČÍK, R., KAZANSKÝ, R.: Kybernetická bezpečnosť. In *Bezpečnostné fórum 2015, zborník vedeckých prác z 8. medzinárodnej vedeckej konferencie*. Banská Bystrica : Vydavateľstvo Univerzity Mateja Bela – Belianum, s. 78-85. ISBN 978-80-557-0849-2.
- LOVEČEK, T. 2007, *Bezpečnosť informačných systémov*, Žilina, Žilinská univerzita, 2007, 246s, ISBN 80-807-0767-5.
- NBÚ, 2014 [online]. 2014. [cit. 2014-12-14]. Dostupné na internete: <<http://www.nbusr.sk/ipublisher/files/nbusr.sk/oblasti-bezpecnosti/objektova-a-fyzicka/>>
- SANS INSTITUTE. 2014, [online]. [cit. 2014-12-16] dostupné online <<http://www.securingthehuman.org/info/170182>>
- STRNÁD, O. 2010. *Riadenie rizík informačnej bezpečnosti*. Ostrava: AMOS 2010. ISBN: 978-80-904523-9-8
- ŠIMÁK, L. 2006. *Manažment rizík* : Žilina, FŠI ŽU, 2006, [online]. [cit. 2014-12-14] dostupné online [http://fsi.uniza.sk/kkm/files/publikacie/mn\\_rizik.pdf](http://fsi.uniza.sk/kkm/files/publikacie/mn_rizik.pdf)
- TICHÝ, M. 2006. *Ovládání rizika, analýza a manažment*. Praha: C. H. Beck, 2006. ISBN 80- 7179-415-5

### RISK MANAGEMENT IN INFORMATION SECURITY

#### S u m m a r y

Risk analysis in IS (information systems) is a key component for creating a more effective system for the information system protection. When identifying the risks it is important to focus on the impacts and threats, which can invade the availability, integrity and credibility of the information. If there is a possibility of a threat in terms of an unauthorized modification of personal data, we have to observe possible

weaknesses, for example changes in programmes caused for example by so called malwares

Risk management is a field of management focused on the analysis and decreasing the risks by means of various methods and techniques of the risk prevention, which eliminate the current or estimate the future factors increasing the risks.

The IS audit can be seen as a specialized and independent assessment of a concept, solution plan and a routine operation of the information system itself or one of its part (e.g.: audit of the users' internet connection and its utilization), in terms of its ability to fulfil the security requirement

Summary of security policies defines the way which protects an organization starting with persons protection

through privacy protection up to civil rights protection. It defines in general a secure use of the information system within the organization. The security management and security policy can be applied only after the risk analysis has been carried out, in other words an identification of threats and the probability of their occurrence has been successfully done. Safety project is a process of planning and managing the large scale operations. Creative process is as important as the final result – project documentation.

KEYWORDS: social engineering, risk analysis, audit, security policy

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**RECEIVED: 27 January 2016**

**ACCEPTED: 20 April 2016**

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## MECHANISM OF THE SEA PERCEPTION MANAGEMENT: PSYCHO-EDUCATIONAL PREREQUISITES OF THE PERSONALITY SELF-CONCEPT

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### Annotation

This research is based on existentialism and phenomenological philosophy of education, humanistic and cognitive psychology, and the scientific theory of the symbolic interactionism. The psychological mechanism of the sea perception management is revealed. Educational prerequisites of its application are developed. Methods of scientific literature analysis, meta-analysis, interpretation, modeling and synthesis were used in the theoretical descriptive research. The sea perception management is discussed from the point of view of general conditions of the sea perception, subconscious value of the sea, physiological reactions, reflection and behavior. An actualization of the sea perception mechanism is important in the perspective of life awareness and meaning at the educational level.

KEYWORDS: sea, perception of sea, mechanism, influence, psycho-education.

### Introduction

**Relevance and novelty of the problem.** Uniqueness, distinctiveness and value of the personality, the level of his/her authenticity, status, needs, subjective personal provisions (in regard to himself/herself and environmental phenomena) determine the perception and reaction to the external influence. The existential sensation and experiences are unique, personal and valuable (Duoblienė 2006).

A man has unique experiences from sensors and original reactions in the individualistic and recreational relationship with the sea. The personality can relax, enjoy the marine and coastal environment, think about existential questions, perceive his/her existence and transcend above everyday routine and give the meaning to his/her life or a concrete situation.

Scientific data of the relationship with the sea at the level of health, physiotherapy, psychotherapy and psycho-pedagogical importance are presented in past decades (Stadler 1988; Kaufmann 2006; Schmid-Höhne 2006; Tenzer 2007; Lebenskraft aus dem Meer 2011; Lileikis 2011, 2015 etc.).

However, we can rarely find social researches, which develop the mechanism of the sea perception management (diagnostic and experimental levels of the sea perception) and its influence to the self-development and self-realization.

The personality develops natural origins of the sea perception when he/she grows, knows and feels the relationship to the sea. The sea perception depends on provisions, status and needs of a person.

The human develops his/her personality in the relationship to the sea. He/she is the main educator and creator of his/her own original sea-image from the phenomenological point of view.

Processes of the maritime self-education of the personality depend on his/her relationship to the socio-cultural environment, which influences on the personal and original perception of the sea.

The influence of socio-cultural environment on the sea perception is based on the theory of symbolical interactionism.

The personality's behavior in regard to the sea depends on its importance to him/her from the point of view of the maritime education. The importance of the sea to the personal behavior rises from the social interaction. It is of great importance to the interaction of individuals. The sea perception appears and changes in the process of interpretations (Blumer 1969; Kompa 1992; Schmid-Höhne 2006).

Individual perception of the sea depends on how others perceive the sea.

**The object** of the research is the psycho-educational mechanism of the sea perception management.

**The aim** of the research is a consideration of the mechanism of the sea perception management from the psycho-educational point of view.

**The tasks** of the research are as follows:

1. Revelation of the psychological mechanism of the sea perception management.
2. Development of educational prerequisites of its application.

**Methods** of scientific literature analysis, meta-analysis, interpretation, modeling and synthesis were used in the research.

**The type** of the research is theoretically descriptive.

**Methodological principles** are as follows:

- Existentialism shows the fear of the lonely person, who suffers because of uncertainty and of the hostile world, and brings a dimension of hope. An attachment to the pleasures of life is not the right way for the

personality but his/her consciousness, liberation and purification of his/her existence only (Bitinas 2000).

– Humanistic and cognitive psychology accentuates the knowledge and cognitive processes that are most relevant to the personal behavior. The person is not a passive victim of the management regarding the sub-consciousness and external powers. The personality is able to accept, realize and conceptualize all of his/her experience despite its characteristics. He/she is able to positively improve, consciously achieve long-term purposes and creatively implement himself/herself thanks to knowledge.

– The uniqueness of the human existential feeling doesn't allow explaining the humane reality based on the objectivism only but it requires understanding the person regarding to his/her life situation from the phenomenological point of view (Mickūnas, Stewart 1994; Lileikis 2015).

Methodological principles help state scientifically that the maritime psycho-education of people includes the development of their wide physical and intellectual horizons.

So, they are able to overcome the tragedy of existence and give a sense to it.

The perception and images of the sea and their transformation especially depend on the personality's knowledge about the sea, on his/her understanding, consciousness, individual experience, subjective aspirations and original relationships to the sea by giving a sense to all them in the self-expression.

### **The psychological mechanism of the sea perception management**

Inner provisions, needs and feelings are very important to the sea perception. It is appropriate to ask - what happens when the real sea meets the sea, which is *a priori* in a personality's consistency of his/her nature and experience?

The perception of the sea appears as a combination of sensors (sensory perception of the environment), internal influence of feelings and physiological reactions, and reflection.

All this relate to the personal behavior from the point of view of the relationship to the sea. Personal feelings, internal effects, reflection and behavior at the level of the outer sea associate with the sea-image of the personality regarding his/her internal sea.

The mechanism of the sea perception management was analyzed in reference to general conditions of the sea perception, subconscious meanings of the sea, physiological reactions, reflections and behavior.

### **General conditions of the sea perception**

The perception of the sea *a priori* depends on conditions as endogenous and exogenous factors, which are very important for the perception in generally. It means that a real environment is not identical with the perceived environment.

Various conditions influence on the sea perception and behavior in regard to the sea:

– Psychological conditions (imagination, provisions, needs, attention, feeling and aspirations of realization);

– Natural conditions (climate and weather conditions, a presence in the concrete place - at sea, on the shore or coastal mountain);

– Social environment (people, communication, maritime life-style of society, maritime traditions);

– Technological environment (presence on board or in a sea-coastal cafe) etc.

Factors of the formal and informal education as environments influence on the experience of personal life and are very important to development of the sea-image.

On one hand, a man can be sure that the real sea exists from the ontological point of view. On the other hand, the psychological mechanism of the real sea perception is difficult. Above-mentioned conditions allow perceiving the sea in some way.

A collection of some sea images influences on the sea perception by the way depending on various conditions. The collection of sea images exists in the sub-consciousness of the personality.

So, the same sea will rise and promote different images, associations, feelings and behavior to the seafarer and another man who develops only a recreational relationship to the sea.

The mood is very important to the relative sea perception. The sea can raise positive feelings to the positively engaged personality despite of a bad smell of algae and floating debris in water.

Negative aspects of the relationship to the sea may become an object of attention of the negatively engaged personality.

However, a negative mood and feeling of the personality at sea-coast can be improved through the sea experience, impressiveness, contrast, pause and boundary between the land and water. The boundary is unique and meaningful through myths and semi-conscious reflections.

The negative mood can be improved by watching the sea horizons and water-colors and its environment. It helps relax, reduce the psycho-emotional stress and calm down (Tenzer 2007).

### **Subconscious meanings of the sea**

The personality being by the sea gets its meanings and symbols. Sea horizons can symbolize freedom and bring its semiconscious images. Smell of salty sea air and taste experienced in the mouth can symbolize a treatment and health.

A perceived object brings some related symbols and understanding. It is inevitably interpreted.

Meanings and symbols of the human nature and of his/her experience (that are in the sub-consciousness) take part in interpretation processes during the perception. These processes start immediately after taking in account the sea as a meaningful object.

Images and some symbols automatically rise from the sub-consciousness and make a (more or less) conscious influence on the human behavior.

The experienced stimuli are unconsciously interpreted and categorized from the neuro-psychological point of view (LeDoux 1998; Lileikis 2011).

E. g., a young man, who is characterized by the experience of sinking, can image the sea as a huge treat to his/her life.

However, if he/she learns to swim and experiences the positive emotions of swimming, then the sea will be perceived not only as a treat but also as an opportunity to experience the swimming joy.

So, the sea perception and meaning, which characterize the concrete person, rise from the sea meanings of the sub-consciousness. Symbols, related to the sea and being relevant to a concrete person, are activated and the sea is interpreted according to the important things of the person regarding his/her unique experience.

### ***Physiological reactions of the sea perception***

Meanings of the sea, which are generating the physiological reactions, are activated in the sub-consciousness when we are in relationship to the sea because of our experience in the past. If the sea was perceived as a treat to human life in the past, then the sea perception further can promote a fear and body's reactions related to it.

If the sea was perceived in past as an opportunity to enjoy the swimming, then later its perception in life can raise preparative psycho-emotional tension for the experience of the similar joy.

When the relationship to the sea in past was experienced as a very meaningful from the existential point of view, then both cases of the perception of the sea are characterized by the body's reaction, especially with the faster heartbeat and adrenalin as the activity stimulator.

The personality naturally evaluates the sea during its perception according to its meaning experienced earlier. It is based on the stimulation of emotional experiences and of physiological reactions.

However, the level of the consciousness is unequal in these processes of the sea perception management. It has been stated in the 20<sup>th</sup> century that an evaluation of the object (of the sea in this case) during the perception can be unconsciously performed (LeDoux 1998).

The person without deeper analysis can not understand why he/she suddenly feels accordingly in some situations, and why his/her mood changes (becomes better or wrong).

On the one hand, the sea can be firstly perceived unconsciously, and only later the logic of the consciousness explains some reactions in regard to the meaning of the perceiving object.

On the other hand, the body's reaction and self-feeling by perceiving the sea may be wrongly cleared. The human, being on shore and listening to sounds of the sea, can consciously interpret them as a relaxing and calming influence of the sea.

However, the human can experience the calming influence of the sea not because of sounds of the sea but because of biochemical body's reactions raised by conditions of the seacoast climate, especially from the neuro-psychological point of view (Schmid-Höhne 2006).

So, the actual trend of the maritime psycho-education is a combination of the physiological level (of the sea

perception management) with the sub-conscious activity of the personality.

### ***Reflection of the sea perception***

Moreover, despite the mentioned processes, it is naturally tried (more or less) to reflect own individual relationship to the sea during the perception of it.

Personal thoughts reflect the meanings and symbols (of the relationship to the sea) arisen from the sub-consciousness thanks to the personality's nature and experience.

A young man, who is characterized by the experience of sinking, can image the sea and repeatedly realize it as a huge treat to his/her life in the above-mentioned example of sea meanings. However, the person can reflect the sea as an opportunity to experience the swimming joy when he/she acquires the additional positive experience of swimming.

Researchers find out a lot of cases in the mankind history when the personality walk by the sea aimed to reflect the existentially important issues of his/her life. The person is able to think allegorically during the reflection relevant to his/her own life at the level of symbols in general.

So, the experienced fear of the sea can be related to the anxiety of life, and the joy (after the person learned to swim or overcame fear of the sea) can be related to aspirations of overcoming of other difficulties of life or exciting challenges.

### ***Perception of the sea and behavior***

We don't have a possibility to exactly foresee the behavior of the person when meanings and symbols of the sea rise from the sub-consciousness, and when he/she reacts emotionally and physiologically in some way, and when he/she reflects the situation.

We cannot guarantee that the positive experience by perceiving the sea (regarding the mentioned example of opposite experiences of the relationship to the sea) overcomes and the person will be practically motivated to experience the swimming joy.

There are deeper internal and external factors that determine the personality's behavior even when the situation has been theoretically modeled.

The theory of the symbolical interactionism prefers the personality's behavior depends on his/her meaning of the sea, and shows a possibility to behave regarding the meaning of the sea in the concrete moment.

The concrete moment of the sea perception (with other components of the mechanism) can promote or disturb the behavior regarding the sea in situations.

Emotional experiences related to the perception of the sea, reflection and behavior impact on each other in general.

The new experiences by behaving can promote the new decisions for various actions and for innovational thinking (Lileikis 2011, 2015). The new reflection is able to make influence on a different behavior (Schmid-Höhne 2006).

The newest theoretical knowledge (according to the sea perception in the concrete place) can bring strange feelings and promote different behavior regarding the sea.

The person firstly can experience strong feelings and only then reflect them.

However, if the person reflects the sea on land, he/she can experience stronger feelings and a more excessive heartbeat because of his/her very meaningful maritime past.

Emotional experiences and thinking by perceiving the sea can change the behavior, and the behavior can impact on the reflection and feelings. The psychological mechanism of the sea perception management is shown in the model (Fig. 1).

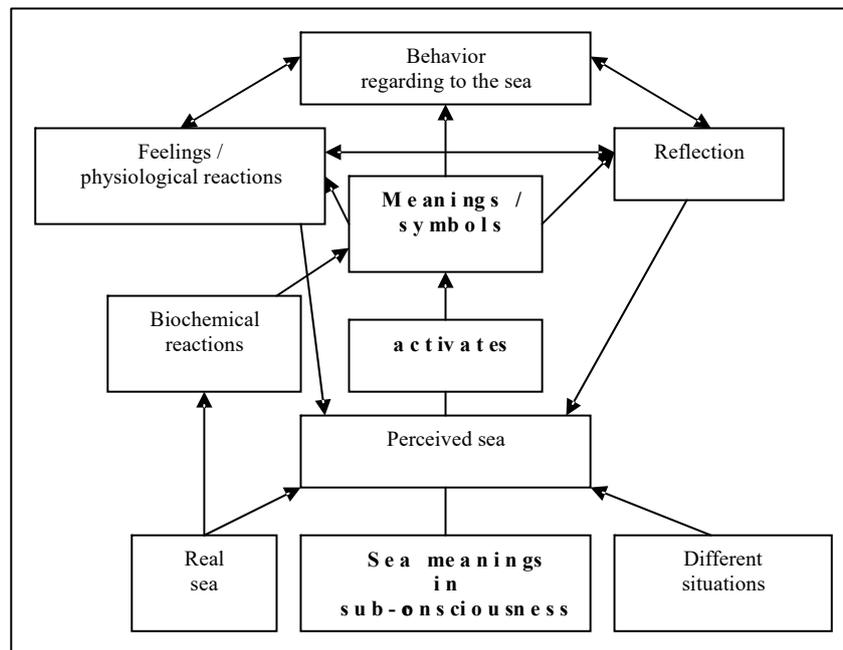


Fig. 1. The mechanism of the sea perception management (Schmid-Höhne 2006)

Basis of the psychological mechanism of the sea perception management includes the real sea, unconscious meanings and different situations.

The sea is perceived using senses and activating meanings and symbols, which influence on the feelings, physiological reactions and reflections.

All this encourage the behavior of the personality in regard to the sea.

A possibility of the practical application of the sea perception mechanism expresses the idea of the personal actualization and gives sense to the realization of relationships with the sea at the level of educational prerequisites.

The model is also characterized by the additional processes, which are meaningful to the sea perception as well.

**Educational prerequisites for the practical application of the mechanism of the sea perception management**

The mechanism of the sea perception management includes main factors, which are known to the science. It is very important to perceive the mechanism and to develop own abilities of the maritime self-consciousness from the psycho-educational point of view:

- Understand processes of the sea perception as a complex mechanism;
- Highlight each component of the sea perception mechanism separately;
- Actualize each component of the sea perception mechanism and describe own relationship to the sea;
- Understand the sea perception mechanism holistically;
- Analyze one’s own individual relationship to the sea holistically based on the sea perception mechanism;
- Reveal one’s own features of the sea perception from the point of view of the biological and psychological development;
- Compare features of the sea perception at different stages of one’s own biological and psychological development;
- Perceive the sea as a value in the system of the valuable experience of life;
- Improve yourself creatively at the level of the original maritime realization.

The logical functioning of the mentioned system of abilities is educationally concretized in the scheme (Fig. 2).

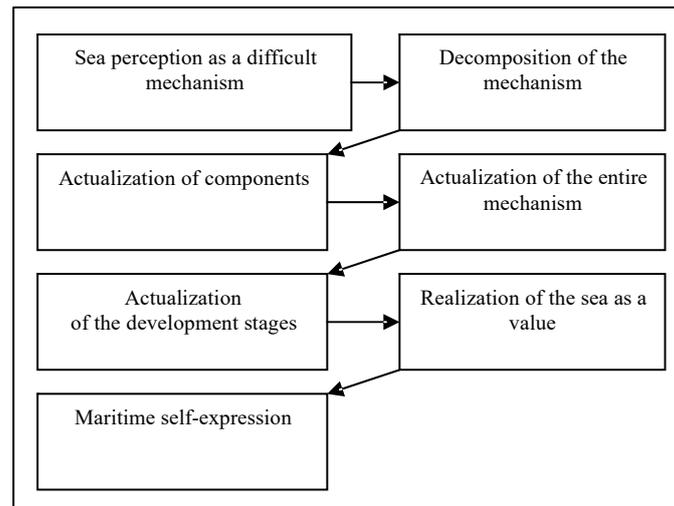


Fig. 2. Stages of educational actualization of the sea perception

Stages of educational actualization of the sea perception are presented in the scheme according to interpretation of the mechanism of the sea perception management. The importance of consciousness in human life is undoubtedly from the educational point of view.

The presented way (of the personality self-concept and of giving sense to his/her life) as a possible theoretical direction can enrich the processes of the maritime self-development at the level of scientific prerequisites.

Further it is appropriate to empirically test (with the diagnostic or experimental researches) the practical validity of the prerequisites for the application of the mechanism of the sea perception management regarding the psycho-education of the personality.

## Conclusions

Basis of the psychological mechanism of the sea perception management includes the real sea, unconscious meanings and different situations. Experiential meanings of the sea are excited in the sub-consciousness by the sensorial perceiving of the sea. It is perceived using senses, subconscious meanings, feelings, physiological reactions and reflections. All this encourage the behavior of the personality in regard to the sea. Subsidiary processes (relevant to the perception of the sea) show a dependence of all components on each other, especially on the unconscious biochemical reaction. The possibility of application of the mechanism of the sea perception management expresses an idea of the personal actualization, and gives sense to realization of the relationship to the sea.

## References

- Bitinas, B. (2000). *Ugdymo filosofija*. Vilnius: Enciklopedija.  
 Blumer, H. (1969). *Symbolic Interactionism. Perspective and Method*. Englewood Cliffs: Prentice-Hall.  
 Duoblienė, L. (2006). *Šiuolaikinė ugdymo filosofija: refleksijos ir dialogo link*. Vilnius: Tyto alba.  
 Kaufmann, J. C. (2006). *Frauenkörper – Männerblicke. Soziologie des Oben-ohne*. Konstanz: UVK Verlagsgesellschaft.

- Kompa, A. (1992). *Sozialbehaviorismus und Symbolischer Interaktionismus*. Augsburg: Institut für Sozioökonomie.  
*Lebenskraft aus dem Meer*. (2011). Prieiga internete: <http://www.mareplus.de/impresum.html>  
 LeDoux, J. (1998). *Das Netz der Gefühle. Wie Emotionen entstehen*. München: Carl Hanser.  
 Lileikis, S. (2011). *Kultūrinės ir psichosocialinės jūrinės edukacijos metodologiniai metmenys*. Klaipėda: Klaipėdos universiteto leidykla.  
 Lileikis, S. (2015). *Jūrinės savivokos formavimosi kontūrai: asmenybės vertingumo linkmė*. Klaipėda: Lietuvos aukštoji jūreivystės mokykla.  
 Mickūnas, A., Stewart, D. (1994). *Fenomenologinė filosofija*. Vilnius: Baltos lankos.  
 Stadler, M. A. (1988). *Persönlichkeitsentwicklung an Bord. Chancen pädagogisch-therapeutischen Jugendsegelns*. Lüneburg: Neubauer.  
 Tenzer, E. (2007). *Einfach schweben. Wie das Meer den Menschen glücklich macht*. Hamburg: Marebuchverlag.  
 Schmid-Höhne, F. (2006). *Die Meere in uns*. Herbolzheim: Centaurus Verlag.

## MECHANISM OF THE SEA PERCEPTION MANAGEMENT: PSYCHO-EDUCATIONAL PREREQUISITES OF THE PERSONALITY SELF-CONCEPT

### Summary

The research is based on existentialism and phenomenological philosophy of education, humanistic and cognitive psychology, and the scientific theory of the symbolic interactionism. The psychological mechanism of the sea perception management is revealed. Educational prerequisites of its application are developed. Methods of scientific literature analysis, meta-analysis, interpretation, modeling and synthesis were used in the theoretically descriptive research.

The sea perception management is discussed from the point of view of general conditions of the sea perception, subconscious value of the sea, physiological reactions, reflection and behavior. An actualization of the sea perception mechanism is important in the perspective of life awareness and meaning at the educational level.

Personality uniqueness, distinctiveness, value, the level of his/her authenticity, status, needs, subjective personal provisions, in regard to himself/herself and environmental phenomena, determine the perception and reaction to the

external influence. The existential sensation and experiences are unique, personal and valuable (Duoblienė 2006). A man has unique experiences from sensors and original reactions in the individualistic and recreational relationship with the sea. The personality can relax, enjoy the marine and coastal environment, think about existential questions, perceive his/her existence and transcend above everyday routine and give the meaning to his/her life or a concrete situation.

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The personality develops natural origins of the sea perception when he/she grows, knows and feels the relationship to the sea. The sea perception depends on provisions, status and needs of a person. The person develops his/her personality in the relationship to the sea. He/she is the main educator and creator of his/her own original sea-image from the phenomenological point of view.

Processes of the maritime self-education of the personality depend on his/her relationship to the socio-cultural environment, which influences on the personal and original perception of the sea. The influence of socio-cultural environment on the sea perception is based on the theory of symbolic interactionism.

The personality's behavior in regard to the sea depends on its importance from the point of view of the maritime education. The importance of the sea to the personal behavior rises from the social interaction. The sea perception appears and changes in the process of interpretations (Blumer 1969; Kompa 1992; Schmid-Höhne 2006). Individual perception depends on how others perceive the sea.

The perception of the sea *a priori* depends on conditions as endogenous and exogenous factors, which are very important to the perception in generally. It means that real environment is not identical with the perceived environment.

Various conditions influence the sea perception and behavior in regard to the sea, especially psychological conditions (imagination, provisions, needs, attention, feeling and aspirations of realization); natural conditions (climate and weather conditions, a presence in the concrete place); social environment (people, communication, maritime life-style of society, maritime traditions); technological environment (presence on board or in a sea-coastal café) etc.

Factors of the formal and informal education as environments influence the experience of personal life and are very important to development of the sea-image. On one hand, a man can be sure that the real sea exists from the ontological point of view. On the other hand, the psychological mechanism of the real sea perception is difficult. Above-mentioned conditions allow perceiving the sea in some way.

A collection of some sea images influences on the sea perception by the way depending on various conditions. The collection of sea images exists in the sub-consciousness of the

personality. So, the same sea will rise and promote different images, associations, feelings and behavior to the seafarer and another man who develops a recreational relationship to the sea.

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However, a negative mood and feeling of personality at sea-coast can be improved through the sea experience, impressiveness, contrast, pause and boundary between the land and water. The boundary is unique and meaningful through myths and semi-conscious reflections. The negative mood can be improved by watching the sea horizons and water-colors and its environment. It helps relax, reduce the psycho-emotional stress and calm down (Tenzer 2007).

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The mechanism of the sea perception management includes main factors, which are known to the science. It is very important to perceive the mechanism and develop one's own abilities of the maritime self-consciousness from the psycho-educational point of view.

It is appropriate to understand processes of the sea perception as a complex mechanism, highlight each component of the sea perception mechanism separately, actualize each component of the sea perception mechanism and describe one's own relationship to the sea, understand the sea perception mechanism holistically, analyze one's own individual relationship to the sea holistically based on the sea perception mechanism, reveal one's own features of the sea perception from the point of view of the biological and psychological development, compare features of the sea perception at different stages of one's own biological and psychological development, perceive the sea as a value in the system of the valuable experience of life, improve yourself creatively at the level of the original maritime realization.

The basis of the psychological mechanism of the sea perception management includes the real sea, unconscious meanings and various situations. The sea is perceived by senses, unconscious meanings, feelings, physiological reactions and reflections. All this encourage the behavior of the personality in regard to the sea. A possibility of the application of the sea perception mechanism expresses an idea of the personal actualization and gives sense to realization of the relationship to the sea at the level of educational prerequisites.

**KEYWORDS:** sea, perception of sea, mechanism, influence, psycho-education.

**RECEIVED: 1 April 2016**

**ACCEPTED: 20 April 2016**

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## MANAGEMENT AND INNOVATION IN TRAINING OF PERSONNEL AND PUBLIC IN CIVIL PROTECTION

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### Annotation

The state of training and education of the population on civil protection in Ukraine is analyzed in the present article. The necessity of reforming of the system of personnel training by use of innovation in education, training, management, and retraining of staff is noted. The article offers an innovative model of program of discipline "civil defense" for the implementation in the learning process for the preparation of masters of various specialties.

Key words: innovation, civil protection, emergency, education.

### Introduction

Providing of appropriate quality of life and an improvement of it in developed modern society due, among other factors, to lower values of various risks. A source of danger for the modern man is so diverse, and the threats themselves are so significant that an individual may not be able to protect yourself from them. Security features may be borne by the various services and agencies that its activities should lead to the reduction of possible risks. At a time when for the most of the structures the risk reduction is a qualitative indicator of their work for the emergency services hazard prevention and liquidation of their consequences is a major activity. Improving the performance of special services of civil protection, various types of enterprises and individuals associated with technical innovations, effective management and professionalism of workers and the public concerning emergency and dangerous situations. The role of education in this regard can hardly be overestimated: it is the development of relevant competences and scenarios, the development of new techniques and technologies, the introduction of innovative methods of risk management, improving governance under the threat or existence of an emergency situation.

### Dynamics of emergency situations in Ukraine

The importance of emergency services will grow with time, which is associated not only with the natural increase in the number of emergency situations, but also with an increase of various risks associated with technological, social, and military threats. According to the State Emergency Service of Ukraine in the last 18 years in Ukraine, there is a positive dynamics of emergency situations of different nature. The graph 1 shows the dynamics of emergency situations (ES) in Ukraine in the past 18 years the types and the total number of them. The positive trend on reducing of disaster related, primarily, with uncontrollable factors, namely, with the reduction of the natural disaster. It should be noted that the reduction of natural emergencies probably occurred not only because favorable natural processes in Ukraine in those years, but also because of the preventive activities of the State Service for Emergency Situations and other structures at the national, regional and local levels, making it possible to prevent not only the technological and social disaster, but also the natural (Zaplatynskyi V. 2013). In statistics, also affects accounting system of emergencies and thus criterias that classify an event of the negative situation to the category of emergency.

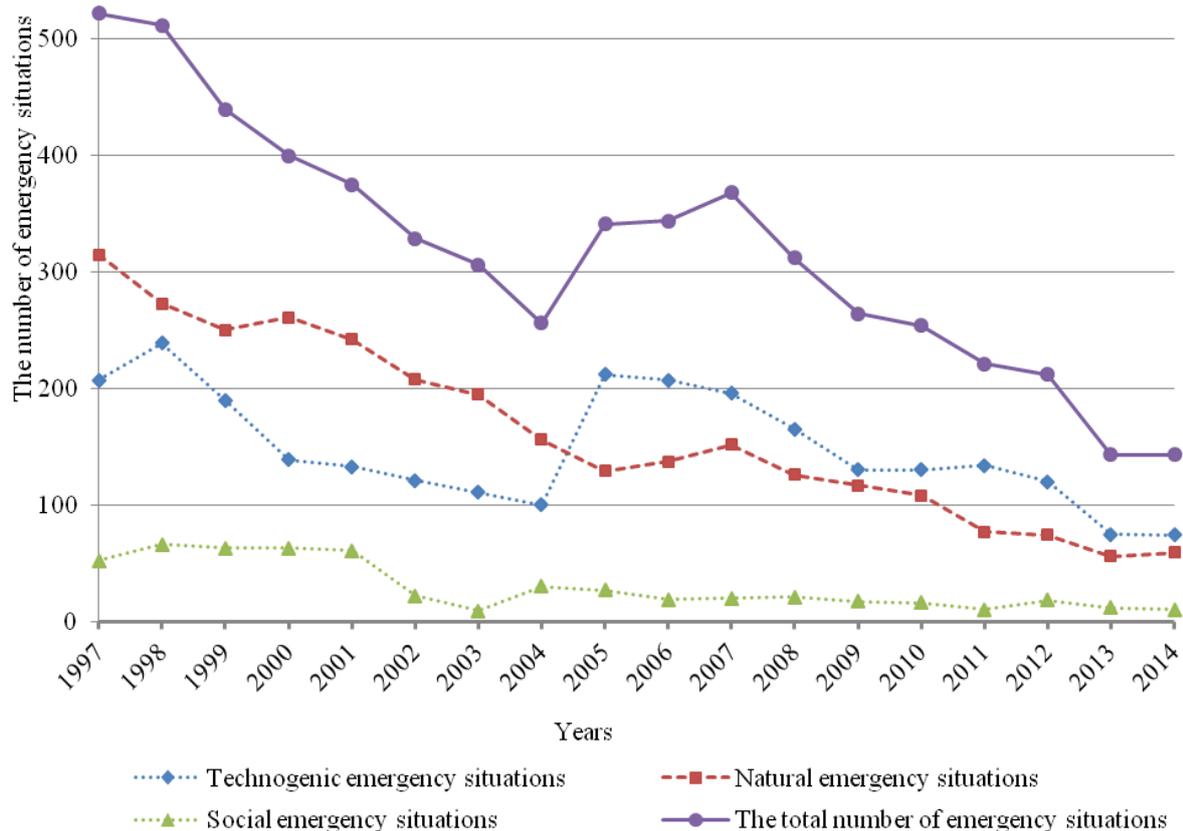


Fig. 1. Dynamics of emergency situations in Ukraine, 1997-2014 years.

The situation in Ukraine today is characterized by a large number of military dangers and risks associated with these man-made, natural and social. However, the activities of the State Service for Emergency Situations (SCES) may be difficult or impossible in the areas of counter-terrorism operation (military operations). In this regard, the role of individuals and groups with different structures and subordinate to counter various risks, including the risks of occurrence of emergencies grows up. The effectiveness of the individual and of the whole system of civil protection of Ukraine is largely dependent on the competence of each individual employee and every citizen of Ukraine for emergencies.

### Management and financial support for education in civil protection

In Ukraine, for personnel training in the field of civil protection, as well as the population, according to Shkarabura M., Kutsenko M., released annually by 4% to 7% of the budget SCES (Шкарабура М., Куценко М. 2015). In 2014, for these purposes it has been allocated 7.8% of the budget of the State Emergency Service (Average expenditure of State Emergency Service of Ukraine for 2014 year), and in 2015 – 7.76%, which amounted to 323255 ₴ (UAH). (Average expenditure of State Emergency Service of Ukraine for 2015 year.), In terms of the euro at the beginning of 2015 it amounted to 17261 € (EUR) respectively on 09.26.2015 year - 13397 €. In absolute terms, the amount allocated for training in the field of civil protection in 2015 is 15596 ₴ more than in 2014, but the foreign currency equivalent, as a result of

the devaluation of the hryvnia, it was significantly less than in 2014, when the amount of funding for training and households in foreign currency equivalent (in terms of the beginning of 2014) amounted to 27868 €.

The above said funds are used in the implementation of the budget program 1006360 "Training of personal in the field of civil protection." This program includes:

- ✓ training of specialists and scientific-pedagogical personnel in the field of civil protection;
- ✓ training and retraining of specialists in the field of civil protection;
- ✓ training and retraining of workers in the field of civil protection;
- ✓ provision of secondary education, focused on civil protection;
- ✓ training of the population to act in emergency situations (Шкарабура М., Куценко М. 2015).

In addition to the budget program 1006360 "Training of personal in the field of civil protection" in Ukraine there is a complex system of financing public education on civil protection, which includes the use of budget funds and funds of enterprises and organizations. The order of training of the population in an emergency is defined in Chapter 10 of the Code of Civil Defense of Ukraine (Кодекс Цивільного Захисту України 2013). According to Article 39 of the Code of Civil Defense of Ukraine training of the population in emergency situations is carried out:

- ✓ working population - in the workplace;

- ✓ preschool children, pupils and students - at the place of study
- ✓ non-working population - in the community.

Determines the order of the training of the population in emergency situations, the Cabinet of Ministers of Ukraine.

Organization of training of employed and unemployed population in emergency situations is the responsibility of the State Emergency Service of Ukraine, local state administrations, local governments that develop and maintain appropriate organizational guidelines and training programs for the population to act in an emergency situation.

Education of the working population in emergency situations is mandatory and carried out during working hours at the expense of the employer. Thus, for the preparation of the working population involved commercial facilities, and some budget enterprises from the budget of Ukraine. Therefore, the total amount spent on the preparation of the population is much greater than the sum of the budget of the State emergency services for training. In addition to the cost of training, coaching, special education (for those whose work is related to the increased fire hazard) organizing and conducting special site-exercises and training for civil protection the financial resources allocated to the equipment information and reference parts for civil protection, and on major enterprises, in accordance with Article 20 of the Code of Civil Defense of Ukraine, for the maintenance of officials, and to a very large or dangerous - units for civil protection.

Non-working population according to the article 42 of the Code of Civil Defense of Ukraine on their own studies memos and other background information on civil protection, fire safety rules at home and public areas, and is entitled to receive from public authorities, local governments, through the media other visual products, information on emergencies in the area or that area of possible defeat from which it may be the place of residence of non-citizens, and how to protect against the hazards caused by such emergencies (Кодекс Цивільного Захисту України 2013). Local executive bodies and local authorities, including through when they started counseling centers conduct outreach to non-working population on behavior in emergency situations.

To meet the need for an independent study of the overall program of training of the population in emergency situations, local executive authorities and local governments with the methodological support of the territorial courses and teaching centers of Civil Protection and Safety produces educational, teaching and visual aids, brochures, distributing informational materials booklets, etc. Outreach to the population how to behave in emergency situations is carried out by introducing a permanent columns in the media, particularly print, as well as through information and communication technology, audio-visual and interactive media and social advertising (Порядок здійснення навчання населення діям у надзвичайних ситуаціях 2013).

The organization of education of children of preschool age, pupils and students assigned to the Ministry of Education and Science of Ukraine, whose tasks include the development and approval of training programs for the study of safety measures, methods of protection against the hazards caused by the disaster, to provide pre medical assistance in coordination with the State Emergency Services. The list of knowledge, skills and competences in the field of civil protection is secured in the Standards of vocational and higher education. Education of pupils, students and pre-school children in emergency situations and fire safety regulations is mandatory and carried out during the educational process at the expense of the funds provided for the financing of educational institutions.

According to the Code of Civil Defense of Ukraine trained in emergency response may hold public organizations and extracurricular education (Кодекс Цивільного Захисту України 2013). With the assistance of non-governmental organizations also promoted awareness among the population on their own and collective security in the event of an emergency (Порядок здійснення навчання населення діям у надзвичайних ситуаціях 2013).

According to the "exercise training of the population in an emergency," approved by the Cabinet of Ministers of Ukraine (Порядок здійснення навчання населення діям у надзвичайних ситуаціях 2013), teaching and educational work with preschool children conducted in accordance with the requirements of a basic component of pre-school education and is directed to the formation of a sufficient and necessary level knowledge and skills of the child to stay safe in the environment of the elementary norms of behavior in emergency situations and prevent fires from childhood pranks with the fire. To improve the quality of educational work with children on personal safety, protection of life and norms of behavior in emergency situations in preschool education is conducted annually "Safety Week of Child." Preparation of students of secondary and vocational education institutions to act in emergency situations, provides the knowledge and skills for personal safety under threats and emergencies, use of means of protection against its consequences, the study of fire safety regulations and the basics of civil protection carried out in the study subjects "Basics of health" and "Defense of the homeland." Consolidation of the theoretical material is carried out through the annual celebration of "Day of Civil Protection."

Preparation of students of higher educational institutions to act in emergency situations should be carried out according to standard academic disciplines, "Health and Safety" (for bachelors) and "Civil Protection" (for M.Sc.), which should include:

Подготовка студентов высших учебных заведений к действиям в чрезвычайных ситуациях должна осуществляться по нормативным учебным дисциплинам "Безопасность жизнедеятельности" (для бакалавров) и "Гражданская защита" (для магистров), которые должны предусматривать:

- \* formation of students enrolled in the educational qualification of Bachelor, knowledge and skills to ensure the necessary level of safety in emergency situations, in accordance with the future job profile, industry standards and regulations;
- \* formation of students enrolled in the qualification of master skills in preventive and emergency planning and management activities of civil protection.

The higher education institutions in order to develop actions in emergency situations with the participants of the educational process should be carried out annually objects does training for Civil Protection (Порядок здійснення навчання населення діям у надзвичайних ситуаціях 2013).

The effectiveness of the control system of education in the field of civil protection depends on many factors, including the vertical and horizontal linkages across the system. More difficult to assess the effectiveness of investments in education, due to the inability to take into account the magnitude of the negative effects of it at different levels. The efficiency of investments in the training of professionals of civil protection evaluate by increase of productivity. Shkarabura M. Kutsenko M. (Шкарабура М., Куценко М. 2015) cite data showing that the productivity of workers of civil protection, with higher education on average, 1.3 times higher than that of workers who do not have such education. The payback period for the cost of training is 7.5 years. Evaluate the effectiveness of the training costs of the population today can only indirectly. The most actual data are available, taking into account the indicators reducing the number of selected emergency and dangerous situations caused by human factor in the 1000 population, depending on the number of people who have been trained on issues of civil protection. According Shkarabura M., Kutsenko M., the cost of this category could be redeployed, in particular by passing the preparation of population to higher and secondary educational institutions with the involvement of civil protection (Шкарабура М., Куценко М. 2015). In the event of such changes it will be a question of double funding, namely involved professionals of SCES through the corresponding item in the budget of the State emergency services, as well as using government funding of higher and secondary educational institutions. In the case of private educational

institutions raises the question of the allocation of state funding.

Consider the structure of the budget program 1006360 "Training in the field of civil protection" based on the data Shkarabury M. Kutsenko M. (Шкарабура М., Куценко М. 2015) the cost structure is shown in Fig. 2. The most significant cost article is the cost of training of a personal of a higher education.

In the system of State Service of Emergencies of Ukraine function the system of vocational training, which includes four higher educational institutions that are preparing students for the field of "Civil Protection", "Fire Safety" etc .:

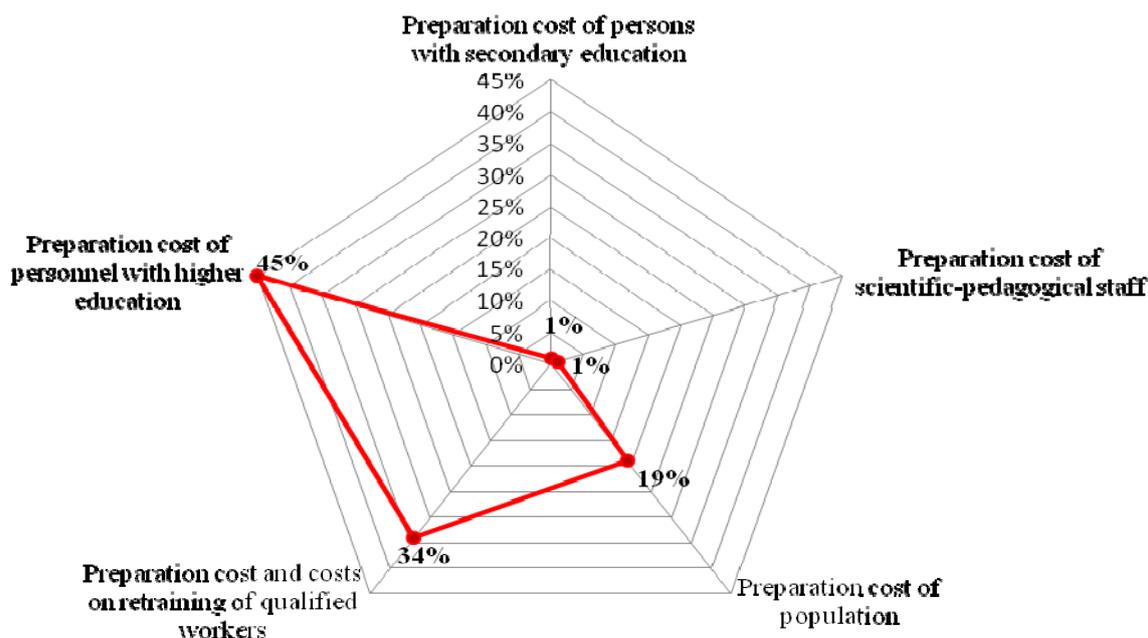
- National University of Civil Defence;
- Lviv State University of life safety;
- Academy of fire of the name of Heroes of Chernobyl;
- Vinnytsia higher vocational school of civil protection.

Function specialized training centers, including the kennel, 24 educational-methodical center of life safety and civil protection, other educational institutions, centers, departments (Zaplatynskyi V., Uryadnikova I.).

The second highest expenditure that goes on training of the population is allocated of 34% of the budget program 1006360. 19% of the budget is allocated for training and retraining of skilled workers. Moreover, the cost of training is much higher than the cost of retraining. The effectiveness of training can be assessed in terms of labor productivity. In the case of retraining the evaluation of the effectiveness of investment is difficult.

1% is allocated for training with secondary education, as well as training of the teaching staff.

In general, the system of training for the civil protection needs to be reformed, particularly in the field of population and substantial improvements in the training of students. Today, in the elementary school building skills of a healthy lifestyle and safe behavior is formed in the course "Basics of health" and partially integrated into the content of other articles of invariant and variable components of the model curricula (An order of Ministry of Education and Science, Youth and Sports of Ukraine № 572201). According to the standard primary school (State standard of primary education in 2011) to study the basics of health and physical education is given 4 hours per week.



**Fig. 2. Structure of spending of budget program 1006360 "Training in civil protection" SCPS for 2015.**

Pupils of grades 5-9 learn the issues of health, security and safety in emergency situations within the framework of the subject "Fundamentals of health." This subject has been transformed from the subject "Fundamentals of health and safety." For the study of the issues of health, safety and physical education is given 20 hours per week (National defense 10-11 class). In accordance with the State standard of basic and upper secondary education, approved in 2011, high school students should learn the basics of health, physical education and defense of the Fatherland. The defense of the country involves the study of the foundations of general military training and applied physical training, medical training, and the foundations of the civil protection (State Standard for basic and secondary education in 2011). A detailed analysis of the current system of training on safety and health, as well as the results of the survey of former students showed significant shortcomings in the preparation of schoolchild.

The complicated situation is observed in higher education. After the cancellation of a joint order of the Ministry of Education and Science of Ukraine, Ministry of Ukraine of Emergencies and Affairs of Population Protection from the Consequences of Chernobyl Catastrophe and the State Committee of Ukraine for Industrial Safety, Labour Protection and Mining Supervision of 21.10.2010 № 969/922/216 (Спільний наказ №969/922/216, 2010). The legal basis of the teaching disciplines "Safety of life", "Fundamentals of occupational safety and health", "Civil defense" and "Occupational safety in the industry" lost administrative framework of the Ministry of Education and Science of Ukraine. After the adoption and implementation of the new law "On Higher Education" have changed, but not limited to, quantitative credit training from 36 hours to 30 hours in the higher educational institutions of Ukraine organization and management training of security is

achieved, based on personal understanding of the issues of management of higher education institutions, deans and heads of relevant personal relations departments or disciplines teachers on safety. It should be stated that during the period of the order № 969/922/216 new content modules industry standards of higher education have not been developed, and the content modules that have been developed up to 2007, have not been implemented in the educational process (Заплатинський В.М. 2015).

Thus, the reform should not only undergo training system for civil protection, but also the entire system of training and awareness related to emergencies.

### **Innovation in Education for Civil Protection**

Before the scientific and educational community is not an easy task to popularize knowledge about the safety and, in particular, on matters of civil protection. It is no secret that many of the students, pupils and their parents, as well as heads of various, including high-level cool enough to include the study of security issues, considering it an unpleasant necessity. Leaders of many higher educational institutions of Ukraine agree to the union of disciplines, reducing the time to study them, and even to the complete abolition of some or all of the disciplines of cycle safety. Not the least role in this negative process is the lack of competence of teachers of these disciplines, their relationship to the subjects taught and, consequently, the formation of students' negative opinion of the disciplines of cycle safety. This is facilitated by repetition of similar material in different disciplines, without regard to the presentation of courses of professional orientation, regional problems, teaching materials for special purposes, which is never useful in professional and daily activities.

Many teachers of the security do not use the innovative technology in teaching. Reforming the system

of training and the population in the security industry must involve substantial retraining and advanced training of scientific and pedagogical staff, introduction of innovative technologies.

Today, the concept of innovation in education is seen as updating and innovation, the result of which should be the improvement of learning efficiency.

Innovation in Education is a natural phenomenon, dynamic in nature and developing the results of their administration can solve the contradiction between the traditional system and the needs of a qualitatively new formation. The essential feature of innovation is its ability to influence the overall level of professional work of the teacher, to expand the field of innovative learning environment in the school, region. As the system the innovation is characterized by the formation of integral quality innovation: innovation process, innovative activity, innovative potential, innovative environment. The source of innovation is focused search ideas to resolve the conflict. Development is done by testing in the form of pedagogical experiment or pilot implementation (Дубасенюк О.А. 2014).

Development and introduction of innovations in the educational field is a complex process. Often innovation is not supported by colleagues and senior officials of the structure of education. Innovation can come to grief as a result of their use by teachers with inadequate level of competence. Thus, the innovation can exist, but it can effectively use a limited number of people. The effectiveness of innovation in the education industry is difficult to give in quantitative and qualitative assessment, because the personality of the teacher is often played a leading role.

Innovation, in the context of the pedagogical process, the introduction of a new means for the purpose, content, methods and forms of training and education, organization of joint activity of teacher and student. Educational innovation - innovation in the teaching activities, changes in the content and technology training and education in order to increase the effectiveness of the educational process (Дичківська І. М. 2012; Поляков С.Д. 2007).

There is a classification of innovations, which allows to divide them into several types. One of the newest classifications of innovations in the field of education is as follows:

- **Analogue.** This innovation is based on what is known is taken in teaching approach, which parked private innovation.
- **Combined.** It is a process in which several well-known educational blocks together, and get a completely new approach.
- **Retroinnovatsiya.** It is to introduce the modern pedagogical practices of several historically neglected approaches.
- **Essential.** It characterized inapplicable earlier innovation in modern education.

The very essence of innovation in education is to find and successful application of new approaches to learning. Innovations are one of the four areas of distribution:

- In upbringing;
- Learning;

- Management;
- In retraining (Innovation in education).

In higher not a specialized education in civil protection is proposed to introduce an innovative model program of discipline. This program is completely different from previous ones. Training programs on civil protection and civil defense previously existed in the Soviet Union for a long time. In Ukraine, the program of discipline "civil defense" (В.А. Лук'янчиков, В.В. Мухін, М.М. Яцюк 1995) was substantially revised in 1995 after the signing of the joint order № 182/200 «About teaching discipline "security of life" and "civil defense". At this time, was developed the first training program "Safety of life" (SL). The second training program on civil defense was created in 2002, in accordance with the order of the Minister of Education and Science of Ukraine from 06.02.2002, the number 76. The third program on civil protection was established in accordance with the joint order of the Ministry of Education and Science, the Ministry of Ukraine of Emergencies and Affairs of Population Protection from the Consequences of Chornobyl Catastrophe of Ukraine and the State Committee for Industrial Safety, Labor Protection and Mining Supervision of 21.10.2010 № 969/922/216. After the cancellation of this order, this sample program also lost its relevance.

New typical all-Ukrainian program of civil protection is written to meet the requirements of the Code of Civil Defense of Ukraine, in particular articles 20, 21, 40 and others. The program also takes into account the provisions of the new Law of Ukraine "On Higher Education". The program is based on an invariant component. This knowledge and competence that can be useful to a person in the course of his daily and professional activities, regardless of the industry and positions. The word "may" in the preceding sentence specifically introduced because security is linked to the probabilistic nature of manifestations of dangers. The variable component consists of three components:

- ❖ block of general issues of civil protection on the subject, which broaden and deepen the invariant part of the question;
- ❖ block of professional issues of civil protection, taking into account the specific characteristics of enterprises industry and functional specialists of the primary tasks of the posts, which are usually occupied by university graduates;
- ❖ regional block of issues dealt with meteorological, geographical, geological features of the region associated with this particular occurrence of natural emergencies.

In the regional category are considered ethnic, religious, etc. features that can affect the appearance of social emergencies. In regions with the state border in presenting topics should be more detailed study of international cooperation in the sector of civil protection, as well as to consider the possibility of emergencies abroad, the actions or the consequences of which could spread to the region. The regional perspective should be devoted to the dangerous objects, objects of critical infrastructure in the region and, accordingly, action in emergency situations at these facilities, due to the fact that the consequences of such situations are very

territorial distribution. A feature of the new model program is flexible guidelines for the distribution of teaching time, which indicate the minimum and maximum possible time to study subjects, respectively, in peacetime and in time of threat to national security. In peacetime, it is recommended to study the civil defense in the amount of at least 1-2 credits (30 - 60 hours), the optimum amount recommended in the study of the discipline of 1.5 credits (45 hours). In the context of threats to national security recommended amount is 1.5 to 3 credits (45-90 hours should be considered the best 2 credits (60 hours). The ratio of lectures, practical (laboratory) work and amateur work is on average, 20%; 30%, 50% and may vary within wide limits.

We compare our proposed training program for civil protection programs developed and used in the educational process earlier. The curriculum of the 1995 Civil Defense was designed for 34 training hours, of which 20 was given to general training and 14 for professional. Of the 34 hours allotted 32 to classroom work, and only 2 hours for independent work. For some special time for independent work does not stand out and all 34 hours have been to classroom. The authors, in developing the program for civil defense, detail came to the distribution of hours, depending on the specialty (field of study), as a result of the number of lectures varies between 8-16 hours, practical lessons - 8-18 hours, 0-14 hours, laboratory exercises. More detailed study of subjects and rigid regulation of time on their study of the program was needed at the time and to ensure appropriate student learning. The disadvantages of this program are the lack of flexibility when considering the professional and regional issues, as well as difficulty in processing subjects in connection with the changes and innovations in civil defense.

Ukrainian model program for civil defense, developed in 2002 recommended 54 hours to the study, including 32 hours for general training and 22 hours of training on the profile. The number of classroom hours is 36 hours (67% of time learning the discipline), including: 14 hours of lectures (26%); 12:00 practical classes (22%), laboratory exercises 10 hours (19%) and independent work 18 hours (33%).

This program did not regulate in detail the features of the profile of training and allowed to vary the theme and the distribution ratio of lectures, practical and laboratory sessions, depending on the particular specialty.

Civil Protection Program, developed in 2011 in its structure is somewhat similar to a program in 1995 that contains the individual blocks of vocational subjects for different training profiles. The recommended program in the amount of time studying the discipline is 36 hours, which is significantly less than in 2002 and the program corresponds to the program of 1995. This amount is stated as the minimum, but the program has not optimal or maximum volume. The program is recommended to take 30 hours of classroom work, which is 83% of the time and 6 hours of independent work, which consequently amounts to 17% of the time. The structure of the classroom work: lectures 6 hours (17%), practical 12:00 (33%), laboratory exercises 12:00 (33%). In this program, the lowest compared with other number of lectures - only 6 hours against 8-16 hour program 1995

and 14 hour 2002 program. Time for independent work unreasonably reduced to 6 hours (17%), which contradicts modern trends in education.

Introduction of new innovative programs for civil protection in the learning process requires high qualification of the teaching staff on the ground in relation to the need for detailed study of the variable part in creating work programs for each specialty. However, this program provides a broad academic freedom of staff, the possibility of the study most of the rest on the professional needs and regional characteristics, to take into account the rapidly changing situation regarding the occurrence of various threats and, more importantly, the interests and wishes of the students in the study of invariant and variant parts .

## Conclusions

The risk of emergency situations of different nature forces to carry out preventive measures to reduce the probability of their occurrence and mitigate the consequences, as well as specific competences for action in emergency situations, for elimination of the consequences. The positive trend of reducing the number of emergencies in Ukraine for the past 18 years does not remove the responsibility from each member of the Society for the Study of Civil Protection, which is governed by laws and regulations, in particular the Code of Civil Defense of Ukraine. Selective analysis of the structure of the educational system for civil protection in Ukraine showed that to increase its effectiveness, it requires substantial restructuring and improvements. One area of improvement is the introduction of such innovations. The paper proposed to introduce in the higher education system a new innovative program on the subject "civil protection", which will intensify the educational process, greater use of new teaching methods, such as problem lectures, case method, work in small flu, role-playing, case studies, etc. This in turn becomes a lever to increase the interest of students, change their attitude toward discipline, effective development needed in the daily and professional activities, competence on security and civil protection.

## References

- Zaplatsynskyi V. Analysis of the dynamics of fatal accidents in Ukraine as an indicator of the level of threat. *Polityka bezpieczenstwa w warynkach integracji europejskiej. Bezpieczenstwo, globalizacja – zarys problematyki*. Zbiór prac naukowych. Redakcja naukowa Milan Labuzik, Pavel Dziekanski, Antonii Olak. – Wyższa szkoła biznesu I przedsiębiorczości w Ostrowcu u Świątkrzyskim. Ostrowiec Świątkrzyski, 2013. s. 134-148. ISBN 978-83-936652-1-1
- Zaplatsynskyi V., Uryadnikova I. Analysis and directions of development of the Ukrainian system of education of extraordinary situations. // *Sbornik clanku 4. mezinárodní konference „Zvládání extrémních situací”* 21. – 25. 11. 2011. – Praha: CASRI, 2011. CD. (– S 129 Annotation) ISBN 978-80-905084-0-8
- Государственная служба Украины по чрезвычайным ситуациям. //Электронный ресурс: <http://mns.gov.ua/>
- Державний стандарт базової і повної загальної середньої освіти. Затверджено постановою Кабінету Міністрів України від 23 листопада 2011 р. № 1392 Електронний

- ресурс. Режим доступу: <http://zakon1.rada.gov.ua/laws/show/462-2011-%D0%BF>  
 Державний стандарт початкової загальної освіти. Затверджено постановою Кабінету Міністрів України від 20 квітня 2011 р. № 462. Електронний ресурс. Режим доступу: <http://zakon1.rada.gov.ua/laws/show/462-2011-%D0%BF>
- Дичківська І. М. *Інноваційні педагогічні технології*: підручник. 2-ге вид., допов. Київ, Академвидав. – 2012. – 352 с.
- Дубасенюк О.А. Інновації в сучасній освіті // *Інновації в освіті: інтеграція науки і практики: збірник науково-методичних праць* / за заг. ред. О.А. Дубасенюк. – Житомир : Вид-во ЖДУ ім. І. Франка, 2014. – С. 12-28
- Закон України Про вищу освіту // *Відомості Верховної Ради (ВВР)*, 2014, № 37-38, ст. 2004.
- Заплатинський В.М. Створення ефективної системи освіти з питань безпеки в надзвичайних ситуаціях. // *Праці міжнародної науково-практичної конференції «Актуальні проблеми моделювання ризиків і загроз виникнення надзвичайних ситуацій на об'єктах критичної інфраструктури»* [Електронний ресурс] / Український науково-дослідний інститут цивільного захисту. — Версія 1.0. — Електрон. текстові дані (100 файлів: 10000000 байт). — К.: ТОВ «Інститут математичного моделювання «Фраксім», 2015. — С. 171-181. — 1 електрон. опт. диск (CD-R). ISBN 978-966-7792-08-4.
- Захист Вітчизни 10-11 класи. Навчальна програма (рівень стандарту, профільний рівень) [http://mon.gov.ua/images/education/average/prog12/zahist\\_st\\_pr.doc](http://mon.gov.ua/images/education/average/prog12/zahist_st_pr.doc)
- Інновації в освіті. Доступно в Інтернеті: <http://kak-bog.ru/innovacii-v-obrazovanii#ixzz3mx8gXuh>
- Кодекс Цивільного Захисту України (Відомості Верховної Ради (ВВР), 2013, № 34-35, ст.458). Із змінами, внесеними згідно із Законами № 224-VII від 14.05.2013, ВВР, 2014, № 11, ст.132; № 353-VII від 20.06.2013, ВВР, 2014, № 13, ст.221; № 1166-VII від 27.03.2014, ВВР, 2014, № 20-21, ст.745; № 76-VIII від 28.12.2014, ВВР, 2015, № 6, ст.40; № 124-VIII від 15.01.2015, ВВР, 2015, № 14, ст.96. Електронний ресурс: <http://zakon2.rada.gov.ua/laws/show/5403-17>
- Навчальна програма з нормативної дисципліни "Цивільна оборона" для студентів ВНЗ освітніх рівнів "неповна вища освіта" та "базова вища освіта" всіх спеціальностей. // Укладачі: Заплатинський В.М., Мухін В.В., Стеблюк М.І., Запорожець О.І., Осипенко С.І., Применко В.І., Сидоренко В.В., Суслю С.Т. — К.: МОНУ, 2002, — 12 с.
- Наказ Міністерства освіти та науки, молоді та спорту України № 572 від 10.06.2011 "Про Типові навчальні плани початкової школи". Internet: <http://mon.gov.ua/images/files/doshkilna-serednya/serednya/navchalni-plany/nmo-572.doc>
- Наказ Міністра освіти України та Начальника Штабу – Заступника Начальника цивільної оборони України від 20 червня 1995 р. №182/200 "Про викладання дисциплін "Безпека життєдіяльності" та "Цивільна оборона". // *Збірник директивних документів з питань викладання нормативних дисциплін "Безпека життєдіяльності", "Основи охорони праці", "Охорона праці в галузі", "Цивільний захист"*. — К.: Основа, 2003. — С. 87.
- Національна доповідь про стан техногенної та природної безпеки в Україні у 2014 році*. Державна служба України з надзвичайних ситуацій. Український науково-дослідний інститут цивільного захисту ДСНС України. — Київ, 2015. — 365 с.
- Поляков С.Д. *Педагогическая инноватика: от идеи до практики*. — М.: Педагогический поиск, 2007. — 167 с
- Порядок здійснення навчання населення діям у надзвичайних ситуаціях. Затверджено постановою Кабінету Міністрів України від 26 червня 2013 р. № 444 Електронний ресурс. Режим доступу: <http://zakon2.rada.gov.ua/laws/show/444-2013-%D0%BF/paran9#n9>
- Програма підготовки студентів вищих навчальних закладів з дисципліни "Безпека життєдіяльності"* / Укл. В.А. Лук'яничков, В.В. Мухін, М.М. Яцок та ін.— К., ІСДО, Ч. І. — 1995. — С. 1–17.
- Розподіл видатків Державної служби України з надзвичайних ситуацій на 2015 рік.// Електронний ресурс: [http://www.mns.gov.ua/files/2015/1/13/rozpodil\\_DSNS\\_2015.pdf](http://www.mns.gov.ua/files/2015/1/13/rozpodil_DSNS_2015.pdf)
- Розподіл видатків Державної служби України з надзвичайних ситуацій на 2014 рік.// Електронний ресурс: [http://www.mns.gov.ua/files/2014/8/8/rozpodil\\_DSNS\\_2014\\_3.xls.pdf](http://www.mns.gov.ua/files/2014/8/8/rozpodil_DSNS_2014_3.xls.pdf)
- Спільний наказ Міністра освіти і науки України, т.в.о. Міністра України з питань надзвичайних ситуацій та у справах захисту населення від наслідків Чорнобильської катастрофи та Голови Держаного комітету України з промислової безпеки, охорони праці та гірничого нагляду № 969 /922/216 від 21.10.2010 р. " Про організацію та вдосконалення навчання з питань охорони праці безпеки життєдіяльності та цивільного захисту у вищих навчальних закладах України". // *Типові навчальні програми нормативних дисциплін "Безпека життєдіяльності", Основи охорони праці", "Охорона праці в галузі", "Цивільний захист"*. — К.: МОНСМ України, 2011. — С. 7-22.
- Типова навчальна програма нормативної дисципліни "Цивільний захист" для вищих навчальних закладів.// *Типові навчальні програми нормативних дисциплін "Безпека життєдіяльності", Основи охорони праці", "Охорона праці в галузі", "Цивільний захист"*. Укладачі: Запорожець О.І., Садковий В.П., Михайлюк В.О., Осипенко С.І., Войтенко В.В., Гончарук В.С., Дашковська О.В., Дивак В.В., Заплатинський В.М., Миронець С.М., Применко В.І., Русаловський А.В., Селіванов С.Є., Т., Яремко З.М. — К.: МОНСМ України, 2011. С. 50-72
- Шкарабура М., Куценко М. До питання реформування системи підготовки кадрів для служби цивільного захисту України. // *Пожежна та техногенна безпека*. Всеукраїнський науково-виробничий журнал. № 8, 2015, — С. 10-11.

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## THE ROLE OF TOURISM AS OF AN INTERDISCIPLINARY SUBJECT IN THE DEVELOPMENT GEORGIAN ECONOMY

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### Annotation

The data revealed in the paper is based on the surveys and statistics conducted by Georgian Tourism national Administration, national Statistics Office of Georgia, Ministry of Internal Affairs of Georgia, World Travel and Tourist Council, Agency of Protected Areas and displays all the academic work and activities Grigol Robakidze University generates to promote the program of tourism (workshops, master classes, meetings with potential employers, practical experience of planning/organizing tours and of becoming a travel guide, organizing and participating in domestic and international conferences for students and scholars, academic forums, international projects, field trips in the country and abroad, etc) and assure its quality and conveys its modest contribution to help students to learn touristic-recreational resources of Georgia and what is more important, to learn how to manage them based on the gained knowledge.

KEY WORDS: tourism, education, economy, development, Georgia, Grigol Robakidze University.

### Introduction

Functioning of different interdisciplinary complexes is more characteristic for the development of contemporary economy than promotion of separate branches. Tourism should be treated as a broad, single-handed, inter-sector agricultural complex of national economy uniting different fields.

Touristic market in Georgia needs to be considered as a category belonging to economy revealing social-economic processes and a combination of relations in the spheres of marketing research, exchange and distribution among producers and consumers of tourist services. Therefore, the urgency of analyzing modern trends of fostering the world, as well as, of Georgian tourist markets and necessity of conveying the problems of their functioning emerged inevitably regarding existing reality.

In Soviet times tourism was reviewed as sports and leisure unlike today, when its role and significance is increased into being one of the leading spheres of business.

It is necessary to note, that the major documents on the tourism, accepted by the World Tourist Organization or with its participation focus tourists on such contacts which would assist the present dialogue based on mutual understanding and mutual trust. It concerns Manila Declaration on World Tourism (1980), Acapulco Document (1982), the Charter of Tourism and the Code of the Tourist (1985), the Hague Declaration Concerning Tourism (1989), the Montreal Declaration (1996), the Global Code of Ethics for Tourism, etc. The highlighted documents emphasize the necessity of tolerant forms of a dialogue with the population of host countries and the population with the arrived tourists. The important problem of tourism considers achievement of higher level of respect and trust among nations. The Acapulco Document reads: tourism should assist the spirit of

validity, harmony and respect between people and should promote the knowledge of the world.

Tourist resources (Georgian law on “Tourism and Resorts”, the year 1997, Article 2) are the unity of natural historical-cultural, cognitive and social-habitual resources and infrastructure existing on the territory of Georgia meeting demands and requirements of a tourist.

Tourism is a rather complicated branch of business directly related to different sectors of society and economy. Without correct and accurate planning tourism may cause undesirable negative impacts on ecology, social-economic processes and protection of cultural heritage. Strategic planning on national and regional levels should cover policy of tourism development, structural plan, standard of sites, institutional factors and all the other elements necessary for the further promotion and management. In general, the frames of strategic planning should elaborate detailed plans for tourist attractions, resorts and other fields of tourism.

During Soviet rule, Georgia was the tourism center of the USSR, drawing more than 3 million visitors annually. The collapse of communism and resulting civil war in the early 1990s brought tourism to a standstill, as many hotels and resorts became shelters for displaced people. Conditions slowly improved, but the August 2008 conflict with Russia dealt a second blow to the country's fledgling tourism industry. Since then, Georgia's government has worked to actively promote tourism, and the goods and services expected by Western travelers are available in Tbilisi, as well as in the rest of the nation. The dramatic Caucasus Mountains, tranquil Black Sea, numerous lakes, rivers and waterfalls make Georgia's unspoiled landscape unforgettable. Nearly 40 percent of the country is forested, which is protected by 19 nature reserves. Driving the Georgia military highway provides some of the best views. Georgia's mountains rise up to 16,000 feet, ideal for hiking, and skiers and snowboarders

flock to the large ski resorts, such as Bakuriani and Gudauri. Those in search of healing or tranquility can take in the springs and mineral waters at secluded retreats. Wine aficionados may be surprised to learn that grapevines were cultivated in Georgia 8,000 years ago; today, wine producers grow more 500 varieties of grapes. Georgia also is home to numerous ancient and medieval monuments, towers and cathedrals, including four UNESCO World Heritage sites. Tbilisi sits at the heart of the Caucasus region and has long been a crossroads between east and west. Its natural setting is impressive, and its modernity will make most visitors feel right at home. Away from the capital, which is also Georgia's largest city by far, the Black Sea resort city of Batumi and the rugged mountain towns of Svaneti and Kazbegi should not be missed. Georgia's Black Sea coast presents a bountiful spectrum of natural environments, from the Caucasus peaks in the north to semitropical rain forests in the south. Tourism in this region also takes many forms, with historic towns that serve as standard-bearers to Georgian history and culture, and dynamic new resorts that cater to a fashionable clientele. Four Black Sea coast destinations provide centers for tourism in this region.

Social resources, information sector and a service system are worth to be mentioned particularly since those three are the factors touristic Georgia lacked dramatically in the 90-ies of the previous century being on the way of independence and we think our country still cannot claim to have an array of those. Abundance of natural, cultural-historic resources does not necessarily imply well-managed successful tourist industry. Efficient application of the resources is of crucial importance here and this is impossible without educated and qualified social resources able to create particular events and activities, touristic infrastructure and/or service systems. The latter means the existence of the education system backing innovations the orientation on which is a basic strategic vector for a number of leading states.

## Research and Results

The education space of Georgia devotes a history of a decade to tourism as to a university discipline and concentrates on the inculcation of new technologies, training of qualified staff and orients on innovations, it does its best to match with European standards and Grigol Robakidze University (we, two scholars from Georgia represent) is among those educational establishments that consider international norms in teaching tourism to integrate education and science to improve quality.

The session of Euro Committee of November 26, 2009 prepared the application about creation of a completely functioning knowledge triangle of education, research and innovations (business). If the orientation on a knowledge triangle and innovations is of such an urgent significance for Europe, it is understandable how much important it is for Georgia, the education space of which covers a decade devoted to the sphere of learning/teaching tourism. Inculcation of new technologies, preparation of qualified staff and orientation on innovations is of a crucial meaning for the tourism education field.

It is remarkable that Georgia's education system in the sphere of learning/teaching tourism should match with European universities and Grigol Robakidze University considers international norms in these terms. Periodically held workshops, master classes and meetings with potential employers, etc are among the activities in the list the university performs for the purpose of promoting the program of tourism.

Grigol Robakidze University has been successfully functioning on a Georgian education market since 1992 with the meaningful scientific-research experience. It is oriented on the inculcation of Western values stipulating its strife to actively participate and initiate projects of scientific-research character, realize them efficiently and foster the formation of contemporary knowledge society. Respectively, the university has fruitfully implemented the following projects:

- Tempus TACIS - 2001;
- World Economic and Harvard University International Research Project - 2003;
- US embassy financed grant project – 2009;
- USAID grant project “Improvement of Energy Opportunities” – 2009 (won by the School of Business and Management);
- USAID (G-PAC) Grant project “Economic policy of Sustainable Energy” - 2003;
- USAID project of training public servants (won by the School of Public Administration and Policy);
- UAG project of “Grants supporting Higher Education Institutions” by the East-West Management Institute (EJMI); etc.

Prior to focusing on the activities implemented by the university to develop the program of tourism we should have a look at economic indicators and some statistics by National Statistics Office of Georgia, National Bank of Georgia, LEPL Civil Aviation Agency and JSC Georgian Railway to relate the data to the reality existing in the country in terms of the needs and requirements the university faculty should apply to in order to promote teaching tourism to determine the level it assists the development of Georgian economy.

Economic Indicators encompass statistics on the number of people employed in the tourism sector, on tourism services import/export, the share of tourism in GDP, foreign direct investments in hotels and restaurants, and the passenger capacity of Georgian railways and airports. The statistics of economic indicators are available in various breakdowns: employment (data of the number of people employed in hotels and restaurants, transportation and other tourism related services); tourism services import/export (quarterly and annual data of revenues from international tourism and expenditures of Georgian residents abroad); share of tourism in GDP (statistics available quarterly and annually); foreign direct investments (quarterly and annual data of foreign direct investments in hotels and restaurants); capacity (passenger capacity of Georgian Railways and airports of Tbilisi, Batumi, Kutaisi and Mestia).

Employment is a rather problematic issue for Georgia. One of the reasons of low employment rate is the lack of trained staff and absence of their work practice and experience. Alike elsewhere, in Georgia

also, in most cases the demand of an employer is to have a meaningful work experience and the demand is not met by the majority of job searchers, and if they are newly graduates in particular. That is why the majority of enterprises begin to train the staff themselves which naturally does not by and large serve the interests of an employer. Integrating theoretical studies and practical vocational ones during the instruction period did not use to be a common practice for the educational system of Georgia. However, a small number of institutions would

provide the combination and Grigol Robakidze University is among them. One of the starting-principles of the academic activities of the university is to prepare students for practical work urgency thus forming the basis of their future employment.

A significant growth of the unemployment rate in Georgia happened during the political-financial crisis in 2008 and reached 16.9%, since 2009 it tends to reduce (See table1 and graph 1-2).

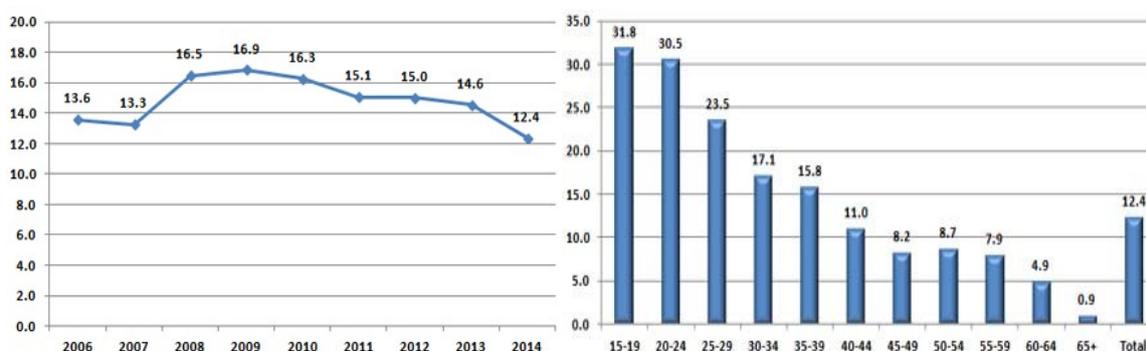
**Tab. 1.** Unemployment rate in Georgia in the years 2007-2014

	2007	2008	2009	2010	2011	2012	2013	2014
Active population (labor force), thousand persons	1965,3	1917,8	1991,8	1944,9	1959,3	2029,1	2003,9	1991,1
Employed, thousand persons	1704,3	1601,9	1656,1	1628,1	1664,2	1724	1712,1	1745,2
Unemployed, thousand persons	261	315,8	335,6	316,9	295,1	305,1	291,8	246
Unemployment rate, percentage	13,3	16,5	16,9	16,3	15,1	15	14,6	12,4

(Source: [www.geostat.ge](http://www.geostat.ge) – National Statistics Office of Georgia)

While analyzing unemployment, economists focus on the education level of unemployed able to work. In this terms Georgia is a paradox. For example, according to the account of Human Development 2010, Georgia is among the leading countries by the workforce education index.

81% of unemployed have general or higher education. At the same time, the account of the World Competitiveness (2011-2012) claims workforce having inadequate education to be the main factor preventing doing business in the country.



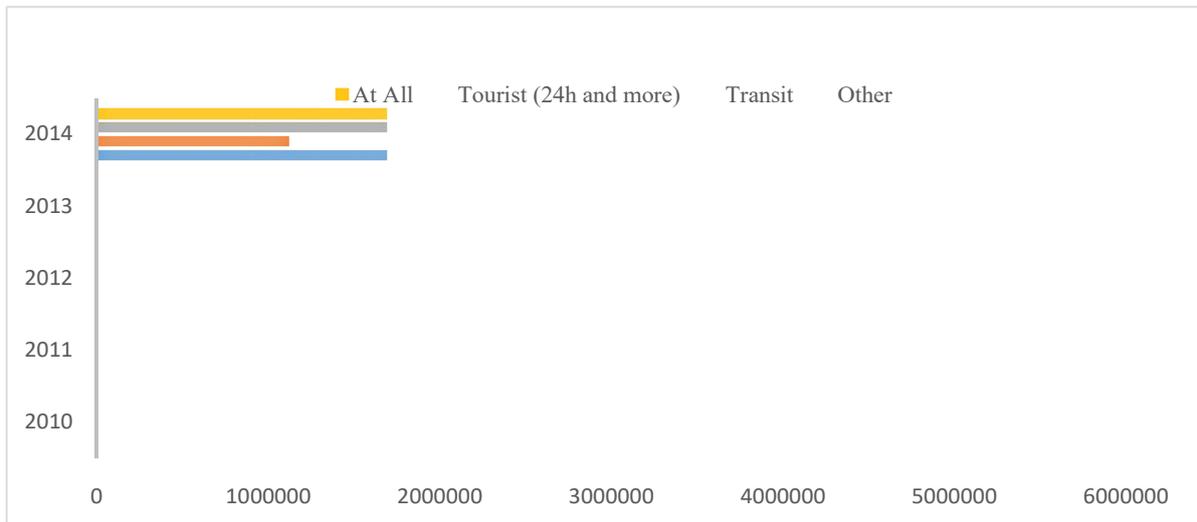
**Graph 1.** Unemployment rate in Georgia in percentage

**Graph 2.** Unemployment rate by age groups in percentage in 2014

(Source: [www.geostat.ge](http://www.geostat.ge) – National Statistics Office of Georgia)

As for the youth, the unemployment rate is considerably (twice) higher than the average statistics rate of unemployment. The inconsistency of the levels existing on the labor market and of qualifications needed for business is the essential basis of the problem of unemployment for the state and society.

The role of tourism increases in Georgia every year. The amount of visitors and tourists is importantly increased during recent years. From statistical analyses of Mod's Analytical department is revealed that tourist-visitors amount in 2014 comparing with 2010 is increased with 208.8% and consists 2 229094 person.



**Fig. 1.** The amount of visitors in Georgia in 2010-2014  
 (Source: [www.police.ge](http://www.police.ge) – Ministry of internal affairs of Georgia)

The increasing amount of tourists, for getting pertinent profit needs the corresponding level of service. For example, if we compare the research of quality in the region of Adjara, which was held in 2012 by the

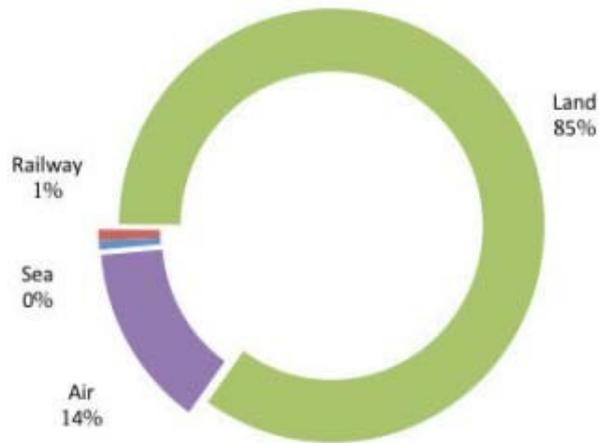
department of tourism and resorts, a number of deficiencies has been revealed, that emphasizes the irrelevant level of the service (See figure 2).



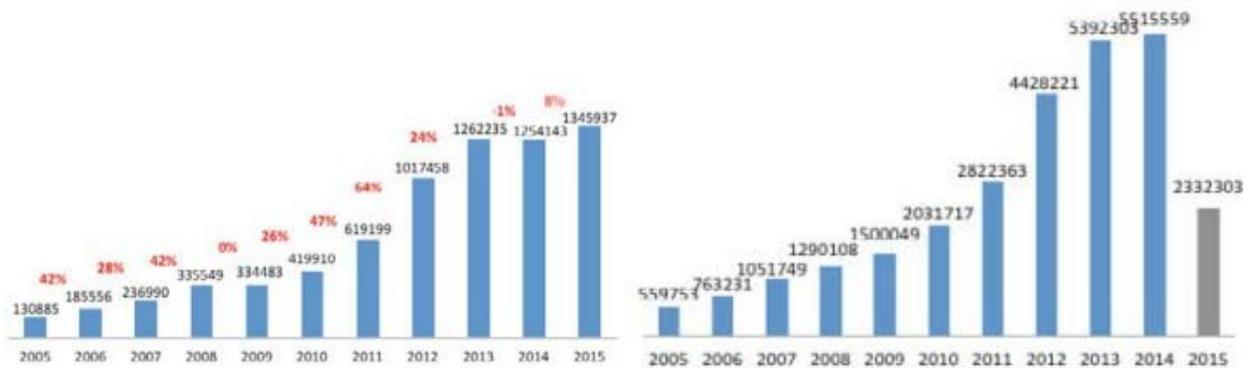
**Fig. 2.** The number of employees in hotels and restaurants according to the types of activities  
 (Source: [www.geostat.ge](http://www.geostat.ge) – National Statistics Office of Georgia)

The number of the employed in hotels and restaurants stands out according to the growth indicator. The labor market research reveals an increasing interest of employers in this sector as well as the demand to improve the service level by the internationally set standards of hospitality and travel services. This is a substantial term of maintaining and broadening tourist interest possible only through experienced and knowledgeable human resources.

Control of massive international tourism is substantial for Georgia. Border crossing statistics are as follows: in the second quarter 2015, 85% (1 141 466) arrived in Georgia by land transport, followed by air transport 184 412. The first 6 months figure was 2 002 103 arrivals by land, followed by air transport with 202 033 arrivals. The business border was Sarpi (Turkish border) revealing 336 665 crossings in the second quarter 2015, and 583 222 crossings in the first 6 months (Figure 3, graph 3-4).



**Fig. 3.** Georgia International arrivals by borders 2015: II quarter  
(Source: <https://wtcc.fluidreview.com/>– World Travel and Tourism Council 2015)



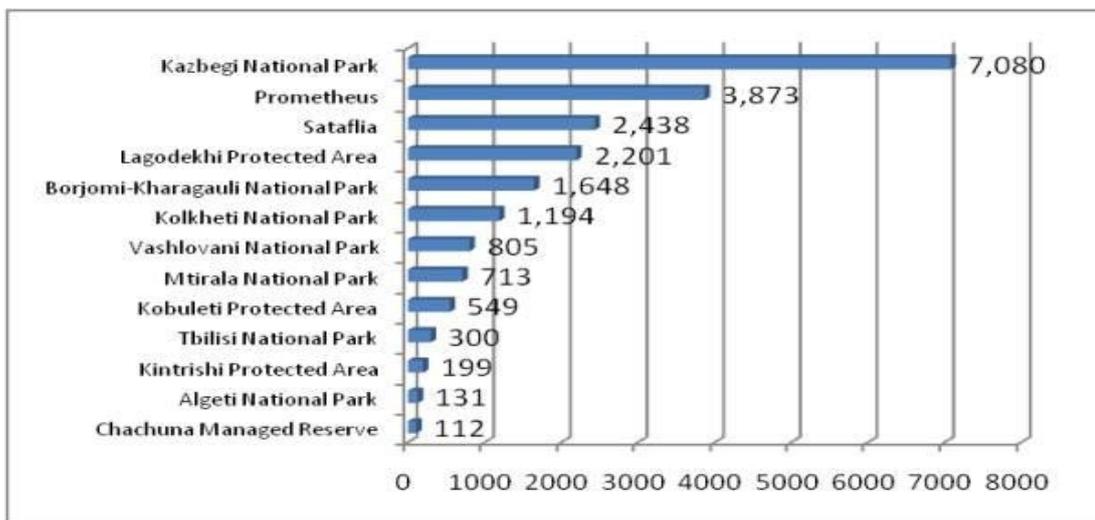
**Fig. 3..** International arrivals in II quarter (2005-20015)

**Fig. 4.** International arrivals by years

(Source: <https://wtcc.fluidreview.com/>– World Travel and Tourism Council 2015)

Out of the factors having the impact on the realization of tourist product, the political state of the country and current legislation are utterly important.

Tourism sphere in Georgia is regulated by Georgian laws on “tourism and resorts” and “resorts and zones of sanitary preservation of resort venues” (See graph 5).



**Fig. 5.** Visitor Statistics by Protected Areas 2014  
(Source: <http://apa.gov.ge/en/> - Agency of Protected Areas)

Georgia is continuing to experience growth in tourism; more visitors crossed the state border the last month than previous years. Latest figures revealed there were 852,377 visitors to Georgia in August 2015 – a 10 percent increase on the same period in 2014. Today the Information-Analytical Department of the Ministry of Internal Affairs presented statistical data, which noted out of 852,377 visitors 383,619 were tourists. That was a two percent increase year-on-year (y/y). Meanwhile last month 383,619 visitors used Georgia as a transit country – a 54 percent increase y/y.

The remaining 243,765 people came for other purposes, such as business, which was a 3.5 percent increase compared to 2014. Statistic showed most guests who visited Georgia last month came from Turkey, which was a 10 percent increase y/y, while the number of guests from Azerbaijan also increased 7.5 percent. The next highest number of visitors were from Armenia (24.7 percent more), followed by Russia (23 percent more) and Ukraine (5.6 percent more). A positive trend was also observed regarding visitors from European Union (EU) countries. Georgia recorded a 36 percent increase in visitors from Kazakhstan. Additionally, 54 percent more guests came from Belarus and 35 percent more came from Moldova. The number of visitors from the United Arab Emirates to Georgia in August increased by 766 percent and from Saudi Arabia by 75 percent. Georgia enjoyed a 10 percent increase in the number of visitors from the United States too. Similarly, the number of guests who visited Georgia between January-August 2015 was also higher than previous years. In this period increasing numbers of guests came from Lithuania (21 percent), the Czech Republic (20 percent), Latvia (14 percent), Germany (12 percent), Italy (10 percent), Great Britain (10 percent) and the Netherlands (10 percent). In the first eight months of the year 3,922,376 visitors came to Georgia – a six percent increase y/y. [1]

This summer Georgia hosted several sport (European Youth Olympic Festival with over 3 500 sportsmen and 7 000 visitors) and music festivals (Tbilisi Open Air (hosting 50 000 in general) and GEM Fest in Anaklia, as well as the UEFA Cup Super Final with 6 000 foreigner fans [2], and some more events like Global Gathering in Rustavi and semi final of the beauty contest “Miss China” took place in September in Tbilisi. The contest was organized by the Tourism National Administration at the Ministry of Economy and Sustainable development and was believed to promote touristic potential of Georgia on Chinese market, as well as the growth of visitors coming from China and European countries [3]. We should emphasize the fact that Georgian youth and mostly university students volunteered to assist the events and participate in those to support and advocate the country's image, as well as to gain practical experience in the sphere of tourism.

The practice of organizing and carrying out the conference among different universities significantly stipulates the assurance of quality and promotion of the tourism program at Grigol Robakidze University. The conference is annually attended and participated by the representatives of various higher educational establishments along with the students of the school of

business and management at Gr. Robakidze University. The conference fosters the enhancement of research and communication skills of undergraduates.

Academic personnel involved into the bachelor program of tourism actively participate in international and/or local scientific forums, conferences such as the annual Eurasian Multidisciplinary Forum – EMF organized by European Scientific Institute (ESI), Center for Law and Economic Studies – University of the Azores (Portugal), Grigol Robakidze State University, 13<sup>th</sup> International Scientific conference “Human Resources Management: Current Trend, Challenges, Inspirations”, Alexander Dubcek of Trencin, Engaging Culture and Heritage for Sustainable Tourism Development” – INTERREG IVC CHARTS closing conference (European Union) – Valis Resort, Agria, Volos, Thesalia Region, Greece, etc. to stimulate faculty self-development, be engaged in international space and gain experience to assure the quality of scientific research.

In order to assist students to develop practical skills, the tourism professors of the School of Business and Management led the team of students to attend ISCONTOUR 2015 (International Student Conference in Tourism Research at Salzburg University of Applied Sciences, Austria and participate in the Tourism International Exhibition - EMITT (East Mediterranean Tourism and Travel Exhibition).

On top of international projects, the university is particularly focused on arranging and organizing domestic academic tours for students of the tourism program [10], thus encouraging the efficient synthesis of theoretical and practical knowledge. Students often visit mountain regions of Georgia such as Svaneti, Khevi, Khevsureti, etc. The significance of the tours financed by the university is revealed in the fact that they help students to study tourist recreational resources of Georgia and moreover, to manage them correctly. They also obtain the practical skills of planning and projecting a tour and gradually acquire the mastery of being a tour guide. The list of complex activities mentioned above enhances the functioning of the tourism program and quality of teaching/learning at Grigol Robakidze University. Integration of education, science and innovative approaches are the substantial factor improving the quality of education. Qualified alumni serve the purpose of eliminating the existence of the paradox we have talked about thus contributing to the development and well being of the state economy, as well as its general prosperity.

## Conclusion

Encroachment and damage of the resources, let alone their destruction, will by and large end all the talks about tourism. It is also remarkable that maintenance and rescue of a certain part of the resources is possible by tourism uniquely. Tourism projects, research and teaching relies on strong links with the sphere due to the applied nature of the discipline. Work-integrated learning experience drawing heavily upon interactions with industry also seems significant for the forging of future employment prospects in tourism industry. All the academic work and

activities Grigol Robakidze University generates to promote the program of tourism (workshops, master classes, meetings with potential employers, practical experience of planning/organizing tours and of becoming a travel guide, organizing and participating in domestic and international conferences for students and scholars, academic forums, international projects, field trips in the country and abroad, etc) and to assure its quality is its modest contribution to help students to learn touristic-recreational resources of Georgia and what is more important, to learn how to manage them based on the gained knowledge. 30-35% of Grigol Robakidze University alumni are employed in the sphere of tourism and we are sure they put their share in the solution of the problem tourism in Georgia faces nowadays. Respectively, it is to create an image of Georgia as of a touristic country and its popularization, as well as, preparation of qualified staff in the tourist sector and development of tourism industry in general. Thus, it is urgent to actively participate in international tourist exchanges and exhibitions to promote Georgian touristic product and eventually secure the growth of interest towards the country, the increase of tourist flows into the country and stimulation of demand with the latter to

support and raise economic development of the country in turn.

### References

- Piranashvili M, Grdzlishvili N., (2015). Social-Economic Aspects of Promoting International Tourism in Georgia, 13<sup>th</sup> International Scientific conference "Human Resources Management: Current Trend, Challenges, Inspirations", Alexander Dubcek of Trencin, Faculty of Social and Economic Relations.
- Grdzlishvili N., (2014). Prospects of Developing Trans-boundary Regional Tourism in Georgia, V International Scientific Practical Conference "Tourism: Economy and Business", Batumi Shota Rustaveli State University. Adjara Department of Tourism and Resorts, Batumi.
- Grdzlishvili N., (2013). Aspects of Managing Investment Processes in the Sphere of Tourism, International Scientific Conference dedicated to the 20<sup>th</sup> Anniversary of the School of Law and Social Sciences and the 80<sup>th</sup> anniversary of Akaki Tsereteli State University
- Hsu Cathy C. H., (2011). Global Tourism Higher Education: Past, Present, and Future, New York: Routledge.
- Sharpley R, (2011). The Study of Tourism: Past Trends and Future Directions, New York: Routledge.
- Drake S. P., (1991). Local Participation in Ecotourism Projects, in Whalen T. (ed) Nature Tourism.

**RECEIVED: 17 September 2015**

**ACCEPTED: 20 April 2016**

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## INNOVATION CHALLENGES OF THE SILVER ECONOMY

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### Annotation

The human population is ageing. This phenomenon is a major challenge for the society, but it can also be a great opportunity for business and economy. The competition for a better position in the ageing segment of the economy has already started worldwide. „Calico” was the first huge project in the United States to enter into this economic segment in an innovative way. In the EU, the „Silver economy” focused on developing strategies related to the ageing population, mainly in terms of special technology services. These services generally aim to support well-being through health monitoring, robotic assistance, electrical mobility or sport activities including health tourism, green care and web based home care solutions. Nowadays, innovation developers focus on solutions for elderly people. Economic sectors involved in innovation and development want immediate strategies and clear visions for the next decades. Health and social care, health services, self-health management and senior tourism all require ready models. The question is whether there is an innovative ready-to-use model that will be suitable for the needs of the Silver Economy?

KEY WORDS: Silver economy, innovative economic model, European demography, healthcare diamond, successful ageing

### Introduction

The population in the majority of the developed countries of the world is ageing. Many studies analyse the phenomenon itself, but only a relatively small group of researchers focus on the impact assessment and its possible benefits. Up until recently, industrial decision makers had not considered the 50+ generation as a strong market potential, and services and products designed for them were not prioritised. However, in today's unstable economic environment, senior people - pensioners and elderly people whose children live independently - represent one of the most important groups of buying power. This group - often called silver economy - is a major economic growth factor. Created by scholars of Oxford University, the term “silver economy” refers to the economy of the 50+ age group, including all their economic activities, products, demands and expenditures. Although the definition covers a huge economic potential, it is only a part of the total market mechanism; a so-called niche segment that still represent a strong buying power. By now, experts have realised that the elderly population is not a homogenous group of pensioners. Senior citizens are different in many ways. Age is a main distinctive feature: there can be decades of difference, which means that we can talk about “younger” and “older” elderly people. In their case, the right to well-being is just as significant as in case of other segments (European Commission 2015).

Different industries are constantly developing products and services especially designed for senior people; a new model needs to be created because of the differentiating factors within the silver sector: gender, cultural background, acquired skills, life experience or health status are of key importance. Taking into consideration the whole group of elderly people, it is

clear that there is a huge market segment with a currently unexploited potential. My research focuses on whether the existing mechanisms are suitable to answer the “ageing” challenges or new innovations are needed to fulfil the demands of the silver economy.

### Research methodology

The research topic is quite interesting because silver economy can create a new market niche and also carries a great innovation opportunity for all stakeholders. My study will describe the newest innovation areas and the most significant results achieved so far. I will also emphasize the importance of bottom-up and top-down innovation incentives related to the field of my study. My research is based on qualitative analysis. Qualitative methods provide rich and detailed information on the independent thoughts and opinion of the interviewees (Macdonald et al 2008). Interviews are one of the most popular qualitative research methods, with semi-structured interviews being the most widely used technique (Dicicco-Bloom et al 2006). This research method enables the researcher to get an in-depth knowledge about the impressions and attitude of the respondents. In the case of semi-structured interviews, it is vitally important to carefully select the right interviewees and interview types. My work consisted of 11 interviews with experts of the field of my research. The interviews were based on pre-defined open questions that also enabled further spontaneous questions.

### Results

The different impacts of innovations can be defined in all aspects of society and economy. The effectiveness of the management system strongly affects the competitiveness and the general life standard of the population. Innovative impacts are important because the

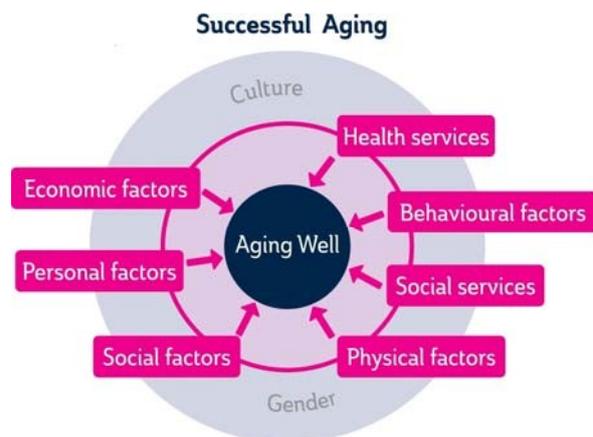
identification and solution of the possible unsuitable social processes play a key role in the mechanism of large scale reforms. Based on the common opinion of open societies, democracy and freedom of thought are the natural environment of innovation-based social mechanisms. Economic growth factors like education, knowledge and research are all closely connected to innovation. According to former studies of economics, human resources, natural resources, capital, technology and innovation were the key factors of economic growth. Among the aforementioned elements, innovation has become the most important factor, because in terms of the contribution to economic growth, education, knowledge and research have become more significant than capital (Gáspár 1998).

Innovation is most commonly used when something is renewed, a practice is transformed or a previous operation mechanism is changed. In this meaning, the term 'innovation' basically refers to renewal or upgrading. On one hand, innovation substantially means the renewal or upgrading of a process, while on the other hand it also refers to the adaptation capacity in a constantly changing situation. In that sense, the change takes place in accordance with a conscious development plan that aims to create a better, more effective and improved technology. Innovation usually takes place in connection with a specific development area instead of a whole system. When examining the history of economy, it is of common sense that new industries tend to displace the older ones, while some industries will mutate and survive by altering (innovating) their production systems or by developing new products or services. In his concept of creative destruction, Schumpeter replaces the old ones by creating new designs, companies and industries (Schumpeter 1934). The core characteristic of innovative thoughts is to question the existing order by exploring its deficiencies. Thus, innovation is not an action or a single result of action but a process. Its forward movement is based on continuous conflicts: some stakeholders are interested in the spreading of something new, and therefore they will go against the traditional interests of others. As a result of its adaptation strategy based on trial and error, innovation induces continuous economic growth. In reality, innovation does not only refer to new products, production methods, new markets and new production systems. With regards to the whole picture, innovation will result in replacement, transition, completion without alteration, organisational changes and in strengthening or displacement of traditional "behaviour". Industrial organisations will choose conscious and differentiated adaptive behavioural strategies in order to achieve the best possible results. Therefore, new concepts, ideas and combinations are the basis of innovation that will create economic growth (Schumpeter 1934; Cohen et al 1989).

Demographic predictions and international research show that the world population is rapidly growing. Today's 4:1 ratio of active earners and pensioners is projected to become 2:1 by 2060 (European Commission 2015). Within the growing population, the number of elderly people is increasing, with a higher rate of women

among them. With the development of economies, this trend is foreseen to increase further. With a predicted increased longevity, the senior population will age further. The developed world has to face a major challenge caused by the fact that the reproductive performance of the population is below the replacement level (i.e.: the number of deaths is higher than the number of new-borns) (L. Rédei 2006).

Based on the results of demographic studies, new scientific fields have emerged in order to better understand the new challenges. These scientific fields focus on studies aiming to fully comprehend the processes related to the elderly. For example, the science of gerontology examines the chronological changes in human life processes and aims to define the characteristic principles of ageing. Within gerontology, geriatrics experts focus on the health issues of senior people; in summary, geriatrics refers to preventive, curative and rehabilitation medicine. The understanding of ageing is of vital importance for service providers, because a healthy senior citizen is also one good consumer.



**Fig 1.** Successful Aging

Source: Zsarnoczky, M. Are we at the beginning of a new age of human and economic evolution?

The factors of successful ageing are closely connected to the environment and environmental impacts. It is of key importance to understand the chronological changes in human life processes that affect everybody equally. According to gerontologists, the ageing of the body is a normal biological process, not necessarily accompanied by pathological lesions or diseases. However, the biological processes of natural ageing increase the vulnerability to diseases and accidents.

Innovation industries need to realise that hereditary factors, environmental impacts, personal lifestyles developed in younger years, behaviour, social status, emotional and cognitive development, moral and ethical values and the accessibility to quality free time all influence ageing and life expectancy (Imre 2007).

The age of a person affects the self, the family, society, institutions, economy, culture, health and politics. Different risk factors can emerge at any stage during ageing, but there is a so-called "healthy ageing process" (Czigler 2000). To get a better understanding of the situation, it is necessary to realise that elderly people become ill because they are affected by a disease, and not

because they are old. Health issues directly related to ageing are typically movement coordination disorders, lack of stamina or dementia (Halmos 2002). The aforementioned statements clearly indicate that today's research related to the elderly is far more advanced in the field of health sciences than in economics.

The “new elderly” have an impact on almost all segments of the economy. The figure below shows that silver economy plays an important role in several different economic fields. The needs of the elderly create a pull-effect that will result not only in economic growth, but also will cause an unparalleled social alignment.



**Fig. 2.** Economic segments of the silver economy.

Source: Zsarnoczky, M. New Hope for the EU

Service providers and the elderly people are gradually starting to realise the importance of a healthy lifestyle, and there is a tendency among them to open up towards regular physical activity and physical-emotional-intellectual harmony, and as a result, a higher level of empathy will emerge towards them. With regards to innovation, the process of ageing goes on in parallel with today's trends of urbanisation: the senior population tends to migrate from rural and peripheral regions towards central urban areas (Enyedi 2012). One of the major problems of urbanisation is that senior people are willing to move to urban areas mainly because of the available services, but the cities are often not ready to receive them (Veres 2006).

Developers of the “urban future” will have to cope with huge challenges in the near future. The creation of a senior-friendly space will greatly affect local people, living environments, existing road and pavement systems, utility and transport services, community spaces and parks, workplaces, shopping facilities, doctors' offices, schools, hospitals, and public institutions. Senior friendly accessibility will become an integral part of everyday life, offering user-friendly solutions for the whole society. The implementation of senior friendly spaces is a long-term process where the transformation of urban areas is only part of the development. However, with smart decision making, the newly developed spaces can also serve tourism purposes (Michalkó 2007). According to tourism experts, the innovative marketing brand of „designed for older people” will spread widely. There are several examples of senior friendly urban development incentives, where designated and independent areas are

created with the special need of elderly people in mind (The Green House Project/USA). One of the main safety priorities in such cases is that the development area should lie far away from any natural disaster area. Some world-class projects have become so complex that they offer multifunctional apartments specially designed for senior people where nursing and other healthcare services are available; in addition, the tenants and their family members can also enjoy health tourism services at the premises (Park Royal Resorts/Hungary). In the field of senior friendly solutions, the European Union is currently in the lead. Within the frameworks of the “Living Lab” projects in LÄNSI-SUOMI in western Finland, experimental settlements have been established with a population of several hundred people; the main objective of the project is to fully restore and also increase the mental and physical health of the tenants. The CALICO project (established by Larry Page, founder of Google) has a different approach towards ageing. The project defines the stoppage of ageing by biotechnology as a first objective, and aims to find the solution for that. With regards to “conventional” innovation processes, this reverse approach is quite unique, because usually, the discovery of a new technology is followed by the exploration of its utilisation possibilities.

## Conclusions

Innovations are various as different. The examination of innovations is generally based on three factors and is conducted in a planned and targeted way. The assessment of the current situation and the detection of innovation are based on previous experiences, while the innovation results will lead to acceptance or rejection. According to Drucker, the mere possibility of change can be considered as innovation, which can be interpreted in all aspects of life. “And it is change that always provides the opportunity for the new and different. Systematic innovation therefore consists in the purposeful and organized search for changes, and in the systematic analysis of the opportunities such changes might offer for economic or social innovation. As a rule, these are changes that have already occurred or are under way. The overwhelming majority of innovations exploit change” (Drucker 1993).

In order for a change to become an innovation, the majority of interests and intentions have to agree on a number of factors, .i.e.: the assessment of the situation, the conditions regarding the forthcoming processes, the objectives, and the evaluation of the results and the principles of networking. Innovation is typically a bottom-up incentive that usually starts from the side of the manufacturer (Baldwin et al 2011). Innovation has the potential to link products, services, technology, processes, organisations, management concepts, governance and institutional systems (Schumpeter 1969). Also we know that innovation in public service sectors is different from innovation in private services (Fuglsang et al 2011). In the new of life in old age, real innovations arise in the form of feedback from the side of consumers, and often have trouble reaching developers (Magnusson et al 2003). According to the newest research results, front employees tend to be the most successful (Cadwallader et al 2012).

To manage the system, a monitoring organisation is required with the ability to provide constant feedback. For example, in a senior home, the first interaction level is realised between patients and nurses; this relationship can be mutually and easily strengthened and developed. The next step is the second level, where the nurse will have to negotiate with the management level to improve the work processes. In the case of silver economy, the majority of the manufacturers' problems can be traced back to the fact that the first step of the interaction chain is missing. Of course, in all other ways, they have infinite innovation opportunities: the health industry is constantly in demand of new medications, and the newly developed therapies will always need new technologies. Robotics, for instance has become an integral part of our life, not only in industrial sectors but everywhere. 2.0 technologies are present in all industrial sectors: in finance (e.g. stock market programmes), transportation (e.g.: autonomous trains, home delivery by drone technology), space science, utility management (e.g. underground cleaning robots), architecture – all this can be seen as a whole robot society (Wasen 2015).

The emerging silver economy brings forward huge innovation challenges created by the demand for the development of services tailor made for the elderly. Companies have to prepare for the upcoming changes by capacity development, increased accessibility of their products and enhanced social equality. The winners will be those companies who can successfully adapt to the changing environment and are able to increase the satisfaction of their customers by developing a so-called anti-ageism approach. For the elderly, "age in place," in a place that is safe, affordable, walkable, healthy, and inclusive is of key importance. They will prefer places and services where they can feel a sense of connection and belonging. Older people today have a higher level of education than previous older generations and are more experienced in the use of technology. Across the UNECE region, the proportion of people aged 55-74 using a computer and using the Internet has increased considerably over the last ten years, albeit on very different levels across countries. (UNECE Statistical Database 2013). The baby-boomer generation has a higher level of discretionary income than before. They are more flexible in making choices and they are typically open to new services. They appreciate human values like kindness, patience and hospitality. This is especially true in the case of silver tourism, where the elderly represent a consumer group that is in many ways different from average travellers (Zsarnoczky 2016)

The sector of AHA (active and healthy ageing), wellbeing, eHealth, senior tourism, age-friendly housing, health and social care and their ICT-related subsectors are facing huge development processes in the near future. In the US, several large companies are moving into silver economy markets, such as Google with the acquisition of NEST and iRobot as well as Apple with its eHealth Kit and Wellness business. European larger companies like Bosch, Legrand or Philips have developed Silver Economy strategies. Japanese companies are also in the lead in development. Companies like HONDA, Kawada and Toyota have already achieved significant results in developing humanoid robots that are mostly used for

household or entertainment purposes. The development of robots specialised for helping handicapped people are another focus of robotics development worldwide.

Real estate experts emphasize the importance of developing "smart" buildings that use ICT technologies, especially because the market price of the formerly novel innovative technologies has fallen in the past years. Smart technologies are breaking through in all sectors; for example, in the real estate sector, there is a growing demand for social homes especially designed for senior people. Instead of the previously available automatized equipment, today it is possible to satisfy individual needs by remote controlling. The former one-way communication that mostly aimed at energy efficiency and remote controlling of lights, heating, cooling, entrance systems, etc., is being replaced by the newest developments of IT and robotics. In the case of senior healthcare, a special attention is given to nursing and monitoring robotics (Giraffplus/Italy).

Current studies show that the public funding rate is decreasing worldwide in the sector of senior care, resulting in a growing need for widely accessible and financially sustainable technologies. Today's senior healthcare system consists of five different sub-sectors, shown in the figure below. Four out of the five can be considered as optional services, while the fifth element represents single people or those without access to health services (because of financial or other reasons).



**Fig. 3.** Healthcare diamond  
Source: own edition

In some regions like southern Europe or Asia, the elderly still play an important role in the family life. Senior people are an integral part of the family system, and they are valued members of the society, too. However, in other societies, where the traditional family model had been displaced, the elderly mean a huge challenge for the so-called "sandwich generation" who has to take care of their children and parents at the same time (Kibbe 2003).

Active senior people who have financial resources represent a prioritised population segment. There are numerous preventive and medical services developed especially for them by healthcare and tourism service providers. In the tourism industry, huge amounts are

invested into the development of new medical tourism destinations. There is a fierce competition within health and medical tourism for the senior age group. New technologies represent huge possibilities for industries like cosmetology, plastic surgery, anti-ageing therapy and gene therapy.

Based on the results of my research, the largest strategic developments in the silver economy are foreseen to take place in the field of healthcare services. Within the sector, organisational and technologic innovations are the two main types. Organisational innovations can be vertical or horizontal. Horizontal innovation means that several service providers enter the market at the same time, while vertical innovation means that the same company comes up with multiple treatments or/and services. Technological innovation focuses on organisational changes related to services, in order to provide better accessibility of medicines or healthcare services, i.e.: logistic development of a novel medicine distribution system based on home delivery (Herzlinger 2006).

## References

- Baldwin, Carliss Y., von Hippel, Eric (2011) *Modeling a Paradigm Shift*. From Producer Innovation to User and Open Collaborative Innovation, *Organization Science*, 22/6: 1399-1417 <http://dx.doi.org/10.1287/orsc.1100.0618>
- Cohen WM, Levinthal D (1989) *Innovation and learning: the two faces of R&D*. *Economic Journal* 99/397: 569-596 DOI: 10.2307/2233763
- Czigler István (2000) *Túl a fiatalságon (Megismerési folyamatok időskorban)* Pszichológiai tanulmányok XVIII. Akadémiai Kiadó, Budapest, pp. 39-73.
- Drucker, P. (1993) *Innováció és vállalkozás az elméletben és gyakorlatban*. Park Kiadó, Budapest, pp. 43.
- Gáspár László (1988) *Általános innovációelmélet*. Magyar Innovációs Szövetség, Budapest, pp. 16-17.
- Enyedi György (2012) *Városi világ*. Modern Regionális Tudomány Szakkönyvtár, Akadémiai Kiadó, Budapest, pp. 186-189.
- Fuglsang, L. Ronning, R. Enquist, B. Framing (2011) *Innovation in Public Service Sectors* Routhledge New York, pp. 3-5.
- Imre Sándor (2007) *A klinikai gerontológia alapjai*. Medicina Könyvkiadó Zrt., Budapest, pp. 27-61.
- Halmos Tamás (2002/4) *Az öregedés élettani és társadalmi jelenségei*. Magyar Tudomány, Budapest, pp 402.
- Kibbe, C. (2003). *Employed caregivers struggle to find resources*. *New Hampshire Business Review*, 25(22), 1-2.
- Kohli, M. (2006) *Alt – Jung*, in S. Lessenich/ F. Nullmeier (Eds.), *Deutschland – Eine gesplante Gesellschaft*, Frankfurt/ New York, pp. 115
- L. Rédei Márai (2006) *Demográfiai ismeretek*. Reg-Info Kiadó, Budapest, pp. 53-113.
- Michalkó Gábor, Rátz Tamara (2007) *A tér vonzásában: a turisztikai termékfejlesztés térspecifikus vonásai*. Kodolányi János Főiskola tanulmánykötet, pp. 6-23.
- Schumpeter, J.A. 1934 (1961). *The Theory of Economic Development*. An Inquiry into Profits, Capital, Credit, Interest and Business Cycle. Oxford: Oxford University Press, pp. 29-54.
- Seelos, C., and J. Mair (2012) „*Innovation Is Not the Holy Grail. It is Time to Move from Innovation as an Ideology to Innovation as a Process.*” *Stanford Social Innovation Review* 12 (Fall) pp. 45-49.
- Veres Valér (2006) *A demográfia és a népeségsszociológia*. Egyetemi Kiadó, Kolozsvar. pp. 38-53.
- Wasen, K. (2015) *Innovation Management in Robot Society*. RouthledgeTaylor & Francis Group, New York, pp. 27-49.
- Zsarnoczky, M. (2016) *Are we at the begging of new age of human and economic evolution?* Károly Róbert College, Gyöngyös, pp. 2-6
- Zsarnoczky, M (2016) *Silver Tourism*. Slovenská Pol'nohospodárska Univerzita, Nitra, pp. 3-7.
- Europa.eu (2015): *Regional Policy* [http://ec.europa.eu/regional\\_policy/en/projects/finland/the-living-lab-on-wellbeing-services-and-technology-enables-independent-living-for-elderly-people](http://ec.europa.eu/regional_policy/en/projects/finland/the-living-lab-on-wellbeing-services-and-technology-enables-independent-living-for-elderly-people)
- European Commission (2015): *Growing The European Silver Economy* <http://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/silvereco.pdf>
- European Commission (2015): *The 2015 Ageing Report: Economic and budgetary projections for the 28 EU Member States (2013-2060)* [http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2015/ee3\\_en.htm](http://ec.europa.eu/economy_finance/publications/european_economy/2015/ee3_en.htm)
- Giraff Plus [http://www.giraffplus.eu/index.php?option=com\\_content&view=frontpage&Itemid=54&lang=en](http://www.giraffplus.eu/index.php?option=com_content&view=frontpage&Itemid=54&lang=en)
- Park Royal Senior Care Homes (2013) *Concepts and ideas*. <http://parkroyal.hu>
- The Green House Project <http://www.thegreenhouseproject.org/>
- UNECE Statistical database (2013) Available from <http://w3.unece.org/pxweb/>

RECEIVED: 1 April 2016

ACCEPTED: 20 April 2016

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## POSSIBILITIES TO IDENTIFICATE ACTION POINTS IN ECONOMIC DEVELOPMENT OF LOCAL MANAGEMENT

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### Annotation

Although in the first place the public opinion interprets the success of the settlements from an economical viewpoint, in fact the success of a settlement is depending on several economical-social factors. The settlements and the surrounding social, economical sphere are constantly changing. After the collapse of the communist system development activities of local governments had suffered from lack of enough resources in Hungary. Taking into consideration their operational-financial deficiencies they could not give enough attention to the strategic thinking in local developments plans. Instead of real long-term programmes they were running for simple new resources. Due to their short-term irrelevancies many strategic dimension could not gain enough attention and support. But after debt-consolidation central government encouraged local governments to participate actively in local economic activities and strategic development. The settlements as autonomies due to their far-reaching role-system possess means of different characteristics, which can strengthen or even weaken each other's effects. According to common experiences decision making-process of the Hungarian local governments is much more based on a kind of opportunism than on a thought of sustainable growth. The research method described in the study supports the strategic decision-making process with recent tools of 'fact-based' decision-making. It provides structured information not only for prioritizing strategic fields but also for planning actions of economic development. Two main objectives of this method are defining development-fields and setting up an action plan. The main idea of this research is an indicator chart which is based on PESTEL-analysis, Balanced-Scorecard perspectives and a benchmark database which helps the interpretation of data. The analysis of the database is a core element of this method. During the benchmarking process the figures of the examined governments are compared to an average figure of multifarious types of settlements (e.g. similarity by population, size, development or other standards).

KEYWORDS: economic development, PESTEL-analysis, scorecard, indicator table, benchmarking

### Introduction

It is generally believed that successful settlements can come into being where the citizens are also prosperous and successful; thus where the growth, the improvement of the quality of life appears also in the life of the community and of the individual. In this case the citizens are obviously content; they can create the properly multilateral and complex expression of interest (Bódi-Böhm 2000). However, this scenario cannot be considered as a standard. Interpreting the success of settlements as the set of individual successes is a bit simplifying and idealistic. The individual successes do not always provide clear communal values. There is not in every case a long-term sustainable development behind such a success (Nagyné Molnár 2013).

Success cannot be reduced to one sole factor. Although in the first place the public opinion interprets the success of the settlements from an economical viewpoint, in fact the success of a settlement is depending on several economical-social factors. The field-research done in domestic settlements also prove this. The factors determining success are thus complex. Every factor that influences the local condition of existence and the quality of life has an effect on the development of the settlement, thus also on its success (Ludescher 2010).

Behind the successful settlements stands a stable economy and community. According to Bartik (1995) and Čapkova (2005) the emphasis is on the positive quality of life besides having a sustainable development.

The settlements and the surrounding social, economical sphere are constantly changing. Among the continuously changing conditions those settlements can be truly successful which are able to adapt to their environment. (Jedynak, Nagy, Ardelean 2015) Adapting to the environment can be interpreted in a political, economical, social, technological, nature-geographical and legal sense. The PESTEL analysis is based on the research concerned with the adaptation to the six factors. With this analysis we can get a good general survey about the acting factors. It helps us also in regional planning, because with its help the wanted development goals can be determined more precisely. (Bacsi, Forman, Káposzta, Nagyné Molnár, Péter 2007). However, this analysis does not explain, how one can be truly successful through the viewpoint of the examined acting factors. What kind of means can be used for this?

The settlements as autonomies due to their far-reaching role-system possess means of different characteristics, which can strengthen or even weaken each other's effects. One part of the instruments used by the settlements are unique (e.g. local taxes, local

communities, etc.), whereas other instruments (e.g. administrative legal regulation) work alike everywhere. The success of a settlement depends also on finding their effective means and how well they use it (Nagyné Molnár 2013).

Meaning of local economic development is not defined clearly yet. It might be considered as comprehensive strategy for using local resources in creating employment facilities (Čapková 2005). In other interpretation local economic development is meant a strategic intervention either by an external or by internal stakeholder who is a local player (Mezei 2006). Because of weak experiences some local governments have uncertainly defined their strategies. That is why the main goal of our study is to assist in local economic activities by providing a method based on result-based decision-making tools.

Focus was given to three dimensions: first an action plan based on researching external conditions, internal resources and their relations. Our research table (RSC-matrix) focuses on internal features of local economy and external conditions of their circumstances by using a special system of indicators. Secondly available stimulating tools and external conditions are examined, particularly prioritizing the identification of the action plan. Tool-impact matrix (Lendvay 2013) shows the relation between the internal structure of tools of local government and their external conditions. It will show how local government can influence external conditions by its internal structure of tools, and finally how the local government is able to accommodate to these external conditions. Thirdly the relation between tools and available resources will be examined in order to facilitate real planning on development activities.

Examining local economic development opportunities it is a relevant precondition that local economy shall be examined in interaction with its environment (external conditions). It means a comprehensive coverage by external factors and complex understanding of internal economic dynamics.

There are different researching methods to examine **external** factors. One of them is PESTEL-analysis. PESTEL is meant as a wide analysis method within business environment. As an abbreviation it is consisting of six relevant external dimensions among enterprises: Political (P), Economic (E), Social (S), Technological (T), Environmental (E) and Legal (L). This model is enough flexible, and it has different forms with regard to the primary focus of the researching or business environment. The flexibility of this model makes it possible to be used in a special sector, within local governments. Local entities, governments are in a unique situation: their decisions have impacts mainly not only on themselves (as in the case of a company's decision), but particularly on their entire local community. It is a relevant question how local governments can influence on their economic development and improving life-quality of their population through external conditions. There are several external factors which cannot be affected or controlled. In this case the adequate adaption or accommodation can be the realistic goal of the local decision-makers.

Within the validation process each dimension of the analysis was examined with regard to its relation and relevance for assisting in strategic decision-making processes of local governments. The following conclusion was established: political, economic, social, environmental and legal factors play an important role either for local community or for a company, but their impacts can prevail in different ways. Technological changes show wider diversions: technology is a key-factor for companies, especially in the sense of recent info-technology oriented, active competition. While local communities are much more depending on infrastructural conditions which might have even technology-oriented dimensions as well.

In order to examine **internal** factors, another well-known method was used. Balanced Scorecard is considered a strategic frame-system, which is very supported within business environment, similarly to SWOT or PESTEL researching methods because of its flexibility and easy application. Balanced Scorecard is consisting of four dimensions: financial, consumer/buyer, operational and learning-improvement dimensions. Based on each dimension strategic goals, referring indicators and reflecting actions can be established. This method is adequate for measuring the efficiency of the decision-making in reaching strategic goals. Similarly to PESTEL-method it is enough flexible to be used in local governmental environment in order to measure the efficiency/success of local economic development activities. As regards some elements of this method, it was changed because of the special focuses of the governmental dimension. The methodology determines the strategic goal of the local community as the development of the local economy, which created changes within the original four dimensions. Correction in the method was based on the revision of all four dimensions.

- Financial dimension was renamed financial-economic dimension as far as it gives priority not only to financial conditions of the local government, but mainly to its complex economic situation.
- Consumer/buyer dimension was a bit misleading, even if some typical service-provider and consumer might be examined within the local community, local government as well. The main focus is given here not only to the concrete service provided by local government, but mainly to the general quality level of local services. That's why life quality as new dimension is more suitable in the governmental dimension.
- Operational dimension is meant even wider fluctuation: companies have a wide, flexible space for their operations, but local governmental decisions and activities are strictly determined by central regulations, laws. But within these narrow circumstances local governments have also opportunities to make their operations, resource mobilization more efficient. That's why this dimension was renamed as operational efficiency.

- The learning-improvement dimension is also reflecting for a company environment while this category is a bit problematic within a governmental environment. This dimension was changed for innovation in order to take into consideration the innovation and adaptation facilities of the local community.

These four dimensions can contribute to a comprehensive examination internal factors affecting the development of local communities.

**A new model: RSC-matrix**

This model is consisted of combining factors of the two previously mentioned models. The first one is the PESTEL-matrix which is useful for measuring of external conditions. The second one is the Balanced Scorecard which is useful for measuring of internal factors. Integration of these two dimensions is reflected in the RSC-matrix (Table 1). Rows are measured by the factors of the Balanced Scorecard approach, while columns are reflected by six factors of the PESTEL-model. Each field of the chart refers to one indicator which is relevant for identifying relevant dimension of local economic development.

**Table 1.** RSC-matrix (research table) logical framework and code of indicators (I: indicator)

Factors	Political	Economic	Social	Infra-structural	Environmental	Legal
Life Quality	IQP	IQE	IQS	IQI	IQEn	IQL
Operational Efficiency	IEP	IEE	IES	IEI	IEEn	IEL
Economy and Finance	IFP	IFE	IFS	IFI	IFEn	IFL
Innovation	IIP	IIE	IIS	III	IIEEn	IIL

Source: Prepared by Lendvay

**Indicators**

In order to measure 24 indicators, we need to have 50 several measuring values. Most of the indicators are measure by 2-5 several data which are collected from different, specified primer and secondary sources. That is why unified methods and principles are of high importance. In order to achieve this goal electronic form was provided. Collected data are being transformed into “data-processing table” which is automatically generating indicator values. Core data and purified indicators are reflected in the SPSS database.

It was an important precondition for indicators that they would have own information contents which are even considered a good entry point for researching different aspects and dimension of the development

process. Indicators (Table 2. and 3.) are suitable for providing a comprehensive analysis on external and internal features of local governments, and furthermore they can contribute to the complex comparison of differentiating governments within well-determined conditions. Benchmark database is adequate for further differentiation such as the size of the local entity (population of settlement) or the localization. Benchmark database plays key role in clarifying and correcting data originated from the researching tables. RSC matrix can give a complex analysis on external and internal features of local governments, if the values of indicators are examined in a comprehensive, interacting, interdependent way of method.

**Table 2.** Indicators (life quality, efficiency and economical/financial dimensions)

Name	Description
IQP	Proportion of mayor's candidate support to its nominating organization from government side (%)
IQE	Per capita net income for the year (thHUF)
IQS	Unemployment rate (%)
IQI	Number of residential public services which can reach with public transport in 30 min. (pcs)
IQEn	Amount of green space per capita (m <sup>2</sup> /cap.)
IQL	Proportion of new and modified decrees to all decrees. (%)
IEP	The realized proportion of the local government investment and development spending compared with budget appropriation (%)
IEE	The local willingness to pay taxes compared with the GDP growth. (%)
IES	Long-term unemployed rates within overall unemployed (%)
IEI	Average lifetime of the IT tools which used by local government (year)
IEEn	Amount of environmental investments per capita (thHUF/cap)
IEL	Proportion of available strategic documents in relation to the number of mandatory strategic documents (%)
IFP	Proportion of the amount of the per capita urban development source and the country's national development fund amount per inhabitant (%)
IFE	Gross value added per enterprise. (thHUF)
IFS	Proportion of the working age taxpayers (%)
IFI	Per thousand capita number of medium-sized enterprises weighted by PGI index
IFEn	Number of overnight stays per thousand capita and the multiplied proportion of protected areas in the settlement.
IFL	Proportion of collected HIPA (Local Business Tax) and the tax paying ability of settlement (%)
IIP	Proportion of the candidates to the seats of the representatives in the city council (%)
IIE	Changes in the number of registered businesses per thousand inhabitants (pcs/1000 cap)
IIS	Number of civil organizations per thousand capita (pcs/1000 cap)
III	Number of internet access per hundred capita (pcs/100 cap)
IIEn	Proportion of selectively collected waste to communally collected waste (%)
IIL	Proportion of development resources won by the local business compared with the national rates (%)

Source: Prepared by Lendvay

## Results

During the measurement in the first phase we have collected municipal data from different districts of the convergence regions, nearly from 130 local governments. Every district has different number of settlements wing to different regional conditions. In the future, this basic database can be expanded with further elements as required.

The first result was derived from Benchmarking's analysis in case of region's aspect and in case of settlement size's aspect. As an illustration we show the effects of environmental infrastructure in case of district (Table 3.) and settlement size (Table 4.).

At first we examine those services which were utilized by the population in 30 minutes (IQI). It can be determine that the Kapuvár district shows the best result (24.35), and the Nyíradony district represents the worst result (10.00). This is consistent with the image formed on the overall development of regions. The other district's results are between 14.5 and 18.5. If we disregard data's which calculated on the basis of only two valid responses, the remaining three values is in parallel with the size of the district headquarters, which

seems logical, because a more significant district headquarter can supply more public services directly in a same time. The indicator provides indirect information about public transport and the road network quality. Examining the map it's conspicuous that the region has outstanding frequent road network which has to make the travel time shorter to reach district headquarter. The other endpoint is the Nyíradony district. In here the anomaly may be caused by -at the side of generally weaker development of the region- the natural central (Mikepércs) terminalisation and for a new settlement which has less developed infrastructure is raised to district headquarter level.

If we examine the same indicator (IQI) as size of settlements (Table 4) it's ascertainable that there is significant difference between the smallest size category (max. 500 cap) and the largest category. The difference is approximately 20% which can be sensible in life quality especially if every day public services, like schools or kinder gardens fallout from the accessibility circle.

The IEI indicator examines the support of economic development through the average lifetime of the IT tools. We can also examining with this indicator the work efficiency conditions indirectly. The required varies for the indicators are from local data services which are less

reliable. As you can see, we cannot do anything neither with two district data's because of the small sample size (Table 3). But at the same time it's striking that the overall average lifetime of IT tools is high (4,99 years). More than a year of average lifetime difference can be observed in favour for the west side districts, however, a more detailed examination is necessary to definitively declare this statement. By taking a closer examination

about the settlement size (Table 4), it's a bit strange that the bigger (over 5000 cap.) settlements IT tools has 33% higher average lifetime compared with the 501-1000 cap. settlement category. If we take into consideration that the obsolescence time of IT assets is approximately 3 years it's determinable that the public sector technical facilities are nowhere meet the standards of the age.

**Table 3.** Benchmark values as districts

Indicator	District (Average/valid item number)						Sum
	Kapuvári	Makói	Nyíradonyi	Szikszói	Tabi	Tapolcai	
IQI	24,35	17,79	10,00	18,50	14,50	18,10	17,80
	20,00	14,00	8,00	2,00	24,00	30,00	98,00
IEI	4,87	5,93	No data available	6,50	4,51	4,88	4,99
	20,00	11,00	0,00	2,00	17,00	26,00	76,00
IFI	4,75	5,82	5,00	5,02	3,65	4,34	4,63
	20,00	15,00	9,00	24,00	24,00	30,00	122,00
III	10,18	8,21	2,56	7,43	1,32	4,01	5,54
	20,00	15,00	9,00	24,00	24,00	33,00	125,00

Source: Prepared by Lendvay

**Table 4.** Benchmark values by settlement size

Indicator	Settlement category (Average/valid item number)				Sum
	max. 500 cap.	501-1000 cap.	1001-5000 cap.	More than 5001 cap.	
IQI	16,28	21,19	17,68	19,83	17,89
	47,00	21,00	25,00	6,00	99,00
IEI	4,93	4,57	5,44	6,04	5,02
	36,00	19,00	18,00	4,00	77,00
IFI	3,12	4,93	6,83	8,59	4,66
	62,00	25,00	30,00	6,00	123,00
III	1,53	5,16	11,23	26,95	5,85
	64,00	25,00	31,00	6,00	126,00

Source: Prepared by Lendvay

The IFI indicator refers to the ability to attract economic activity for settlements. It consists of two factors: from the number of medium and large sized enterprises per 100 capita and a separate indicator which is on basis of the infrastructure facilities. The former one is approaching to the town's ability to attract investors through the existing businesses and the last one is through the infrastructural availability. Based on this indicator the Makói district has really good abilities, the Tabi and the Tapolcai district have the most difficult situation and the other districts have average values. Based on above it is appropriate for districts with weaker result to develop their business infrastructure which is match with the Tabi and Tapolcai district site inspections experience. In case of the Makói district it would be worth to attracting the investors to the region using the regional, municipal marketing tools. Noticeable that

when examining the various municipalities within the districts a significant deviation can be observed, which intuitively shown by the settlement sized benchmark data's. For the lowest settlement category the value is 3.12, while for the highest category the value is 8.59. It is well established that larger settlements are more attractive to businesses wishing to settle in.

The infrastructural environment for economic innovation is modelled by the number of broadband Internet accesses per 1000 inhabitants (III indicator). The overall average in this field is 5.54. In line with expectations the Kapuvári district (10.18) has positive direction, and the Tabi (1.32) and Nyíradony (2.56) districts differs negatively from the average. If the latter is compared with the same measure, relatively high IFI values can conclude that modest level of broadband coverage can be or perhaps it's already an obstacle for

the regional development of the real economy. The settlement size is growing together with the high value of the indicator, which is in line with expectations.

## Conclusions

The settlement's success depends on a lot of technical, economical, social, infrastructural etc. factors. Universal rule the success cannot be reduced to one sole factor. The territory and the settlement size analysis provide an informative data about the success. In this article we display a new method (RSC matrix). This model is consisted of combining factors of two known models. The first one is the PESTEL-matrix, which can measure the external conditions. The second one is the Balanced Scorecard approach, which can measure the internal factors. We examined the interaction of these factors. The RSC matrix's operation was presented by indicators. The results prove that this matrix is one of the most useful tools for the local government in the economic development.

## References

- Bacsi Zs, Forman B, Káposzta J, Nagyné Molnár M, Péter B, Káposzta J (2007) (ed.) *Regionális gazdaságtan* (Regional economy) Gödöllő: DE AMTC AVK, 2007. 300 p. (ISBN:978-963-9732-76-6)
- Bartik, T. J. (1995). Economic Development Strategies. Upjohn Institute Working Paper No. 95-33. Kalamazoo, MI: W.E.  
*Upjohn Institute for Employment Research*. Retrieved September 17, 2013  
[http://research.upjohn.org/up\\_workingpapers/33](http://research.upjohn.org/up_workingpapers/33)
- Bódi, F.- Bóhm, A. (2000). A sikeres és sikertelen településekről. (About Successful and Unsuccessful Settlements.) In Bódi F.- Bóhm A (Eds.), *Sikeres helyi társadalmak Magyarországon* (Successful Local Society in Hungary) (pp. 7-32.). Budapest: Agroinform Kiadóház.
- Čapková, S. (2005): Local Government and Economic Development Čapková, S. (ed.) *Local Government and Economic Development*. Open Society Institute, Budapest, pp. 1-19.
- Lendvay, E. (2013): The possibilities in the economic development of the local governments. In: Lengyel I. - Vas. Zs. (2013) (eds.): *Regional Growth, Competitiveness and Development*. University of Szeged, Faculty of Economics and Business Administration, Doctoral School in Economics, Szeged, 26-36. p. (ISBN 978-963-306-222-7)  
<http://www.eco.u-szeged.hu/kutatas-tudomany/workshop/workshop>
- Ludescher, G. (2010). *A vállalkozások és a közösségek szerepe a rurális térségek megújulásában* (Function of the enterprises and communities in connection with regeneration of the rural areas.) Pécs: IDResearch Kft./Publikon Kiadó.
- Mezei, C. (2006): A helyi gazdaságfejlesztés fogalmi meghatározása (Definition of the local economy development) *Tér és Társadalom* 20. year 2006/4. pp. 85-96.
- Nagyné Molnár, M. (2013): Factors of success in case of local society, *DETUROPE* 5:3.63-70.pp.
- Witold, J., Nagy H., Ardelean, L. (2015) (ed.): *Local Development in the Central European Perspective* Rzeszów: University of Rzeszów, 2015. 253 p. (ISBN:978 - 83 - 60391 - 73 - 0)

## POSSIBILITIES TO IDENTIFICATE ACTION POINTS IN ECONOMIC DEVELOPMENT OF LOCAL MANAGEMENT

## S u m m a r y

After the collapse of the communist system in Hungary the local government could not give enough attention to the strategic thinking in local developments plans. After debt-consolidation central government encouraged local governments to participate actively in local economic activities and strategic development. The settlements and the surrounding social, economical sphere are constantly changing. Among the continuously changing conditions those settlements can be truly successful which are able to adapt to their environment (Jedynak, Nagy, Ardelean 2015). The settlements as autonomies due to their far-reaching role-system possess means of different characteristics, which can strengthen or even weaken each other's effects. The main goal of our study is to assist in local economic activities by providing a method based on result-based decision-making tools. Focus was given to three dimensions: first an action plan based on researching external conditions, internal resources and their relations.

We prepare a new method (RSC-matrix) which focuses on internal features of local economy and external conditions of their circumstances by using a special system of indicators. One part of this RSC-matrix is a PESTEL-matrix, which can measure the external conditions. PESTEL is meant as a wide analysis method within business environment. This model is enough flexible, and it has different forms with regard to the primary focus of the researching or business environment. Our experience, that the political, economic, social, environmental and legal factors play an important role either for local community or for a company, but their impacts can prevail in different ways. Technological changes show wider diversions: technology is a key-factor for companies, especially in the sense of recent info-technology oriented, active competition. While local communities are much more depending on infrastructural conditions which might have even technology-oriented dimensions as well.

The second part of the RSC-matrix is the Balanced Scorecard approach. It can measure the internal factors. We examined the interaction of these factors. Balanced Scorecard is consisting of four dimensions: financial, consumer/buyer, operational and learning-improvement dimensions. Based on each dimension strategic goals, referring indicators and reflecting actions can be established. This method is adequate for measuring the efficiency of the decision-making in reaching strategic goals. These four, partially changed dimensions contribute to a comprehensive examination internal factors affecting the development of local communities.

The RSC-matrix model is consisted of combining factors of two known models. The RSC-matrix research method describe the strategic decision-making process with recent tools of 'fact-based' decision-making. It provides structured information not only for prioritizing strategic fields but also for planning actions of economic

development. It shows how local government can influence external conditions by its internal structure of tools, and finally how the local government is able to accommodate to these external conditions. The RSC matrix's operation was presented by indicators. The results prove that this matrix is one of the most useful

tool for the local government in the economic development.

KEYWORDS: economic development, PESTEL-analysis, scorecard, indicator table, benchmarking

**RECEIVED: 31 March 2016**

**ACCEPTED: 20 April 2016**

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## SUPPLY CHAIN PARTICIPANTS IN THE MUSHROOM SECTOR AND THEIR ROLE IN THE ADDED VALUE CREATION IN SUSTAINABLE WAY BASED ON A HUNGARIAN CASE STUDY

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### Annotation

With the world's growing population the significance of the food producing sector as well as mushroom growing is constantly increasing. Great improvement is waiting for the mushroom sector in Hungary based on the expected development efforts and trends during the period until 2020. Experts often mention the fact that nowadays neither products nor enterprises but supply chains are competing in the market. This is also true for mushrooms, namely those companies and participants will be the winners who can satisfy customers' dynamically changing needs faster and more exactly, or can provide the customers with their needs regularly and in a reliable way. The goal of the study is to present the supply chain in the Hungarian mushroom (primarily *agaricus*) sector, to determine the most important participants of the supply chain and their fundamental role in the added value creation according to the end product's sustainable production and quality.

KEY WORDS: mushroom growing, sustainable agriculture, supply chain, added value, sustainable production.

### Introduction

The organization and planning of supply chains have become such a strategic area which requires an international overview. (Bowen, 2011; Csáki et al., 2010; Goodman, 2004) Concerning the supply chain efficiency of foods and their values provided to consumers the attention centres around how the product reaches the costumers. There are various needs and habits, cultural differences should be considered in individual countries and in different markets, however, the protein consumption of the developing markets or a great del of wasting in developed markets have brought important changes (Kearney, 2010).

In the supply chain of foods economy, environment and society are expressively connected and they give a mutually related complex system (Pálvölgyi et al., 2012). The questions of sustainability, environment consciousness and thriftiness cannot be separated from each other, they should only be seen in a strategic and systematic way. National governments have already realized that economy developing and environment protection should be managed together, and they have described national strategic programmes. It is important that methods must be real as specific solutions at the level of farmers as well as at the level of connections among farmers. Studying supply chains is considered as a good example of thinking in this system. According to classic value chain models of economics value comes into being in several steps and goes to the customer although these days not only the goods as end products are in the focus since those values have come into being which are made by other actors, built into the end products. Not only the product but also the cumulative performance (see value elements) of the whole supply chain count in the

customer's decision. (Think about packing, transporting, marketing or even sustainability as social values.)

Culinary interest towards mushrooms shows big differences in various cultures all around the world. (Kovács, 2011) In certain places housewives would not put mushrooms on the table at all while in other places a great deal of money is paid for them. Currently mushroom is not a basic food rather supplementary; thanks to its particular nutritional values it appears more often instead of meat or garnishing as a part of healthy nutrition. Inside agriculture the sector has gone through an impressive development within the last couple of years. (Kovács, 2011) The world's current mushroom growing is about 3.6 million tons annually (FAOSTAT, 2011) which is more than three times that thirty years ago (1.1 million tons), and even one and a half times greater than ten years ago (2.4 million tons). The world's mushroom growing and consumption have soared in big leaps. Once Hungary was a big force in mushroom growing meanwhile today the consumers' mushroom culture is fairly poor and the public consumption is uneven.

Nowadays the biggest mushroom grower country in the world is China both in amount and the number of species. 40-50 percent of the world's mushroom consumption comes from here but their own data state that it is a lot more since Food and Agriculture Organization of the United Nations (FAO) statistics do not contain several of their grown varieties (Hu and Zhang, 2010). China's mushroom export to Europe is also significant.

The present economic actors should suit old traditions, changing needs and the more intensified growing requirements, modern technologies at the same

time. It is a real challenge requiring a continuous innovation of the supply chain.

Growing in cellars or caves has become old-fashioned today, and the Dutch type of mushroom houses is not so new either. One of the main directions of the innovation is to intensify the amount grown on one square metre which is a key question concerning thriftiness. The other main direction is to improve quality which determines existence on the market and it is closely connected to the selling price, however this latter is only connected to the grower's performance. Logistics, processing and packing also matter, even the way of selling which needs a complex supply chain strategy.

## Material and method

In this study we raise the attention to the sustainable supply chain of mushroom growing. The primary goal was to analyse the importance of mushroom growing and its sustainability criteria based on secondary literature sources of the mushroom sector. Putting Porter's theoretical method of value chains into practice we applied that to determine and interpret the primary value creating processes of mushroom growing, then we interpreted the indirect value creating role and elements of the supporting processes as well. To write this study we made three deep interview analyses with well-known mushroom grower experts and dealers between January and March 2015. The deep interview was split into five big topics such as the company's situation in the sector, company management, development, the supplier and the customer sides of intercompany connections. For deepening practical knowledge the company's plan tours and site visits were provided.

The research results and the connection points mapped were gathered in a novel complex and extended supply chain figure developed by us, and the value creating points were also marked in that. In this extended supply chain figure we wanted to map the whole value flow from the supplier to the customer and those connection systems which can provide the customers with further values besides mushroom as end product. The enterprise integrated into the case study well represents the exploitation of connected advantages in a complex system, consequently the creation of a sustainable system.

## Discussion

### The significance of mushroom growing

Inside agricultural sciences mushroom growing is one of the dynamically developing branches of horticultural sciences; as opposed to the fifties the yields have increased five times until now due to constant researches.

Mushroom was known and grown as a delicious dish in ancient times, however, its scientific research (Rác and Koronczy, 2001) exists only from the 18th century. Mushrooms grown have a greater role in the world's feeding with the increasing population (Mutsy, 2005). From nutritional and physiological aspect mushrooms are valuable food since they contain essential aminoacids, minerals and important vitamins in huge amounts. Several types of them can be applied effectively against

tumours and there are other types reducing cholesterol and blood sugar levels. Mushroom consumption in Hungary is 1.5 kg/person/year which is far beyond the European average; for example in the United Kingdom only agaricus consumption is 2.9 kg/person/year while in Spain its consumption reaches 3.5 kg/person/year. According to FAO data the amount grown in the world is 8 million tons annually, 75-80 percent of this is *Agaricus bisporus* and 15 percent is oyster mushroom (Research Institute of Agricultural Economics, 2015).

One fifth of agaricus grown in the world comes from the European Union although growing is placed to Eastern and Central Europe. The biggest grower, Poland made great developments during last years, increased its growing to 150,000 m<sup>2</sup> and started building several logistics centres.

Before World War II Hungary had been the world's third biggest mushroom grower behind France and the United States with its 1,200 tons grown in 1938. In Hungary growing took place on 200,000 m<sup>2</sup> in 1940 and after the war this amount fell significantly (Uzonyi, 1971). Currently in Hungary about 20,000 tons of mushrooms are grown annually, and the decrease halted by now thanks to New Hungary Rural Development Program but the aim is to take over the leading role with 50,000 tons grown. The purpose of development covers encouraging Hungarian consumption, expanding export, creating new mushroom growing farms as well as mushroom compost producers and a huge increase of processing capacity. Efficiency and profitability can be less increased nowadays with creating better technologies but logistics developments provide much greater development potential. (Dupcsák and Marselek, 2015)

### Growing mushrooms and sustainability

The great significance of mushroom growing lies in that by its nature mushroom can be grown in a sustainable way since it 1. does not have any negative effects on the landscape, 2. does not cause any unwanted contamination, 3. is extremely sensitive to income, and consequently provides economical income to the participants in growing while using several by-products.

During last years several innovative technological developments became known which put mushroom growing in the focus of sustainable farming. Originally in the home country of mushroom growing, so in France growing was taking place in stone mines and cellars (Szabó, 1990), today due to innovative development technologies there is a possibility to use reusable polypropylene plastic bottles instead of fast worn-out plastic bags (in case of king oyster mushroom), or other growing processes with trays or multi-level shelves etc.

Several points of the mushroom growing supply chain can be remarkably connected to other points of agricultural growing. For example, according to local conditions mushroom compost needed to mushroom growing is suitable for using by-products (e.g. industrial, forestry, agricultural by-products, sawdust or straws of other agricultural plants). After the growing cycle depending on the technology mushroom compost grown is extremely suitable for improving soil, containing many types of nutrients, macro and micro elements; pesticides

are not so typical in mushroom growing so there are only a few remains.

An important criterion for sustainability is that we should list the factors (hazard analysis) threatening the value of the end product and the value creating ability of the whole supply chain. In the following in every phase we are presenting the most important risks and the methods which help avoiding the possible dangers so they can give sustainability. The three keystones of every successful strategy and value creation are the three questions to answer as follows: 1. How can this activity be profitable? 2. How can this profitability be sustainable, repeatable persistently? 3. How can this activity be different from others, having individual advantages?

## Results

### Value creation in mushroom growing

Using the value chain method (Porter, 1985, p. 37) we created the value chain of mushroom growing with discovering the primary activities as the main process of the business, their order in time, then we determined the supporting activities and evaluated the contents of the individual activities. The process of value creation is highly influenced by "... the characteristics of mushroom growing (living organisms, weather, environment conditions etc.)". "Among these influencing factors the most important are time and seasonality ..." (Téglá et al., 2012).

#### *Primary activities:*

(The following activities directly contribute to the creation of added value.) The first chain element and at the same time a part of the incoming logistics is mushroom compost buying and/or production. Horse manure and poultry manure, short straw, gypsum and water are used to produce compost. Wheat straw is usually used from straw types. The fibrous components such as straw give water holding capacity and consistency. Quality is influenced by the origin and management of organic components, artificial materials inside, pesticides, and minerals such as nitrogen content of chicken manure. Gypsum is an important ballast material, what is essential that it should not contain any heavy metal contamination.

Concerning the ultimate quality of the supply chain and the end product the most important thing is homogeneous and well selected compost available regularly at the same quality. The quality of the compost and mainly its fixedness are so important factors that in our study the compost is produced in special plants.

The growing/production phase in the value chain consists of spawn (mycelium) production, casing soil production and real growing phase which provides another substantial added value. Mycelium production takes place in precise laboratory conditions since this step is one of the elements with the greatest uncertainty and the highest costs. For engrafting the seed of millet or other crops is used, its quality is crucial since it should not contain strange (weed) seeds, causative agents, pests and contaminations. The next phase is casing soil production, mushrooms cannot create fruit bodies without it. Being free from causative agents and pests is

extremely important in case of the casing soil concerning the quality of the end product. We can get nice mushrooms only if the casing soil is clear and has a good water holding and water loss capacity and its nutrient content is low. The mixture of peat types and chalk powder is mainly used in Hungary. Then the real growing is a kind of waiting and caring, followed by "harvesting". The key to growing is ensuring conditions (light, heat, humidity etc.) undisturbed and eliminating factors causing errors, ensuring undisturbedness. Growing mushrooms can take place in cellars, or in agricultural building of other aims, in tents of Dutch type etc.

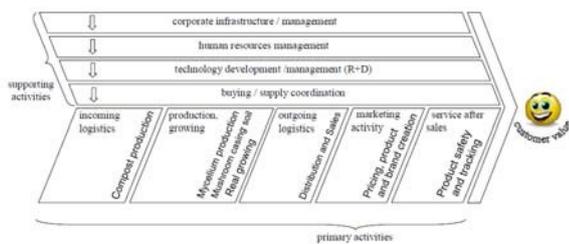
In our case the outgoing logistics consists of distribution and sales. For the grower the end product should be in a good shape to transport and/or sell. It is a good question whether the product is transported directly into the commercial channel or used for processing. From the view of the supply chain it is an extremely important question what kind of packing the product has because it should serve logistics needs and ultimate customer needs as well. In the latter case there is an exceptional big development and the ultimate differences are also big since the customer evaluates the ultimate quality of the product based on this latter one. Due to inappropriate packing it can occur that the customer receives a product of excellent quality at an improper quality, for instance broken, damaged, or its marketing value is lower than the rival's. "Green logistics has a greater significance in organising supply chains. ... Hungarian food industry companies extended their portfolios with environment-friendly packing techniques." (Pónusz and Horváth, 2014)

Marketing activity consists of pricing, product and brand creation, and the character of the relationship with the customers. In case of mushroom several solutions should be used and they can bring additional value for the customer because the majority of the customers are not regular mushroom consumers. That is why these needs should not only be satisfied but also encouraged.

The last element of the value chain is further elements after sales such as product safety and tracking. As opposed to industrial products attention should be paid to these values because they can be values of trust for the customers.

#### *Supporting activities:*

(These activities only indirectly contribute to the creation of added value; we cannot say exactly when and what value they are responsible for) In case of buying/supplying coordination long-term strategic relationships are typical regarding special expert needs. Concerning technology development mushroom growing is characterised by intensive researches, almost every big grower takes part in this kind of activity. Considering human resources management mushroom growing hides great opportunities for this activity is effectively done with employing undergraduates and those living with disabilities. Mushroom growing has high living labour force and capital needs. Concerning corporate infrastructure and management the size is typically family business (for a summary see Fig. 1).

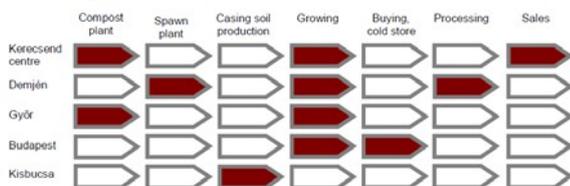


**Fig. 1.** The value chain of mushroom growing inside a company (Source: own creation based on Porter (1985) p. 37)

**The value chain and supply chain of mushroom growing**

It is well-known that nowadays neither products/services nor enterprises but whole supply chains are competing. In today’s sharpened and turbulent competitive environment those enterprises will be successful which can effectively take part in making value flow in the supply chain, their role and significance can become a determining factor, and they can satisfy the customers’ dynamically changing needs faster and more exactly as well as regularly. The questions what kind of and how big position can be reserved and by whom in the whole supply chain are important elements of the strategy. In our interpretation value chain means that how corporate processes (functions) can be connected inside a company in a sustainable way and today crossing the borders of the company into a supply chain. The supply chain is such a value chain in which the series of value creating processes create values (not only products and services!) suitable for satisfying customer needs through co-operating companies.

The company in our case study has covered several elements of the whole sector since its foundation in 1990 (see Fig. 2).



**Fig. 2.** The value chain and supply chain of mushroom growing (Source: own construction)

In harmonising real processes between companies there is an opportunity by which the competitive situation of the participant companies (1) can be improved, and even the performance of the whole chain can be optimised and improved. We define supply chain management as a conscious activity of the supply chain harmonising the participant companies’ value creating points and improving the values built in.

Also important is the growers’ effort to make their connections closer with the mediators of the sales process to sell their product to the customers in a better quality (Pagh and Cooper, 1998). The specific structure and the type of the supply chains are always determined by the goals and values wanted. These goals and values are related to the basic function of the supply chain (Fisher, 1997).

**A case study of a Hungarian sustainable mushroom growing business**

Mushroom industry plant in Demjén and the National Crown Mushroom Grown Union (NCMGU) are one of the biggest mushroom growing companies (representing cca 35-40 percent of Hungary’s mushroom growing). 98 percent of the whole growing is agaricus growing, and the remaining 2 percent is oyster and exotic mushroom species (shiitake, king oyster etc.). The enterprise deals with almost the whole spectrum of mushroom growing namely spawn production, mushroom compost production, fresh mushrooms and canned products appear.

The spawn plant and research laboratory in Demjén produces mother spawn in great amounts which is demanded both in Hungary and abroad.

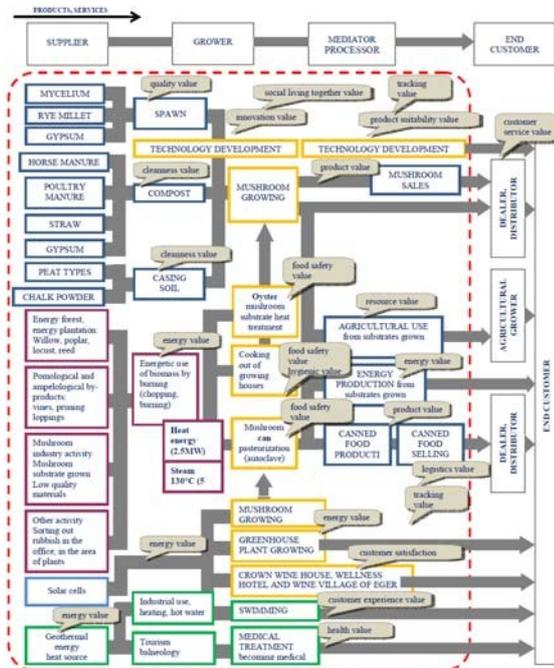
Aspects of sustainability:

- In case of mushroom compost production in Kerecsend indoor technology is used as an experiment to reduce the plant’s external odour emission which is unpleasant for those living nearby. In favour of sustainable farming the plant annually uses 17,650 tons of wheat straw, 14,700 tons of poultry manure, 3,528 tons of horse manure to grow agaricus mushroom. Besides these the use of other lignocellulose (saw dust, straw) materials and additives (e.g. soy thickening, wheat bran etc.) is significant to the growing needs of oyster and other exotic mushroom species. In 2009 in the framework of Special Accession Programme for Agriculture and Rural Development (SAPARD) the furnace was changed to a type working with grapevine bought from Crown Wine House of Eger; so the plant received renewable energy while also utilising the waste of the Crown Wine House. A good example of ecological and economical farming that some parts of the mushrooms grown can be used for catering at the Hotel of the Wine House.
- The company complex does other crop production activity as well (grape and fruit growing, tree plantation, energy plantation). This activity results in a huge amount of plant biomass so the company also works a furnace burning biomass which maintains the temperature needed for pasteurisation and autoclaving to produce canned mushrooms. In this case energy production is secondary since food gives a higher added value for everyone. The example of sustainability shows well that some of the mushroom substrates grown are used as organic manure, the rest is burnt in a thermal power station (performance of 950MW) nearby meanwhile producing electric power.
- In case of mushroom growing a special dimension of sustainability means that in favour of local social acceptance researches and investments are in progress to make possible deflecting, washing and conveying through biofilter in order to reduce odour emission. As the result of washing with ammonia ammonium-sulphate fertilizer can be turned back into the

compost production process. As calculations prove this process itself emit as much carbon dioxide as the plant population can endure in the previous or the given year.

- In growing the heating of the mushroom growing houses over the ground is solved by thermal water in more and more plants by a partner company since Hungary's geothermal capacities are really favourable; especially in the region mentioned above (Demjén, Eggerszálók etc.) where one of the whole Europe and almost the world's greatest and the most popular geothermal treasures is hiding, its importance in tourism is great as well. The system fertilizing (cooking out) the mushroom growing houses is based on biomass energy.
- The company's environmentally conscious view is proved by the solar cell programme which will decrease the cooling and air-conditioning costs of the sites in summer.
- The 44 types of mushroom products do not contain preservatives; the processed (canned) products are made by International Organization for Standardization (ISO) 9002 and Hazard Analysis and Critical Control Points (HACCP) regulations.

The organization sells the fresh mushroom on site or in supermarkets such as Tesco, Metro, Spar, Lidl, Penny Market, CBA, Real stores but export is important mainly in Austria, Croatia, Finland, Italy and Romania. The following figure describes the extended supply chain of mushroom plant in Demjén and the National Crown Mushroom Grown Union (NCMGU) (see Fig. 3).



**Conclusion**

As seen from the situation analysis above it can be stated according to the analysis of mushroom growing value chain and supply chain that mushroom growing and agaricus included is highly suitable for sustainable growing. Shown as best practice in this case study the

Hungarian enterprise and its strategic efforts convince us that their business is about value creation, examined both in small and large economic environment it provides relevant groups with value.

The real importance of our research is that after using theoretical models and seeing them as logical framework we have mapped the inner structure, individual realization of a given supply chain, highlighting those connection points which presumably contribute to the spectacular success of the analysed case during the last years.

By applying the theoretical models we developed these models further such as the extended interpretation of the supply chain and marking the value creation points.

The results and conclusions of our supply chain analysis showing value points can be utilised as a best practice for mushroom grower competitor enterprises as well as the newcomers to the market; on the other hand it is suitable for a better understanding of the value creating points, and this way developing co-operation. Creating sustainability is exactly based on understanding better and exploiting these connections.

Landais (1998) states that sustainable development is a long-term perspective which is present in the amount of incomes, the complexity of the work, the number of people employed in the area and in protecting both the environment and biodiversity.

In our analysis a condition of sustainable growing is to identify the most important elements of value creation (income production) in order to determine the factors threatening it, then to make such a strategy that provides the key elements of value creation. Szilágyi et al. (2013) say that "... processes are often formed by know-how and coincidences ...". (Note "often both"). The same authors also state that the following risk types should be examined namely 1. financial; 2. time; 3. personal; 4. social; 5. psychological risks. In our analysis we suggest examining further risks such as 6. technological 7. product and product consumption risks besides 8. the connection of key elements of supply chain.

The conclusion of our research is that the elements of the supply chain are so connected that all the participants in the supply chain should think in terms of a system to maximise the value of the end product. This latter strategy practically means that in case of the given activity elements those aspects should also be considered which are not closely connected to the activity itself. For example the producer of the compost should pay attention to the end product's expected content value or the external needs of the people living nearby. In growing and harvesting packing with logistics and marketing purposes should be thought over so as our customers' satisfaction could increase. The strategy of producing an integrated product needs the supply chain participants' cooperation closer than earlier. We can see a best practice for this strategy in case of the organization network examined.

The question of quality (concerning compost, casing soil and spawn) is not only a question of hygiene but also the key to standard quality. The second conclusion of our analysis is the question of quality is of greatest importance regarding several value elements of the supply chain that means if it is not suitable then there will

be no yield at all. In this sense we can talk about the same rate of importance and greatest importance in case of compost, casing soil and spawn production.

The third conclusion is that mushroom growers should deal with issues for example how they can satisfy the customers' dynamically changing needs faster and more exactly, or how they can provide the customers with products satisfying their needs regularly and in a reliable way.

#### Value forming elements

We see the following value forming elements as key factors:

- As opposed to its mechanized character mushroom growing has a high level of handwork need. As for growing the phase of stocking, casing, ruffling, cropping and sterilization needs physical power while harvesting needs skills and is usually done by women. Operations executed just in time and with a technique influence the quantity and the quality of the yield. There is a great opportunity for creating jobs in mushroom growing.
- Agaricus mushrooms are sold and put on trays with foil. In harvesting mushrooms are touched only once to avoid physical and other damages.
- Packing has not only selling and logistics purposes but also contributes and profoundly matches the value of the end product. The customer evaluates the product based on subjective feelings and prior knowledge such as outlook, odour, moisture, mechanical damages, colour, size or the way of using etc. With paying attention to ecological and economical factors the goal of mushroom growing is to produce food of excellent quality whose outer appearance does not only meet expectations but whose content values are appropriate and free from remains of chemicals and harmful components.
- The connections of the sector bring excellent opportunities and more value creation. A great number of examples for this situation have been presented earlier in our case study.
- An advantage of mushroom growing is that it does not need any special growing appliances, buildings and tools of other purposes can be remarkably utilised.
- Hygiene has an important role in the whole supply chain of the sector, in case of different materials their intact transportation and logistics free from contamination should be in the focus.
- With the help of renewable energy resources mushroom growing can be matched with the concept of the sustainable farming more efficiently.
- Mushroom growing intertwines with intensive Research and Development (R+D) worldwide, this covers technologies, profitability, environment protection, the content value of mushroom species and the latest logistics solutions.

#### The continuation of the research

The results presented here in this current study are seen as the first step of a research series. We would like to continue our research in some directions whose expected steps in the future are as follows:

- to analyse and interpret the value elements of the NCMGU's extended mushroom growing supply chain;
- to make a feasibility study for Hungarian mushroom growing enterprises;
- to explore and make a comparative analysis of international best practices.

Not long ago in the research institute in Eger, Hungary a green house was built which can be sustained by renewable energy sources, variety experiments will be soon launched and analysed economically. In the future the goal of the research is to find that exotic mushroom variety or varieties which can exploit the opportunities lying in renewable energy sources at the maximum.

#### References

- Bowen, S. (2011). The Importance of Place: Re-territorialising Embeddedness. *Sociologia Ruralis*. 51(4):325-348.
- Csáki, Cs. et al. (2010). Food safety. The strategical bases of Hungarian food economy, rural development and food safety. ('Élelmezésbiztonság. A magyar élelmiszer-gazdaság, a vidékfejlesztés és az élelmiszer-biztonság stratégiai alapjai'). Hungarian Academy of Sciences (Magyar Tudományos Akadémia), Budapest, p. 154.
- Dupcsák, Zs, Marselek, S. (2015). Logistics ideas, agricultural logistics tasks ('Logisztikai elképzelések, agrárlogisztikai feladatok') *Journal of Licensed Growers – Farmers (Östermelők – Gazdálkodók lapja)* No. 3 under publication
- FAOSTAT (2011). Statistics division of the food and agriculture organization of the United Nations, <http://faostat.fao.org/> [Accessed: 15 Decemeber 2014]
- Fisher, M.L. (1997). What is the Right Supply Chain for Your Product? *Harvard Business Review*. 75(3):105-116.
- Goodman, D. (2004). Rural Europe Redux? Reflections on Alternative Agro-Food Networks and Paradigm Change. *Sociologia Ruralis*. 44(1):3-16.
- Hu, D, Zhang, X. (2010). Mushroom economics in China. – *Mushroom Business*. <http://www.mushroombusiness.com/content/articles/detail/232/mushroom-economics-in-china> [Accessed: 17 December 2014]
- Kearney, J. (2010). Food consumption trends and drivers. *Royal Society Biological Sciences*. 365(1):2793-2807.
- Kovács, D. (2011). Mushrooms in eating or the world's mushroom consumption, growing, collecting and commerce ('Gombák az étkezésben, avagy a világ gombafogyasztása, -termesztése, -gyűjtése és -kereskedelme'). *Mycological Statements (Mikológiai Közlemények)*, Clusiana 50(2):183–198.
- Landais, E. (1998). Agriculture durable: les fondements d'un nouveau contrat social? *Courrier de l'environnement de l'INRA* (33):23-40.
- Mutsy, Á. (2005). Analysing the Hungarian mushroom sector's situation from 1990 to 2005 ('A magyar gombaipar helyzetének elemzése 1990-2005-ig'). (edited by Lippay, J., Ormos, I. and Vas, K.) *Scientific Session*, Corvinus University, Budapest p. 373.
- Pagh, JD, Cooper, M.C. (1998). Supply Chain Postponement and Speculation Strategies: How to Choose the Right Strategy. *Journal of Business Logistics*. 19(2):13-32.
- Pálvölgyi, T, Czira T, Csete, M, Csité, A, Péti, M. (2012). Environmental Evaluation to the Strategic Environmental

- Analysis of National Sustainable Development Framework Strategy. ('Környezeti értékelés a Nemzeti Fenntartható Fejlődési Keretstratégia Stratégiai Környezeti Vizsgálatához') Env-in-Cent Kft., Hungarian National Sustainable Development Council (Nemzeti Fenntartható Fejlődés Tanács), Budapest.
- Pónusz, M, Horváth, A. (2014). Aspects of green logistics developments in the EU. ('Zöld logisztikai fejlesztések aspektusai az EU-ban') In: Kiss Tibor (ed.) Via Futuri 2014: Sustainability – Competitiveness – Regional Development: Theoretical researches, practical use (Via Futuri 2014: Fenntarthatóság - Versenyképesség - Regionális fejlődés: Elméleti kutatások, gyakorlati alkalmazások.) University of Pécs, Faculty of Economic Studies (PTE Közgazdaságtudományi Kar), pp. 150-157.
- Porter, M.E. (1985). Competitive Advantage, Creating and Sustaining Superior Performance. NY: Free Press, (republished with a new introduction, 1998) p. 37.
- Rácz, J, Koronczy, I. 2001. How to grow agaricus mushroom? ('Hogyan termesszünk csiperkegombát?'). Quality Champignons Kft., Kerecsend, pp. 7-14.
- Szabó, I. (ed.) (1990). Growing agaricus, oyster and other mushrooms. ('A csiperke, a laska és más gombák termesztése'), ILK Modul Entrepreneurship Office (Vállalkozási Iroda), Budapest.
- Szilágyi, TP, Medve, A, Tóth, T. (2013). Investment process analysis from the procurer's decision making to execution. ('Beruházási folyamatvizsgálat a megrendelői döntéshozataltól a megvalósulásig'), in Volume of Studies: Business development in the 21st century (Vállalkozásfejlesztés a XXI. században), Budapest.
- Tégla, Zs, Hagen, I, Holló, E, Takácsné, Gy.K. (2012). Adoption of Logistic principles in WOODY-biomass energy clusters. Review of Applied Socio-Economic Research, REASER..4(2):236-246.
- Uzonyi, S. (1971). The history and situation of the Hungarian mushroom spawn production. ('A hazai gombacsíra-gyártás története és helyzete'), Doctoral thesis at University of Horticulture and Food Industry, Budapest

**SUPPLY CHAIN PARTICIPANTS IN THE MUSHROOM SECTOR AND THEIR ROLE IN THE ADDED VALUE CREATION IN SUSTAINABLE WAY BASED ON A HUNGARIAN CASE STUDY**

**S u m m a r y**

Finally as a summary mushroom growing will play a thoughtful role in solving the world's feeding problems and working sustainable farming in the future and hopefully an important role in the world of sustainable farming. Its economic significance is inevitable since it can be grown based on plants, established several times a year and having high nutritional value it is a cheap source of protein.

**KEYWORDS:** mushroom growing, sustainable agriculture, supply chain, added value, sustainable production

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## LABOUR AND MACHINE EFFICIENT UTILIZATION IMPORTANCE TO THE ENTERPRISE PROFIT

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### Annotation

In recent years the manufacturer's competitiveness environment has been greatly influenced by the new consumer trend. Consumers developed a need for variety, high quality, low price and just on time products. This affect has influenced the producer's profitability dramatically. The food industry is one of the most influenced industries, because the consumers demand for fresh, healthy and quality food products. On the other hand, globalization has made a large impact to the overall competitiveness environment; producers must adapt their products to different cultures at low price in order to work in a global market. Therefore, the goal of this paper is to identify the importance of labour and machine utilization in order to maintain high profitability and fulfil consumer demands for quality and just on time products. The methodology used in this paper consist of secondary material analysis together with a case study of a candy manufacturer. The authors' results identifies the importance of shift scheduling and machine time evaluation, which can results in higher profitability and fulfilment of consumer demands. The results provided in this research can also be applied to other manufacturing industries.

Key words: *Productivity, Human Resource, Manufacturing Process Optimization, Machine Utilization, Competitiveness.*

JEL: D24, L66.

### Introduction

The manufacturing industry's competitiveness environment has been greatly influenced in recent years by the globalization of the world markets. "Manufacturing environment is constantly being pressured for improvements. Three clusters of pressures now bearing down on manufacturing systems, namely globalization, the need to develop environmentally benign products and products and the new business and organizational structures now emerging" (Raouf, Ben-Daya, 1995). In addition, consumers created a new demand for the manufacturing industry. They require high quality products, with a variety and just on time distribution. "Product Development and Management Association best practices study suggests that approximately 15% of the new product ideas and approximately 60% of the new products actually introduced into the market place make it to a commercial success in the market" (Grunert, Trijp, 2014). Because of this new developed trend producers must adapt and develop their production processes, however lack of capital may cause bankruptcy. On the other hand, the government has started to lack more in a global scale and created laws that protect consumer health and environment. "Promoting sustainable consumption and production are important aspects of sustainable development, which depends on achieving long-term economic growth that is consistent with environmental and social needs. Most government policies in this area focus on stemming the environmental impacts of unsustainable industrial production practices, primarily through regulations and taxes. Promoting sustainable consumption is equally important to limit negative environmental and social externalities as well as to

provide markets for sustainable products" (OECD, 2008). Because of the changed competitiveness environment producers competitiveness is lowering and it is important to develop a strategy which could maximize profit and satisfy the government and consumer's demands. "In the past decades, the requirements for manufacturing have increased significantly. The major reasons are shorter product and market life cycles, a significantly increased model range but smaller batch sizes and highest technological requirements. In order to distinguish oneself from other companies and to improve the own competitiveness in this challenging market, an effective manufacturing strategy is crucial. Therefore, the manufacturing strategy has to be coordinated with other functional strategies and depends on enterprise individual contents. In result, the manufacturing strategy determines the certain use of specific resources and capabilities in manufacturing, which can enable the development and expansion of competitive advantages. However, existing approaches for developing a manufacturing strategy do not allow a sufficient response to the described market situation" (Dombrowski, et al. 2016). Therefore, the goal of the paper is to conduct a case study and identify the importance areas of the enterprise, which could maximize profit and in the same time efficiency utilize the machines and labour force. The main focus will be on profit and consumers demand for just in time, quality products. The methodology used in this paper consists of secondary material analysis together with a case study of candy production. Flow process charts will be used to analyse the production process. Therefore, the object of the study is machine and labour utilization possibilities in order to maximize profit and satisfy just in time production. For

the achievement of this goal several objectives must be accomplished:

1. Analyse the manufacturing process optimization possibilities;
2. Identify possible competitiveness strategies for producers;
3. Conduct a case study of candy manufacturing process.

## Literature review

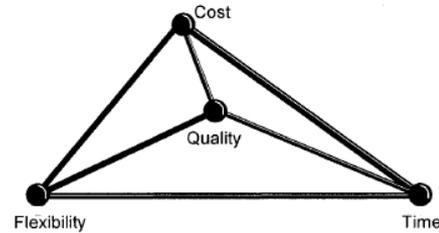
Process optimization is an important aspect of every company, in order to achieve competitiveness advantage it is important to constantly improve all activities. However, the concept of competitiveness advantage means that you need to have an advantage from your competitors in a particular field. It doesn't mean that you can't work on several factors, but it means that you need to concentrate on a particular area one at a time and then further develop the overall productivity of the company, because all aspects are connected.

In order to optimize a process you need to identify the area that you wish to optimize and then find a way how to measure the productivity possibilities. When all activities are overview the main area that needs to be optimized can be chosen. In this situation we will analyse the manufacturing process. The manufacturing process is important to understand, because by changing the sequence or making several steps at the same time may increase the total productivity of the process. There are different ways of manufacturing processes that may be used, mainly this depends on the manufacturing line and can slightly modify the existing product. Then the packaging of the product may vary depending on the line and methods used.

Making adjustments to the manufacturing process or buying additional equipment may require to expand and change the layout of the machines. Understanding not only the manufacturing steps is important, but the workers movement and machine position. Simply reorganizing the plant's scheme can save time and reduce the shifts times. By selecting the best positions, time may be saved. On the other hand, by hiring different amount of employees or changing their working time can also increase productivity (Sawhney, 2013).

### *The goal of manufacturing process optimization.*

By manipulating the processes and time for work an optimization of the overall manufacturing process may be achieved. However, there are still limitations to this idea. Figure 1 shows the main limitations when trying to optimize the manufacturing process.



**Fig. 1.** The manufacturing tetrahedron (Ling, 2006)

It is important to considered witch goal to select when optimizing the process: cost, quality, flexibility or time.

### *Manufacturing analysis process.*

It is important to analyse a process from end to beginning, however it is important to select a particular product or project. Then a process flow needs to be made from end to beginning. By using the flow process chart it is possible to determine the problematic area of the process. To do this it is important to model the whole process by using different shapes that resembles a particular task: process (rectangular), decision (diamond), inspection (circle). These are the main 3 figure that are important for a proper process visualization scheme. It is also important to draw the process scheme detail, that no steps would have not be missed. The whole process visualization is not enough, it is essential to analyse and offer solutions for optimization. The process flow diagram is used in this case (Priest, Sanchez, 2013). As mentioned before the main problem area easier to identify by calculating the duration of operations. Firstly, it is important to optimize the manufacturing process. To do so it is important to conduct a more concrete process flow chart and out of it make a process flow chart diagram with standard times. Then it is important to use creativity, ideas, and recommended possible solutions. In our case, we will overview some scientists that analysed the manufacturing process.

*Possible solutions for manufacturing process optimization.*

When evaluating several ideas it is important to identify the best ones. Generally speaking it is wise to selected all the possibilities and simply identify the pluses and minuses for all of them. The analysis of this area may be difficult in some times and often it will be not very objective, because it is hard to determine the exact possibilities if you are implementing a management system, however if it is a product line or a change in the working staff it is more easily done. Speaking about the manufacturing process, there can be several areas witch to analyse.

*Computer vision.*

Computer vision is a field that includes methods for acquiring, processing, analysing, and understanding images and, in general, high-dimensional data from the real world in order to produce numerical or symbolic information. Gruzauskas and Valentinas has together with LTD “Agito” implemented a computer vision system for French bread quality checking. The system’s implementation helped to save up working place and increase the productivity of the manufacturing line, the evaluation of return of investment indicates 122 days (approximately 3 months) (Gruzauskas, Komskiene, 2015).

*Automation of product line.*

Automation and combination of several manufacturing processes may increase the productivity and decrease cost, however large capital investments may be required. The Institute of Food Technologists analysis and amplifies the importance of packaging and environment safety (Brody et al. 2008).

*Expanded product line.*

Simply additional equipment may increase the productivity and manufacturing time problems. A lot of funding projects are helping to develop this area of the manufacturing. There are active European union projects that can be used for expending current manufacturing lines or plants e.g. “Regio invest It+”, “intellect+”, business development in country side areas” etc (European Commision, 2014).

*Changing staff philosophy.*

Lean Manufacturing (LM) is a business strategy that was developed in Japan. The main role of lean manufacturing is to determine as well as to eliminate the waste. Companies implement LM to keep their competitiveness over their competitors by improving the manufacturing system’s productivity and quality enhancement of the product. The goal of Rohani and Zahraee was to apply one of the most significant lean manufacturing techniques called Value Stream Mapping (VSM) to improve the production line of a colour industry as a case of study. To achieve this goal they implemented lean fundamental principles to construct VSM for identification and elimination of wastes by using team formation, product selection, conceptual design, and time-frame formulation through tact time calculation (Rohani, Zahraee, 2015).

*Reorganize manufacturing process.*

Changing the steps of manufacturing process may increase productivity. Another paper analysed the manufacturing cycle. The production characterized by complex and diverse technologies, alternative solutions and combined modes of work piece movement in the manufacturing process. Because of various approaches to this problem, an analysis of previous investigations has been carried out, and a theoretical base is provided for the technological cycle and factors affecting the manufacturing cycle time. The technological and production documentation of the company has been analysed to establish the technological and real manufacturing cycle times, total losses and flow coefficients. This paper describes the original approach to production cycle scheduling on the grounds of investigations of manufacturing capacity utilization levels and causes of loss, in order to measure their effects and to reduce the flow coefficient to an optimum level (Jovanovic, et al. 2014).

*Supply chain management.*

Implementing management systems that would help optimize the flow of raw material, manufacturing and distribution. Several universities from England analysed the possibilities to double the manufacturing speed. Their work concluded that the wider systems of production require the co-ordination of resources and push at the limits of human biophysical and cognitive limits (Allwood, et al. 2015).

*Evaluating Optimization level.*

When planning to implement a certain solution or if not possible after the optimization it is important to evaluate the efficiency of the optimization. This can be done in several ways. Formula 1 indicates the importance to evaluate the cycle time, especially if the current line is expended. Only then it can be determined if it would be wise to expend the manufacturing line (Venkata, 2011).

$$\text{Cycle time} = \frac{\text{Time per cycle}}{\text{Quantity per cycle}} \quad (1)$$

Formulas 2-5 indicates different types of productivity indexes. Formula 2 is all factor productivity that includes tangible inputs and all outputs, it does not measure the intangible inputs. However, it is not so important in this situation.

$$\text{All Factors Productivity} = \frac{\text{Goods produced}}{\text{All inputs used to produce them}} \quad (2)$$

Formula 3-5 shows the importance to evaluate the overall optimization level by using different criteria. Manufacturing time, machine quantity and quantity per worker.

$$\text{Single Factor Productivity} = \frac{\text{Output}}{\text{Time}} \quad (3)$$

$$\text{Single Factor Productivity} = \frac{\text{Output}}{\text{Labor}} \quad (4)$$

$$\text{Single Factor Productivity} = \frac{\text{Output}}{\text{Machine}} \quad (5)$$

The evaluation of these indexes is important in order to identify the optimization level achieved. Only by comparing the results proper competitiveness can be achieved.

The company was established in year 2012, last quarter. However, the company requested confidentiality and the commercial names won't be mentioned in this paper. This company is manufacturing candies. These candies are made from natural products. There are no added sugar, no other sweeteners. Therefore, all the sweet taste of the candies comes only from the natural fruit sugar content existing in fruit purees and juices. Nowadays, natural products becomes more popular, people are starting to take care of food rations. The main idea of the candies from the beginning was to create 100% natural sweet, without any artificial additives. Therefore, the natural candies has no preservatives, no dyes, no artificial flavourings, or any other bad stuff. There are some manufactures which manufacturing natural chocolate, candies, they called it eco products or natural. People who have diabetes are searching for products where they could find only natural sugar or other substitute and those products could help them to survive without sugar.

Let's start to talk about all processes which are important in all supply chain. The company is ordering products from other countries, because local fruits is not suitable. They are ordering fruit juice and puree for fruit stripes. After ordering they have to wait for items. At that time, when order is received, manufacturing process could start.

First step is to make the right consistency. Fruit puree and juice concentrates are same fresh fruits, just concentrated by evaporating part of the water. This evaporation is made in big boiler and it takes time for the final consistency. Because of this action, product has long term of validity. Also the evaporation took a lot of time and when it is happening, employees have no job except the company has stripes batch from last days.

When fruit juice and puree are finished, all mass are pour out in many metal vessel and then it have to stagnate. Than pieces are removed and personnel can start cutting works. It takes the biggest part of manufacturing time, because all cutting works are made by hands.

All stripes must be almost the same length and thickness. All jobs in workshop are made with gloves. After cutting, all stripes are covered with fiber. When products are finished, next step is packing.

For packing step company has packing machine, which is filled with packages. This machine could weigh fruit stripes and employee set the right weight for this action. After it, all stripes are placed in machine. When the right weight is available, stripes are placed in package and after that machine soldered it and embossed date.

## Case study of candy manufacturing process

When all package are weighed, other employee take it and pack in to box. A box is filled with 24 package. After this action, box is weighed and the weight must fit to rate. If it is not fit than all packages have to be reweighed. Sometimes packing machine pour in incorrect weight. When this is noticed, a lot of packages have to check.

When all these steps are finished, employees moved all boxed in to warehouse, count the balance and inform chief. This information is helping to know how many order could be sell. Sometimes available quantity is inadequate for customer orders.

After process review some of the real problems could be seen.

1. First and the biggest problem is that orders are bigger than production. Company run in to production shortage and it is stopping profit growth.
2. Next problem which took a lot of time is manual cutting. If company could optimize this process maybe all profit growing problem disappear.
3. Sometimes weight machine made a mistake and package weight could be more or less. It is notice when a box whit 24 package is weighted. If the weight is incorrect, all packages have to be reweighed.
4. The fourth problem could be the size or quantity of boiler. Maybe if the boiler would be bigger the productivity could increase. Other version – maybe company needs one more boiler for bigger productivity?

When all the problems are known, solutions are needed. If the company increase their production, they will get biggest profit. Of course, all suggestions could be made after calculations.

Optimisation processes are very important because when company couldn't deliver their product to big shopping centres they get penalty and have to pay it. Contracts have paragraph like "The seller did not produce a contract within the time limits, the seller must pay the penalty - a fine equal to the value of the goods overdue." When company has enough production it would save them from biggest monetary troubles.

One of the most important things is to know how much time all jobs are required. Flow chart could show all the jobs and flow process chart will show all duration.

First of all take a look in to flow chart. This could help to see which processes have to be done till company gets the product. Also it shows which of the processes could be done in the same time for saving time:

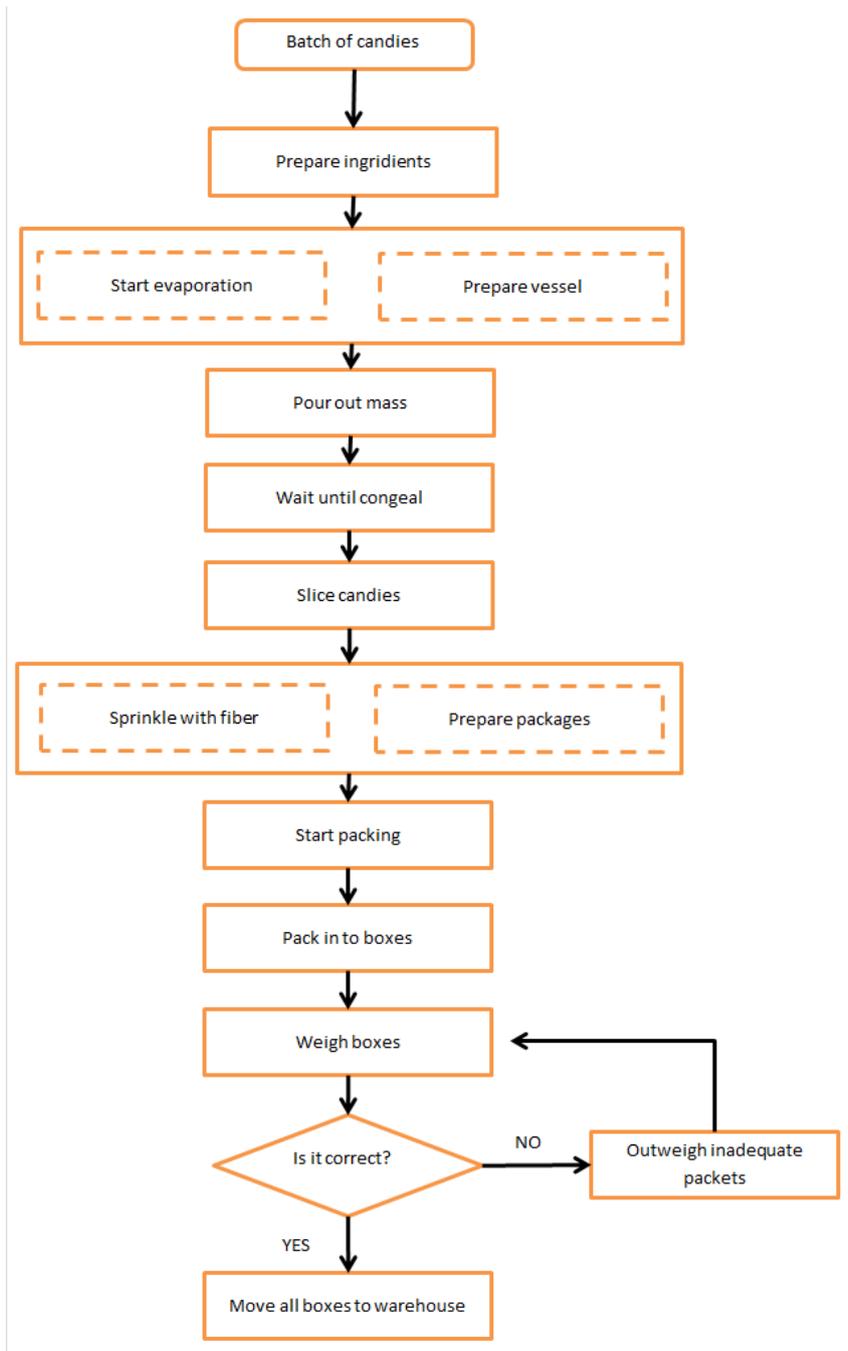


Fig. 2. Candy manufacturing process flow chart, made by authors

In this flow chart (Figure 2) the main processes could be seen. And in this entire chart one question is needed: "Is the weight of package is correct?" This question adds more time in manufacturing process. But first of all let's analyse processes without this inspection,

how much time one batch is needed. For this analysis take a look in to flow process chart. When company has no spoilage all chart is uninterrupted.

Action	Preparation	Time	Transportation	Time	Delay	Time	Operation	Time	Inspection	Time	Storage	Time
Employee gets order for new batch	○	5										
Fill the production table							○	5				
1.1. Check recipe							○	3				
1.2. prepare ingrediens							○	10				
1.3. Bring ingrediens near boiler			○	5								
2.1.1. Put ingrediens in boiler							○	7				
2.1.2. Turn on							○	1				
2.1.3. Waiting						○		270				
2.2.1. Took vessels from drying room			○	15								
2.2.2. Line with special material							○	10				
2.2.3. Waiting for mass						○		200				
3.1. Turn off boiler							○	2				
3.2. Pour out mass in to vessels							○	20				
3.3. Put on table							○	5				
4.1. Waiting						○		30				
4.2. Check the mass consistency							○	2				
4.3. Move pieces from vessels							○	15				
4.4. Crush the pieces							○	20				
4.5. Waiting						○		15				
5.1. Took all pieces in to cutting place			○	5								
5.2. Waiting						○		5				
5.3. Cutting works							○	240				
5.4. Move in to place for fiber			○	10								
6.1.1. Waiting						○		5				
6.1.2. Sprinkle all stripes							○	20				
6.1.3. Put in to box			○	3								
6.2.1. Took packages from warehouse			○	6								
6.2.2. Bring near packing machine			○	5								
6.2.3. Place in to machine							○	10				
6.2.4. Waiting for stripes						○		15				
7.1. Bring stripes near machine			○	6								
7.2. Turn on machine							○	1				
7.3. Check all parameters									○	5		
7.4. Pour in stripes							○	9				
7.5. Packing							○	120				
7.6. Waiting						○		15				
8.1. Took all packages							○	15				
8.2. Put in to box							○	30				
8.3. Check correct number of packages									○	20		
8.4. Put on desk							○	5				
9.1. Waiting						○		5				
9.2. Put box on weighing machine							○	15				
9.3. Check weight									○	15		
10.1. Check weigh limit									○	10		
10.2. Waiting						○		5				
11.1. Put the box on trolley							○	10				
11.2. Waiting						○		5				
11.3. Transport in warehouse			○	8								
11.4. Close warehouse											○	2
Percent (%):		0,5		5,8		35,1		53,6		4,8		0,2
Total time (longest duration):		5		60		365		557		50		2
Total (min) :						1039						
Total time (hours):						17,32						

Fig. 3. Flow process chart for manufacturing process, made by authors

As it is seen, all batch continues 17 hours and 19 minutes. It is more than two working days for one batch. Delay took 35.1 % of all time (figure 3). It is because of evaporation. It took the biggest part of time. Also operations time took 53,6 % of time and cutting works and packing works took about 6 hours. One batch gives

$$\text{Cycle time} = \frac{\text{Time per cycle}}{\text{Quantity per cycle}} = \frac{1039}{1200} = 0,87 \text{ (cycle time/quantity)} \quad (6)$$

approximately 50 boxes which are filled with 24 packages. So for 1200 packages company has to give more than 17 hours. Now the cycle time formula could be calculated It would be compared with the result which will be shown in suggestions:

Also the single factor productivity could be calculated. For this calculation Output and time spent for it is used:

$$\text{Single Factor Productivity} = \frac{\text{Output}}{\text{Time}} = \frac{1200}{1039} = 1,15 \text{ (output/time)} \quad (7)$$

For other calculation Output and labour is used. As it is known, company has 5 employees for manufacturing processes. They all are working for 8 hours.

$$\text{Single Factor Productivity} = \frac{\text{Output}}{\text{Labor worktime}} = \frac{1200}{85} = 14,12 \text{ (output/labor hour)} \quad (8)$$

Last calculation shows that one employee made 14,12 packages per hour. It is not very high ratio and maybe some changes in all manufacturing processes could make it bigger.

First of all let's talk about weighing process. Sometimes weighing machine choose not correct weight and the weight of package could be more or less than target weight. And part of chain where employee checking the weight of all box with 24 packages took additional time. All packages has to be outweighed and inadequate packages must be replaced. After this weight of all box has to be rechecked. For one box employee retard about 5 minutes. It do not look terrible for one box, but for one batch about 20 % of boxes must be outweighed. It is 10 boxes and it took about 50 minutes. This outweigh process burden all manufacturing chain.

And one batch time change in to 1089 minutes (18 hours and 9 minutes). If company want to decrease time for one batch, the solution could be to change weigh machine. This machine allocates less weight in line and it helps to reach the target weight. If company invests money in to new machine, it could decrease time for one batch. Also company saves packages and money for it.

Next proposition is to work in three shifts. One shift would manufacture pieces for cutting other one would work in cutting and the last one will work in package stages. Preparation and mass manufacturing took 348 minutes and it is 5 hours and 48 minutes. If one employee has responsibility of evaporation, he could make 2 batch of mass for one day. Preparation for evaporation would be two time decrease and only evaporation time (4 hours 30 min) would be double.

Second shift could start working after first evaporation. They would do only cutting work. It takes 370 minutes and it is 6 hours and 10 minutes. Three employees are needed in this stage. After one day, company has to have 1,5 batch of candies and it is about 1800 packages.

The last stage is about packing. It took 337 minutes and it is 5 hours and 37 minutes. Also all preparation works could be done by one time and only packing would be doubled (3 hours and 55 minutes). After calculation it is seen that after almost 10 hours 2 batches are packed

Shift/Hours	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Evaporation																						
Cutting																						
Packing																						

Fig. 4. Working time of shifts, made by authors

Figure 4 shows how much time 3 shifts need for 2 batches. Total time is 21 hours. Now new ratios could be calculated. First of all calculate cycle time.

$$\text{Cycle time} = \frac{\text{Time per cycle}}{\text{Quantity per cycle}} = \frac{1260}{2400} = 0,525 \text{ (cycle time/quantity)} \quad (9)$$

Cycle time decreased from 0,87 to 0,525. It shows that time which is needed for one cycle, in this company for one batch, is lower. And that's mean that 3 shifts is better than one.

$$\text{Single Factor Productivity} = \frac{\text{Output}}{\text{Labor worktime}} = \frac{2400}{1260} = 1,9 \text{ (output/time)} \quad (10)$$

$$\text{Single Factor Productivity} = \frac{\text{Output}}{\text{Labor worktime}} = \frac{2400}{56} = 42,85 \text{ (output/labor hour)} \quad (11)$$

This ratio shows how much productivity could be increased. When 5 employees, each work 17 hours, productivity is 14,12 for each. And now one employee works 10 hours, 3 employees work 36 hours and one work 10 hours, productivity is 42,85 hours.

In the future, when company has more profit, one more suggestion is to buy one more boiler and hired more employees. It helps to get more packages in the same

time. Of course production would be increased but productivity will be the same. And after few years company could buy production line. All cutting works are manual and if company buy production line it could be all automatic.

This production line has boilers where mass could be evaporated, also all mass are spilled in to shapes. It could

save time for cutting work and other preparation works related with cutting.

Here is one example where mass could be spilled and stagnate and after that only move from this shape is

## Conclusions

During the first part theoretical solutions were overviewed, it can be concluded that:

The process flow chart and process flow chart diagrams can be effectively used in the manufacturing process optimization. The visualization helps to identify the key activates that may cause the same problems, at the same time the duration of the whole process may be evaluated. This is important, because manufacturing optimization can cause changes in different aspects of the process e.g. flexibility, cost, time and quantity are closely related with each other.

The overviewed scientific recommendations showed help to identify possible solutions for the manufacturing process. In summary, it can be sad that manufacturing lines needs to be automated by buying additional equipment, implementing sensors or computer vision systems. On the other hand human resource reorganization or management systems implementation can also be beneficial to the overall productivity level.

Lastly it was concluded that after the optimization process it is essential to evaluate how much exactly did the productivity increase, only then it is important to decide if the project was implemented correctly. However, determining only the current level is not enough other management system implementation inside the enterprise is important, if the company wants to maintain a proper optimization level in the long run.

After all manufacturing process analysis it is seen that some changes in company could increase productivity and could help company have more profit.

1. Company could not make all orders because of production shortage. They could use all having labour recourses and have more production. Now they are working with one shift which is 5 employees. If company split these employees in 3 shifts they could do more production in less time. Nowadays company make one batch in 17 hours. If they agreed to have 3 shifts they could have 2 batches in 21 hours. This would lead to labour productivity increase by 303%
2. Manual cutting took a lot of time in manufacturing process. Company could invest money for production line which could void manual cutting. Production line could make candies without cutting. This process

important and that's all. Of course it is a large investment but if company expand trade in other countries it could help to be ready for all orders.

could be replaced with mass filling in to shapes. Then only mass withdrawal from shapes would be manual process. It could save a lot of time in all manufacturing. Of course it is a big investment and it could be implemented when company extend their sale.

3. The weighing problem took about 20 % per batch. It is too much and company has to change their weigh machine. They could choose another machine which can spread candies in to smaller quantities. Then candies would be exactly spread and they decrease this problem. Also company would save money for corrupted packages.
4. One more solution for trying to increase production is to buy bigger boiler or get new one. This decision did not increase productivity. But it could increase production and in same time for example company could do not two batches but four. It could ensure that warehouse would be always with enough quantity of packages. And in the nearest future when company has more customer they would get biggest profit.
5. Lastly, it is recommended to implement a management system inside the company. One of the problematic areas was the incompatibility of supply, manufacturing and distribution. Therefore, implementation of supply chain management or LEAN management principles could lead to better productivity level in all enterprise activities and not only manufacturing. The main principle of LEAN is to standardize processes that they could be easily documented, duplicated and would last the same amount of time. Then it is possible to better plan the manufacturing and delivery orders.

The case study analysis indicates the importance of technological and machine optimization in order to achieve sustainable competitiveness advantage. Moreover, by utilizing labour and machines maximum productivity is achieved, which is related with the enterprises profitability. Without concrete durations of manufacturing process it is hard to plan the production time and meet the deadlines of the customers. Therefore, the compatibility of machine and labour can provide sustainable competitiveness advantage and maximize enterprise profit.

## References

- Allwooda, M., Childsb, T., Clarec, A., Silvad, A., Dhokiae, V., Hutchingsa I., Leachc, R., Leal-Ayalaa, D., Lowthc, S., Majewskif, C., Marzanog, A., Mehnenh, J., Nassehie, A., Ozturki, E., Rafflesg, M., Royj, R., Shyhaj, I., Turneri S., 2015. Manufacturing at double the speed. *Journal of Materials Processing Technology*, 229, p.p. 729-757.
- Brody, AL, Bugusu, B., Han, JH, Sand, CK, McHugh, TH., 2008. Scientific status summary. Innovative food packaging solutions. *Journal of Food Science*, 73(8), pp.R107-R116.
- Ling, F., 2006. Manufacturing systems: Theory and practice, USA, Springer.
- Dombrowskia, U., Intrab C., Zahnb T., Krenkela P., 2016. Manufacturing Strategy – A Neglected Success Factor for Improving Competitiveness. *Procedia CIRP*, 41, pp.9-14.
- Grunert, K., Trijp, V., 2014. Consumer-Oriented New Product Development. *Encyclopedia of Agriculture and Food Systems*, 2, pp.375-386.
- Jovanovic, J.R., Milanovic, D.D., Djukic, R.D., 2014. Manufacturing Cycle Time Analysis and Scheduling to Optimize Its Duration. *Strojniški vestnik – Journal of Mechanical Engineering*, 60(7-8), pp.514-524.

- OECD, 2008. Promoting Sustainable Consumption, Danvers, The Organisation for Economic Co-operation and Development.
- Priest, W., Sanchez, M., 2013. Product development and design for manufacturing, Rochester, Rochester Institute of Technology.
- Raouf, A., Ben-Daya, M., 1995. Flexible manufacturing systems: recent developmens, Netherlands, Elsevier Science B.V.
- European Commision, 2014. European Research Area Facts and Figures 2014.
- Rohani, J.M., Zahraee, S.M., 2015. Production Line Analysis via Value Stream Mapping: A Lean Manufacturing Process of Color Industry. *Procedia Manufacturing*, 2(February), pp.6–10.
- Sawhney, R., 2013. Implementing labor flexibility: A missing link between acquired labor flexibility and plant performance. *Journal of Operations Management*, 31(1-2), pp.98–108.
- Gruzauskas, V., Komskiene, D., 2015. Maximizing Competitive Advantage: Product Lines Automation. *Vyznam ludskego potencialu v regionalnom rozvoj: zbornik z medzinarodnej konferencje*.
- Venkata, R., 2011. *Advanced Modeling and Optimization of Manufacturing Processes*, London: Springer.

RECEIVED: 27 January 2016

ACCEPTED: 25 March 2016

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  8. Examples of referencing:

### Books

Valackienė, A. (2005). *Crisis Management and Decision-making*. Technology, Kaunas.

Berger, P. L., Luckmann, Th. (1999). *The Social Construction of Reality*. Pradai, Vilnius.

### Journal articles

Boyle, T. (2003). Design principles for authoring dynamic, reusable learning objects. *Australian Journal of Educational Technology*, 19(1), 46–58.

### Book articles

Curthoys, A. (1997), History and identity, in W. Hudson and G. Balton (eds), *Creating Australia: Changing Australian history*, 25 - 84. Allenn and Unwin, Australia.

### Web documents

Wiley, D. A. (2003). Learning objects: difficulties and opportunities. [Retrieved March 18, 2009], <[http://opencontent.org/docs/lo\\_do.pdf](http://opencontent.org/docs/lo_do.pdf)>.

### Statistical information and web resources

Lithuanian Emigration Statistics. (2009). Statistics Lithuania to the Government of the Republic of Lithuania. [Retrieved February 16, 2009], <<http://www.stat.gov.lt/lt/news/view/?id=6819&PHPSES SID=5b1f3c1064f99d8baf757cde1e135bc0>>.

9. **Summary with the keywords** is written in English. **The summary should include at least 3000 characters.**
10. Short CV of the authors, which consists of: name, surname of the authors. Degree. Work. Occupation. Research direction. Address. Telephone. Other information about the author. The author CV must include **up to 3000 characters**.

### Requirements for the outline and layout of the article

- The articles must be written in MS Word A4 pages.
- Document margins: top – 2 cm, bottom – 2 cm, left – 2 cm and right – 2 cm.
- Full text: in lowercase letters, aligned to both margins, size – 10 pt, font – Times New Roman, first line of the paragraph indented by 0.5 cm.
- Title of the article: in capital letters, left alignment, size – 14 pt., **Bold**.
- Author’s name, surname: in lowercase letters, left alignment, size – 12 pt., **Bold**.

- Institution name: in lowercase letters, left alignment, 10 pt., *Italic*.
  - E-mail: lowercase letters, left alignment, 10 pt., *Italic*.
  - Abstracts: text size – 8 pt, title – 10 pt, **Bold**. A full stop is not put after the last main word.
  - Section names: lowercase letters, left alignment, size – 11 pt., **Bold**.
  - Word *references* – 10 pt, reference list – 9 pt.
  - Summary in English language: article name in capital letters size 10 pt, **Bold**, word Summary – expanded by 2 pt. (do not put spaces between the characters), text size – 9 pt., first line indented by 0.5 cm.
- **Figures** and **diagrams** must be clear, schemes – grouped into a single object.
- Tables** and **schemes** have to be numbered and titled.
1. Table titles are written above the table in the centre.
  2. Figure names are written under the figure in the centre.
- The text will not be further edited.**
- NOTE. It is obligatory to use the prepared template for the article.***

Klaipėdos universiteto leidykla

**Vadyba 2016'1(28).** Mokslo tiriamieji darbai

Klaipėda, 2016

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SL 1335. 2016 04 28. Apimtis 17,5 sąl. sp. l. Tiražas 50 egz.  
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