University College of Economics and Culture

ECONOMICS AND CULTURE

Volume 14, Issue 1

Riga, 2017

AIM AND SCOPE

Journal *Economics and Culture* is a peer-reviewed international publication dedicated to the exchange of information about the latest studies in the fields of economics, finance, business management and entrepreneurship, education and culture.

Journal *Economics and Culture* has been published since 2010 by the University College of Economics and Culture. Journal publishes two issues per year – in June and December.

Authors are welcomed to submit their papers devoted to the issues in political economics, business performance, entrepreneurship, human resource management, finance and banking, marketing, e-learning and e-teaching, IT solutions for business and education, commercial law, and cultural management.

The editorial board is participating in a growing community of CrossCheck System's users in order to ensure that the content published is original and trustworthy. CrossCheck is a medium that allows for comprehensive manuscripts screening, aimed to eliminate plagiarism and provide a high standard and quality peer-review process.

TABLE OF CONTENTS

THE EVALUATION OF TRADE CREDIT INSURANCE IN LITHUANIAN BUSINESS MARKET AS A CREDIT RISK MANAGEMENT TOOL

Aleksandra Lezgovko[1], Andrej Jakovlev[2]

[1] *Mykolas Romeris University, Insurance and risk management institute, Lithuania, aleksandra@draudimas.com*

[2] *Mykolas Romeris University, Lithuania, andrej.jakovlev.lt@gmail.com*

Abstract. In today's trade, the vast majority of commercial transactions in both domestic and international trade are concluded by applying trade credit terms. *The aim of this article* is to analyse the trade credit insurance and, according to the methodology, to evaluate it as a credit risk management tool in the context of Lithuanian business market. The authors have proposed a *methodology* that combines theoretical and practical research methods. First of all, with assistance of qualitative analysis, the alternative external credit risk management tools were examined. Such analysis allows not only to identify the advantages, disadvantages and benefits of researched risk management tools but also to assess the efficiency and rationality of trade credit insurance in the context of alternative methods. In order to carry out an assessment in the practical aspect, considering the lack of statistical data, it was decided additionally to perform an expert evaluation. After performing an assessment of trade credit insurance, it was concluded that in international trade, with a large buyer portfolio and high sales volume, the trade credit insurance becomes the most effective and rational way to manage credit risk, which eliminates the losses because of the debtor's insolvency or bankruptcy, manages countries and sector's risks and helps to discipline the debtor, what determines the decline in overdue accounts frequencies, amounts and volumes.

Introduction

The topic of this article is relevant because in modern trade, the vast majority of commercial transactions in both domestic and international trade are formed, namely, by applying trade credit conditions, thus the creditor risks that in case if the debtor is unable to fulfil its debt obligations, the company will not receive its sales revenue. As market conditions are changing and the competition is getting more intensive, in order to grow and develop Lithuanian business, representatives are forced to search for new export markets, so the corporate trade credit risk environment expands. Also, it is extremely important for business representatives to know what are the effective and rational methods of trade credit risk management and what is the efficiency of such management methods. However, during the analysis of Lithuanian and foreign scientific literature, it was noticed that trade credit risk management is paid relatively little attention – the trade credit risk management is usually studied only in the context of company's financial analysis, offering methods that are based on internal management resources. During the analysis of the scientific literature, it was noticed that there is no unified description of the trade credit concept available. Paul and Boden (2012) provide a description of the concept of credit based on the origin Latin word *credere* (faith, trust) or *creditum* (loan debt). Ferrando and Mulier (2012) indicate that trade credit as a delay between the delivery of goods and services and the payment for them. However, Rutkauskas et al. (2008) argues that in most cases, credit is still described as an economic–monetary relationship. According to Jasiene and Laurinavicius (2009), usually, there are commodity and monetary forms of credit distinguished. Pike and Cheng (2001) describe trade credit as a process comprising the combined commodity–financial transaction. The authors believe that the exchange of goods (or services) is separated from the exchange of money in terms of time. Nilsen (2002) compares credit with a loan and,

therefore, describes the trade credit as supplier's short-term loan to the purchaser. But Paul (2007) stated that the supplier's (non-financial organizations) goal accepting trade credit terms is, namely, to sell its goods and not to provide financial resources to the debtor. Pridotkiene and Snieskiene (2011) describe trade credit as a process when a company sells goods or provides services, allowing the buyer to pay after a pre-agreed period. By providing deferred payment terms, the company expects to achieve some certain materialistic and (or) non-materialistic benefits – such as increased competitiveness, customer portfolio growth, future increase in sales revenue and the like. Ferrando and Mulier (2012) describe the use of trade credit of a firm like a twofold process in which a firm can receive trade credit from its supplier (accounts payable) and, in turn, can extend trade credit to its customers (accounts receivables). Trade credit is offered by suppliers to their customers as an alternative to pre-payment or cash on delivery terms, or the need for expensive bank letters of credit, providing time for the customer to generate income from sales before paying for the product or service (Jones, 2010).

Trade credit (or sometimes called commercial credit) is seen as the most popular form of payment and in the scientific literature is considered as one of the most important precondition for company's business and competitiveness development (Pridotkiene, Snieskiene, 2011). Whilst early trade credit theories relate the use of trade credit to the presence of information asymmetries and the monitoring advantage that suppliers have over banks, more recent analyses focus on the importance of trade credit (mainly in the form of accounts receivable) as a cash management tool (Ferrando, Mulier, 2012).

Particularly, very little attention is paid in order to determine the effectiveness and disadvantages of external trade credit risk management methods. Therefore, it was decided to research the trade credit insurance and the following aim of the research was raised – to evaluate it as a credit risk management tool in the context of Lithuanian business market. The carried-out assessment was based on a major *problem of the research* – is the trade credit insurance is an effective and rational way to manage credit risk in Lithuanian business market? Also, the objectives of the research were nominated: to analyse the concept of the trade credit risk, to research and present the trade credit insurance assessment methodology, to investigate the trade credit insurance, herewith the advantages and disadvantages of alternative credit risk management instruments, and to make an assessment of its efficiency and rationality as a credit risk management tool in the context of Lithuanian business market. Research methods used in this study are analysis of scientific literature; analysis of statistical data; qualitative comparative analysis; and expert evaluation, calculation and assessment of Kendall's concordance coefficient; empirical research is carried out.

During the empirical research, the following hypothesis of this article was nominated: the trade credit insurance is an effective and rational way to manage credit risk in order to develop the business in Lithuanian business market. Our empirical research has confirmed this hypothesis, that is, both the data obtained during the expert evaluation and the data obtained from qualitative comparative analysis confirmed that trade credit insurance is the most effective and rational credit risk management tool in cases when trading goods or providing services in domestic and especially in foreign markets and in cases of large buyer portfolio. It eliminates losses occurred because of the debtor's insolvency or bankruptcy risks and manages countries and economical sector risks, whilst providing the opportunity to use additional factoring service to finance the commercial transactions and to control the working capital flow and to obtain more favourable conditions for trade financing from commercial banks. Also, during the research, it was determined that the implementation of insurance in the management of company's buyer portfolio credit risk allows the policyholder to achieve a higher reliability and credit rating and also is an efficient method for optimising company's administrative costs. All of this allows the businesses representatives to focus more on the core business, increase its operational efficiency and gain a competitive advantage, which enables the development of the business. At the end of the article, the conclusions and recommendations on how to properly choose an effective credit risk management tool and when trade credit insurance can be used as an efficient and rational method to manage credit risks is provided.

The conception of the trade credit insurance as a credit risk management tool

The sales of goods and services are exposed to a significant number of risks, many of which are not within the control of the supplier. According to Jones (2010) and Li, Zhen and Cai (2014), the highest of these risks and one that can have a catastrophic impact on the viability of a supplier is the failure of a buyer to pay for the goods or services he or she has purchased.

Losses attributed to non-payment or bankruptcy occurs regularly. Default rates vary by industry sector and country from year to year, and no industry or company is safe from trade credit risk. In order to avoid non-payment risk and to ensure ready access to bank financing, suppliers can purchase trade credit insurance, which is an insurance policy and risk management product that covers payment risk resulting from the delivery of unpaid goods or services. Li, Zhen and Cai (2014) describe trade credit insurance as one of the most important risk management tools that is widely used in company's daily operation.

Approximately 90% of the world's trade credit insurance market is covered by 'Big Three' insurers – Euler Hermes, Coface and Atradius. Therefore, the authors will use the information provided by the 'Big Three' and the largest worldwide broker AON in order to research the main operational principles of trade credit insurance as a trade credit risk management tool.

Trade credit insurance policies are very flexible and consist of three main types of cover:

- Portfolio cover – it is the most common type of trade credit insurance that typically covers firm's whole sales turnover and all of the buyers, above a pre-agreed first loss level. The underwritten buyer portfolio is constantly monitored and any changes in the status of a buyer are provided to the seller, so the firm could make appropriate decisions to avoid or mitigate the non-payment risk;

- Single risk or buyer cover – this type of cover is particularly useful for organisations that deal with only one buyer or have significant concentration of exposure to one buyer.

- Selected risks cover – can cover against certain selected risks. Two of the most common reasons for choosing this type of cover are the wish to cover key concentration exposures or receivables that will be assigned to a bank.

According to Euler Hermes, Coface, Atradius and The International Credit Insurance & Surety Association (ICISA), the major part of trade credit insurance policies issued are the portfolio cover type, also referred to as whole turnover cover. This type of insurance policy covers all the buyers in exchange for a premium, which is based on the annual turnover and credit risk level of its buyers. The policyholder receives protection up to an agreed percentage of any losses incurred against late payment or the failure to pay by its buyers. The basic operation scheme of the trade credit insurance and the role of the trade credit insurer in the transactions between seller and buyer can be found in Figure 1.
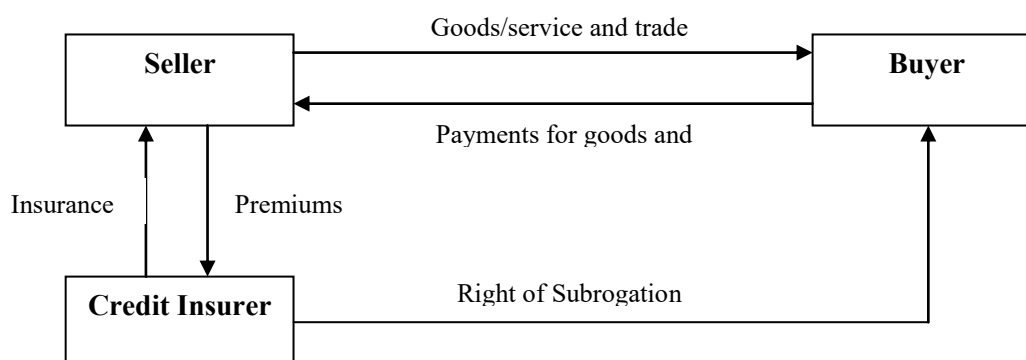
Figure 1. The role of the trade credit insurer in the transactions between seller and buyer (Sources: Jones, 2010, p. 6)

According to Euler Hermes, Coface, Atradius and AON information sources and Van der Veer (2011, 2015), trade credit insurance protects the seller from the risk of buyer non-payment, which can occur due to commercial and political risk (in case of international trade). Trade credit risk insurance can be defined as a risk management product offered by private insurance companies and governmental export credit agencies to business entities that need to protect their accounts receivable from loss because of credit risks, such as protracted default, insolvency or bankruptcy of the buyer. Trade credit insurance policies are very flexible and consist of portfolio, single risk / buyer and selected risk covers. Trade credit insurance protects the seller from the risk of buyer non-payment, which can occur due to commercial and political risk. Consequently, trade credit insurers mostly cover short-term commercial and political risks for periods between 30 and 180 days, establish credit limits and terms of business for each particular buyers and have the right to reduce or cancel credit limits of a specific buyer if it's financial situation deteriorates. Moreover, trade credit insurance policies never cover 100% of the risks assumed and insured percentage do not exceed 85–90% of the losses, in order to ensure that the insured supplier is motivated to manage its buyers prudently, as the supplier will always share in any losses. So it can be stated that the core value of trade credit insurance is that it provides not only feeling of safety to the supplier, who can be assured that their trade is protected, but also valuable market information on the financial situation of the supplier's customers and, in the case of buyers in foreign countries, on any trading risks peculiar to those countries. As well as by providing an insurance policy that matches the client's patterns of business, trade credit insurers will establish the level of cover that can reasonably be provided to the supplier for trade with each individual buyer by analysing the buyer's financial status, profitability, liquidity, size, sector, payment behaviour and location.

The methodology of evaluation of trade credit insurance as a credit risk management tool

According to the hypothesis, which is to be verified during the investigation, it was concluded that in order to carry out the assessment of trade credit insurance as a credit risk management instrument, it is necessary to develop a methodology that would not only make this assessment in theoretical aspect but, at the same time, let to establish a link between trade credit insurance usage and Lithuanian business market stability and possibilities of increasing its competitiveness, which in turn can allow to expand the business. Therefore, for developing the methodology, the following trade credit insurance assessment criteria were taken into account:

- credit risk management method;
- relevance of the credit insurance in Lithuanian business market;
- impact of the credit risk on stability of Lithuanian companies;
- impact of the insurance on business development opportunities and increase in competitiveness possibilities.

In order to make an evaluation of practical usage of the trade credit insurance and the relevance in Lithuanian market, the authors has decided to carry out an expert assessment, because there is no statistical data available to perform the analysis. At the same time, the completion of the expert evaluation questionnaire makes it possible to determine the mutual relations between the trade credit insurance, the development potential and the possibilities increasing the competitiveness. However, by analysing Lithuanian business market, first, it is necessary to define the analytical guidelines. As, in this article, the trade credit insurance is considered as a credit management tool, the authors believe that it would be appropriate to assess the market for Lithuanian business enterprises that focus on the trade of goods and services, in the context of business stability and development. Therefore, furtherly in the work the business market will be examined in this particular aspect.

This complex research on trade credit will provide Lithuanian market business representatives with the opportunity to more accurately identify not only the rationality and efficiency of trade credit insurance as a credit risk management tool but also to assess its impact on business development. In addition, the research allows evaluating the efficiency of external trade credit risk management methods without the

need of large time input, so the developed methodology can be used by Lithuanian companies in order to evaluate the relevance of researched credit risk management tools. It should be noted that the developed methodology can be supplemented by consideration of other alternative trade credit risk management methods.

Qualitative comparative analysis of trade credit insurance and other alternative credit risk management methods

During the analysis of the Lithuanian and foreign scientific literature, it was noticed that relatively little attention is given to determine the suitability of the trade credit risk management. Major part of Lithuanian and foreign scientists usually investigate the trade credit risk management in the context of the legal aspect or the company's financial analysis and do not focus on when and what way to choose in order for efficient and rational use of trade credit risk management. There is also little attention paid to assessing the disadvantages of trade credit risk management methods used in practice by Lithuanian companies. Therefore, the qualitative comparative analysis was chosen for assessment of trade credit insurance as a credit risk assessment tool. Such comparative analysis allows not only to better identify the advantages, disadvantages and benefits of the insurance as the trade credit risk management tool but also to assess its the efficiency and rationality, comparing with other alternatives.

In order to perform this analysis, the following credit risk management's instruments were chosen: trade credit insurance, independent trade credit risk management, integrating services of a credit bureau, factoring, letter of credit, bank guarantee and surety. In order to facilitate the use of the information obtained, qualitative comparative analysis is presented in the table created by authors, with the help of information systematisation (see Table 1).

The analysis and comparison of the above-mentioned trade credit risk management tools led to the conclusion that an independent trade credit risk management integrating services of a credit bureau have rather preventive risk management features, rather than protection features, because all risks and responsibility for losses remain within the company. And although such type of risk management based on the credit bureau services is quite intensively used in Lithuania, according to the authors, this trade credit risk management approach is advantageous only because of its relatively low cost (see Table 1) and only in case of short-term transactions, with small credit limits that cannot cause big damage to the creditors' financial stability and performance if the debtor fails.

Not much of a trade credit risk management features has the surety, as it may be regarded as a reliable guaranty only if there is a sufficient financial capacity of the surety issuer. It should be noted that the validity of a surety lasts only as long as the transaction obligation is valid and ends with the end of the main obligation or with the end of maturity of surety ensuring measures. Also, this risk management method is quite inconvenient at high sales dynamics, as the surety is made each time for each transaction. Especially, it gets inefficient in the context of international trade, as it does not estimate the country risk and, in addition, the guarantor itself may be exposed to this risk. Therefore, author's opinion is that in comparison with other external trade credit risk management tools, the surety as a risk management method has the least number of advantages.

Table 1. Advantages and disadvantages of trade credit risk management tools (Source: author's compilation)

Eligibility assessment criteria	Trade credit risk management tool		
	Independent trade credit risk management, integrating services of a credit bureau	Trade credit insurance	Factoring

Advantages	By collecting and systematising the entire information necessary for trade credit risk assessment and forecasting, the credit bureau optimises all costs related to information collection, classification, storage and evaluation. There is no need to invest in staff and their competence. Decisions are made independently.	Cash flows are controlled by the administration of debts by pre-trial and legal debt collection or by paying an insurance claim. Credit limits and deferred payment terms for new customers are granted on the basis of the insurer's liability. The risk of a wrong assessment of the buyer goes to the insurer. Risk Diversification. The loss because of delay in payment, insolvency or bankruptcy risks is eliminated.	Working capital risk management. The ability to execute selection of individual customer transactions and accounts.
Disadvantages	In case of payment delays, insolvency or bankruptcy, the losses are not compensated, because the entire responsibility for the trade credit limits and deferred payment term goes to the creditor. Debt administration and collection costs also go to the creditor.	Does not apply financing of the trade transactions. Regulates credit limits and deferred payment terms. Whole buyer portfolio (sales turnover) must be covered. The insurance premium is calculated by applying a percentage rate to the insurable turnover.	Only insured transactions are factorised (or a recourse right is applied when all the risks due to the insolvency of the debtor go to the creditor). High financing and administration fees, a number of additional administrative costs. Financing only in the range of set credit limits.
Benefits	It provides access to the estimated financial results and guideline credit ratings. Provides information about payment history, past and current delays in payment, garnishment and bailiffs information. Offers other additional useful services.	A competitive advantage is gained. It provides access to more favourable conditions of trade financing. Country and economic sector risk are managed. No need for investing in personnel in order to manage the credit risks. Convenient at high sales dynamics. Bad debt record book-keeping eliminated, thanks to insurance. It improves the policyholder's ranking in terms of creditworthy. Makes the beginning of cooperation with the little-known local and export business partners more secure.	Increased merchant-ability power. Improves the competitiveness in domestic and export markets. More efficient customer billing control, debt administration. Safer beginning of cooperation with the little-known local and export business partners.
Eligibility assessment criteria	**Trade credit risk management tool**		
	Letter of credit	**Bank guarantee**	**Surety**
Advantages	If the creditor fulfils its contractual obligations properly, the payment settlement is guaranteed. It allows to calculate in advance the payment settlement date and, if	If the debtor breaches the deal, it ensures that the bank will fulfil the obligation of the guarantor's claim, which meets the guarantee conditions, without the need to prove the violation fact. Unconditionally	If the debtor breaches the deal, it ensures that the surety issuer will fulfil the obligation of the guarantor's claim, which meets the surety conditions.

	needed, to discount the letter of credit in order to obtain the payment for the deal before a specified date and to reduce the working capital deficiency.	obliges the bank to fulfil its obligations.	
Disadvantages	It is established for each transaction separately and only at the request of the debtor. Registration takes time. High maintenance costs. Difficult implementation process. Full protection occurs using confirmed and irrevocable letter of credit.	Each transaction must have a separate bank guarantee, so takes a lot of time to supervise the entire customer portfolio. Initiated only in case of debtor's agreement. Valid as a safety measure only if there are sufficient bank's financial capacities.	Valid only as the transaction under the obligation is valid and ends with the end of the main obligation or with the end of maturity of surety ensuring measures. Protection is valid only in case of sufficient financial capacity of the guarantor. Does not include assessment of the country and economic sector risk.
Benefits	Confirmed irrevocable letter of credit eliminates the risk of incurring losses in case of debtor's late payments, insolvency or bankruptcy. Secures the beginning of cooperation with a little familiar export business partners.	Eliminating the risk of loss to the debtor of late payments, the event of insolvency or bankruptcy. Managed country and economic sector risk. Secure the beginning of cooperation with the little-known local and overseas business partners.	It allows managing the risk of non-payment. Reduces the risk of insolvency of the debtor.

In summary, it can be stated that in international trade, with a large customer portfolio and sales volume, the trade credit insurance becomes the most effective and rational way to manage credit risk. Additionally, insurance can grant the company with more confidence, which leads to a competitive advantage (the risk of a wrong assessment of the buyer goes to the insurer, and in addition, the risk is diversified and the country and economic sector risks are controlled), because the insurance company guarantees that in case the debtor (buyer) deliberately delays to cover its debts, in event of the insolvency or bankruptcy, the company will regain its sales revenue, because the insurer will help to recover the money by initiating pre-trial or legal debt collection or by paying of the insurance claim. In addition, credit insurance enables possibility of using additional financing of trade transactions through factoring and to control the flow of sales revenue turnover with non-recourse factoring agreement and to obtain more favourable conditions for trade financing from commercial banks. Also, by using trade credit insurance, the company will not need to invest in personnel, their competence (assessment of risks) and risk management tools, and the trade credit risk management process itself with insurance assistance is simple and easy to use. It is important to mention the fact that insurance premiums are not taxed, and the implementation of insurance when managing company's buyer portfolio credit risk allows the policyholder to have higher reliability and creditworthiness ratings.

The examination of expert evaluation of the trade credit insurance as a credit risk management tool

Practical assessment of trade credit insurance efficiency and rationality in Lithuanian market is carried out using the expert evaluation. The aims of expert evaluation are:

– to identify the relationship between trade credit insurance and determinants of choosing such as a credit risk management instrument;

- to determine the interrelations between trade credit insurance and the potential of development and competitiveness increase;
- to find common patterns (if any) reflecting the rationality and efficiency of the researched credit risk management method.

Ten experts participated in the expert evaluation. The following selection criteria were applied for the experts: (1) higher university education; (2) at least 5 years of successful experience in the trade credit risk management; (3) sufficient knowledge of trade credit insurance and not less than 3 years of experience in using this product.

Based on these criteria, 10 individuals were selected, who can directly make decisions regarding the trade credit risk management or work closely with this product and have deep understanding of it. The experts were communicated in person – by phone and e-mails – so the assessors did not know the composition of the expert group and thus had no impact on each other's opinion (see Table 2):

Table 2. Expert evaluation participants

Expert	Position	Field of activity	Expertise (years)
1	Professor	Insurance	23
2	Director / Associate Professor	Audit / Insurance	12
3	Senior Project manager	Trade credit insurance / broker	17
4	Chief Financial Officer	Finance / IT	13
5	Country manager	Trade credit insurance	10
6	Chief financial officer	Finance / Furniture manufacturing	16
7	Chief Executive Officer	IT / Security systems	11
8	Head of development	Insurance/broker	20
9	Chief Financial Officer / Chief Operating Officer	Manufacturing	7
10	Head of risk underwriting department	Finance / Logistics	12

The first six questions of the questionnaire identify the expert, his or her professional experience and expertise, so the evaluation will not consider answers to these questions, with accordance to researcher ethics and to guaranteed confidentiality for the experts. In addition, because these questions are not directly related to the assessment, further, they are assessed by a zero value; therefore, the seventh answer that reveals the expert understanding of the trade credit insurance continuously in the research is identified as the first question of the expert evaluation. The first question seeks to identify if the experts correctly understand the subject of credit risk as well to check the expertise of the expert regarding the topic. The analysis of the expert answers to the first question 'Please describe how you understand the trade credit risk' shows that the experts understand and interpret the trade credit risk as one of the operational risks, which could have a substantial impact on business continuity and which is caused by unfulfilment of obligations of one of the transaction parties – the buyer (debtor), like delays in payment or fully / partially failure to pay for the services / goods sold. All the experts agree with the statement that in order to ensure business development, the trade credit risks must be managed.

In order to determine, on what basis the experts evaluate the debtor's credit risk, the third question provided for the experts is 'What must be taken into account in order to assess the debtor's trade credit risk more accurately?' The answers of all 10 experts are provided in Table 3.

Table 3. Debtor's trade credit risk assessment criteria (Source: created by the author on the basis of the expert evaluation)

Debtor's creditworthiness criteria indicated by the experts	Number of experts	Debtor's creditworthiness criteria indicated by the experts	Number of experts
The company's financial condition	10	Credit bureau recommendations	2
Debt history	6	Legal courts, content of legal procedures	2
Business sector specifics	6	Collaterals and other negative information	2
Buyer's country economic and political situation	5	Information about the shareholders or founders	2
Credit history	4	Information about the movable and immovable property	2
Financial performance indexes	4	Company size	2
The solvency assessment (rating) / Creditworthiness	3	Company age	2
General short-term solvency ratio	3	Reserves collected for unforeseen events	2
Public information about the company, impartial third-party reviews	3	Countries of export–import partners	1
Business perspectives	3	Changes in staff and its dynamics	1
		Business transparency	1

Results provided in the Table 3 show that the experts evaluate the buyers creditworthiness by a number of criteria and not solely on the basis of company's financial position (company's financial position has been identified by all the experts). Experts consider the debtor's country economic and political risks (identified by five experts), sector risk (identified by six experts), business perspectives (indicated by three experts), debt (indicated by six experts) and credit (indicated by four experts) history, Financial performance indexes (indicated by four experts), legal court history evaluating legal procedures content and ancillary information about the debtors (indicated by three experts) as well as the other information contained in Table 3. On the basis of the set criteria, it is concluded that the experts assess credit risks responsibly, trying to treat it as widely as possible, taking into account the availability of information. This assessment takes a lot of time, as it is based on quantitative and qualitative information that needs lot of time, financial and information resources in order to be collected and assessed.

After examination of the credit risk and the factors determining it, which were considered in terms of creditworthiness criteria, further in the expert evaluation, the trade credit insurance is investigated as a credit risk assessment tool. In order to receive the assessment of the effectiveness of credit insurance from the experts, they were asked to answer the fourth question, which sounds as follows: 'In your opinion, is the trade credit insurance an effective method for credit risk management?' After analysing the answers of all the experts, it was determined that all the participants evaluated the insurance as an effective method. In addition, as the experts had been given an opportunity to provide not only unambiguous answers 'yes / no' but also to express their view in a free form, some experts pointed out that in order to assess the effectiveness of the trade credit insurance as a credit risk management instrument, it must be compared to other alternative credit risk management methods and the pricing of each must be taken into account. Such expert approach to the assessment, on the author's opinion, confirms the competence of the experts and the importance of the comparative analysis carried out by the authors, in order to make the most objective assessment of the trade credit insurance under the research aspect. It should be noted that one of the experts presented an opinion that trade credit insurance efficiency arises not only from the assessment of what the credit risk management area is but also in terms of prices. Therefore, this particular expert indicates that such credit risk management tool requires the user (insurance policyholder) to pay

significantly lower cost compared to the bank guarantee (which also has protection features) and other alternative instruments, which have more features of trade financing. Such expert opinion coincides with the author's findings, which are based on a qualitative comparative analysis.

When carrying out the expert evaluation of trade credit insurance as a credit risk management tool, the authors believes that it is appropriate to check and compare the trade credit insurance advantages and disadvantages, which were identified by qualitative comparative analysis in theoretical aspect, to the expert's practical opinion. Such comparison will provide more reliability to the obtained data and to the conclusions of the research; therefore, the fifth and sixth expert evaluation questions are meant to determine the advantages and disadvantages of the trade credit insurance as a credit risk management tool on the basis of expert opinion. Systematised expert evaluation results of the above-mentioned questions are presented in Table 4.

Table 4. The advantages and disadvantages of the trade credit insurance as a credit risk management tool based on expert evaluation (Source: created by the authors based on the expert evaluation)

Eligibility assessment criteria	Trade credit insurance
Advantages	Effective administrative cost optimisation: debt collection and debtor credit assessment is passed to the insurer; therefore, staff workload is reduced. Elimination of bad debts: protects the company's balance sheet from the bad / non-payable debts. Risk management: the risks are diversified, the risk of a wrong assessment of the buyer is passed to the insurer, provides reliable assessment of the creditworthiness of debtors, risk supervision (customer credit risk monitoring; in-depth creditworthiness assessment, when searching for links to other activities of the company owners and shareholders). Cash flow control and optimisation: by reducing the incidence of overdue accounts, quantities and volumes; debtors become more disciplined, losses owing to the debtor's insolvency or bankruptcy risks are eliminated. A competitive advantage is achieved. Country and economic sector risks are managed. Let's the company to put stronger focus on its core business, respectively increasing its operational efficiency. Standardisation of internal processes. Professional and comprehensive insurer's support. Good measure for contributing to the development of the company in terms of overall stability. Improves the policyholder creditworthiness rating, increases company's confidence and establishes a credible image of the company, raises the prestige of the company. Secures the beginning of cooperation with a little familiar business partners.
Disadvantages	A complicated formulation of insurance agreement (policy). Improper for covering risks of atypical trade deals. Long waiting period insurance claim payment. In some cases, expensive (at a smaller customer portfolio / sales turnover). In order that the trade credit insurance to be operated correctly, an active policyholder's actions and the adaptation of internal processes to the insurance conditions is required. In case of inability to apply these actions and to implement a risk management framework, the trade credit insurance may be unsuited to the company's activities and possibly will not bring the expected benefits. Often, the credit limits granted by the insurers are less than that preferred by creditor, thus limiting sales. Long-term decision-making. Strict rules and procedures (e.g. insurance claim indemnification). Quite difficult to implement, monitor and manage the granted credit amounts when the number of buyers is sufficient enough (e.g. 350 and more), where invoice are issued very often and in relatively small amounts. Newly established and little companies (buyers) are treated very strictly, thus restricting the trade with them. Buyers from insurance-prohibited countries are not covered.

After the examination of advantages and disadvantages of the trade credit insurance as a credit risk management tool identified by the experts, the insurance rationality assessment is being carried out. When experts were asked, under what conditions insurance may be considered as rational credit risk management instrument and under what conditions such management method is ineffective, the following data was obtained and is provided in Table 5.

Table 5. Factors (conditions) determining the rationality and inefficiency of trade credit insurance as a credit risk management tool (Source: created by the authors on the basis of expert evaluation)

Rational method	Ineffective method
In case of growing exports and a stable macroeconomic environment of the country;	In case of trading / providing services to companies operating in non-insurable countries or with increased credit risk;
Under well-established buyer portfolio flow and similar credit terms of receivables obligations;	In case of trading / providing services to newly established firms / public institutions / individuals;
When trading in domestic and foreign markets, applying deferred payment terms;	If buyers are paying in advance for goods or services;
When company is in process of expanding its business;	Having a smaller buyer portfolio or working in the local market with well-known clients;
In case of non-payment risk increase in the market and uncertain economic situation;	When a separate buyer cannot affect the company's financial stability, and the company has and uses resources / tools to manage these risks;
In order to effectively regulate the overdue trade account receivables;	Working in high-risk conditions – regardless of objective recommendations about the creditworthiness of the buyer provided by the insurer.
Having a large portfolio of account receivables (harder to assess each individual buyer), especially when working in foreign markets;	
When each individual buyer can influence the company's financial stability and the company does not have or does not use the resources / tools to manage these risks.	

Based on the data presented, it can be stated that the expert's opinion regarding factors determining the trade credit rationality and inefficiency have separated. Most of the experts argued that trade credit insurance is a rational credit risk management tool as for domestic and foreign markets when the credit terms are applied. However, there was also an expert claiming that when trading / providing services only in the local market, the trade credit insurance is not an effective method for credit risk management, reasoning it with clients' 'notoriety'. Also, expert opinions are separated regarding the method's rationality in terms of the flow dynamics of buyer portfolios. Although the majority of experts assign trade credit insurance to the rational risk management instrument in case of a small buyer portfolio, where each individual buyer can influence the company's financial stability, one of the experts attributed the same condition to the factors determining the inefficiency of this risk management tool.

In order to determine the relationship between trade credit insurance and the company's development prospects through the aspect of sales and competitiveness increase and cash (income) flows, the experts were asked to evaluate the benefits of the method for each of the criteria by evaluating it from 0 to 10 points, where 0 is valued as the absence of benefit (impact), 1 point as little benefit and 10 points as big benefit (impact).

The results gathered during the expert evaluation are provided in Figure 2. Benefit of credit risk insurance is evaluated in terms of aim: criteria 1 – to manage company's account receivables; criteria 2 – to manage company's working capital; criteria 3 – to increase sales revenue; criteria 4 – to increase company's competitiveness; criteria 5 – to increase company's goodwill.

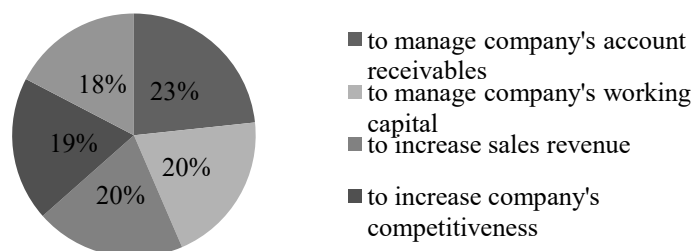Criteria 1 Criteria 2 Criteria 3 Criteria 4 Criteria 5
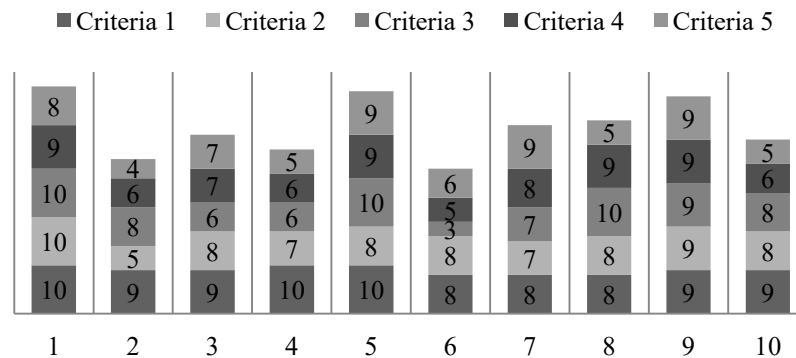
Figure 2. Credit insurance benefits, which are provided for companies to increase sales and competitiveness and to manage income flows (Source: created by the authors based on the expert evaluation)

The data provided in the graph shows that depending on the expert, the influence of the researched credit management instrument under the criteria provided is evaluated differently. The first, fifth and ninth experts in accordance with all criteria have assessed the benefits of the trade credit insurance as a significant or very significant, assigning the evaluations from 8 to 10 points. It should be noted that according to the first criterion (in order to manage company's account receivables), the insurance benefits were rated as very important by all the experts. Also, the trade credit insurance was estimated by the second criteria (in order to manage company's working capital) as a fairly big benefit of the credit risk management tool. Only one expert indicated such method as little effective in regards to this aspect. The expert opinions were highly separated regarding the benefits provided by the trade credit insurance under the third criterion – in order to increase sales revenue. The vast majority (70%) of the experts estimated the impact of the insurance in this aspect as a very significant or significant (from 7 to 10 points), but 20% attributed the benefits to the less significant (5-6 points) and the sixth expert superficially evaluated the benefits provided by the trade credit insurance as little significant under the researched criteria. Also, the experts' opinion was divided regarding the benefits provided by the fourth and fifth criteria as follows:

60% of the experts attributed the insurance to a method that provides a big benefit when seeking for company's competitive advantage, but 40% of the experts estimated the impact of the insurance to competitive advantage as less significant, assigning assessments from 5 to 6 points;

50% of the experts estimated the insurance as a method that provides many benefits for increasing the prestige of the company and, on the other hand, the same number of experts assessed its impact on the increase in company's prestige as less significant or very little significant (4–6 points).

Summarising the results of the expert evaluation, further, the total assessment of benefits provided by the insurance for increasing company's sales revenues and competitiveness and for cash flow management, by the influence of each criterion is presented in Figure 3.

■ to manage company's account receivables
■ to manage company's working capital
■ to increase sales revenue
■ to increase company's competitiveness

Figure 3. Impact of credit insurance on increasing company's sales and competitiveness and on income flow management (Source: created by the authors on the basis of expert evaluation)

The last four expert evaluation questions are asked by the authors in order to determine the relationship between the use of trade credit insurance and Lithuanian business market stability and opportunities of competitiveness increase as well as to identify the impact of trade credit insurance on Lithuanian business market at a macrolevel (if such impact exists). Considering the competence of the participants of the expert evaluation, experts are invited to assess the influence of the trade credit insurance in order to increase the competitiveness of the Lithuanian business sector in foreign markets and its impact (if any) on Lithuanian export–import balance indicators and gross domestic product (GDP) (when Lithuanian companies are using insurance as a credit risk management tool). Also, the authors decided to check the assumption provided in the work that trade credit insurance is an efficient and rational method for credit risk management in the context of Lithuanian business market, on the basis of experts competence and to verify the hypothesis that the trade credit insurance in Lithuanian business market is an efficient and rational way of credit risk management in order to develop the business. The received data is presented in Table 6.

Considering the data presented in Table 6, it can be stated that although trade credit insurance influence for the nominated goals is assessed differently by the experts, the relations themselves – between trade credit insurance and competitiveness increase in foreign markets, as well the Lithuanian export–import balance indicators and GDP – were unambiguously identified by all the experts.

Table 6. Determination of the relations between the appliance of trade credit insurance (TCI) and Lithuanian business market stability and the evaluation of competitiveness increase opportunities (Source: created by the author based on the expert evaluation)

Q	Criteria	Criteria	Grade	Experts										Average
				1	2	3	4	5	6	7	8	9	10	
10	6	The influence of the implementation in order to increase the competitiveness of Lithuanian business sector in foreign markets	From 0 to 10	9	9	9	9	9	5	8	7	9	7	8.1
11	7	The impact of the TCI implementation in Lithuanian companies has or may have on Lithuanian export–import balance indicators and GDP	From 0 to 10	8	3	8	8	8	8	8	4	9	7	7.1
12	8	The TCI is an efficient and rational method for credit risk management in context of Lithuanian business market	Yes: 1 No: 0	1	1	1	1	1	1	1	1	1	1	1
13	9	The TCI in Lithuanian business market is efficient and rational way of credit risk management in order to develop the business	Yes: 1 No: 0	1	0	1	1	1	1	1	1	1	1	0.9

It should be noted that although expert opinion on the significance of influence have separated, however, the vast majority of experts (90%) identified it as a very significant or significant enough in order to increase competitiveness in foreign markets and by assessing the insurance impact on Lithuanian export–import balance indicators and GDP.

Summarising the carried-out expert evaluation, it is concluded that the trade credit insurance is seen as an efficient and rational method for credit risk management by the experts in context of Lithuanian business market in order to develop the business. Its benefits and impact on the company aims to manage the company's account receivables are assigned to a very significant category – the average of significance is 9 (maximum score is 10 points), whilst the impact on the objectives to manage the company's working capital and to increase sales revenue and company's competitiveness and goodwill is estimated as

significant (significance average ranging from 6.7 to 7.8). By considering the advantages and disadvantages of the trade credit insurance identified by the experts, it is decided that often the purpose of the trade credit insurance itself is identified as disadvantage – to protect the policyholder against credit risk on the basis of a very broad and deep credit rating evaluation methodology, which provides credit limit granting. Some experts evaluate credit limit granting procedure as a restriction in trading process; however, in fact, the purpose of such limits is to reduce the credit risk to an acceptable and reasonable one. Yet, some new gaps that have not been detected during the qualitative comparative analysis were identified – long insurance claim payment waiting and decision-making period and the need to adapt the internal processes to the insurance conditions – without implementing a risk management framework and without correct estimation of insurance claims payment terms, the trade credit insurance cannot provide the expected benefits. Analysing rationality and inefficiency of the insurance, it is concluded that the inefficiency is often treated by the experts not on the basis of certain insurance function efficiency, but according to its using suitability, which leads to an incorrect final evaluation. Also, during the carried out assessment, a link between trade credit insurance and the company's development prospects expressed through the insurance company's impact on sales and competitiveness increase and income flow management has been identified.

Conclusions

After carrying out the analysis of the trade credit insurance as a credit risk management tool in the context of the disadvantages, advantages and benefits and after investigating its effectiveness, efficiency and inefficiency based on theoretical (qualitative comparative analysis) and practical (expert evaluation) aspects, the authors consider that it would be appropriate to carry out a summarised insurance assessment that combines and examines the obtained results.

Assessing the debtor's crediting opportunities, it is necessary to assess its solvency, liquidity, operational efficiency and profitability indicators, to analyse company's level of liability and capital structure, evaluate the possibility of bankruptcy and take into account the debtor's disposable amount of money. During the examination of internal non-financial factors, it is advisable to rely on the company's strategy and business policy, to investigate the behaviour of the staff and management, to pay attention to the company's participation in legal proceedings and to assess the company's legal liability. External factors are particularly important when assessing the creditworthiness of foreign customers because under international trade conditions, solvency risks depend not only on the internal, financial and non-financial situations but also on the buyer's country's political, economic and other risks and cultural peculiarities. Unfortunately, the assessment of debtors' ability to pay often confronted with the problem of data reliability and accessibility. In addition, information collection and evaluation requires a lot of expertise, time and money, what makes profitable transactions at first sight, less useful and sometimes even unprofitable. Especially, the trade credit risk assessment problems are reflected in international trade, as some foreign countries' laws and legal systems hinder the availability of information and its collection to a level that it becomes simply impossible to perform.

The carried-out assessment of scientific literature concluded that in order to perform the assessment of trade credit insurance as a credit risk management tool, it is necessary to develop a methodology that could allow to evaluate the effectiveness of trade credit insurance not only in the theoretical aspects but also to define the relationship between application of trade credit insurance and the possibilities of increasing the stability and competitiveness of Lithuanian business market on the practical side. For this reason, the authors have proposed a methodology that combines theoretical and practical research methods. First of all, with the assistance of qualitative analysis, the alternative external credit risk management tools were examined. Such analysis allows not only to identify the advantages, disadvantages and benefits of researched risk management tools but also to assess the efficiency and rationality of trade credit insurance in the context of alternative methods. In order to carry out an assessment in the practical aspect, considering the lack of statistical data, it was decided additionally to perform an expert evaluation. At the same time, by completing the expert evaluation questionnaire, it becomes possible to determine the

links between the trade credit insurance, the development potential and competitiveness increase on the basis of business sector insights. The assessment, which is made in accordance with the methodology, combining qualitative analysis and expert evaluation is more solid, because the assessment of the trade credit insurance in the theoretical aspect additionally includes experts who are decision-maker in their field and who are well aware of the researched product from the practical side.

In the authors' opinion, only insurance and bank guarantee have genuine trade credit risk management features. Both management tools ensure that in case if the events provided in the contract (insurance policy) or a guarantee (bank) occur, the creditor will receive the payment, so the creditor will not suffer losses because of the debtor's insolvency, delayed payment or bankruptcy. Nevertheless, comparing insurance and bank guarantee, the authors believe that insurance is more effective and rational trade credit risk management method, which additionally gives the creditor a lot of advantages. In addition, credit insurance enables possibility of using additional financing of trade transactions through factoring and to control the flow of sales revenue turnover with non-recourse factoring agreement and to obtain more favourable conditions for trade financing from commercial banks. Also, by using trade credit insurance, the company will not need to invest in personnel, their competence (assessment of risks) and risk management tools. Furthermore, the implementation of insurance when managing company's buyer portfolio credit risk allows the policyholder to have higher reliability and creditworthiness ratings. Although in terms of the price, insurance may be more expensive instrument than a bank guarantee (according to applicable premium rates).

After performing an assessment of trade credit insurance, it was concluded that in international trade, with a large buyer portfolio and high sales volume, the trade credit insurance becomes the most effective and rational way to manage credit risk, which eliminates the losses because of the debtor's insolvency or bankruptcy, manages countries and sector's risks and helps to discipline the debtor, what determines the decline in overdue accounts frequencies, amounts and volumes. In addition, credit insurance provides possibility to finance trading transactions and to control the working capital flow by using additional factoring service and to obtain more favourable conditions for trade financing from commercial banks. It is important to mention the fact that the implementation of insurance by the company in order to manage credit risk provides the policyholder with a higher reliability and credit rating. Furthermore, it is an effective method to optimise the administrative costs. Also, it is simple and convenient to use management tool. All of this allows businesses representatives to focus more on the core business by increasing its operational efficiency, gaining a competitive advantage and the opportunity to expand their business.

References

Ferrando A., Mulier K. (2012). *Do Firms Use the Trade Credit Channel to Manage Growth? European Central Bank (ECB) working paper* No. 1502. [Accessed 15.09.2016]. Available from Internet:

https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1502.pdf7b3f759c3bda2048d23f62bad122d1 86d

Jasiene M., Laurinavicius A. (2009). *Kredito rizikos valdymo jmonese problemos ir jij sprendimo budai. Verslas: teorija ir praktika.* (10), 15-29.

Jones P. M. (2010). *Trade Credit Insurance. The World Bank primer series on insurance* (15). [Accessed 18.09.2016]. Available from Internet: http://siteresources.worldbank.org/FINANCIALSECTOR/Resources/ Primer15 TradeCreditInsurance Final.pdf

Li Y. et al. (2014). *Trade credit insurance, capital constraint, and the behavior of manufacturers and banks. Springer Science and Business Media (*240), 20.

Nilsen J.H. (2002). *Trade Credit and the Bank Lending Channel. Journal of Money, Credit and Banking, (*34), 226-253.

Paul S. Y. (2007).*Trade Credit: Understanding Its Importance. Journal of the Chartered Institute of Credit Management (3)*, 42-45.

Paul S.Y., Boden R. (2012). *Getting Paid: Lessons for and from SMES. Association of Chartered Certified*

Accountants. [Accessed 07.09.2016]. Available from Internet: http://www.accaglobal.com/content/dam/acca/global/PDF-technical/small-business/pol-tp-gp.pdf

Pike R., Cheng N. S. (2001). *Credit Management: An Examination of Policy Choice, Practices and Late Payment in UK Companies. Journal of Business Finance & Accounting (27),* 1013-1042. [Accessed 11.10.2016]. Available from Internet: http://onlinelibrary.wiley.com/doi/10.1111/1468-5957.00403/abstract

Pridotkiene J. (2011). *Prekinio kredito rizikos veiksnių vertinimas: rytų ir vakarų rinkų rizikingumas eksportuotojo požiūriu.* Ekonomika ir vadyba (16), 273-279.

Pridotkiene J., Snieskiene G. (2011). Prekinio kredito rizikos formavimosi prielaidos eksporto atveju. Ekonomika ir vadyba (16), 280-286.

Rutkauskas A. V. (2008) *On the sustainability of regional competitiveness development considering risk. Technological and Economic Development of Economy*: Baltic Journal on Sustainability (14), 88-99.

The International Credit Insurance & Surety Association (ICISA) publicly available information. [Accessed 11.11.2016]. Available from Internet: http://www.icisa.org/publications/1583/mercury.asp?page_id=1941,

Trade credit insurance company Atradius, publicly available information about trade credit risk evaluation and insurance services. [Accessed 07.09.2016]. Available from Internet: http://global.atradius.com/products/credit-insurance/credit-insurance.html

Trade credit insurance company COFACE, publicly available information about trade credit risk evaluation and insurance services. [Accessed 07.09.2016]. Available from Internet: http://www.coface.lt/Mes-siulome/Valdyti-savo-rizikas

Trade credit insurance company Euler Hermes, publicly available information about trade credit risk evaluation and insurance services. [Accessed 07.09.2016]. Available from Internet: http://www.eulerhermes.com/ products-solutions/ credit-insurance/Pages/default.aspx

ORGANISATIONAL PATHOLOGIES UNDER CONDITIONS OF ECONOMIC DOWNSWING

Jacek Pasieczny

Faculty of Management, University of Warsaw, Poland, jpasieczny@wz.uw.edu.pl

Abstract. The topic of organisational pathology is surprisingly absent in literature on management, especially when bearing in mind the theoretical and practical import of such questions. The intention of the author is to fill in this gap, at least partially. The paper is based on an analysis of literature and an empirical research conducted by the author. The research applied partially structured interviews as its method. These interviews were conducted with entrepreneurs and managers of various levels. They made possible the drawing of conclusions relating to conditions behind the genesis and growth of selected organisational pathologies in a situation of economic downswing. The article briefly presents the concept and influence of pathology on the functioning of an organisation. The author concentrates on the causes of the phenomenon and presents them from various perspectives. It is during times of economic downswing that an increase in unethical behaviour, including corruption, mobbing as well as others, becomes particularly visible. Also noticeable is concentrating on limiting costs, which can sometimes reach pathological scale. This can lead to a permanent loss of pro-development potential by the organisation. Moreover, numerous pathological phenomena emerge at the tangent point of the organisation and its surroundings. The source of many undesirable phenomena in the organisation and in its relations with its surroundings is a fall in trust, which makes its appearance in crisis situations. More often than not, managers facing a situation in which they have no choice perpetuate organisational pathologies, whilst, at the same time, being aware of the lack of validity of their actions. However, a more frequent source of problems is the differences in perspective in perceiving organisational phenomena by various actors and stakeholders.

Keywords: organisational pathologies, downswing, dysfunction, error

JEL Classification: M 10

Introduction

Pathologies, understood as irregularities, inseparably accompany all of man's activities. This also pertains to management. Actually, it is difficult to look at management as organised action without making reference to pathologies. In fact, numerous authors have undertaken the question of pathology whilst analysing other matters. However, identification and descriptions of pathologies have rarely been the primary goal of researchers. It is for this reason that analysis of literature fails to give significant pointers relating to the methodological aspects of conducting research in this area. The sensitive nature of this research area is undoubtedly an impediment to the process of procuring information. Many respondents, for various reasons, declined participation in such a study. What is of great importance in this case is the open and honest expression of opinions by those questioned. It is for this reason that this study has applied partially structured interviews. Only such an approach can lead to the emergence of an 'open catalogue of organisational pathologies'.

The sources of organisational pathologies as well as areas in which they originate are diverse. However, it is possible to identify certain regularities. The goal of this paper is to present selected pathologies in the organisation and the management process, with special stress on conditions of economic downswing. This text is based on the analysis of literature as well as partially structured interviews conducted amongst deliberately selected entrepreneurs, specialists and managers of various levels. The basis for the writing of this paper was the 'Managerial Errors' research programme as undertaken at the Faculty of Management of the University of Warsaw over the years 2012–2016. The research was interpretative in character. It made it possible to identify selected pathologies and procure diverse opinions regarding their areas and causes.

The Essence and Elements of the Theory of Pathology

The word *pathology* is derived from the Greek language and means a state of being ill or the study of illnesses. In common usage, pathology is understood as the extended presence of a significant irregularity.

In as much as pathology is the study of illness, organisational pathology can be treated as the study of 'organisational disease'. Looking at the second meaning of the phrase, organisational pathology is a long-term, significant irregularity in the functioning of an organisation. According to Kieżun (1971), the study of organisational pathology can be considered as a clearly isolated part of the theory of organisation and management, which is concerned with the analysis of deviations and their subsequent generalisation as well as the defining of remedial measures. As to organisational pathology itself, that same author defines it as a 'relatively permanent irregularity responsible for waste in an economic sense and (or) moral one exceeding the limits of social tolerance' (Kieżun, 2012). By analogy, management pathology may be defined as significant, long-term irregularity in the process of managing an organisation or as an isolated part of the study of management concerned with the analysis of the functioning of irregularities in management.

A concept that is similar to pathology is *dysfunction*. Dysfunction should be treated as a phenomenon that has a negative impact on a defined social system. Systems are subject to tension and changes in ill-advised directions as a result of dysfunction. The long-term effect of dysfunction can cause a system to enter a pathological state. This means that dysfunction in an organisation leads to interference in the efficient functioning of that organisation, where management dysfunction makes impossible or impedes proper management of the selected organisational system. However, the borderline between dysfunction and pathology is not always clear, which is reflected in the area of definitions. For example, Albrecht (2003) perceives dysfunctions as organisational disorders. According to Cameron, Whetten and Kim (1987), dysfunctions can include both processes, such as increasing centralisation, and states, such as low morale.

According to Stocki (2005), 'pathology encompasses all dysfunction in the organization that does not allow the achievement of realistic goals set for the given organization and aligned with social good, using defined means over a defined time period'. A similar view of pathology ('through dysfunction') was held by many of the interviewed managers and entrepreneurs.

The term organis*ational inefficiency* is also used relatively often. Entire organisational systems or their individual processes are seen as being inefficient. *Inefficiency* is the opposite of *efficiency* – the praxeological assessment of 'good work'. The basic positive aspects of efficiency are effectiveness, gainfulness and economy. In a sense, these advantages are gradable. Therefore, organisation or process inefficiency is treated as the holding of an insufficient quantity of the positive aspects of efficiency by the organisation or process. Thus, a significant problem is the establishing of a threshold for the efficiency barrier defining the limits of phenomena deemed as being pathological (Kieżun, 2012). The structure of intended effects of human endeavour as developed by Zielenewski may prove helpful.

Table 1. Structure of the Effect of Action (Source: Kieżun, 2012)

	Independent of their assessment	Intentional		Unintentional
		Main	Subsidiary	
	Positive assessment	Main aim achieved to the defined degree	Subsidiary aims achieved to the defined degree	Positive surprises
		Useful result		
	Negative assessment	Costs of action		
		Costs that had real input into the useful result	Fragmentary losses	
			Unavoidable losses	Waste

Effects of action (rotated label in leftmost column)

From the point of view of praxeologically efficient action, minimising waste should be a goal. However, it should be borne in mind that there exists a limit of socially acceptable waste. This gives rise to a question: Is all waste pathological or does it only become so when it crosses the limits of social acceptance? Bearing in mind the complexity of the surroundings, especially the variety of legal and cultural conditions, the social acceptance factor seems to be important. However, the matter of recurrence is even more important. One-time waste may be the outcome of a mistake or an error, understood as the performance of an action in an improper manner, an inaccuracy in some product of work or reasoning, but of a unit or random character. Waste that is relatively permanent, the result of recurring action and/or made permanent in a formal manner, becomes pathology. Pathologies, dysfunctions and managerial errors are part of the broader thematic field of mismanagement, which means managing incompetently or dishonestly. Several authors in their papers use this generic term (e.g. Brown and Hesketh, 2004; Heller and Darling, 2011; Petrucelli and Peters, 2017; Christensen, 1993; Webb, 1992). The pathology studies described in this article also fall within this broad spectrum.

Consideration of pathologies has been present in topical literature from almost its very inception. Though not directly, these matters were present in the works of Xenophon as well as the Code of Hammurabi. The entire classical stream of management science can be considered a derivative of the desire by distinguished engineers to eliminate organisational dysfunction and pathology. Later streams of management science also looked into this matter.

Depending on the agreed assumptions, pathologies may be analysed in the context of the ecology of the population of organisations (Scott, 1992), the organisation lifecycle (Samuel, 2013), psychopathology (Kets de Vries and Miller, 1984) or applying a systemic metaphor for the organism (Miller et al., 1991). There is also a wealth of achievement amongst the representatives of the diagnostic approach, which seeks and creates instruments for the identification and analysis of pathology subject to concrete situational conditions (e.g. Launsby, 2016; Gouliemos, 2005). Examples from this group of authors include Stocki (2013), Gestmann (2001), Guy (1989) as well as Robinson and Benett (1995), who created an interesting typology of organisational behaviours outside the norm.

The area of emergence of organisational pathology that is best studied is the social area. Stocki (2011), Lencioni (2005) and Samuel (2010) are amongst those devoting their studies to this field. This group also includes authors analysing various dysfunctions and pathological behaviours. Questions of professional burnout are studied by Awa, Plaumann and Walter (2010); Chan (2011); Halbesleben, Osburn and Mumford (2006); and others. White (2010) considers the source of dysfunction to be excessively detailed management in the actions of managers. Dysfunctions linked to various types of organisational cultures are analysed by Fink, Dauber and Yolles (2012). The question of bullying and intimidation in the workplace is taken up in the works of Archer (1999); Ashforth (1984); Björkvist, Österman and Hjelt-Bäck (1994); Einarsen (2000); and others. It is the view of Lecker (2011) that the sources of unethical leadership may be found in both the professed system of values and the qualities of the worker as well as in organisational conditions such as a high level of expectations on the part of the organisation, high stress levels and forcing appropriate behaviour though hierarchical operation.

Questions of pathology in other areas of the organisation are looked at by researchers less often. However, there are questions that are well studied. Amongst them are pathological phenomena accompanying the processes of decision-making. Perlow, Okhuysen and Repenning (2002) link pathology with a rapid rate of decision-making. Pathological mechanisms of mutual undermining of decisions by members of teams in administrative organisations are noted by Schulman (1989). McMillan and Overall (2016) see the sources of dysfunction in faulty strategic management systems that filter transmitted information, stressing the good and screening out the bad, for example. Other researchers are involved in the study of pathologically extreme economising (Goffnett, Lepisto and Hayes, 2016; Pasieczny, 2005).

Areas subject to study include external sources of pathology. Questions of organisational pathologies during crises are examined by Miller (1998). The role of financial institutions in the origins of crises is stressed by Bogle (2009). Other researchers are studying problems stemming from expectations of very

quick organisational action (Perlow, Okhuysen and Repenning, 2002).

Both research and practice often apply a subdivision into pathologies in the functioning of businesses and administrative pathologies. This subdivision is decidedly hazy. A significant portion of pathologies, or even their decided bulk, is universal in character. Moreover, numerous pathologies occur at the tangent point of the business and public sectors.

The group of universal pathologies most certainly includes what is known as 'negative autonomisation'. It includes (Kieżun, 2012):

- Switching the main objective to subsidiary ones or to another main objective,
- Changes in ways of operating, and
- A change in goals, in which the means of action (indirect goal) becomes the main objective.

Robert K. Merton already observed the so-understood autonomisation in the 1950s. He noted the phenomenon of internalisation of organisational rules that are introduced to achieve concrete organisational goals but become values in and of themselves regardless of the achievement of those goals. Questions of autonomisation by organisational units concentrating exclusively on 'ancillary goals' that are means to achieve the main goals (bypassing other 'ancillary goals' not encompassed by their action) was also a subject of study of the only Nobel Prize winner in the field of organisation and management(Simon, 2007). Simon's efforts mainly concentrated on administration. However, his findings were universal in character. Kieżun (2012) considers the worst pathologies in administration to be

- Gigantomania – permanent increase in the number of employees, multiplication of organisational entities
- Luxurymania – unjustified excessive spending on the external manifestation of power
- Corruption – official misconduct or misuse of public function for personal gain
- Arrogance of power – disrespect of customers by administrative officers

In addition to pathologies in administration, equally painful are pathologies, errors and dysfunction in businesses. In line with research conducted by the author, long-term and permanent errors in management that are a source of organisational pathology include (Pasieczny and Glinka, 2008):

1. The creation of irreplaceable people by the organisation,
2. Replacing day-to-day communication with occasional events/campaigns and the inept communicating of changes,
3. Excessive dependence on procedures,
4. Failure to see ties between organisational outlay and effects,
5. Lack of any will to learn and acquire new knowledge from employees,
6. Shifting the responsibility for mistakes to others,
7. Surrendering to the herd effect,
8. The ignoring of minor signals,
9. Concentration on the symptoms of the problem, not their causes,
10. Shortening the time horizon for decisions,
11. Lack of vision and reactivity, and
12. A quest for novelties and disregard for tested solutions.

Research Conditions and Methodological Limitations

The inspiration for commencing studies into pathologies was the author's experience in organisational advisory services, which allowed the noting of long-term, serious and recurring problems faced by many organisations. These even made their appearance more often than once in organisations applying refined solutions in the area of management. The diagnosing of such problems and identification of their sources is an important task from the point of view of questions of the value of the organisation. Organisational pathologies are a significant factor lowering the value of an organisation. Their elimination may prove a relatively inexpensive (though not always simple) path to increasing such value.

Research into pathologies is impeded because of the already-mentioned unwillingness to disclose the negative sides of the functioning of an organisation. The motive behind this may be a fear of displaying the organisation in an unfavourable light (and thus tarnishing its image) as well as fear of the consequences of being accused of disloyalty.

A significant barrier involves the problem of the interpretation of concepts and variations in the perception of phenomena by those examined. This problem is seen in the execution of both qualitative and quantitative studies.

The research presented in this paper is located in the interpretive paradigm and was conducted using text analysis and partially structured interviews. The aim of the researcher was the creation of an 'open catalogue' of errors, pathologies and dysfunction and, equally importantly, discovering and understanding the mechanisms interfering with the functioning of the organisation. Realistion of a similar goal using 'classical' quantitative methods would have been difficult, if not impossible.

This text is based on the analysis of literature as well as partially structured interviews conducted amongst 22 deliberately selected entrepreneurs, specialists and managers of various levels. A consequence of such a deliberate selection of the sample is lack of representativeness of the study. Six entrepreneurs, 2 highly qualified specialists working in a nonpublic health service entity, 13 company managers and 1 mid level manager from a housing cooperative were interviewed. Amongst the entrepreneurs, micro-entrepreneurs and owners of small businesses made up the majority. Most of the entrepreneurs carry out service activities. Their companies are located in the Polish capital, but because of the wide use of the Internet, their activity is not limited to their location. In spite of the small size of their companies, some are successfully operating on foreign markets. The surveyed entrepreneurs were mainly young people aged 25–35 years. Five of the six entrepreneurs come from families with entrepreneurial traditions. Only one has managerial education. The company from the healthcare industry from which the interviewees come is the largest private company in the industry in Poland. It employs more than 14,000 employees, including 6,000 doctors and has 200 own and 2,500 partners' clinics. The interview was conducted with the company's network development specialists. Both are graduates of management schools. With a single exception, the managers were responsible for organisations or organisational cells in Poland. The majority of the managers were employed in large and medium companies. They included one president of a pumped-storage Power plant, presidents and managers of waterworks in several Polish cities, an airport manager, hypermarket managers and managers of construction companies.

One of the respondents was a high-level manager of a Russian company belonging to an international corporation. In addition, one interviewee was a specialist in one of Warsaw's housing cooperatives responsible for dealing with all formalities in the Warsaw City Hall. The length of the interviews ranged from 30 min to 6 h. The interviews were recorded and subsequently transcribed.

Respondents were asked whether and what specific pathologies occur in the following areas: organisational solutions, social sphere, philosophy, values, strategy, relations with the environment and vertical and horizontal relationship. Methods of implementing change and reactions to change were discussed. An ancillary list, based on literature analysis, contained more than 30 examples of pathologies in these areas, but for the purpose of the research (creating an open catalogue of pathologies and dysfunctions), the researcher sought to avoid pointing out specific examples and suggestions to respondents. In addition, respondents were asked to indicate the manifestations and sources of the pathologies. Fulfilling the intended aim of the study and further work were not only meant to arrive at a better understanding of some of the phenomena taking place in organisations but also to serve a practical purpose to managers and entrepreneurs who are interested in the development of their organisations. They were meant to answer the questions – what not to do and how not to behave.

The use of partially structured interviews made it possible to acquire information that is both broad in nature and varied. However, the weak aspect of such research is the already mentioned lack of representativeness and limited possibilities for generalisation. In spite of the above-indicated difficulties and research limitations, a certain recurrence of opinions was achieved.

Economic Downswings and Pathological Phenomena: Research Results

The conducted research brings to the forefront a whole gamut of pathologies linked to unethical behaviour. As research conducted by PricewaterouseCoopers (2009) demonstrates the level of economic crime rises in times of crisis. The origins of such behaviour are to be found in the worsening economic situation of economic entities and, as it also seems, in poorly rooted moral standards as well as a lack of respect for the law on the part of many entrepreneurs and managers.

An important organisational problem that was pointed to by many participants in the study was unethical behaviour, including unethical leadership. The sources may be found in both the professed system of values and in the qualities of the employee as well as in organisational conditions, such as a high level of expectations on the part of the organisation, a high level of stress and forced behaviour through the operation of a hierarchy (Lecker, 2011, pp. 38–39). Actions forbidden by legal regulations (e.g. bribery and mobbing) and actions not unequivocally defined and forbidden (e.g. favouritism and preferential treatment in the private sector) are amongst the unethical activities that can be identified. The interviewed managers indicated that some of the specified phenomena, such as bribery or favouritism, increase in times of economic downswing whilst others, such as mobbing, have to ties to such downswings.

The conducted interviews demonstrated that during economic downswings, differences in perceiving organisational reality by various groups of participants are exacerbated. During a downswing, managers make decisions that, in their view, are rational. However, subordinates see them as unfair and injurious. Something that managers may consider as firmness is perceived by their subordinates (and often business partners) as ruthlessness. What owners or lenders view as a rationalising of operations may be just a reduction in jobs by workers. 'Economising' for some may be the 'shifting of duties' for others. The list goes on. Just about all participants in the study called attention to problems involving communications and difficulties in the proper presentation and justification of the need for change. Problems with communications are a universal phenomenon that occurs everywhere, regardless of the condition of the company. However, economic downswing is a factor revealing and exacerbating errors and organisational weaknesses.

An interesting question looked at by several interviewees was the concentration of excessive attention to cost control and cost cutting and the ignoring of pro-revenue actions during times of economic downswing. In a part of the organisations in which the interviewed managers were employed, a poor economic situation almost exclusively resulted in savings, where more often than not such savings related to areas and assets that could be considered as key company resources. Such actions give current benefits but, in the view of the interviewees, can limit the development potential of their organisation. A somewhat smaller group of interviewees indicated a growing disdain for making decisions in times of economic slump, which was most often explained by the managers' apprehension against losing their positions.

When indicating pathologies, most interviewees simultaneously sought their sources. Most often, the sources were 'objective factors' or 'factors independent of the managers'. It seems that downswings facilitate the perceiving of phenomena by becoming something of a catalyst for the rationalising of many (including one's own) improper behaviours and decisions.

Exceptional situations facilitate extreme behaviour and mistakes, whilst the increased dynamics in organisational behaviour underscores and intensifies the effects of all manners of organisational dysfunction. Some managers are aware of the fact that a poor economic situation coupled with pressure from stakeholders force the taking of decisions calculated for a very short time horizon, where any change in this state of affairs seems impossible. This is due to independent factors, principles of the free flow of capital and the enormous pressure (on the part of the media, regulators, shareholders, banks, etc.) for accelerating the dynamics of the functioning of the organisation.

Amongst the unfavourable phenomena facilitating organisational pathologies that intensify during a downswing, a fall in trust can also be observed. This pertains to not only the organisation's external relations, which are understandable in light of the increase in economic crime. As stressed by some study

participants, people are the source of pathology and, in many cases, the 'elimination of pathology will take place by replacing people'. Others noted a solution in the development of organisational information technology systems that can increase capabilities of monitoring workers whilst simultaneously limiting unconstrained freedom in actions by people occupying certain positions. Bearing in mind the systemic character of many dysfunctions, this signifies a tendency to seek out very simple and often deceptive solutions. At the same time, many managers stressed that they see the importance of trust and the building of an appropriate organisational culture.

Numerous errors, dysfunctions and pathologies may be the result of conscious and intentional decisions and organisational solutions. They may also be the effect of unconscious actions. Whether the error was committed consciously or unconsciously usually has no real meaning from the economic point of view. Its effects are losses, drops in efficiency, additional costs and other negative phenomena finding their reflection in the economic situation and social position of the organisation – waste. However, decisions and organisational actions face judgment by many stakeholders using diverse criteria. From the point of view of ethical principles, an unconscious managerial mistake resulting in a fall in company profits differs from a conscious decision causing the same decrease, but as the effect of corrupt actions. What is important is that those for whom, for obvious reasons, economic criteria are more important also use ethical criteria in their judgments. Thus, the media or even shareholders may 'forgive' a manager for his or her unconscious mistake in spite of the fact that it lead to tangible loses for the latter. A manager who caused the same problems as a result of conscious and dishonest actions cannot count on such lenience. However, sometimes the situation is more complex. Errors are conscious but unavoidable when they are the result of improper assumptions lying at the base of the organisation. A good and relatively common example illustrating this question is the selection of suppliers for a company. A significant part of companies (and almost all public sector institutions) are guided by the lowest delivery price in their selection. In spite of the best of intentions and many efforts on the part of the people responsible for supplies, the lowest price cannot always be reconciled with high quality, favourable payment deadlines, proper maintenance services and so on. Decisions regarding choice of one supplier over another are taken in a fully conscious manner, but from the point of view of the organisation, these decisions are not optimum. This is seen by not only the decision-makers themselves but even by other stakeholders. However, such shape given to the decision is the result of improper assumptions functioning in the organisation or its surroundings and no one faults the decision-makers. In this case, organisational pathology involves the fact that everyone is aware of the decision being 'consciously improper', but the decision-maker had no choice and has to take it. Such error is committed consciously, but the decision-maker never had any intention of harming the organisation. The source of such errors lies in dysfunctional systemic assumptions.

Final Comments and Conclusions

A significant portion of pathologies indicated in this study comes down to the impossibility of taking fully rational decisions. This should not be a surprise because the term *rationality* itself is not sufficiently precise. It is derived from the Latin *ratio, rationis*, which means calculating, solving, reasoning and manner of thinking. In its turn, *ratiocinatio* means reasonable consideration. Simplifying somewhat, rational actions are actions based on reason. However, real rationality, translated into action rules, always takes place in defined historical, political, geographical, organisational, social and other conditions. These conditions are usually variable. Thus, speaking of fragmentary or limited rationality as well as of grading rationality is justified. What is valuable from the point of view of practice is Weber's statement that rationality reveals itself in the selection of the most effective (efficient) means to achieve previously defined goals (Kłosiński, 2000). However, it is possible to question both the rationality of selected goals as well as the selection of the most effective means itself (especially *ex post*). Differences in the assessment of rationality of actions from the perspective of the organisation as a whole and from the point of view of its selected parts are tied with a very severe organisational pathology – autonomisation.

Another problem is the contradiction between the rationality of a decision in the long and short terms. The

same decision, whose implementation brings the desired effects, may play a role in the fostering of unfavourable phenomena and consequences in the long term. However, managers must take such decisions because if they do not, they will most probably not be able to serve their role for long. Subordinating decisions to short-term rationality becomes prerequisite to survival, but at the same time, it can have a negative impact on future development processes. Examples of such irrational behaviours may be indulging in fades and herd effects. What until recently was a standard worker responsibility presently becomes a 'project managed by the worker'. Outsourcing, lean management, reengineering and other methods of 'optimising costs' are applied almost universally and, more often than not, without any greater sense. The effect that this provides is often in the form of a short-lived improvement in financial results that, in the longer perspective, may lead to a situation in which the organisation has no surplus that can make possible the starting up of new processes.

In presuming that the currently dominant assumption that the goal of the organisation is survival and development, decisions leading to the maximising of short-term benefits at the cost of the future should be considered a pathology. However, it cannot be ruled out that as a result of a changing reality, not only the organisational lifecycle will shorten but basic assumptions regarding organisational targets will also be subject to revaluation.

The sources of pathologies are systemic and complex. This also means that there are no universal solutions for these problems. However, there exist more or less effective fragmentary solutions. In essence, management would not have been isolated as an area of interest of practitioners and theoreticians, a subject of numerous studies and ultimately a scientific discipline if not for having the experience numerous problems linked with the functioning of the organisation. Amongst other reasons, these problems were the effect of recurring errors and irregularities in managing. Just about all authors have formulated guidelines for ancient and modern managers alike, warning against the committing of such errors. In writing how to proceed, they simultaneously called attention to what not to do.

There continues to be a need for such guidelines today. In the view of Gestmann (2001), 'in moments of despair, entrepreneurs reach for every, even semi-credible theory relating to management. All known principles of management, from Total Quality Control, through Human Relations, to Reengineering, are instructions that promise help in eliminating organizational, communication, dependency-based, and other interference found in the workplace without actually studying just what the reasons are in an exhaustive manner' . A downswing in the economy exposes and, to a certain extent, intensifies pathological phenomena. On the other hand, it is a period of searching and creating new solutions and instruments in the area of management. Expectations relating to the identification and elimination of the most visible and greatest pathologies are growing. The intended goal: creating an 'open catalogue of pathologies and dysfunctions' by definition requires the continuation of research. Its theoretical and practical significance will grow as the number of respondents and the scope of the study on the causes and sources of pathology increase. This can also lead to creating an outline of an early warning system for the most common dysfunctions and pathologies in organisation.

References

Albrecht K. (2003). *The Power of Minds at Work: Organizational Intelligence in Action*, New York: American Management Association

Archer D. (1999). Exploring "Bullying" Culture in Para–Military Organisations. *International Journal of Manpower*, Vol. 20, N. 1–2, pp. 94–105.

Ashforth B. (1984). Petty Tyranny in Organizations. *Human Relations*, Vol. 47, No. 7, pp. 755–778

Awa W. L., Plaumann, and Walter U. (2010). Burnout Prevention: A Review of Intervention Programs. *Patient Education and Counseling*, Vol. 78, No. 2, pp. 184–190.

Björkvist K., Österman K., and Hjelt–Bäck M. (1994). Aggression among University Employees. *Aggressive Behavior*, Vol. 22, No. 3, pp. 173–184

Bogle J. C. (2009). *Dość* [Enough], Warsaw: PTE.

Brown P., Hesketh A. (2004) *The Mismanagement of Talent. Employability and Jobs in the Knowledge Economy.* Oxford: Oxford University Press.

Cameron K.S., Whetten D.A., Kim M.U. (1987) Organizational Dysfunctions of Decline. *The Academy of Management Journal,* Vol. 30, No 1, pp. 126-138

Chan D. W. (2011). Burnout and Life Satisfaction: Does Gratitude Intervention Make a Difference among Chinese School Teachers in Honk Kong? *Educational Psychology*, Vol. 31, No. 7, pp. 809–823.

Christensen J.G. (1993) Corporatism. Administrative Regimes and the Mis-management of Public Funds. *Scandinavian Political Studies*, Vol. 13, No. 3. pp. 201-224.

Dobrzyński M. (2012). *Doktryna szoku jako inspiracja współczesnego zarządzania* [The doctrine of shock as inspiration for modern management]. Warsaw: University of Warsaw Scientific Press.

Einarsen S. (2000). Harassment and Bullying at Work: A Review of the Scandinavian Approach. *Aggression and Violent Behavior*, Vol. 5, No. 4, pp. 16–27.

Fink G., Dauber D., and Yolles M. (2012) Understanding Organizational Culture as a Trait Theory. *European Journal of International Management*, Vol. 6, Issue 2, pp. 199–220.

Gestmann M. (2001). *Sabotaż w miejscu pracy* [Sabotage in the workplace]. Cracow: Professional Business School Press.

Goffnett S. P, Lepisto L., and Hayes R. (2016). Using the Socio–Economic Approach to Management to Augment Lean SiX Sigma. *International Journal of Productivity and Performance Management*, Vol. 65, Issue 1, pp. 80–97.

Gouliemos M. (2005). Applying the Organizational Failure Diagnosis Model to the Study of Information Systems Failure. *Disaster Prevention Management*, Vol. 14, Issue 3, pp. 362–377.

Guy M. (1989). *From Organizational Decline to Organizational Renewal: The Phoenix Syndrome*. New York: Quorum Books.

Halbesleben J. R. B., Osburn H. K., and Mumford M. B. (2006). Action Research as a Burnout Intervention: Reducing Burnout in the Federal Service. *Journal of Applied Behavioral Science*, Vol. 42, No. 2, pp. 244–266.

Heller V.L, Darling J.R (2011) Toyota in crisis: denial and mismanagement. *Journal of Business Strategy*, Vol. 32 Issue: 5, pp.4-13.

Kets de Vries M. F. and Miller D. (1984). Neurotic Style and Organizational Pathology, *Strategic Management*, Vol. 5, Issue 1, pp. 35–55.

Kieżun W. (1971). *Autonomizacja jednostek organizacyjnych. Z patologii organizacji* [The autonomization of organizational units: Organizational pathology]. Warsaw: PWE.

Kieżun W. (2012). *Patologia transformacji* [Transformation pathology]. Warsaw: Poltext sp. z o. o.

Kłosiński K. (2000). Racjonalność w procesach społeczno–gospodarczych [Rationality in social and economic processes]. In *Racjonalność myślenia, decydowanie i działanie* [Rational thought, deciding, and acting], L. W. Zacher (Editor). Warsaw: Koźmiński University, pp. 66–70.

Launsby R. G. (2016) *Medical Device Challenges*. Launsby Consulting, Available from Internet: http://www.launsby. com/Articles/MedDeviceChallenges.pdf, [accessed on June 29, 2016].

Lecker M. J. (2011). When Corporate Leaders Behave Badly. *Human Resource Management*. Polish Academy of Sciences and Institute of Labor and Social Studies 6/2011 (83), pp. 38–49.

Lencioni P. (2005). *Pięć dysfunkcji pracy zespołowej* [Five dysfunctions in teamwork]. Konstancin–Jeziorna: MT Biznes.

McMillan C. and Overall J (2016). Wicked Problems: Turning Strategic Management Upside Down. *Journal of Business Strategy*, Vol. 37, Issue 1, pp. 34–43.

Miller D. (1988). Organizational Pathology and Industrial Crisis, *Organization & Environment*, Vol. 2, Issue 1, pp. 65–74.

Miller J. G. and Miller J. L. (1991), A Living System Analysis of Organizational Pathology. *Behavioral Science*, Vol. 36, Issue 4, pp. 239–252.

Pasieczny J. (2005) Dlaczego kryzys nie musi prowadzić do rozwoju [Why crisis does not have to lead to development]. *Przegląd Organizacji* [Organizational Overview] 6/2005, pp. 7–11.

Pasieczny J. and Glinka B. (2008). Błędy menedżerskie – wybrane źródła i implikacje dla rozwoju organizacji [Managerial mistakes: Selected sources and implications for the development of organizations]. *Problemy Zarządzania* [Management Issues] 4/2008 (22), pp. 153–166.

Perlow L. A., Okhuysen G. A., and Repenning N. P. (2002). The Speed Trap: Exploring the Relationship between Decision Making and Temporal Context. *Academy of Management Journal*, Vol. 45, Issue 5, pp. 931–955.

Petrucelli J.R., Peters J.R (2017) Preventing Fraud and Mismanagement in Government: Systems and Structures. Hoboken N.J: John Wiley & Sons Inc.

PWC, (2012) *Presja gospodarcza prowadzi do częstszego występowania przestępstw gospodarczych [Economic pressure leads to more frequent economic crime]*. Available from Internet: http://www.pwc.pl/pl/biuro-prasowe/presja-gospodarcza-prowadzi-do-czestszego-wystepowania-przestepstw-gospodarczych.jhtml. [accessed on June 21, 2012].

Robinson S. L. and Bennett R. J. (1995). A Typology of Deviant Workplace Behaviors: A Multidimensional Scaling Study. *Academy of Management Journal*, Vol. 38, Issue 2, pp. 555–572.

Samuel Y. (2010). *Organizational Pathology: Life and Death of Organizations*. New Brunswick: Transaction Publishers.

Schulman P. R. (1989). The Logic of Organizational Irrationality. *Administration & Society*, Vol. 21, Issue 1, pp. 31–53.

Scott W. R. (1992). *Organizations: Rational, Natural and Open Systems*. Englewood Cliffs, New Jersey: Prentice–Hall.

Simon H. A. (2007). *Podejmowanie decyzji i zarządzanie ludźmi w biznesie i administracji* [Taking decisions and managing people in business and administration]. Gliwice: Helion.

Stocki R. (2005). *Patologie organizacyjne – diagnoza i interwencje* [Organizational pathologies: Diagnosis and intervention]. Cracow: Oficyna Ekonomiczna.

Webb J. (1992) The Mismanagement of Innovation. *Sociology*, Vol. 26, No. 3. pp. 471-492.

White R. D. (2010). The Micromanagement Disease: Symptoms, Diagnosis and Cure. *Public Personnel Management*, Vol. 39, Issue 1, pp. 71–76.

THE INFLUENCE OF ORGANIC PRODUCT CLASSIFICATION ON CHARITABLE CONTRIBUTIONS EMBEDDED IN RETAIL PRICES

Michael Levens

Walsh College, USA, mlevens@walshcollege.edu

Abstract. Research on embedding direct charitable contributions into purchase transactions through increasing product price has revealed mutual benefits for charitable organisations and for-profit companies. This process is referred to as the embedded premium (EP). The potential for this type of mutually beneficial cause marketing has been shown to apply to a wide range of products. The fastest growing product classification in the United States, organic products generally cost more than their non-organic alternatives. The basis of this research is to examine if organic products enhance the utility of EP offerings. Eight different organic and non-organic food products are presented in a 64-block, single choice set design to a national sample of consumers with choice options between current market price and current market price plus 5% price premium with entire premium going directly to charity. The results of the research indicate that organic products with EP were, on an average, chosen almost five percentage points less frequently than similar EP choices involving non-organic products.

Keywords: cause marketing; charitable contribution; embedded premium; organic.

JEL Classification: M31

Introduction

Cause marketing is a ubiquitous promotional strategy in both academic research and business practice. Whilst cause marketing can provide benefits to the business sponsor, the charity and consumers, the charity often has less control than the business sponsor and this can lead to arrangements that are not in the long-term interest of the charity. The study of embedding direct charitable contributions into a purchase transaction through increasing product price could enhance opportunities for charitable organisations to proactively approach companies with cause marketing proposals. The unique contribution would be the ability to increase price whilst also increasing preference. Typically, the case for cause marketing is built on goodwill and the potential for future revenue or profits for the partner company. If increasing product price to include a direct donation can be shown to possess consumer utility, business cases for cause marketing activities are enhanced for all parties involved. This indirect transfer process is referred to as an embedded premium (EP). Arora and Henderson (2007) describe EP as an enhanced offering resulting from a social cause being added to a product or service. EP, in contrast to other promotional strategies, appeals to non-economic factors and concentrates on the connection between concern for others and the concern for oneself (Arora and Henderson 2007).

Just as cause marketing has become ubiquitous, the concept of environmentalism and environmental practices has evolved from the periphery of societal values to assuming a much more prominent position (Ottman, 2011). Environmentalism and environmental practices, similar to EP, appeal primarily to non-economic factors and have encouraged the formation of many charitable organisations to serve the desires of individuals. There is also an economic dimension to environmentalism where businesses incorporate environmental themes and environmental practices as they make products and provide services to consumers.

The roots of environmentalism can be traced back centuries, but the 1970 enactment of the National Environmental Policy Act in the United States and the inauguration of the annual Earth Day celebration began to accelerate environmental awareness. The environmental practice of sustainability encouraged the growth of organic agriculture, which focuses on the health of soil, water and air. Organic products have become the fastest growing product category expanding from sales of $1 billion in 1990 to sales of $43.3

billion in 2015 (OTA 2016). Food comprises almost 92% of total organic sales and sales of organic food products are growing over three times the growth rate of the overall food market (OTA 2016).

The Theory of Planned Behaviour (TPB), the idea that attitude towards behaviour, subjective norms and perceived behavioural control combine to shape an individual's behaviours and behavioural intensions, provides us with a general framework to consider how organic product classification influences interest in EP choices. TPB has been shown to explain between 39% and 42% of the variance in behavioural intentions (Rivas *et al.* 2009). Bishop and Barber (2015) propose that the TPB model could be strengthened by the inclusion of *purchase of organic products* as a normative belief. Normative beliefs have been shown to predict the purchase of organic food (Dean *et al.* 2008). Bougherara and Combris (2009) found that altruism, as opposed to selfishness, was the motivating factor for consumers who purchased certified ethical food products. Still, it is important to note that considerable research indicates that people engage in environmentally conscious behaviours for a variety of reasons. These reasons are differentially related to various psychological consequences (Deci, Ryan 1985; Pelletier *et al.* 1998).

This research will consider how consumers react to EP choices across multiple food categories. It will then consider the effect of organic EP choices across the same food categories. The hypothesis is that the presence of organic products will enhance the utility of the EP choices making them more desirable than their non-organic counterparts.

Literature Review

Philanthropy and Cause Marketing

There are a variety of ways that businesses and charitable organisations work together. Two broad categories include philanthropy and cause marketing. The concepts are very different yet both inform the changing relationships between businesses and charitable organisations. Philanthropy is generally considered to be a concerted effort to enhance human welfare. Traditionally, philanthropy has involved a business donating money to a desired charitable organisation. Cause marketing is a promotional strategy designed to connect a marketing campaign to a charitable organisation. In contrast to philanthropy, cause marketing is generally accounted for as a business expense and is typically evaluated against anticipated financial returns.

American Express created the term 'cause-related marketing' in a 1983 campaign that provided one cent every time someone used their card and $1 for each new card application to a fund supporting renovation of the Statue of Liberty. The campaign raised $1.7 million for the renovation and American Express experienced a 45% increase in the number of card holders and a 28% increase in card use (Jones 2009). File and Prince (1998) created a summary of the contemporary literature about the benefits of cause-related marketing, each of which can create value for a business:

- – Breaking through advertising clutter
- – Ability to influence consumers who support the cause
- – Widen the customer base
- – Enhanced corporate image
- – Positive publicity
- – Enhanced trade and salesforce relations

Further, Dean (2003/2004) has demonstrated that consumers are generally not sceptical of cause marketing relationships and that the average organisation that is involved in cause marketing does not risk any loss of consumer goodwill by engaging in cause marketing.

There are a variety of cause marketing and philanthropic models in use today. Some businesses contribute a percent of a particular financial measure. Newman's Own donates 100% of post-tax profits and royalties to charities worldwide. Patagonia donates 1% of its sales to organisations that are active in

environmental protection and restoration. Amazon donates 0.5% of the price of eligible AmazonSmile purchases to the charitable organisation of a customer's choice.

Increasingly, businesses are giving both money and products or services or just products or services as in-kind contributions. Amato and Amato (2007) consider that philanthropy and cause marketing activities may represent an evolution towards a wider base of community involvement beyond cash donations. Charities benefit from the necessary resources that can include money and knowledge (Hoeffler, Keller 2002). Mattel donates 2% of its pretax profits to Mattel Children's Foundation and more than 400 non-profit organisations throughout the world. Some donations are in cash but most are in toys. Other activities include Mattel employees going to schools to play with children and encouraging toy designers to teach art courses at children's hospitals. Mattel considers this deploying both financial and creative capital. Home Depot donates materials and people to help Habitat for Humanity.

Other models include Toms Shoes donating one pair of shoes for each pair that it sells. Cisco Systems created hi-technology schools in Mississippi and Louisiana following Hurricane Katrina. Ben & Jerry's created PartnerShops that can be run by not-for-profits with no franchise fees and no monthly royalty payments. Hotels and airlines are typically allowing donations of loyalty points to charities. Another concept released by JustGive is a customised charity gift card, GiveNow, for use at any of its 1.5 million charity partners.

The most common methodology for cause marketing is donation of a percentage of profits. This is used more than five times as often as percentage of transaction price (Pracejus *et al.* 2003/2004). However, percentage of profit contribution can lead to confusion amongst consumers through the difficulty in mentally calculating both profit and donation percentage as opposed to a simple price percentage (Olsen *et al.* 2003).

The reasons for these models could be altruistic, good business practice or both. Hoeffler and Keller (2002) cite a 1999 Cone/Roper Cause-Related Trends Report that 80% of the US residents have a more positive image of companies that support causes that those individuals care about. Almost two-thirds claim they would switch brands to one affiliated with a supported cause. Approximately three-fourths support the idea of cause marketing as an acceptable practice.

Individual Giving

Exploring the relationship between charitable organisations and businesses considers only two of the four major players in the giving process. In considering only private giving, government roles are excluded and three players emerge. Barring pure business altruism, individual consumers play that third crucial role. The importance of consumers in the giving process becomes evident when you consider the 2008 Corporate Contribution Report published by the Conference Board, which reveals that business-to-consumer companies contribute 35% more than business-to-business companies as a percentage of consolidated pretax income.

Whilst businesses and foundations contribute greatly to philanthropic organisations, a 2015 Giving USA Study indicates that private individuals contribute about 72% of the approximately $358 billion in private US giving. About 70% of American households reported donating each year, but it is not always the same households (Singletary 2008). The Center of Philanthropy at the Indiana University reported that up to one-third of the individuals whom they surveyed alternated between donating and not-donating. The inconsistency has much to do with tax laws as well as the historical link between increases in wealth and giving (Knight 2007).

Just as altruism can motivate businesses so altruism can motivate individuals. The idea of taking pleasure in another's pleasure and just doing the right thing can motivate individuals to make charitable contributions (Carson, Mitchell 1993). Altruism can also be considered the 'functional equivalent of self-gratification' (Baumann *et al.* 1981). As a result, donating may create utility in the form of 'increasing the supply of public good' and through the very act of donating itself (Andreoni 1990).

One of the challenges claimed by many charities is the process of identifying and activating new donors. It may be as simple as asking. Nadeem (2009) cites research by the Independent Sector (1999) that claims 'because they were asked by someone' as the primary reason for donating time or money to a charitable organisation. If the initial request is small in magnitude, there may be a basis for a long-term relationship. When presented with a minor request, a consumer generally finds it difficult to argue that they cannot comply. Fulfilling an initial request increases the likelihood that they will respond favourably to a larger subsequent request (Cialdini, Schroeder 1976). Applying self-perception theory, individuals who comply with an initial request develop the self-perception that may influence them to comply with future requests by inferring their own attitudes and beliefs from self-observation of their behaviour (Reinhen 1978). A customer lifetime value perspective may be most appropriate when considering new donors.

Donations and the Shopping Process

Charitable donations can flow directly from consumers to charities, and donations can flow directly from businesses to charities. The shopping process can lead to transactions that connect the three parties. Donation promises linked to product offers appear throughout the consumer market. As discussed in the section on cause marketing, some businesses choose to offer a percent of the currency amount of an individual transaction to be directed to a specific charity or charitable fund.

The underlying reasons to use a donation-linked product offer have been considered in a variety of research projects. Babin *et al.* (1994) point out that shopping has both task-related and hedonic value. Both are 'aspects of consumer attitudes'. The shopping process can often provide both functional and experiential utility (Babin *et al.* 1994). When considering experiential utility in the shopping process, it is necessary to assess the symbolic meaning of products. Holbrook and Hirschman (1982) claim that 'all products – no matter how mundane – may have symbolic value' and that, in some cases, symbolism is 'rich and salient'. In addition to the product, the donation component of the transaction has symbolic value. The bundling of product and donation provide two separate positive outcomes resulting from a single transaction: The acquisition of the product and the positive feelings created from supporting a good cause (Strahilevitz, Myers 1998).

Consumers purchase products for two primary reasons. Hedonic purchases are based on the gratifying experience of product usage, whilst utilitarian purchases are based primarily on the functional performance of the products (Batra, Ahtola 1990). Hedonic products are pleasure-related products such as chocolate truffles, cake or wine. Utilitarian products are basic need items such as milk, eggs or paper towels. Strahilevitz and Myers (1998) considered the concept of complementarity, consumption of two items at one time, as a way to help select the most appropriate products to attach to charity donations. They believed that affect created from pleasure-oriented consumption was a better complement to charity donations than goal-oriented consumption related to the fulfilment of basic needs. Strahilivitz and Myers (1998) concluded that charity incentives were more effective with hedonic products than with utilitarian products.

There are other variations of the donation-linked product offer that can be constructed. One possible variation is where a brand offers a very small percentage of its product price to charity as opposed to reducing price by an identically very small percentage. Strahilevitz (1999) concluded the potential for purchase intention of a 'brand with a relatively small donation at a slightly higher price to be relatively high'. The characteristic of the product is claimed to be more important as the donation magnitude increases.

Donation-linked product offers could provide utility through changing the context of the charitable donation from writing a check at home to combining the task with a product purchase. Mental accounting refers to a cognitive process in which individuals react differently to products based on product labels or grouping (Kivetz 1999). For example, spending money out of one account may be more desirable than from another account. A donation-linked product offer may also provide utility though simple convenience. Research published in 2007 by The Center on Philanthropy at the Indiana University identified no difference between the amount of online and on-ground charitable donations amounts and

found that 64% of respondents claimed that they gave online because it was simply a convenient way to give.

Charitable donations embedded in purchase transactions can increase the overall transaction price so the charity can benefit without being subsidised by a decrease in business revenue. This enhanced offering resulting from a social cause being added to a product or service is known as an embedded premium (EP) (Arora, Henderson 2007). Consumers are willing to pay 6% more, on an average, when some or all of their payment goes to a charitable cause selected by a seller (Elfenbein, McManus 2010). This increase in donation behaviour could be due to higher levels of empathy when the donation is matched to a preferred cause (Mattila, Hanks 2012). Valente (2015) argues that ethical differentiation can be an effective strategy with EP as the premium is seen to be connected to the charity rather than the seller.

The Organic Factor

Individual concern for the environment should also be reflected in purchasing behaviour (Minton, Rose 1997). An increased emphasis on environmentalism should indicate a greater propensity to purchase organic products. Organic products, food grown in a manufacturing system that is based on a balance between agricultural processes and the environment, represent the fastest growing food segment in the United States (OTA 2016). One of the most significant pressures against increased organic demand is the fact that organic food products average a price premium of 60% compared to similar products without organic certification (Baltussen *et al.* 2006).

The Hartman Group released a 2008 study that claimed 69% of consumers purchased organic products at least occasionally and 28% of organic consumers, 19% of adults, are weekly organic users. Organic products can also be thought of as representing a 'way of living' (Essoussi, Zahaf 2008). Consumer value for organic products is primarily derived from a 'health perspective'. Other reasons to buy include nutrition, safety, lack of chemicals and respect for the environment. Reasons to reject include cost, limited availability and lack of perceived value (Essoussi, Zahaf 2008).

A 2006 Yankelovich study of corporate environmental initiatives that influence consumers' purchase decisions found that 'offer organically raised or grown food products' was the top-rated response ahead of 'use environmentally friendly packaging'. Still, the power of the organic label tends to overpower other brands operating in the market space. Coca Cola with Odwalla, General Mills with Cascadian Farms, Heinz with Earth's Best and Kellogg with Morningstar have had limited success establishing their organic brands. In a presentation to the Food Service Educator's Network , 60% of organic food purchasers could not think of a specific organic brand name unaided (DiMatteo n.d.). Still, if organic refers to a way of life, then might that way of life enhance the utility of a donation-linked product offer?

Those who hold more intense normative beliefs might possess greater intension to pay a premium for organic products (Bishop, Barber 2015). We refer to these individuals as green consumers. The green consumer's purchase decisions are informed by a socially conscious, pro-environmental set of values (Moisander, Pesonen 2002). The green consumer considers whether the consumption of a product will generate a positive or negative ecological environmental consequence (Kim 2011; Jansson *et al.* 2010). As a result, altruistic motives are considered more important for green than non-green consumers. Research by Koppel and Schulze (2013) indicates that support for EP for Fair Trade coffee, most of which is also certified organic, over regular coffee is not related to the individual attributes of Fair Trade coffee but rather caused by the process of selling products at a premium that accrues to the charity. This would seem to indicate that organic products with EP would be preferred to non-organic products with EP through an appeal to altruistic motives.

Methodology

The sample was established as US consumers over the age of 18 years. Sample was drawn randomly from a managed Internet panel consisting of more than 10,000 double opt-in members. Panel members were incentivised with points to be redeemed for goods or services. The offer to participate was normative for

the length of the survey. The 635 respondents consisted of 77% female, 90% Caucasian, 68% married or living together, 62% employed full-time or self-employed, 37% with children aged 17 years or younger in household, 30% had college degrees including 16% with post graduate degrees and 76% were between the ages of 30 and 59 years. Income levels over $100,000 were claimed by 15% of respondents, whilst 13% had income under $25,000. Individuals claiming rarely or never to give to charities comprised 17% of the sample, whilst 40% of the sample believed organic products are higher quality than non-organic products and 49% seldom or never purchased organic products. Respondents working for not-for-profits comprised 8% of the sample.

The survey was released to the entire panel and remained active for two weeks. A completed survey was defined as a minimum of all block choices made and the classification section completed. If there were missing elements of the warm-up section and the other sections were completed then that survey was considered a completed survey. Respondent cooperation rates were monitored and related to panel book statistics for gender, household income, age, education and ethnicity. There were no deviations from normative response patterns and no weighting protocols were used.

Scales for the warm up section, consisting mainly of purchase funnel and category involvement questions, followed commercial brand tracking protocols for the food products market sector. Each survey element was pre-tested by a separate random sample of 30 managed panel members for comprehension and completion time.

The research design was survey-based using 64 blocks where each respondent was randomly assigned to four blocks. Each block consisted of a single choice set. Choice blocks were embedded between charitable category warm up questions and classification questions. Eight food products were subjected to testing in both organic and non-organic forms. The products were selected based on their range in relative price points and their representation of both hedonic and utilitarian product categories. The products included:

- One Gallon of Milk
- One Dozen Eggs
- Half-dozen Chocolate Truffles
- One Pound of Medium Roast Decaffeinated Coffee
- Five Ounce Chicken Breast
- One Large Roll of Paper Towels
- One Bottle of Chardonnay
- Seven Inch Round Bakery Cake

Each product was priced by taking the average of three different retail locations (with national presence) in Southeastern Michigan for both organic and non-organic products.

The non-organic choices were presented to consumers in the following manner:

Which of the following nationally known brands of milk with similar quality would you prefer?

Brand X

1 gallon of milk priced at $3.99

Brand Y

1 gallon of milk priced at $4.20

5% of the price goes to _____ [INSERT CHARITY NAME]

The organic choices were presented to consumers in the following manner:

Which of the following nationally known brands of organic milk with similar quality would you prefer?

Brand X

1 gallon of organic milk priced at $6.99

Brand Y

1 gallon of organic milk priced at $7.36

5% of the price goes to _____ [INSERT CHARITY NAME]

Each choice set was counterbalanced by another block and reconnected for final analysis after testing for stability of the block responses. The names of 10 leading charities were rotated into the survey as selected from most frequently reviewed charities at www.charitynavigator.com/. The 10 frequently reviewed charities at the time of the survey were:

- – American Red Cross
- – World Vision
- – American Cancer Society
- – AmeriCares
- – Food For The Poor
- – Volunteers of America
- – The Nature Conservancy
- – America's Second Harvest
- – Feed the Children
- – CARE

The charity names were cross-referenced with an aided awareness list developed for each respondent earlier in the survey. If the randomly assigned charity was listed in the aided awareness list, that charity was used. If there was no match, a new charity from the Charity Navigator list was randomly assigned until a match was found. In a very few instances where no charities were recognised and, therefore, no match could be found, respondents were assigned to the original randomly selected charity. The dollar price differential between Brand X and Brand Y was calculated to be equal to the percentage amount (5%) that was claimed to go to charity. Many elements of the design were adapted from the procedure used by Strahilevitz (1999) because of his significant contribution in this area.

Results

Interest in EP

Across the eight products tested, an average of 54% of respondents selected the choice without EP, whilst an average of 46% of respondents selected the EP choice. Three products with EP were preferred over non-EP options: non-organic chicken 60.76%, non-organic eggs 56.79% and non-organic wine 51.9%. Of those preferring products with EP, only non-organic chicken preference was statistically different at 95% with $p = 0.0298$. The lowest preference for EP products over non-EP product options were non-organic milk 38.27%, organic chicken 38.46% and organic bakery cakes 39.74%. Those products were the only products recording statistically different results for non-EP choices over EP choices at 95% confidence level with $p = 0.0141$, $p = 0.0212$ and $p = 0.0406$, respectively. Non-EP option preference for non-organic coffee with $p = 0.0526$ and organic eggs with $p = 0.0929$ were statistically different at 90% confidence level. All other choice options were not statistically different.

Interest in organic EP versus non-organic EP choices

In general, organic products with increased price and embedded donation were selected less frequently than their non-organic alternatives. Organic EP products were, on an average, chosen almost 5 percentage points less frequently (48.15% non-organic to 43.22% organic) than similar choices involving non-organic EP products. The only statistically different results were found with non-organic EP eggs selected over

organic EP eggs at 90% confidence with p = 0.0602 and non-organic EP chicken selected over organic EP chicken at 99% confidence with p = 0.0054.

One segment of respondents, accounting for 8% of the sample, overwhelmingly selected EP options for both organic and non-organic products but data cells were too small to analyse statistically at the product level. The 8% segment was typically younger and very affluent and universally selected the following option when asked about their behaviour regarding organic products 'I purchase many different kinds of organic products and am willing to pay a premium for those products'. Other choices not selected by this group included 'I purchase many different organic products but will not pay a premium for those products', 'I purchase some organic products in specific categories', 'I seldom purchase organic products' and 'I never purchase organic products'. There were no counterbalancing issues for either organic or non-organic products.

Respondents were asked about their level of monetary and time donation to charitable organisations in the warm up section. The level of claimed contribution in either time or money to charitable organisations had no significant influence on the selection of one choice option or the other.

Conclusions

The survey results indicate that there is a non-trivial segment (average 46% across all products tested) of consumers who are interested in EP offerings. This research provides not-for-profits with an argument to approach for-profit businesses with mutually beneficial cause marketing proposals. This concept warrants continued consideration as a promotional strategy relative to traditional promotional strategies. Two products, non-organic chicken and non-organic eggs, demonstrated the highest EP appeal levels and indicate a potential difference between utilitarian and hedonic products in EP consideration. Concept appeal did not differ significantly amongst individuals with various levels of claimed charitable behaviour. One segment of respondents was highly interested in EP but that segment was relatively small.

The organic effect ran counter to the hypothesised outcome by actually reducing interest in organic EP choices relative to non-organic EP choices. It appears that the EP choices with organic products were too much to ask from some consumers. Quite possibly, organic consumers view their organic purchases as a *de facto* charitable contribution.

This research is intended to explore the theoretical basis for EP and the impact of organic versus non-organic product association. As actual product brands were not used and choice blocks did not contain the no choice option, there was not a realistic consumer experience. In addition, future research should combine survey data with behavioural data. Regardless of the insights generated from this research, many questions regarding EP and organic versus non-organic product impact on EP will remain, including:

- What is the concept appeal across a wider range of products and services?
- What about the impact of lesser known charitable organisations as the beneficiary?
- What is the impact on concept appeal with different embedded donation magnitudes?
- How does this pricing model impact sales volume over time?
- How is the concept impacted by hedonic and utilitarian product choices?
- Are overall charitable donations increased or are they redirected through the shopping process?

Future research should explore the impact that EP would have on transferring donation recipient and donation amount decisions from joint decisions in married or partnership situations to, generally, one individual in a shopping situation. By removing the bargaining effect, which is estimated to reduce charitable giving by 6%, it would be interesting to see if overall giving increased (Andreoni *et al.* 2003). Finally, additional research should be directed at the small segment of consumers who expressed strong support for EP across both organic and non-organic product choices. That segment might provide unique and valuable insights.

References

Amato, C. & Amato L. (2007). The Effects of Firm Size and Industry on Corporate Giving. *Journal of Business Ethics*, (72), 229-241.

Andreoni, J. (1990). Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving. *The Economic Journal, 100*(6), 464-477.

Andreoni, J., Brown E. & Rischall, I. (2003). Charitable Giving by Married Couples: Who Decides and Why Does It Matter? *The Journal of Human Resources, 38*(1), 111-133. [Accessed 03.04.2017]. Available from Internet: http://www/jstor.org/stable/1558758

Arora, N., & Henderson, T. (2007). Embedded Premium Promotion: Why It Works and How to Make It More Effective. *Marketing Science, 26*(4), 514-531,584-585. [Accessed 03.04.2017]. Available from Internet: https://search-proquest-com.libproxy.tulane.edu/docview/212275314?accountid=14437

Babin, B., Darden, W. & Griffin, M. (1994). Work and / or Fun: Measuring Hedonic and Utilitarian Shopping Value. *Journal of Consumer Research, 20*(3), 645-646.

Baltussen, W. Wertheim, S., Bunte, F., Tacken, G., Galen, M., Bakker, J., & de Winter, M. (2006). *An Organic Price Experiment: Boundaries Ahead?* The Hague: Agricultural Economics Research Institute.

Batra, R. & Ahtola, O. T. (1990). Measuring the Hedonic and Utilitarian Sources of Consumer Attitudes. *Marketing Letters, 2*(2), 159-170.

Baumann, D., Cialdini, R. and Kenrick, D. (1981). Altruism as Hedonism: Helping and Self-Gratification as Equivalent Responses. *Journal of Personality and Social Psychology, 40*(6), 1039-1046.

Bishop, M. M., & Barber, N. A. (2015). Should I Pay More? The Relationship between Normative Beliefs and Willingness-to-Pay for Organic and Local Products. *Journal of Marketing Theory and Practice, 23*(1), 94-106. doi:http://dx.doi.org.libproxy.tulane.edu:2048/10.1080/10696679.2015.980182

Bougherara, D. & Combris, P. (2009). Eco-labelled Food Products: What are Consumers Paying for? *European Review of Agricultural Economics, 36*(3), 321-341.

Carson, R. and Mitchell R. (1993). The Issue of Scope in Contingent Valuation Studies. *American Journal of Agricultural Economics, 75*(12), 1263-1267.

Cialdini, R. and Schroeder, D. (1976). Increasing Compliance by Legitimizing Paltry Contributions: When Even a Penny Helps. *Journal of Personality and Social Psychology, 34*(4), 599-604.

Dean, D. (2003/2004). Consumer Perception of Corporate Donations: Effects of Company Reputation for Social Responsibility and Type of Donation. *Journal of Advertising, 32*(4), 91-102.

Dean, M., Raats, M. & Shepherd, R. (2008). Moral Concerns and Consumer Choice of Fresh and Processed Organic Foods. *Journal of Applied Social Psychology, 38*(8), 2088-2107.

Deci, E. and Ryan, R. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*. NY: Plenum.

DiMatteo, K. (n.d.). *Overview of Organic*. Presentation to Food Service Educator's Network.

Elfenbein, D. W., & McManus, B. (2010). A Greater Price for a Greater Good? Evidence that Consumers Pay More for Charity-linked Products. *American Economic Journal. Economic Policy, 2*(2), 28-60. doi:http://dx.doi.org.libproxy.tulane.edu:2048/10.1257/pol.2.2.28

Essoussi, L. and Zahaf, M. (2008). Decision Making Process of Community Organic Food Consumers: An Exploratory Study. *The Journal of Consumer Marketing, 25*(2), 95.

File K. and Prince R. (1998). Cause Related Marketing and Corporate Philanthropy in the Privately Held Enterprise. *Journal of Business Ethics, 17*(14), 1529-1539. [Accessed 03.04.2017]. Available from Internet: http://www.jstor.org/stabe/25073987.

Hoeffler, S. and Keller, K. (2002). Building Brand Equity through Corporate Societal Marketing. *Journal of Public Policy & Marketing, 21*(1), 78-89.

Holbrook, M. and Hirschman, E. (1982). The Experiential Aspects of Consumption: Consumer Fantasies, Feelings

and Fun. *The Journal of Consumer Research, 9*(2), 132-140. [Accessed 03.04.2017]. Available from Internet: http://www.jstor.org/stable/2489122.

Jansson, J, Marell, A. & Nordlund, A. (2010). Green Consumer Behavior: Determinants of Curtailment and Eco-innovation Adoption. *The Journal of Consumer Marketing*, 27(4): 358-370.

Jones, P. (2009, February 17). An Interview with Cause-related Marketing Pioneer Jerry Welsh. *Cause Marketing*.

Kim, Y. (2011). Understanding Green Purchase: The Influence of Collectivism, Personal Values and Environmental Attitudes, and the Moderating Effect of Perceived Consumer Effectiveness. *Seoul Journal of Business, 17*(1): 65-92.

Kivetz, R. (1999). Advances in Research on Mental Accounting and Reason-Based Choice. *Marketing Letters*, *10*(3), 249-266.

Knight, R. (June 25, 2007). Charitable giving in US hits record. *Financial Times*, 9.

Koppel, H., & Schulze, G. (2013). The Importance of the Indirect Transfer Mechanism for Consumer Willingness to Pay for Fair Trade Products - Evidence from a Natural Field Experiment. *Journal of Consumer Policy, 36*(4), 369-387. doi:http://dx.doi.org.libproxy.tulane.edu:2048/10.1007/s10603-013-9234-0

Mattila, A. S., & Hanks, L. (2012). Antecedents to Participation in Corporate Social Responsibility Programs. *Journal of Service Management, 23*(5), 664-676. doi:http://dx.doi.org.libproxy.tulane.edu:2048/10.1108/09564231211269829

Minton, A., & Rose, R. (1997). The Effects of Environmental Concern on Environmentally Friendly Consumer Behavior: an Exploratory Study. *Journal of Business Research*, 40(1), 37-48.

Moisander, J. & Pesonen, S. (2002). Narratives of Sustainable Ways of Living: Constructing the Self and the Other as a Green Consumer. *Management Decision, 40*(4): 329-342.

Nadeem, M. (2009). Purchasing Equals Happiness Equals Giving! How do you Plan to Spend Your Weekend? *The Journal of American Academy of Business, 15*(1), 229.

Olsen, G. D., Pracejus, J. & Brown, N. (2003). When Profit Equals Price: Consumer Confusion about Donation Amounts in Cause-Related Marketing. *Journal of Public Policy & Marketing, 22*(2), 170-180.

OTA (Organic Trade Association). [Accessed 09-04-17]. Available from Internet: https://www.ota.com/resources/market-analysis

Ottman, J. (2011). *The New Rules of Green Marketing: Strategies, Tools and Inspiration for Sustainable Marketing*, San Francisco: Berrett-Koehler.

Pelletier, L., Tuson, K., Green-Demers, I., Noels, K. & Beaton, A. (1998). Why Are You Doing Things for the Environment? The Motivation toward the Environment Scales (MTES). *Journal of Applied Social Psychology*, *28*(5), 437-468.

Pracejus, J., Olsen, G. D. & Brown, N. B. (2003/2004). On the Prevalence and Impact of Vague Quantifiers in the Advertising of Cause Related Marketing. *Journal of Advertising, 32*(4), 19-28.

Reinhen, P. (1978). On inducing Compliance with Requests. *Journal of Consumer Behavior, 5*(2), 96-102.

Rivas, A., Sheeran, P. & Armitage C. (2009). Expanding the Affective and Normative Components of the Theory of Planned Behavior: A Meta-analysis of Anticipated Affect and Moral Norms. *Journal of Applied Social Psychology, 39*(12), 2985-3019.

Singletary, M. (November 23, 2008). Keep on Giving: Times are even Tougher for Others. *The Washington Post*, p. F01. [Accessed 03.04.2017]. Available from Internet: http://www.washingtonpost.com.

Strahilevitz, M. (1999). The Effects of Product Type and Donation Magnitude on Willingness to Pay More for a Charity-Linked Brand. *Journal of Consumer Psychology, 8*(3), 215-241.

Strahilevitz, M. & Myers, J. (1998). Donations to Charity as Purchase Incentives: How Well They Work May Depend on What You Are Trying to Sell. *Journal of Consumer Research, 24*(4), 434-446.

Valente, M. (2015). Ethical Differentiation and Consumption in an Incentivized Market Experiment. *Review of Industrial Organization, 47*(1), 51-69. doi:http://dx.doi.org.libproxy.tulane.edu:2048/10.1007/s11151-015-9455-2

PHILOSOPHY OF THE PROFESSION AND PROFESSIONAL KNOWLEDGE IN THE STRUCTURE OF PROFESSIONAL IDENTITY OF HEI TEACHERS IN RIGA AND SMOLENSK

Jelena Jermolajeva[1], Tatiana Bogdanova[2]

[1] *University College of Economics and Culture, Latvia, jjerm@latnet.lv*

[2] *Smolensk State University, Russia, tanbogdan@mail.ru*

Abstract. Teacher is a key figure in the implementation of reforms in higher education. Pedagogical research of the professional identity (PI) of teacher, her/his priority values, self-evaluation of performances and professional knowledge and the way how she/he conceptualises the profession at an individual level can lead to the most appropriate strategies to manage the educational reforms successfully. This article presents some results of the Latvian–Russian project 'Professional Identity of Contemporary Pedagogue' implemented in 2014–2016 by researchers of Riga (Latvia) and Smolensk (Russia). In the realisation of project, a hypothetical model of the content of Higher Education Institution (HEI) teacher's PI was created, and HEI teachers' survey was carried out. In total, 198 teachers were surveyed in Riga and Smolensk. The aim of this article is to examine the relevance of the proposed model and analyse the indicators of the first two components of the model: Philosophy of the Profession and Professional Knowledge. The results show that, on the whole, the answers of the Russian and Latvian teachers in the questionnaire are fairly well agreed; however, some differences and peculiarities in the data of Riga and Smolensk were observed. The relevance of the proposed model has been confirmed, and some problems of PI of HEI teachers have been identified. To improve the educational process, executives of the reform and teachers should pay due attention to these problems.

Keywords: professional identity (PI); teacher of Higher Education Institution (HEI); philosophy of the profession; professional knowledge.

JEL Classification: I23

Introduction

The reform of education in Latvia and Russia started long ago, so all the participants of this process, theorists and practitioners, executives of the reform as well as pedagogues feel the need to sum up some of its results. Teacher is a key figure in the implementation of reforms in higher education. Pedagogical research of the professional identity (PI) of teacher, her/his priority values, self-evaluation of performances and professional knowledge and the way how she/he conceptualises the profession at an individual level can lead to the most appropriate strategies to manage the educational reforms successfully (Radulescu 2013).

The study of the teachers' PI was the theme of the Latvian–Russian project 'Professional Identity of Contemporary Pedagogue' implemented in 2014–2016 by researchers of the Riga Teacher Training and Educational Management Academy (Latvia) and the Smolensk State University (Russia), including the authors of this paper. One of the two main directions of the project was PI of Higher Education Institution (HEI) teachers. In the realisation of project, hypothetical model of the content of HEI teacher's PI was created. The model includes six major structural components of the contents of PI: Philosophy of the Profession, Professional Knowledge, Professional Roles, Professional Attitude to Work, Cooperation with Colleagues and Professional Engagement Behaviours (Шпона *et al.* 2015). According to the model, the questionnaire 'HEI teachers' professional identity' was elaborated and HEI teachers' survey was carried out; 118 teachers of Riga and 80 representatives of Smolensk participated in the anonymous testing. The article presents some results of this empirical study. The aim of the article is to examine the relevance of

proposed model of contents of HEI teachers' PI and analyse the indicators of the first two components of the model (Philosophy of the Profession and Professional Knowledge) in the samples of Riga and Smolensk.

The results show that, on the whole, the answers of the Russian and Latvian teachers in the questionnaire are fairly well agreed, despite the fact that in the past 25 years, the two public educational systems have been developed independently. However, some differences and peculiarities in the data of Riga and Smolensk were observed. In the process of the research, the relevance of the proposed model of the content of HEI teachers' PI has been confirmed, and some problems of the PI of the contemporary HEI teacher have been identified. To improve the educational process, executives of the reform and teachers should pay due attention to them.

Literature Review

In overviews as well as in analytical papers, the assertion that subjective factors play an important role in reforming the educational process occurs more and more often. One of these factors is personality of school or higher school teacher (European Commission 2015, Вербицкий 2014, Olsen, Buchanan 2017). The PI of teacher is a complex dynamic unity developing in the interaction of personal and public perceptions of what it means to be a teacher, subjective and social expectations from this profession (Goodson, Cole 1994). Schneider defines identity as 'an active process that reflects individual's ideas about himself and his own development. This process is accompanied by a the sense of his own continuity, coherence, qualitative certainty that enables individual to perceive his life as an experience of the continuous unity of consciousness, the integrity of life goals and everyday behaviors, actions and their meanings, which makes it possible to act consistently' (Шнейдер 2001, 16).

Research of HEI teachers' PI requires structuring the content of this phenomenon. To create the hypothetical model of the content of HEI teacher's PI, the corresponding scientific literature was analysed and generalised. The model was based on the works by Emerson (2010), Beijaard et al. (2004), Healey and Hays (2011) and Woo (2013). For the empirical research, the questionnaire 'HEI teachers' professional identity' was developed using the Professional Identity Scale in Counselling by Woo for the profession of psychologist-counsellor (Woo 2013). Woo's technique was modified to investigate the contents of HEI teachers' PI.

Methodology

The survey of university teachers carried out using the questionnaire 'HEI teachers' professional identity' was elaborated by Shpona, Vidnere and Jermolajeva (Сенченков, Шпона 2016, 191). The questionnaire contains six blocks, according to the major components of the model: Philosophy of the Profession, Professional Knowledge, Professional Roles, Professional Attitude to Work, Cooperation with Colleagues and Professional Engagement Behaviours. Every block consists of 10 statements; each of them can be evaluated by the appropriate rating from the strong disagreement (1 point) to the complete agreement (6 points). In total, there are 60 items.

About 118 teachers of Riga Teacher Training and Education Management Academy, Latvian Academy of Sport Education, Latvian Academy of Music and Riga Technical University participated in Riga; 80 representatives of Smolensk State University, Smolensk State Medical University, Smolensk State Agricultural Academy and Smolensk Academy of Physical Culture, Sports and Tourism were surveyed in Smolensk. On the whole, 198 lecturers of Latvian and Russian universities participated in the research.

By Cronbach's alpha method, the indicator of reliability of the questionnaire is 0.84, which implies that the questionnaire can be recognised as reliable. The distribution of the participants from Riga and Smolensk samples by gender, age, work experience and the presence/absence of scientific degree are shown in Table 1.

Table 1. Characteristics of Riga and Smolensk samples

	F/M (%)	Age				Work experience				Sc. degree
		Mean	Up to 35 (%)	36–55 (%)	56 and above (%)	Mean	Up to 5 (%)	6–15 (%)	16 and above (%)	Dr. or candidate / Mg. (%)
Riga	76.3/23.7	52.8	8.5	49.2	42.4	20.0	7.6	28.0	64.4	57.6 /42.4
Smolensk	76.4/23.6	42.3	26.3	57.5	16.3	14.8	20.0	47.5	32.5	80.0 / 20.0

In all the components of PI mean rates, dispersion, standard deviation, statistical mode and coefficient of variation (CoV) were calculated for both samples of respondents (CoV up to 33% is considered to be reliable and accurate to draw conclusions) (Елисеева 2012, 70). Using the coefficient of Mann–Whitney, statistically significant differences were identified. Within each block of statements and between the blocks, Spearman's rank correlation coefficients were defined by means of *Statistica* software. The cases of significant correlation have been analysed.

Results

The general data obtained for the components 'Philosophy of the Profession' and 'Professional Knowledge' are presented in Table 2. The numbers are separated by a slash: the first one is an indicator for Riga; the second one in italics refers to the Smolensk teachers.

Table 2. General statistical indicators for the PI components 'Philosophy of the Profession' and 'Professional Knowledge' (Riga /*Smolensk*)

Structural components	Mean value	Dispersion	Standard deviation	Coefficient of variation (%)	Mode
1. Philosophy of the Profession	5.19 / 5.12	0.97 / 0.99	0.99 / 1.00	19.02 / 19.46	6 / 6
2. Professional Knowledge	4.82 / 4.71	1.15 / 1.49	1.07 / 1.22	22.20 / 25.91	5 / 5

On the whole, the answers of the Russian and Latvian teachers are fairly well agreed. According to the Mann–Whitney coefficient, the differences between the two samples of respondents are not statistically significant either for the PI taken, as a whole, or for each component separately (Table 3). The similarity of the results confirms the relevance of the proposed model and indicates that it reflects the essential constant characteristics of the studied professional identity. However, there are some peculiarities in the data of the Riga and Smolensk samples.

Table 3. Statistical differences between the variables in Riga and Smolensk samples

Mann–Whitney U-test for variable PI (Smolensk). The criteria shown are significant for p <0.05000									
	Rank Sum 1	Rank Sum 2	U	Z	p-level	Z	p-level	Valid N 1	Valid N 2
PI (Riga)			0.00	0.00	1.00	0.00	1.00	0	0
Mann–Whitney U-test for variable 'Philosophy of the Profession' (Smolensk). The criteria shown are significant for p <0.05000									
	Rank Sum 1	Rank Sum 2	U	Z	p-level	Z	p-level	Valid N 1	Valid N 2	2*1 sided exact p
Philosophy of the Profession (Riga)	66.00	25.00	11.00	−0.68	0.50	−0.68	0.50	10	3	0.57

Mann–Whitney U-test for variable 'Professional Knowledge' (Smolensk). The criteria shown are significant for p <0.05000										
Professional Knowledge (Riga)	Rank Sum 1	Rank Sum 2	U	Z	p-level	Z	p-level	Valid N 1	Valid N 2	2*1 sided exact p
	8.50	19.50	4.50	0.19	0.85	0.19	0.85	2	5	0.86

The component 'Philosophy of the Profession' of teachers' PI concerns basic professional values and patterns: the belief in the necessity and importance of the work, the goals of professional work and professional ethics. To study this component of PI, the researchers offered to respondents the following statements for evaluation:

F1. Teacher should promote a holistic physical, mental and social development of student's personality.
F2. One of the teacher's professional values is student's intellectual growth in the learning process.
F3. Curriculum is a means for the development of student's personality.
F4. In the pedagogical process, it is important to recognize the student's personal achievements.
F5. Effective teaching process is based on equitable cooperation between teacher and students.
F6. Research work is an important component of the profession of university teacher.
F7. It is important for me to communicate with young people, help them, and give advice.
F8. If you look at things realistically, the teacher has few opportunities to influence the student *(reverse code)*.
F9. Teacher profession gives opportunities for self-assertion.
F10. I believe that in my profession it is important to follow certain ethical standards.

The data obtained in the survey for each of the statements of this component are presented in Fig. 1 and Table 4.

Table 4. Data for the items of the PI component 'Philosophy of the Profession'

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Riga	Mean rate	5,37	5,43	5,15	5,48	5,40	5,36	4,97	4,45	4,50	5,74
	Mode	6	6	6	6	6	6	6	5	5	6
	Coefficient of variation (%)	17,00	14,34	17,88	13,43	16,80	14,55	22,06	20,27	28,28	8,95
Smolensk	Mean rate	5,29	5,46	5,18	5,45	5,24	4,95	5,01	4,14	4,80	5,70
	Mode	6	6	6	6	6	6	5	5	5	6
	Coefficient of variation (%)	17,60	15,40	17,60	13,35	15,26	22,25	20,20	23,31	21,58	12,29

The items of the block 'Philosophy of the Profession' received the most consistent and highest rates, compared with items of other components of PI. Teachers believe in the high mission of their profession. The maximum approval is observed in relation to the requirement of strong ethical standards (see item F10 in Fig. 1). The necessity to carry out scientific research is recognised as well. However, there is much less consensus and acceptance regarding possibilities for self-assertion (item F9) and real influence on students (F8). Doubts about the latter are more clearly expressed in Smolensk (Fig 1). Probably, this is related to the imbalance and inconsistency in assessing the statement F7 by the teachers of both samples ('It is important for me to communicate with young people, help them, and give advice'). The Smolensk

teachers have higher average score, whereas in Riga, mode is higher. It should be noted that in both samples, the teachers' answers to items F7, F8 and F9 are far more inconsistent than their assessments given to other statements of this block, although the data remain within the limits of statistical reliability (in the Smolensk sample, the item F6 belongs also to the group of items with less consistent answers). Thus a discernible contradiction is revealed in PI of a contemporary teacher: recognising her/his mission in the development of student's personality and intellect, she/he is aware that the available tools and technologies are not sufficient to carry out this task. Current communication, advice and help seem to be insufficient for the development of student's personality; the subject–object educational process has been exhausted at this stage of the advancement of higher education. Teacher is aware of the need for a new type of communication and professional interaction, but she/he does not possess necessary tools; the organisation of the educational process cannot provide adequate and effective technologies for the tasks to be solved.
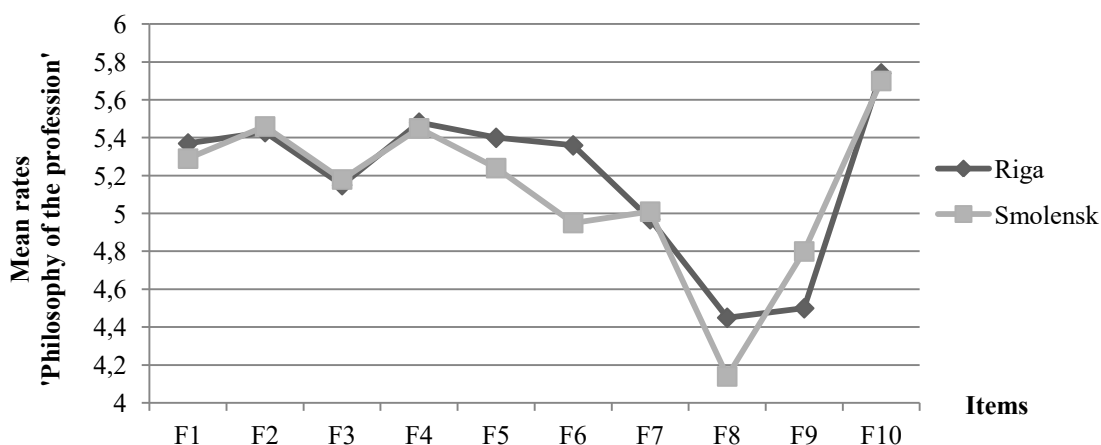
Fig. 1. Mean rates of the statements of the component 'Philosophy of the profession'

Using the Spearman's rank correlation coefficients, the interdependences of statements of the analysed PI component were found (correlations of more than 0.3 are statistically significant, whereas correlations of more than 0.5 and up to 0.7 are moderately strong). Smolensk teachers associate the development of the personality of student mostly with her/his intellectual growth and consider it as their mission (correlation of items F2 and F3 is 0.51). They think that for student's harmonious development, it is necessary to recognise her/his personal achievements. At the same time, they emphasise the complexity of the ethical side of the teacher work: correlation of items F1 and F4 is 0.51 and F4 and F10 is 0.60. The teachers think that assessing student's achievements in the context of group learning can be ethically conflicting. For Riga teachers, the main means of developing the student's personality is equitable cooperation between her/him and teacher (correlation of F5 and F3 is 0.69), whilst research plays an important role in this cooperation (correlation of F5 and F6 is 0.51). It is in this sense that the mission of the teacher/counsellor/assistant is important (correlation of F6 and F7 is 0.54).

The correlation analysis of statements from different blocks of the questionnaire indicates a weak connection between the Philosophy of the Profession and other components of PI in the Smolensk sample (only two moderately strong correlations) and more significant interdependences in Riga (six correlations). In Smolensk, F10 ('I believe that in my profession, it is important to follow certain ethical standards', the highest average score in the block) is the only statement that has the moderately strong correlation of 0.56 with the statement 'I have the necessary diplomas and certificates that give me the right to fulfil my professional role(-s)' (component 'Professional Roles') and 0.54 with 'I feel comfortable when working with people' (component 'Professional Attitude to Work'). Thus for the Smolensk teachers, the highly valued teaching mission remains, unfortunately, rather declarative, with little connection with

professional activities. Only the ethical aspect of Philosophy of the Profession relates to the professional roles performed by teachers (but only at the level confirmed by diplomas, not at the level of personal attitude) and the system of interpersonal relations.

In Riga sample, Philosophy of the Profession is closely connected with the components Professional Roles, Professional Attitude to Work and Professional Engagement Behaviours (Table 5).

Table 5. Spearman's rank correlations of Philosophy of the Profession with the other PI components (Riga sample)

Statements from the block 'Philosophy of the Profession'	Correlating statements in the other PI components	Correlation coefficient
'Effective teaching process is based on equitable cooperation between teacher and students'	'I am convinced that my work at the university has a positive impact on society' (Professional Roles)	0.53
	'I realise the need to improve the performance of my professional role(-s)' (Professional Roles)	0.51
	'The teaching profession is unique and valuable for the development of society' (Professional Engagement Behaviours)	0.51
'In the pedagogical process, it is important to recognise the student's personal achievements'	'I love my profession and would recommend it to young people' (Professional Attitude to Work)	0.62
	'The teaching profession is unique and valuable for the development of society' (Professional Engagement Behaviours)	0.53
'Teacher profession gives opportunities for self-assertion'	'The teaching profession is unique and valuable for the development of society' (Professional Engagement Behaviours)	0.50

From the point of view of the HEI teachers from Riga, pedagogues have a high mission in society, which they implement through cooperation with students, recognition of their achievements and self-realisation in professional activity. It appears that the Latvian pedagogical community shows higher respect to pedagogy of cooperation than their Russian colleagues.

Professional Knowledge (not only in the subject of study but in pedagogy, psychology, physiology and research as well) and Skills (as the ability to apply this knowledge) are an integral part of PI. For this component, the survey participants were offered the following statements for evaluation:

Z1. I know modern methods of teaching my subject.
Z2. I have the necessary knowledge and skills to develop a study course.
Z3. I have the necessary knowledge and skills for research work.
Z4. I can supervise the student's research work.
Z5. I am familiar with modern systems of evaluation and self-evaluation of student's academic performance.
Z6. I am included in the system of developing the academic and scientific qualifications of teachers.
Z7. I monitor professional literature.
Z8. I know and use foreign languages in my work.
Z9. I am aware of the most important problems of contemporary higher school.
Z10. I am familiar with the Law on education, state educational standards and regulations.

The data obtained in the survey for each of the statements in this component are presented in Fig. 2 and Table 6.

Table 6. Data for the items of the PI component 'Professional Knowledge'

		Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Z9	Z10
Riga	**Mean rate**	4,85	5,06	5,02	4,99	4,48	4,50	5,28	4,69	4,63	4,72
	Mode	5	5	5	5	5	5	5	5	5	5
	Coefficient of variation (%)	16,76	15,57	18,24	19,69	26,04	30,16	14,83	24,20	23,77	26,11
Smolensk	**Mean rate**	4,88	5,21	4,95	5,13	4,68	4,59	5,11	3,40	4,46	4,66
	Mode	5	5	5	6	5	6	6	6	5	5
	Coefficient of variation (%)	15,78	13,89	16,98	20,45	21,19	31,73	18,93	52,24	22,25	25,75

In general, the situation for this component of the PI is not bad. The HEI teachers of both samples are included in the system of professional development, and they are aware of the regulatory documents governing education in their countries and monitor professional literature.

The most significant difference in the responses of the two samples was observed in the use of foreign languages (item Z8 in Fig. 2). Though the mode in Smolensk is the maximum (6), the differences in the responses are significant to an extent that they are brought out of the confidence zone (the CoV is 52.24%). The large dispersion of answers shows a problem for the Russian colleagues: very few teachers speak foreign languages well enough or have experience in using them in their work (or the need to use them). This undeniably limits their opportunities in professional activities.
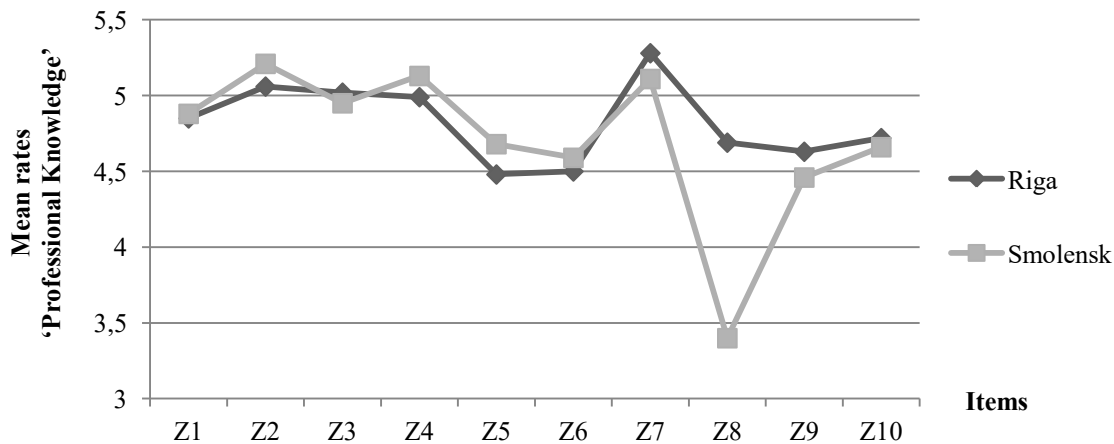
Fig. 2. Mean rates of the statements of the component 'Professional Knowledge'

By the number of rank correlations within the block, the key item for Smolensk teachers is the second statement: 'I have the necessary knowledge and skills to develop a study course'. It has moderately strong correlations with the knowledge of new methods of teaching (item Z1, correlation of 0.55) and the skills of the own research and organising research work with students (items Z3 and Z4 with correlations of 0.60 and 0.64, respectively). It is noteworthy that the correlation connects statements Z1 and Z5 (0.57) and Z5 and Z10 (0.52): for Smolensk teachers, knowledge of the systems of evaluation and self-evaluation of student's academic performance indicates the use of modern methods of teaching and meets the requirements of the 'Law on Education of the Russian Federation'. Consequently, for them, the knowledge of new methods of teaching and evaluating of student's academic performance, as well as the

skills of research and organising research work, are the priority professional knowledge and skills.

For the Riga sample, the key item of the block (with maximum number of internal correlations) is the ninth statement: 'I am aware of the most important problems of contemporary higher school', which is related to the items Z1 (I know modern methods of teaching my subject', with correlation of 0.50), Z8 ('I know and use foreign languages in my work', with correlation of 0.52), and Z10 ('I am familiar with the Law on education, state educational standards and regulations', with correlation of 0.50). As for their colleagues in Smolensk, the priority professional knowledge and skills for Riga teachers are in accordance with the Law and normative acts; however, Latvian regulations orient teachers towards foreign experience to a greater extent than in Russia (as knowledge and use of foreign languages by the Riga teachers indicates). The other three correlations, which connect pairs of items Z1 and Z5; Z2 and Z3; and Z3 and Z4 (0.52, 0.54 and 0.77, respectively), correspond to those in Smolensk. Attention is drawn to the strong correlation of Z3 and Z4 in the Riga sample (0.77). According to the teachers' responses, only a lecturer who is engaged in the own research pays much attention to the organisation of research with students. It points to the importance of teacher's research in the pedagogical process and the necessity to increase demands for personal scientific activity of teachers in Riga.

There is only one correlation between the items of the block 'Professional Knowledge' and items from the other components of PI in Riga sample. There is a strong correlation (0.79) between Z8 ('I know and use foreign languages in my work') and the statement 'I can communicate with international colleagues in a foreign language(s)' (the component 'Cooperation with Colleagues'), which seems quite natural.

Except from the above correlation, in the Smolensk sample, there is a moderately strong correlation (0.50) between Z6 ('I am included in the system of developing the academic and scientific qualifications of teachers') and the statement 'I think I am able to make students interested in my subject' (component 'Professional Attitude to Work'). This proves the importance of the system of development of professional qualification for enhancing the teaching skills; teachers are well aware of its benefits.

Conclusions

The hypothetical model of the content of HEI teacher's PI was confirmed:

- According to the Mann–Whitney coefficient, the differences between the two samples of respondents are not statistically significant; this confirms the relevance of the proposed model of teachers' PI.

- Using the Spearman rank correlation analysis, numerous correlations between the Philosophy of the Profession and other proposed components of the teacher's PI (Professional Knowledge, Professional Attitude to Work and Cooperation with Colleagues) have been revealed. This indicates the validity of the chosen method of the research of teachers' PI.

In the process of the research, some problems of the contemporary teacher's PI have been identified:

- Recognising mission of lecturer in the development of student's personality and intellect, the university teachers are aware that the available tools and technologies are not sufficient to carry out this task effectively.

- Latvian teachers consider the pedagogy of cooperation as an important tool for the development of student's personality; here the joint research work plays an essential role. However, according to the data received, only teachers who are actively engaged in the own scientific activities are able to use this technology effectively.

- Recognising the system of adequate evaluation and self-evaluation of student's academic performance as an important tool for the development of student's personality, Russian teachers feel the danger of the possible conflict of individual assessing with the ethical norms of social realisation of the pedagogical process.

- For the Riga sample, the basic professional values and patterns formulated in the items F1–F10 of the block 'Philosophy of the Profession' (cooperation with students, awareness of the public significance of the profession, etc.) are effective tools in teachers' professional activities. The Smolensk teachers also highly evaluate the teaching mission; unfortunately, their evaluation is rather declarative, having little connection with their work.

- Insufficient knowledge of foreign languages limits the professional growth of teachers from the Smolensk universities.

- The teaching community of Riga is more focused on the use of foreign experience; the system of professional qualification based on the national pedagogical innovations is not considered by respondents as significant contribution to advancing their teaching skills.

References

Beijaard, D., Meijer, P.C., & Verloop, N. (2004). Reconsidering research on teachers' professional identity. *Teaching and Teacher Education*, (20), 107-128.

Emerson, C.H. (2010). *Counselor Professional Identity: Construction and Validation of the Counselor Professional Identity Measure.* PhD thesis. Greensboro: The University of North Carolina.

European Commission (2015). *The Teaching Profession in Europe. Practices, Perceptions, and Policies.* Eurydice Report. Luxembourg: Publications Office of the European Union.

Goodson, I.F., & Cole, A.L. (1994). Exploring the teacher's professional knowledge: Constructing identity and community. *Teacher Education Quarterly*, (21), 85-105.

Healey, A.C., & Hays, D.G. (2011). Defining Counseling Professional Identity from a Gendered Perspective: Role Conflict and Development. *Professional Issues in Counseling. On-Line Journal.* Spring. Sam Houston State University. [Accessed 20.03.2017]. Available from Internet: http://www.shsu.edu/~piic/DefiningCounselingProfessionalIdentityfromaGenderedPerspective.htm

Olsen, B., & Buchanan, R. (2017). "Everyone Wants You to Do Everything": Investigating the Professional Identity Development of Teacher Educators. *Teacher Education Quarterly*, Winter 2017, 9-34.

Radulescu, C. (2013) Is Our Professional Identity Reflected in the European Documents on Education? *Procedia – Social and Behavioral Studies,* 78 (2013), 205 – 209.

Woo, H.R. (2013). Instrument construction and initial validation: professional identity scale in counseling. *PhD thesis, University of Iowa*. [Accessed 18.02.2017]. Available from Internet: http://ir.uiowa.edu/etd/2663.

Вербицкий, А.А. (2014). Место и роль преподавателя в процессе реформы образования. *Вестник Московского государственного гуманитарного университета им. М.А. Шолохова. Серия: Педагогика и психология*, (2), 42-51.

Елисеева, И.И. (2012). *Статистика: учебник для бакалавров*. Москва: Издательство Юрайт.

Сенченков, Н.П., & Шпона, А. (Ред.). (2016). *Профессиональная идентичность педагога:сравнительное международное исследование*. Смоленск: Издательство СмолГУ.

Шнейдер, Л.Б. (2001). *Профессиональная идентичность*. Москва: Издательство Московского открытого социального университета.

Шпона, А., Виднере. М., & Ермолаева, Е. (2015). Сущность и структура профессиональной идентичности педагога. *Известия Смоленского государственного университета*, 2015 (1), 375-381.

FACTORS INFLUENCING PRIVATE CUSTOMERS' TRUST IN INTERNET BANKING: CASE OF LATVIA

Viktorija Skvarciany

Vilnius Gediminas Technical University, Lithuania, viktorija.skvarciany@vgtu.lt

Abstract. Banking sector has developed and extended the usage of online services in the past decade. In fact, nowadays, Internet-based banking services dominate over other historically provided alternatives. This article discusses private clients' trust in Internet banking in Latvia. The model of trust in Internet banking was developed based on four factors, distinguished in the scientific literature. They are provided information, bank's characteristics, e-banking system and website of a bank. Hence, the goal of the research is to measure the impact of distinguished factors on trust in Internet banking. In order to determine how these attributes affect private customers' trust, correlation and regression analysis were applied. The results showed that the most vital factor affecting private clients' trust in Internet banking is e-banking system. What is more, it was found that provided information is a statistically insignificant factor and, hence, it was removed from the model. Respondents, being private customers, limit the breadth of study, thus the results do not reflect companies' trust in Internet banking.

Introduction

Scientists dealing with commercial banking sectors agree that trust is one of the decisive factors leading to successful banking activities. Trust provides collaboration between commercial bank and its clients. This allows the bank to maintain/gain a competitive advantage in the market. With increasing diversity of services provided by commercial banking, trust becomes a factor driving customer to decide whether to accept or to dismiss innovations. Because of that, it is necessary to develop/increase trust in commercial banks.

The development of e-commerce and electronic financial transactions led to the situation when the majority of companies offer intangible products. Therefore, trust in banks has become an integral part of virtual business, because none of the virtual transaction can take place without a commercial bank. Users choose a virtual service as well as select a bank through which the payment will be made. The choice of commercial bank is intertwined with trust. For this reason, whilst analysing trust in commercial banks, it is necessary to pay attention to Internet banking, as it is one of the most developing services of banks and it is becoming more popular amongst users. In fact, Internet banking is important for reaching an overall success of commercial banking activities, as many commercial banks' services are provided online. Internet banking is one of the most popular banking forms in Latvia, as it helps to reduce costs and develop completely different services for clients. Hence, it is important to encourage customers to use Internet banking in order to provide them with the most efficient services the bank could offer. However, not every user trusts Internet banking, which could lead to the refusal to use Internet banking. That is why it is important to analyse the factors influencing customers' trust in Internet banking. Actually, many researches regarding interface between trust in Internet banking and customers' intention to use it were conducted during the past decade. In fact, many scientists claim that trust has a positive direct impact on clients' intention to use Internet banking (Aldás-Manzano, Lassala-Navarré, Ruiz-Mafé & Sanz-Blas, 2009; Bashir & Madhavaiah, 2014; Brar, Sharma & Khurmi, 2013; Casaló, Flavián & Guinalíu, 2008; Chong, Ooi, Lin & Tan, 2010; Ong & Lin, 2015; Özkan, Bindusara & Hackney, 2010; Suvanto, 2012; Thakur, 2014; Yiga & Cha, 2014). What is more, Özkan et al. (2010) state that trust is the factor that

affects customers' further intention to use Internet banking. As trust is considered to be a crucial factor having impact on success of Internet services, it is necessary to determine what leads to higher trust level. Consequently, the aim of the research is to create a model of private customers' trust in Internet banking. The objectives of the study are (1) to distinguish the factors that influence customers' trust and (2) to test the developed theoretical model of trust formation in Latvia. The current article contributes to the scope of knowledge regarding factors having impact on trust in Internet banking, and the research results provide the basis for the future studies in the related field.

Literature Review

There are scientists considering satisfaction an important factor that influences trust in Internet banking (Kassim & Abdullah, 2010; Loureiro, Francisco & Breazeale, 2014; Shao Yeh & Li, 2009; Yap, Wong, Loh & Bak, 2010a). According to the research conducted by Butt and Aftab (2013), satisfaction is the factor that helps to enhance customers' trust in virtual space. In fact, satisfaction and trust are directly proportional variables, suggesting that if the customer is satisfied with the online services provided by bank, he or she will probably use it again. Using always the same services means that the user feels safe, that is, he or she trusts the service provider. Yap, Wong, Loh and Bak (2010b) state that perceived usefulness of Internet banking is the factor affecting the level of customers' trust.

Yap et al. (2010) claim that perceived usefulness of Internet banking positively effects the level of customers' trust. Akhlaq and Ahmed (2013), whilst studying Internet banking, stated that motivation positively influences trust. Zhu and Chen (2012) determined fairness as a factor that has a positive impact on consumers' trust. Yap et al. (2010) state that trust in e-banking is influenced by perceived security and privacy of bank's website, perceived usefulness of Internet banking and website's ease of use. Liébana-Cabanillas, Muñoz-Leiva and Rejón-Guardia (2013) mention ease of use and accessibility of e-banking website as factors that develop trust in Internet banking. Yu, Balaji and Khong (2015) distinguish the following factors influencing trust-building process: goodwill, employees' competence, integrity (the service provider's interest in the client's welfare) and shared values. Zhao, Koenig-Lewis, Hanmer-Lloyd and Ward (2010) state that there is a substantial relationship between trust and perceived risk, considering that trust and perceived risk are the elements explaining clients' intention to use e-banking services. Susanto, Lee, Zo and Ciganek (2013) mention the following factors that influence trust formation in Internet banking: perceived benefits, perceived security, perceived privacy, bank's reputation and ease of use of a website. Lee and Moghavvemi (2015) found that there is a positive relationship between clients' trust and the bank's image, that is, image influences the level of trust. In order to easily understand the factors of trust in Internet banking formation, all the factors were merged into four groups:

Information:

- – transparency
- – quality
- – reliability

E-banking system:

- – perceived usefulness,
- – satisfaction with the services
- – internal clients' motivation to use e-banking system
- – fairness

Bank's website:

- – security
- – privacy
- – ease of use

Service provider / the bank:

- – Reputation
- – image
- – goodwill
- – competence of employees
- – integrity
- – shared values

To sum up, four factors from the scientific literature are analysed and passed on to the Latvian respondents for evaluation.

Methodology

One of the main methods used in social studies is questionnaire. Questionnaire is a set of formalised questions used in obtaining information from respondents (Dikčius, 2011). After respondents complete the survey, their answers are summarised and conclusions that reflect the opinion of whole population are drawn. What is more, there are many questionnaire forms, for instance, in-depth interview, which could be conducted in person, by phone, by e-mail and so on. However, online survey is the most popular form of interview, as it could help to connect with the right number of respondents easier.

In order to get the answers that most accurately reflect the situation, the questions ought to be properly formulated. Moreover, questions should be formulated in such a way that respondent understands them correctly, because only then the analysis of the views of the respondents could be reliable.

For the purpose of getting the reliable research results, the right method of assessment should be chosen for respondents' views. There are many scientists who use the Stapel scale method (Ahmed et al. & Hasan, 2014; Sreejesh et al., 2014), semantic differential scale method (Ciabuca, 2015; Kahveci, 2015) and Likert scale method (Breffle et al., 2011; Petsky et al., 2012). However, Likert scale remains the most popular scale whilst conducting researches. A researcher who uses the Likert scale provides a respondent with statements that ought to be evaluated. The respondent should assess the statements based on a five-point Likert scale, that is, the respondent has to indicate the degree of his or her agreement or disagreement with the statements. In other words, the factors provided to the respondents are measured with five-point Likert scale, that is, the respondents should indicate the level of their agreement with the statement that the certain factor influences the level of trust in Internet banking.

What is more, in order to obtain the reliable research results, the size of the sample ought to be stated. The number of respondents in the sample is calculated using equation (1):

$$n = \frac{1}{\Delta^2 + \frac{1}{N}}, \qquad (1)$$

where

n – sample size

N – general population

Δ – margin of error.

In order to estimate the strength of the relationship between two variables, a correlation analysis was used. Correlation coefficient r_{xy} ranges between −1 and 1. The further the value of the coefficient is from 0, the stronger is the relationship between the variables. The sign of the correlation coefficient r_{xy} quantifies the direction of the linear association. The formula for the correlation coefficient calculation is presented in equation (2):

$$r_{xy} = \frac{Cov(x,y)}{\sqrt{s_x^2 \cdot s_y^2}} \tag{2}$$

where

$Cov(x, y)$ − covariance of x and y

s_x^2 and s_y^2 − the sample variance of x and y

One of the most important tasks of the research is to set the level of the strength of the relationship between examined factors. For the purpose of reaching this objective, the correlation and regression analyses are conducted. The correlation shows the level of the strength of the relationship and the direction of the relationship, whilst the regression explains the interface between dependent and independent variables. In order to explain the correlation coefficient, that is, the strength of the relationship, the characteristics presented in Table 1 are used.

Table 1. Qualitative characteristics of the level of strength of relationship (Source: Bartosevičienė (2010))

Quantitative characteristics of correlation coefficient	Under 0.3	0.3–0.7	0.7–0.9	0.9–0.99
Qualitative characteristics of correlation coefficient	Weak	Moderate	Strong	Very strong

In order to determine the level of the relationship, Pearson linear coefficient of correlation is used. The coefficient is obtained with *SPPS Statistic* software's function *Correlate*. In order to check whether the coefficient is statistically significant, Student's test is used. Before conducting the correlation analysis, two hypotheses are stated:

H_0: correlation coefficient is equal to zero ($r_{xy} = 0$)

H_a: correlation coefficient is not equal to zero ($r_{xy} \neq 0$)

The study examines one dependent variable, which is customers' trust in Internet banking (Y_1), and four independent variables: provided information (X_1), e-banking system (X_2), bank's website (X_3) and service provider/the bank (X_4). In order to determine the level of impact of all independent variables on the dependent variable, the regression analysis is applied. In the current study, a multiple regression analysis is used (3) (Pabedinskaitė, 2009).

$$\hat{y} = a_0 + \sum_{i=1}^{n} a_i x_i \tag{3}$$

where

$\hat{y}$– dependent variable

a_0 – constant

$a_1, a_2, ..., a_n$ – coefficient of independent variable

$x_1, x_2, ..., x_n$ – independent variable

n – number of independent variables

In order to describe the obtained regression model, the following criteria are used (Čekanavičius & Murauskas, 2014; Cohen, Cohen, West & Aiken, 2003):

Coefficient of determination, R^2. The coefficient of determination is a number that indicates the proportion of the variance in the dependent variable that could be predicted from the independent variables. The coefficient of determination ranges between 0 and 1. The determination coefficient should fulfil the condition $R^2 \geq 0.20$.

Analysis of Variance (ANOVA) p-value. The indicator shows if there are independent variables in the model that are connected to dependent variable. If the value of p is greater than 0.05, it means that Y does not depend on X. If the value of p is less than 0.05, it means that there is at least one independent variable X on which the dependent variable Y depends.

Student-test. The test shows if independent variable X is statistically significant. If the indicator is less than 0.05, the examined X is statistically significant, and if the indicator is greater than 0.05, the examined dependent variable is insignificant and could be eliminated from the model.

Variance inflation factor (VIF). VIF helps to detect if there is multicollinearity between independent variables. If VIF is greater than 4, it shows that there is multicollinearity problem, and the model ought to be modified.

Empirical Findings

To start the survey, the size of the sample ought to be computed. It was calculated by applying formula (1) and is equal to 350. The confidence level is 95% and the confidence interval is 5.23. In fact, 351 answers were obtained from the survey.

Whilst examining customers' trust in Internet banking (Y), four factors that were presented in theoretical part of the current study are analysed: (1) provided information (X_1); (2) e-banking system (X_2); (3) website of a bank (X_3); (4) bank's characteristics (X_4).

Correlation coefficients between the distinguished factors and trust in Internet banking are presented in Table 2.

Table 2. Correlation coefficients between distinguished factors and trust in Internet banking in Latvia (Source: author's calculations)

		Provided information	E-banking system	Bank's website	The bank's characteristics
Trust in Internet banking	rxy	0.519*	0.658*	0.652*	0.617*
	Significance (two-tailed)	0.000	0.000	0.000	0.000
	N	344	344	344	344

*Correlation is significant at significance level of 0.01.

Table 2 depicts that all the correlation coefficients are significant at significance level of 0.01. Whilst analysing correlation coefficients, it could be seen that there is a moderate direct relationship between provided information and trust in Internet banking ($r_{xy} = 0.519$). What is more, there is a strong direct relationship between trust in Internet banking and e-banking system ($r_{xy} = 0.658$). In other words, the higher is the level of perceived usefulness, customers' satisfaction with bank's provided services and internal clients' motivation to use e-banking system, the higher is the level of trust. Moreover, according to the correlation coefficients matrix (see Table 2), there is a positive direct relationship between trust in Internet banking and commercial bank's website ($r_{xy} = 0.652$). The website of commercial bank is presented through proxy variables, such as website's security, privacy and ease of use. This is to say, the more secure the customer feels and the easier it is to use the website, the higher is the level of trust in Internet banking. There is a direct positive relationship between the bank's characteristics and trust in

54

Internet banking as well ($r_{xy} = 0.617$). This is to say, the level of customers' trust in Internet banking depends on commercial bank's image, reputation, good customer services and so on. In all the cases, the correlation coefficients are greater than zero, implying that the null hypothesis that the correlation coefficient is equal to zero is rejected (Significance (two-tailed) $= 0.000 < 0.01$).

Table 3. Multicollinearity statistics (Source: author's calculations)

	Information provided	E-banking system	Website	The bank's characteristics
VIF	2.016	2.553	2.937	2.559

It can be seen from Table 3 that all the VIFs are less than 4, which means that there is no multicollinearity and all the predictors could be used for the regression model development. What is more, ANOVA p-value is 0.000, denoting that there is at least one dependent variable X which is linked to independent variable Y. Moreover, the coefficient of determination R^2 is equal to 0.519, which means that the regression equation explains 51.9% of the data. The developed regression model is presented in equation (4):

$$Y = 0.585 + 0.373X_2 + 0.242X_3 + 0.199X_4 \qquad (4)$$

From the regression equation (4), it is clear that the information provided for customers (X_1) is not included in the model. In fact, the dependent variable X_1 has appeared to be insignificant. However, there is one variable that is statistically insignificant – the information provided to customers. In other words, the information provided by the bank has no impact on clients' trust in Internet banking. It could be explained by the fact that provided information is majorly associated with traditional banking. All the rest variables are statistically significant, so they do have influence on trust of Latvia's residents in Internet banking.

Conclusions

Analysing the scientific literature on trust in Internet banking showed that trust is one of the vital factors of successful activities in commercial banks. It helps the bank to retain present customers as well as to attract new ones. Four factors influencing trust in Internet banking were examined. They are provided information, e-banking system, bank's website and bank's characteristics. Whilst studying these factors, regression equation was created. Moreover, it was found that the information provided to customers is statistically insignificant factor and, therefore, it was eliminated from the regression model. In fact, it was found that e-banking system is the factor having a major impact on the level of customers' trust in Internet banking in Latvia. Actually, the regression analysis showed that the trust in Internet banking is a compilation of e-banking system, bank's website and bank's characteristics. Therefore, the current study contributes to the expansion of practical knowledge regarding factors affecting the level of customers' trust in Internet banking. However, there is a limitation of the current study. The study was conducted in order to know which factors influence individual users' trust in Internet banking. However, it does not cover business companies in that issue. Therefore, the further research might be conducted in order to examine the factors affecting companies' trust in Internet banking, as the major part of customers of commercial banks are companies. To sum up, it becomes clear that commercial banks should make efforts to improve all the variables that have an impact on customers' trust in Internet banking, as Internet banking is considered to be one of the most important services commercial banks provide.

References

Ahmed, S. U., Islam, Z., Mahtab, H., & Hasan, I. (2014). Institutional Investment and Corporate Social Performance: Linkage towards Sustainable Development. *Corporate Social Responsibility and Environmental Management*, *21*(1), 1–13. http://doi.org/10.1002/csr.1298

Akhlaq, A., & Ahmed, E. (2013). The effect of motivation on trust in the acceptance of internet banking in a low income country. *International Journal of Bank Marketing*, *31*(2), 115–125. http://doi.org/10.1108/02652321311298690

Aldás-Manzano, J., Lassala-Navarré, C., Ruiz-Mafé, C., & Sanz-Blas, S. (2009). Key drivers of internet banking services use. *Online Information Review*, *33*(4), 672–695. http://doi.org/10.1108/14684520910985675

Bartosevičienė, V. (2010). *Ekonominės statistikos pagrindai*. Kaunas: Technologija.

Bashir, I., & Madhavaiah, C. (2014). Determinants of Young Consumers' Intention to Use Internet Banking Services in India. *Vision: The Journal of Business Perspective*, *18*(3), 153–163. http://doi.org/10.1177/0972262914538369

Brar, T. P. S., Sharma, D., & Khurmi, S. S. (2013). Influence of Trust in Espousal of E-Banking in India. *International Journal of Research in Electronics and Computer Engineering*, *1*(1), 9–16.

Breffle, W. S., Morey, E. R., & Thacher, J. A. (2011). A Joint Latent-Class Model: Combining Likert-Scale Preference Statements With Choice Data to Harvest Preference Heterogeneity. *Environmental and Resource Economics*, *50*(1), 83–110. http://doi.org/10.1007/s10640-011-9463-0

Butt, M. M. M. M., & Aftab, M. (2013). Incorporating attitude towards Halal banking in an integrated service quality, satisfaction, trust and loyalty model in online Islamic banking context. *International Journal of Bank Marketing*, *31*(1), 6–23. http://doi.org/10.1108/02652321311292029

Casaló, L. V., Flavián, C., & Guinalíu, M. (2008). The role of satisfaction and website usability in developing customer loyalty and positive word-of-mouth in the e-banking services. *International Journal of Bank Marketing*, *26*(6), 399–417. http://doi.org/10.1108/02652320810902433

Čekanavičius, V., & Murauskas, G. (2014). *Taikomoji regresinė analizė socialiniuose tyrimuose*. Vilnius: Vilniaus universitetas.

Chong, A. Y.-L., Ooi, K.-B., Lin, B., & Tan, B.-I. (2010). Online banking adoption: an empirical analysis. *International Journal of Bank Marketing*, *28*(4), 267–287. http://doi.org/10.1108/02652321011054963

Ciabuca, A. (2015). The Development of a Semantic Differential Scale for Assessing the Perceived Image of Citizens about Romanian Police Forces. *Procedia - Social and Behavioral Sciences*, *187*(PG-28-33), 28–33. http://doi.org/http://dx.doi.org/10.1016/j.sbspro.2015.03.006

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (2nd ed.). Mahwah: Lawrence Erlbaum Associates, Inc.

Dikčius, V. (2011). *Anketos sudarymo principai*. Vilnius. Retrieved from http://www.ef.vu.lt/dokumentai/katedros/Rinkodaros_katedra/Medziaga_studentams/Anketos_sudarymo_principai.pdf

Kahveci, A. (2015). Assessing high school students' attitudes toward chemistry with a shortened semantic differential. *Chem. Educ. Res. Pract.*, *16*(2), 283–292. http://doi.org/10.1039/C4RP00186A

Kassim, N., & Abdullah, N. A. (2010). The effect of perceived service quality dimensions on customer satisfaction, trust, and loyalty in e-commerce settings: A cross cultural analysis. *Asia Pacific Journal of Marketing and Logistics*, *22*(3), 351–371. http://doi.org/10.1108/13555851011062269

Lee, S. P., & Moghavvemi, S. (2015). The dimension of service quality and its impact on customer satisfaction, trust, and loyalty: A case of Malaysian banks. *Asian Journal of Business and Accounting*, *8*(2), 91–121.

Liébana-Cabanillas, F., Muñoz-Leiva, F., & Rejón-Guardia, F. (2013). The determinants of satisfaction with e-banking. *Industrial Management & Data Systems*, *113*(5), 750–767. http://doi.org/10.1108/02635571311324188

Loureiro, S. M. C., Francisco, J. M., & Breazeale, M. (2014). Who needs delight? *Journal of Service Management*, *25*(1), 101–124. http://doi.org/10.1108/JOSM-06-2012-0106

Ong, C.-S., & Lin, Y.-L. (2015). Security, Risk, and Trust in Individuals' Internet Banking Adoption: an Integrated Model. *International Journal of Electronic Commerce Studies*, *6*(2), 343–356. http://doi.org/10.7903/ijecs.1428

Özkan, S., Bindusara, G., & Hackney, R. (2010). Facilitating the adoption of e-payment systems: theoretical constructs and empirical analysis. *Journal of Enterprise Information Management*, *23*(3), 305–325. http://doi.org/10.1108/17410391011036085

Pabedinskaitė, A. (2009). *Kiekybiniai sprendimų metodai*. Vilnius: Vilniaus Gedimino technikos universitetas.

Petsky, H. L., Cates, C. J., Lasserson, T. J., Li, A. M., Turner, C., Kynaston, J. A., & Chang, A. B. (2012). A systematic review and meta-analysis: tailoring asthma treatment on eosinophilic markers (exhaled nitric oxide or sputum eosinophils). *Thorax*, *67*(3), 199–208. http://doi.org/10.1136/thx.2010.135574

Shao Yeh, Y., & Li, Y. (2009). Building trust in m-commerce: contributions from quality and satisfaction. *Online Information Review*, *33*(6), 1066–1086. http://doi.org/10.1108/14684520911011016

Sreejesh, S., Mohapatra, S., & Anusree, M. R. (2014). *Business Research Methods: an Applied Orientation*. Springer International Publishing Switzerland. Retrieved from http://dspace.elib.ntt.edu.vn/dspace/bitstream/123456789/7672/1/Business research methods.pdf

Susanto, a., Lee, H., Zo, H., & Ciganek, a. P. (2013). User acceptance of Internet banking in Indonesia: initial trust formation. *Information Development*, *29*(4), 309–322. http://doi.org/10.1177/0266666912467449

Suvanto, H. (2012). Constructing a typology of trust in asymmetrical food business relationships. *British Food Journal*, *114*(7), 926–943. http://doi.org/10.1108/00070701211241536

Thakur, R. (2014). What keeps mobile banking customers loyal? *International Journal of Bank Marketing*, *32*(7), 628–646. http://doi.org/10.1108/IJBM-07-2013-0062

Yap, K. B., Wong, D. H., Loh, C., & Bak, R. (2010a). Offline and online banking – where to draw the line when building trust in e-banking? *International Journal of Bank Marketing*, *28*(1), 27–46. http://doi.org/10.1108/02652321011013571

Yap, K. B., Wong, D. H., Loh, C., & Bak, R. (2010b). Offline and online banking – where to draw the line when building trust in e-banking? *International Journal of Bank Marketing*, *28*(1), 27–46. http://doi.org/http://dx.doi.org/10.1108/02652321011013571

Yiga, C., & Cha, K. J. (2014). Toward understanding the importance of trust in influencing Internet banking adoption in Uganda. *Information Development*. http://doi.org/10.1177/0266666914563359

Yu, P. L., Balaji, M. S., & Khong, K. W. (2015). Building trust in internet banking: a trustworthiness perspective. *Industrial Management & Data Systems*, *115*(2), 235–252. http://doi.org/10.1108/IMDS-09-2014-0262

Zhao, A. L., Koenig-Lewis, N., Hanmer-Lloyd, S., & Ward, P. (2010). Adoption of internet banking services in China: is it all about trust? *International Journal of Bank Marketing*, *28*(1), 7–26. http://doi.org/10.1108/02652321011013562

Zhu, Y., & Chen, H. (2012). Service fairness and customer satisfaction in internet banking: Exploring the mediating effects of trust and customer value. *Internet Research*, *22*(4), 482–498. http://doi.org/10.1108/10662241211251006

ARE THE EU MEMBER STATES READY FOR THE NEW UNION CUSTOMS CODE: EMERGING LEGAL ISSUES ON THE NATIONAL LEVEL

Gediminas Valantiejus

Mykolas Romeris University, Lithuania, gvalantiejus@mruni.eu

Abstract. In 2016, the European Union has launched a new and ambitious project for the future regulation of international trade in the European Union and the rules of its taxation: since the 1 May 2016, the new Union Customs Code (UCC) has entered into force. It revokes the old Community Customs Code (CCC), which was applied since 1992, and passed in the form of EU regulation sets brand-new rules for the application of Common Customs Tariff and calculation of customs duties (tariffs) in all the EU Member States. It is oriented to the creation of the paperless environment for the formalisation of international trade operations (full electronic declaration of customs procedures) and ensuring of a more uniform administration of customs duties in the tax and customs authorities of the Member States in the European Union. Therefore, the article raises and seeks to answer the problematic question whether the Member States of the European Union themselves are ready to implement these ambitious goals and does the actual practice of the Member States support that (considering the practice of the Republic of Lithuania). The research, which is based on the analysis of case law in the Republic of Lithuania (case study of recent tax disputes between the taxpayers and customs authorities that arose immediately before and after the entry into force of the UCC), leads to the conclusion that many problematic areas that may negatively impact the functioning of the new Customs Code remain and must be improved, including an adoption of new legislative solutions.

Keywords: international trade; international business; the Union Customs Code; EU Member States; customs duties (tariffs).

JEL Classification: F13 - Trade Policy: International Trade Organizations; K39 – Other: Customs Law

Introduction

The necessity to improve the existing business environment, to ensure an innovative and competitive economy and effective use of electronic resources and opportunities and to counter internal and external challenges for the EU customs union has led us to a major legal regulatory reform of import taxes (customs tariffs/duties) in the European Union. The results of the reform mean that a completely new source of law was adopted to regulate this area – in 2013, the European Union has adopted the Union Customs Code (UCC), and it has entered into force since 1 May 2016 (Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code, 2013). If this EU legislation will be implemented timely and fast, it would radically change the activity of customs authorities and international business operators in the European Union – the still widespread use of the paper documents for the formalisation of customs procedures will be abolished, all customs formalities throughout the Member States of the EU will be standardised, the speed of customs clearance procedures and transportation of goods through the external borders of the European Union will increase and, finally, the efficiency of risk analysis and customs control will be ensured and the public safety will be strengthened. However, harmonised efforts of the customs and tax authorities in the EU Member States and business entities, as well as considerable resources, are necessary to achieve its successful implementation. In addition, more focused efforts of the individual EU Member States are also necessary for the implementation of the Code and this means closer cooperation between national customs authorities, virtually ensuring that all of them will act as a single EU customs administration. Accordingly, the EU Member States must review their national legislation in the field of customs and completely align it with the provisions of the UCC. However, during this period of reforms, it is also necessary to ensure

the continuity of certain practices and to ensure the legitimate expectations of business operators and to adhere to the principle of legal certainty.

Therefore, these factors determine the topicality of the chosen topic and the importance of a detailed legal analysis in this area. We should also stress that whilst there are some general scientific studies on the legal novelties of the UCC (Wolffgang, Harden 2016; Truel, Maganaris 2015; Truel, Maganaris, Grigorescu 2015 and Van Doornik 2014), there are practically no any practice reviews how the UCC is implemented on a practical level in the EU Member States. Besides, most of fundamental studies on the EU customs law are written according to the old EU customs legislation that was in force before the UCC (see, e.g. Lyons 2008, Fabio 2010). Although some of the theoretical assumptions that are necessary for the implementation of the UCC are analysed in some national studies (e.g. Laurinavičius *et al*. 2014), there are virtually no practical studies on how the mechanism for implementing of the Code is operating. The article fills the gap and tries to set the guidelines for the development of national customs regulations that can be important both for Lithuania as well as other Member States of the European Union. Thus, the scientific importance of the article can be explained by the following aspects: (i) the research identifies emerging problematic areas of the UCC itself and presented facts can be used as a basis for the theoretical discussions on the possible legal improvement of the EU trade and customs law, the UCC and its regulations in the future; (ii) the article sets the guidelines for the legal revision of national customs laws in the Republic of Lithuania to make them more compatible with the EU law (i.e. with the UCC); (iii) the ideas and legal experience that is presented in the article can be studied by both scholars and legal practitioners in other EU Member States as examples of good practice as well as examples of practice that need to be avoided to achieve efficient and uniform implementation of the UCC. Therefore, the article raises the problematic question whether the Member States of the European Union themselves are ready to implement the goals of the UCC and does the actual practice of the Member States (considering the Republic of Lithuania) support that? In this regard, two main objectives of the article were formulated: (i) to describe the theoretical aspects related to the implementation of UCC in the Republic of Lithuania and to compare major provisions of national laws with the provisions UCC on a theoretical level; (ii) to conduct a case study and to present practical challenges that may affect the implementation of the UCC (based on the national judicial practice since 2013) and to propose ways to solve these problems. To avoid focusing only on the description of national particularities, both theoretical background and practical implementation of specific areas of the UCC (such as customs valuation, establishment of customs origin, regulation of customs procedures, regulations) are first presented and analysed based on related practice of the Court of Justice of the European Union (CJEU), which is binding for all the EU Member States. In the second stage, after the definition of essential provisions of the CJEU practice related to these specific topics, they are compared with the national legislation, national case law and the practice of national customs authorities (in the chosen EU Member State, i.e. the Republic of Lithuania). For this reason, the article uses both theoretical (analysis and synthesis, systematic, historical, comparative) and empirical research methods (case study, generalisation of professional experience that included examination of the judicial cases of the CJEU (the EU level) as well as cases of national courts (the level of the Member State of the European Union)). Detailed theoretical scientific analysis of the topic (based on theoretical methods) is presented separately in section titled 'Literature Review' and, partly, in 'Results' (see its subsection 'Theoretical aspects related to the implementation of the UCC in the Republic of Lithuania'). Empirical (practical) section of the research (based on empirical methods and the analysis of judicial practice (case study)) is presented in section titled 'Results', in particular, in its subsections 'Practical aspects related to the implementation of the UCC in the Republic of Lithuania: customs valuation'; 'Practical aspects related to the implementation of the UCC in the Republic of Lithuania: rules of customs origin' and 'Practical aspects related to the implementation of the UCC in the Republic of Lithuania: electronic declaration of customs procedures'.

Literature Review

The customs law of the European Union was codified in 1992 when the Community Customs Code (1992) was adopted. The Community Customs Code (hereinafter – CCC) has simplified customs formalities and abolished checks at internal borders of the Member States. This source of law has helped to create a single EU market and eliminated customs control of goods moving within the territory of the European Union. Up to 1 May 2016, the provisions CCC were mandatory to all Member States of the European Union and they required their national institutions that were responsible for the administration of customs duties and other import taxes and related international trade regulatory measures to comply with certain common standards (Lyons 2008).

On the other hand, as has been observed during the implementation of special programmes (Such as Customs 2002 and Customs 2007; see Action programme: Customs 2007 (2003–2007), 2003) that were aimed to unify customs activities throughout the Union, in the long run, the CCC has no longer complied with the changing international business environment and, especially, with the rapidly developing information technology environment that meant the spread of electronic data exchange methods. In this context, we should also stress the considerable importance of the Lisbon strategy that declared the aim of making the European Union the most competitive economy in the world, E-government (Electronic Government) initiative, the World Trade Organization's Doha round of talks, which focused on many conditions to facilitate trade and other associated processes. Another important factor was that a much greater emphasis was put to ensure the security of international trade and this resulted in the new international initiatives of the United States, the European Union and the World Customs Organization (Container Security Initiative, Security Standards Initiative, etc.; see Radžiukynas 2011). For this reason, even as early as in 2005, new changes to the CCC were made and they included the incorporation of the provisions required for the effective application of electronic information systems (Regulation No. 648/2005 of the European Parliament and Council). They allowed national customs authorities to adapt to the rapidly changing business environment more easily (Lux, Douglas-Hamilton 2008).

Other main reasons behind the initiations of the improvements to the CCC since 2004–2005 were related to the customs modernisation needs in the EU Member States, eEurope initiative (eEurope) announced by the European Commission in 1999, including eCustoms Initiative, the ensuring of security, the changing role of customs, simplification of the EU legislation, necessity to improve business conditions and necessity to ensure a closer integration of the EU Member States in customs matters. The main areas of work in order to ensure the smooth review of customs legislation were simplification and rationalisation of existing legislation, validation of electronic data use in all relevant laws, ensuring involvement of business in the legislative process from a very early stage of these proceedings, improvement of the relationship between the legal regulations and their practical implementation, simplification of complex legislation to create more attractive conditions for entrepreneurs, continuation of work on the harmonisation of sanctions for customs offences. In accordance with the principle that the customs authorities of all Member States should have to work as one, the Commission of the European Union sought to eliminate any possibility of departure from uniform EU standards conducted by national legislators. This meant the removal of specific national rules in number of Member States that made it difficult for businesses to adapt to differing national regulations on their activities. Therefore, to ensure further integration, the idea was raised to abandon any national simplifications in customs legislation and to guarantee that they can only be secured at the EU level. In addition, the necessity to improve public safety and cooperation of different customs authorities allowed to provide projects for an overall customs risk management system and common EU-wide risk assessment criteria (Povilauskienė, 2006).

The result of these initiatives on the simplification of customs formalities and improvement of business climate was the adoption of the Modernised Customs Code (Regulation No. 450/2008 of the European Parliament and Council, 2008). The Modernised Customs Code reviewed the CCC; first of all, simplified its provisions governing the customs procedures; adapted them to the electronic environment and business conditions; and finally, linked them with other areas of the EU law (regulating security and safety-related

requirements). The Modernised Customs Code abandoned the currently existing national simplifications and set the clear requirements that throughout the customs territory of the Union, customs procedures must be applied in accordance with the same procedural standards, as it is particularly important to the computerisation of customs procedures (Radžiukynas, 2011). The simplification and better structuring of the customs legislation has also meant the creation of centralised customs clearance system as well as creation of legal basis for the computerised customs procedures and common risk analysis standards (Sarapinienė, Avižienis 2008). It has also envisaged a use of one-stop shop and single-window principles for the regulation of customs clearance procedures (Lyons 2008; Medelienė, Sudavičius 2011). Nevertheless, the difficulties related to the practical implementation of necessary IT solutions was the main reason why the Modernised Customs Code could not be started to be applied up to the planned date, and until 2013, it was revised by the UCC.

Based on its analysis, we can define several areas of the EU customs law that have changed extensively. However, first of all, we should stress that from the key elements of the EU's Common Customs Tariff (tariff classification, origin and value of imported goods), tariff classification has changed only minimally because this element is not regulated only by the UCC but by the separate EU regulation (Council Regulation (EEC) No 2658/87 on the tariff and statistical nomenclature and on the Common Customs tariff, 1987), which remains in force and mostly unchanged since 1987. On the other hand, even in this area, the UCC has introduced some novelties regarding issuance of binding tariff information, which is used to classify goods for customs purposes throughout the Union. According to the UCC, the validity and duration of a binding tariff information was shortened up to 3 years and it was made mandatory not only for the customs authorities but also for the taxpayers (Article 35 of the UCC). Similarly, the same provisions of the UCC provides that the same binding information can be issued to confirm the origin of the goods (earlier, in the CCC, such a possibility was not provided at all, see Truel, Maganaris 2015). Another essential element of the Common Customs Tariff, that is, rules on the determination of customs origin of imported goods, have not changed significantly (Wolffgang, Harden 2016), but some authors (e.g. Van Doornik 2014) note that the UCC regulates acquisition of non-preferential origin of goods much more in detail and sets a more clear criteria that define non-preferential origin; therefore, non-preferential origin of goods can be objectively assigned to a higher number of all imported goods (Articles 59-60 of the UCC). Certain changes have taken place in the customs valuation area: here the customs valuation methods remain the same but the procedures for calculation of transaction value were revised (Truel, Maganaris 2015). This means that a practice when a price of first export sales was used as a basis for calculating the value of goods may no longer be applied and instead the price of a transaction concluded before the goods has entered free circulation shall be used (Article 70, para. 1 of the UCC).

The biggest changes, obviously, took place in the field of customs clearance procedures (see Van Doornik 2014; Wolffgang, Harden 2016). The UCC provides that general import declaration and other customs declarations shall be submitted electronically and until 2020, all the data exchange between customs authorities and taxpayers must take place in electronic environment (Article 6, para. 1 of the UCC). In addition, the UCC has reduced an overall number of customs procedures and has simplified the customs clearance, for example, instead of three simplified types of customs procedures, only two are left (see Articles 256 and 259). The UCC also provides for the possibility to carry out centralised customs clearance (Article 179, para. 2); therefore, the customs authorities may authorise a person to lodge a customs declaration relating to the imported or exported goods only to one specific customs office that serves the place where a person (taxpayer) is established. It is considered that in such case, the customs debt incurred at the place where the customs declaration is lodged. On the other hand, performing of such simplified customs clearance requires permit from the customs authorities. Therefore, the possibility to use such established procedural facilitations depends whether the taxpayer has acquired special status of the Authorised Economic Operator (AEO), see Articles 38–41 of the UCC. Overall, we may conclude that the adoption of the UCC may not be considered as total revolution of the EU customs law, but we should also have in mind that it in general has narrowed the rights of the EU Member States' to regulate this area (Truel, Maganaris, Grigorescu 2015). Thus, it is very important how the Member States themselves are

ready or are preparing for such changes.

Methodology

In order to answer the problematic question whether the Member States of the European Union are ready to implement the goals and new provisions that were set by the UCC, the article analyses actual practice of the Member States (considering as an example the practice of the Republic of Lithuania). The research is conducted at two levels – theoretical (based on the theoretical methods of legal studies, such as analysis, synthesis, comparative, systemic, linguistic and historical methods) and empirical (based on the case study, i.e. analysis of case law related to the application of the national and the EU customs legislation in the Republic of Lithuania). The results of the theoretical research are presented in the subsection 'Theoretical aspects related to the implementation of the UCC in the Republic of Lithuania'. They include overall theoretical assessment of the conformity of national customs legislation rules (e.g. rules on set in the Law on Customs of the Republic of Lithuania, 2016) with the rules set in the UCC. The content of the rules on application of the EU's Common Customs Tariff, examination of disputes with customs authorities and performing of customs procedures is compared with the help of systemic, linguistic and historical analysis.

The results of the empirical research are presented in other subsections, such as 'Practical aspects related to the implementation of the UCC in the Republic of Lithuania: customs valuation', 'Practical aspects related to the implementation of the UCC in the Republic of Lithuania: rules of customs origin' and 'Practical aspects related to the implementation of the UCC in the Republic of Lithuania: electronic declaration of customs procedures'. The empirical research is focussed on three main elements that are important for the proper calculation of customs duties and are directly regulated in the UCC, that is, customs valuation, rules on customs origin and other import and export rules (rules on customs procedures). However, another main element of the EU's Common Customs Tariff, that is, the tariff classification of goods, is regulated in detail not by the UCC but by the Combined Nomenclature of the European Union (Council Regulation (EEC) No 2658/87 on the tariff and statistical nomenclature and on the Common Customs Tariff, 1987), and it hasn't experienced any major changes because of the adoption of the UCC. Therefore, this element of the EU's Common Customs Tariff is excluded from the scope of empirical research. The empirical part of the research was carried out by using the case study method, that is, by analysing tax disputes in the Republic of Lithuania between the taxpayers and customs authorities, which arose immediately before and after the entry into force of the UCC (since 1 January 2013). As the highest competent national authority in resolving of such disputes is the Supreme Administrative Court of Lithuania, for this reason, 15 administrative cases related to the areas referred (customs valuation, customs origin and customs procedures) were identified and selected for further analysis. The study of these cases includes comparison of legal precedents that were formulated in them with the regulations of the UCC in order to determine whether the existing national practice complies with the new requirements of the UCC.

Administrative cases for the analysis of national case law were selected using the public official Lithuanian courts information system 'LITEKO' and its classifications for the relevant judicial decisions (classifications 1.10 'Cases related to the customs activities' (which was used before 1 January 2017) and 'Customs activities' (used after 1 January 2017)) (Lithuanian courts information system 'LITEKO', 2017). The identified practical and theoretical problems that may affect the successful implementation of the UCC in Lithuania and possible methods for their solution are presented in the section on 'Conclusions'.

Results

Theoretical aspects related to the implementation of the UCC in the Republic of Lithuania. As it was mentioned earlier, one of the main goals of the UCC itself is to ensure even more uniform and coherent application of the EU customs legislation by the customs authorities of the Member States (compared to the level that was already achieved whilst the CCC (1992) was in force). Therefore, according to the

provisions of UCC that are set in the Article 3 of the Code, the customs authorities throughout the Union shall be guided by the same directions of activity and must apply the same standards, rules, procedures and policies to 'promote further the uniform application of customs legislation' as it is directly stated in para. 15 of the preamble to the UCC (see also paras 9, 17 and 22 of the Code). The UCC also explicitly mentions the necessity to harmonise customs controls in the Member States (para. 19 of the preamble to the UCC) to create uniform competitive conditions for the international trade operators across the European Union.

Therefore, according to the UCC and recent relevant practice of the CJEU (see cases C-116/12, Ioannis Christodoulou and Others v Elliniko Dimosio, 2013; C-450/12, HARK GmbH & Co KG Kamin und Kachelofenbau v Hauptzollamt Duisburg, 2013; C-595/11, Steinel Vertrieb GmbH v Hauptzollamt Bielefeld, 2013), the ultimate goal of the Member States and their institutions (including customs authorities as well as other national institutions, such as national courts) is to ensure the uniform application of the EU customs legislation whilst dealing with issues such as calculation of customs duties and other regulatory means for the international trade operations. On the other hand, the question what are the exact specific powers and competencies of the Member States to self-regulate these questions always remains open, controversial and debatable as the Member States have used and still uses national rules and special practices on customs procedures, customs clearance or even customs valuation (Radžiukynas, Belzus 2008; Baronaitė 2010; Truel, Maganaris 2015) to boost their overall economic competitiveness, attractiveness to foreign investment or even to solve their own fiscal problems (by trying to gain higher revenue from the collected customs duties part of which goes to their own state budgets). It was assessed in cases as early as in 1960s (see cases C-26/62, Van Gend & Loos v Nederlandse administratie der belastingen, 1963; C-6/64, Costa v E.N.E.L., 1964) and later in cases C-125/94, Aprile Srl v Amministrazione dello Stato, 1995; C-339/09, Skoma-Lux v Celní ředitelství Olomouc, 2010; or recently in the joint cases C-129/13 and C-130/13, Kamino International Logistics BV and Datema Hellmann Worldwide Logistics BV v Staatssecretaris van Financiën, 2014 EU:C:2014:2041. According to these legal precedents and the legal doctrine (Lyons 2008; Medelienė, Sudavičius 2011; Laurinavičius et al., 2014; Barnard 2016), we should stress that there are areas that belongs to the competence of the European Union exclusively (what is directly regulated in the Customs code of the European Union, first of all the elements of Common Customs Tariff, the rules on the incurrence of customs debt and the rules of customs clearance which are necessary for the calculation of Common Customs Tariff). Therefore, even after the adoption of the UCC, there are areas where the discretion is still left for the Member States to regulate, such as appeals against the decisions and actions of customs authorities, inspections and investigations, penalties and sanctions for violations of customs legislation, procedures used for inspecting the tariff classification of imported goods, the organisation of customs authorities as well as the status and powers of customs officers. For example, the Article 44 of the UCC gives the discretion to the Member States to define the specific institutions, bodies or authorities that will be regarded as competent to deal with the complaints of the taxpayers and to set the rules for the appeals procedure as well as to determine the maximum number of stages (steps) for the investigation of the appeal. Regarding customs control, the Article 48 of the UCC only sets general principles for the post-release control, therefore, leaving a room for the detail regulation of the control procedures at the national level. Similar principle is applied towards the definition of possible penalties for the infringements of customs legislation (Article 42 of the UCC). The UCC also doesn't implicitly regulate how the system of customs authorities should be organised in each Member States or which officials or institutions can perform checks and controls, including even such important elements of the Common Customs Tariff as the tariff classification of goods (Article 56–57 of the UCC). However, the existence of such competencies is usually evaluated on a case-by-case level and can be assessed by the CJEU (see, e.g. case C-456/08, Commission v Ireland, 2010).

Regarding the successful implementation of the UCC in the Republic of Lithuania, we should stress that Lithuanian Republic has taken some necessary formal steps to ensure the compatibility of its customs legislation with the provisions of the UCC. First, it introduced a completely brand and new Law on Customs (2016), which regulates the activity of national customs authorities and completely removed old

national regulations on customs value, customs origin or tariff classification of goods from the text of the law. If, for example, the old version of the Law on Customs of the Republic of Lithuania (2004) even included separate sections regulating these elements of the Common Customs Tariff (Chapter IV, sections from first to third), the new version of the law barely mentions only few non-essential questions regarding customs valuation and customs origin (such as the procedure for the issuing of the certificates, which proves non-preferential customs origin, Article 40, and rules on the recalculation of customs value that was expressed in a foreign currency, Article, 41). Therefore, the new Law on Customs became more oriented towards the internal organisational issues of customs authorities (such as their structure, functions, competences, rights and duties of customs officers).

Besides, even in the areas where the UCC leaves the competence to the Member States to make a final decision on the regulation of certain issues (such as the system of appeals), the national system became more compatible with the general requirements of the EU Customs Code and specific national rules were withdrawn. For example, as the Article 44 of the UCC (para. 2 (a)) states that the right of appeal may be exercised initially before the customs authorities (as an institution *in corpore*), the new national Law on Customs (2016) and other legislative acts that implements it (Regulations for the examination of complaints to the Customs Department under the Ministry of Finance of the Republic of Lithuania, 2016) revoked the regulations of the previous legal acts, which required in some cases to file a complaint to the individual customs officer who himself or herself made a disputed decision or has carried out the actions that are the object of the complaint appeal itself. Such previous national legal regulations were criticised in the legal doctrine (Valantiejus, 2013), and therefore, the removal of them is the step forward towards the creation of more transparent and accountable system of customs legislation.

We should also stress that one of the goals for ensuring the uniform application of the EU customs legislation is the creation of a paperless environment for customs operations (para. 15 of the preamble to the UCC). For this reason, the UCC sets the final date of 2020 when all the information regarding customs procedures and customs declarations should be exchanged and stored electronically, using electronic data processing techniques and electronic systems (see also Article 278 and Article 280 of the UCC). The Republic of Lithuania is also rapidly moving towards this direction: according to the Article 15 para. 2(6) of the new national Law on Customs, the Customs Department under the Ministry of Finance of the Republic of Lithuania is held responsible for the adoption and implementation of the informational systems and infrastructure of e-services that are necessary for the tasks of customs authorities under the Article 280 of the UCC. It is necessary to mention that even before the UCC was adopted (since 2003), Lithuania has developed and applied its own Strategic plan for electronic customs (Radžiukynas *et al*. 2011). These measures in general are evaluated as quite successful because the number of electronically processed import and export declarations was constantly growing and since the end of 2009 was higher than 98% of all processed declarations (Laurinavičius *et al*. 2014). In 2016, the number of such electronic declarations even exceeded 99% (Annual report on the activity of Lithuanian customs in 2016, 2017). However, even considering these indicators that shows the high level of the use of e-technologies in customs, we should also stress that even in a current situation, it is impossible to avoid the disputes with customs authorities on how the data in these electronic declarations should be treated and evaluated, for example, the disputes in which cases the correctness of the electronic data can be ruled out by using other, non-electronic data sources. Since the start of 2013 (the year when the UCC was adopted), the Supreme Administrative Court of Lithuania has examined more than six such cases, which usually involved the evaluation of transit customs procedures (Lithuanian courts information system 'LITEKO', 2017).

On the other hand, even after these changes, some disputable areas of national law remains and their appropriate regulation at national level still raises legitimate questions about the compatibility with the EU law (i.e. some aspects of customs valuation control, the determination of customs origin, electronic registration of customs procedures). These problematic areas are discussed in other subsections by using practical examples from the national judicial practice.

Practical aspects related to the implementation of the UCC in the Republic of Lithuania: customs

valuation. One of the obvious areas where problems related to the implementation of the UCC and its requirements (in particular, the requirement to ensure the uniform application of the EU customs legislation) arise not only on theoretical but also on the practical level is customs valuation (determination of customs value). This can be attributed to the fact that certain sources of national legislation are applied and imposed in this area and they define customs valuation of individual types of imported goods (e.g. used motor vehicles) as well as valuation control procedures more precisely than the rules set in the EU customs legislation (see, e.g. 26 June 2009 Order No. 1B-361 of the Director General of Customs Department under the Lithuanian Ministry of Finance 'On the approval of customs valuation rules for imported used transport vehicles', 2009).

It should be emphasised that the customs value of imported goods is one of the main elements of the EU's Common Customs Tariff (Lyons 2008; Edward, Lane 2013; Barnard 2016). For this reason, the main goal of the EU legislation, which regulates the determination of the customs value, was and currently is the establishment of a fair, uniform and neutral system that could prevent the use of arbitrary or fictitious customs values (case C-256/07, Mitsui & Co. Deutschland v Hauptzollamt Düsseldorf, 2009). To ensure the functioning of this system, the UCC contains a provision that 'the primary basis for the customs value of goods shall be the transaction value' (see Article 70 of the UCC) and all other methods of customs valuation can be used only as secondary, that is, they can be applied and invoked only when the customs value of goods cannot be determined based on the transaction value method (Article 74, para. 1). As it is stressed in the UCC, secondary methods of customs valuation can be applied sequentially, according to the hierarchical order, 'until the first point under which the customs value of goods can be determined', that is, until all the conditions and circumstances that allows application of certain method are established. Therefore, the process of customs valuation, which is based on the using of secondary valuation methods, must start from the analysis of conditions for the application of the method of transaction value of identical goods (Article 74, para. 2(a)) and finish with the 'fall-back' or the 'last chance' method that allows the calculation of customs value based on the data available in the customs territory of the Union, using reasonable means consistent with the principles and general provisions of customs valuation set in the Article VII of the General Agreement on Tariffs and Trade and other provisions of the UCC (Article 74, para. 3). It is important to mention that neither the UCC nor the EU regulations, which implements the UCC (Commission Implementing Regulation (EU) 2015/2447 of 24 November 2015 laying down detailed rules for implementing certain provisions of Regulation (EU) No 952/2013 of the European Parliament and of the Council laying down the Union Customs Code, 2015), sets any special or different rules of customs valuation for certain specific types of imported goods (see Articles 127–146 of the Regulation No. 952/2013 (EU) and Articles 69–76 of the UCC). Additionally, the same already mentioned provisions of these legal sources also do not define any special procedures for the customs control that can be used to check the legality and reasonableness of the declared value of imported goods, leaving it mainly to the Member States to regulate such procedures themselves, as it also was before the entry of the UCC into force (Radžiukynas, Belzus 2008; Radžiukynas *et al*. 2011).

In general, it can be noted that many other provisions of the UCC that regulates the determination of customs value are not new, as similar provisions (such as the preference of the transaction value method and hierarchical order for the application of other customs valuation methods) were introduced already by the CCC and previous case law of the CJEU, which explained the CCC (case Ioannis Christodoulou and Others v Elliniko Dimosio, 2013, para. 41). The new aspects in the UCC were only introduced in respect to the use of the first sale price for the calculation of transaction value (Article 70, para. 1 of the UCC). However, the general principles of the UCC, which are defined in its preamble and Title 1, Chapter 1 'Scope of the customs legislation, mission of customs and definitions', stress the need to ensure the uniform application of customs legislation, abandon the national simplifications (distortions) and emphasise the necessity to ensure that customs control procedures should be carried out in accordance with certain common standards. Therefore, in this context, the question arises how we must assess the existence of national customs legislation rules in customs valuation?

In this respect, it should be noted that both the CCC and the UCC, which replaced the CCC, are enacted in

a form of EU regulations and, therefore, must be applied directly, fully and universally in all the EU Member States (see case Hauptzollamt Bremen-Freihafen v Waren-Import-Gesellschaft Krohn & Co, 1970, para. 8 and case C-539/10 P, Stichting Al-Aqsa v Council of the European Union and Kingdom of the Netherlands v Stichting Al-Aqsa, 2012, para. 86). On the other hand, the national provisions on customs valuation that are enforced in the Republic of Lithuania possess their own certain specific features: according to a national regulatory model for customs valuation, matters that are not directly covered by the EU legislation are regulated by the national legislation or the national legislation sets more precise definitions that can be considered as necessary for the proper application of the EU rules (Radžiukynas, Belzus 2008). This approach is invoked for the determination of the customs value of imported used motor vehicles and for performing their customs valuation control procedures (see 26 June 2009 Order No. 1B-361 of the Director General of Customs Department under the Lithuanian Ministry of Finance 'On the approval of customs valuation rules for imported used transport vehicles', 2009; hereinafter – the Rules). The specifics of these national provisions can be characterised as follows: when used motor vehicles (cars) that were depreciated because of their normal use or other effects are evaluated for customs purposes and the usual customs valuation method (transaction value method cannot be used), the customs value is determined according to the estimated import prices of other used vehicles (described in a special pricing catalogues) or according to the property evaluation reports, that is, on the basis of other data available in the customs territory of the Union (Radžiukynas 2003; Baronaitė 2010). The national customs valuation rules for imported used transport vehicles were established because before the accession to the European Union, the imports of used passenger cars (vehicles) amounted to 96.4% of such vehicles imported to the Republic of Lithuania. Besides, many importers of used vehicles usually bought them from individuals at the car markets, so the authenticity of their purchase and sales documents caused a lot of doubts for the customs officers, as these documents often indicated clearly unrealistic prices that have been paid for the purchasing of imported cars. In addition, the different depreciation level and different technical conditions of imported cars (vehicles) made it objectively difficult to apply alternative customs valuation methods to them (e.g. to use the transaction value of identical or similar goods) (Radžiukynas, Belzus 2008).

Formal assessment of these legal regulations leads to the question whether such national rules (as defined in the 26 June 2009 Order No. 1B-361 of the Director General of Customs Department under the Lithuanian Ministry of Finance 'On the approval of customs valuation rules for imported used transport vehicles', 2009) may exist, because they compete with the legal regulations laid down in the UCC and other EU's customs legislation that should have a priority in such cases (see case Skoma-Lux v Celní ředitelství Olomouc, 2010, as well as joint cases C-129/13 and C-130/13, Kamino International Logistics BV and Datema Hellmann Worldwide Logistics BV v Staatssecretaris van Financiën, 2014). They also do not have a sufficient legal background as defined by the national law itself (e.g. the necessity and the powers to adopt such rules are not defined in the Law on Customs of the Republic of Lithuania, 2016). It should be noted that in other similar cases, national courts have generally recognised that such national legal regulations (especially when they regulate tax relations) contradicts the constitutional principle of the rule of law and, therefore, can be declared null and void (see the decision of the panel of judges of the Supreme Administrative Court of Lithuania of 17 June 2015 in the administrative case No. I-5-442/2015, 2015). As we can see from the preamble to the national Customs valuation rules for imported used transport vehicles (2009) and as it is stated in the legal doctrine (Radžiukynas 2003, Baronaitė 2010), the provisions of the rules are also based directly on the World Customs Organization (WCO) law (WCO documents, such as the WCO report 'Valuation of used motor vehicles' (2005)). On the other hand, the general position of the CJEU is that a primary source that is to be used for the regulation of customs legal relations in the European Union is the Customs Code. Therefore, legal acts of other international organisations (e.g. World Trade Organization and/or the World Customs Organization) can be invoked only for interpreting the already existing provisions of the EU customs law (see case C-53/96, Hermès International v FHT Marketing Choice BV, 1998).

So even the formal existence of such Rules in the national legal system raises many serious and obvious

legal problems. This is confirmed by the relevant period national case law during the analysed period (since 2013). For example, whilst assessing the content of these national rules, we should borne in mind that even if the Rules has been repeatedly improved (original version was approved back in 2004, the Rules were updated in 2009 and then in the years from 2015 to 2016, the additional changes have been made), but anyway their current version leaves wide opportunities for the customs authorities to derogate from the use of transaction value method (paras. 8, 11–12 and 16 of current version of the Rules). This can be interpreted as an objection to the analysed provisions of the UCC (Articles 69–74) and the recent case law of the CJEU (case C-291/15, EURO 2004. Hungary v Nemzeti Adó-és Vámhivatal Nyugat-dunántúli Regionális Vám-és Pénzügyőri Főigazgatósága, 2016). This is confirmed by the national case law during the analysed period during which three cases concerning the application of the Rules were identified. In some of these cases, the Supreme Administrative Court of Lithuania have highlighted that if a declared transaction price of imported vehicles is significantly lower than the prices contained in the pricing catalogues that, according to the Rules, must be used for customs valuation during the corresponding period, the customs authorities can only rely on a customs value set according to the pricing catalogues and may not use the transaction value method at all (the ruling of the panel of judges of Supreme Administrative Court of Lithuania of 2 April 2015 in the administrative case No. A-729-442/2015, 2015). Therefore, the national practice approves the exceptional order for using of customs valuation methods and it didn't correspond to the hierarchical order that was traditionally approved in the EU customs law (Wolffgang, Ovie 2008) and the practice of the CJEU (case Ioannis Christodoulou and Others v Elliniko Dimosio, 2013, para. 41). In addition, the application of these Rules in a national case law widely acknowledges the possibility of customs authorities to deny the declared transaction value on the basis of any other sources of evidence that are available to the customs (the ruling of the panel of judges of the Supreme Administrative Court of Lithuania of 4 March 2014 in the administrative case No. A-143-312/14, 2014) and limits the legal abilities of importers to provide any new sources of evidence that support the declared transaction value of imported goods (the ruling of the panel of judges of the Supreme Administrative Court of Lithuania, 14 January 2013 in the administrative case No. A-261-102/2013, 2013), although it should be ensured by the practice of the CJEU (case C-263/06, Carboni e derivati v Ministero dell'Economia e delle Finanze e Riunione Adriatica di Sicurtà SpA, 2008, para. 52) and the recent provisions of the UCC, which defines the right to be heard (Article 22).

In this context, the question arises whether such specific Rules are generally necessary and whether it would not be appropriate to regulate customs valuation control procedures for all types of imported goods in a single legal act (currently, the following rules are approved by the 15 December 2016 Order No. 1B-1027 of the Director General of Customs Department under the Ministry of Finance of the Republic of Lithuania, 2016, but they do not apply for customs valuation of used motor vehicles). This would ensure uniform standards for customs valuation on a national level and, accordingly, the proper implementation of the UCC. In such case, it would be appropriate to amend the general Rules on customs valuation by simply complementing them with specific aspects such as clarifying what specific sources can be used to control the reasonableness of the prices of motor vehicles etc.

Practical aspects related to the implementation of the UCC in the Republic of Lithuania: rules of customs origin. As it was already stressed in this article and as it is reported by other scholars (see Wolffgang, Harden, 2016), we should note that the rules of customs origin itself, which are the substantial element of Common Customs Tariff of the European Union , hasn't changed much in the UCC. This can be explained by the fact that they are regulated not only by the secondary law of the European Union but also by the international trade agreements (preferential trade agreements), which, as it is traditionally recognised in the practice of the CJEU, can be applied directly (case C-104/81, Hauptzollamt Mainz v. Kupferberg, 1982, and case C-188/91, Deutsche Shell v. Hauptzollamt Hamburg-Harburg, 1993). However, in any case, the correct application of these rules is extremely important to the international traders because the rate of the customs tariff for imported goods (conventional, reduced or zero (i.e. preferential) tariff) depends on what origin of goods will be declared and determined by the customs authorities. Therefore, they are also considered as an irreplaceable instrument for the uniform application of Common Customs

Tariff of the European Union (case C-49/76, Gesellschaft fur Uberseehandel GmbH v Handelskammer Hamburg, 1997, para. 5).

As it is repeatedly noticed in the legal scientific literature (see, e.g. Lyons 2008; Holdgaard, Spiermann 2011; Gavier, Verhaeghe 2012; Muniz, 2015), the proper application of the rules regulating customs origin of imported goods is associated with a problem of the distribution of burden to prove the preferential customs origin. For this reason, as it is noticed by Truel, Maganaris and Grigorescu (2015), the provisions of the UCC try to codify the basic rules that regulate the procedures that can be used for proving the origin of the custom (Title II, Chapter 2 of the UCC). It is necessary to stress that some of these rules are more accurate and detailed than the rules set in the CCC, and this relates to the provisions of the Article 61 (para. 1) of the UCC, which states that 'where an origin has been indicated in the customs declaration pursuant to the customs legislation, the customs authorities may require the declarant to prove the origin of the goods'. The wording of this legal regulation in the UCC differs from the text used in the analogous provisions of the CCC (see Article 26, para. 2), which stated that 'the customs authorities may, in the event of serious doubts, require any additional proof to ensure that the indication of origin does comply with the rules laid down by the relevant Community legislation'.

Therefore, we can notice that the UCC (Article 61) states that the declarant (the taxpayer) always has a general obligation to prove the origin of the goods by all available means and the emergence of this obligation is not linked only to specific cases, such as 'the event of serious doubts' and the necessity to provide 'additional proof' to the customs authorities. The UCC also does not contain provisions requiring the customs authorities to gather the necessary primary evidence on customs origin themselves during their investigative procedures (as it was indirectly required by the CCC, which stated that the taxpayer must provide only an additional source of evidence). It is necessary to stress that even before the UCC has entered into force, the CJEU has also started to formulate and to follow the practice under which the general burden to prove the customs origin belongs to the importer. For example, this principle was stressed in the paras 56–57 of the case C-386/08 of the CJEU (Firma Brita GmbH v Hauptzollamt Hamburg-Hafen, 2010), where the CJEU highlighted that in order for the taxpayer (importer) to be entitled to the use of preferential customs origin in customs declarations, 'it is necessary to provide valid proof of origin issued by the competent authority of the exporting State' and that this requirement cannot be considered only as 'a mere formality' (see also the case C-438/11, Lagura Vermögensverwaltung GmbH v Hauptzollamt Hamburg-Hafen, para. 17). The same practice has also been followed in cases where questions on the application of anti-dumping customs duties arose, for example, in the recent case C-416/15 (Selena România v Direcția Generală Regională a Finanțelor Publice (DGRFP) București, 2016; para. 36). In this case, the CJEU has noticed that the customs authorities might require the 'supplementary evidence' to prove that the customs origin declared by the importer was correct and that the imports of goods weren't subject to anti-dumping customs duties.

However, by analysing the practices followed in the Republic of Lithuania since 2013 (when the UCC was adopted) and until nowadays, we may notice that even after the UCC formally entered into force in 2016, the national courts continued to apply different legal precedents that don't recognise the general obligation of the importer to prove the customs origin of imported goods. These precedents differentiate the cases when the customs origin must be proved by the tax administrator (by the tax authorities) and the cases when it must be proved by the taxpayer (importer) itself (see, e.g. para. 47 and 49–50 of the ruling of the panel of judges of the Supreme Administrative Court of 5 September 2016 in the administrative case A-377-556/2016, 2016). Here, the Court stressed that, in general, the burden of proving the right to apply the preferential customs duties belongs to the debtor (taxpayer) rather than the tax authorities (para. 47 of the ruling in the administrative case A-377-556/2016). Whilst such statement is formally in line with the already-mentioned practice of the CJEU and the regulations set in the Article 61 of the UCC, the paras 49–50 of the analysed ruling in the administrative case A-377-556/2016 at the same time sets the different precedent by stating that where imported goods are subject to anti-dumping customs duty, the obligation to prove the origin of the goods would primarily belong to the tax administrator. The same precedent was also continuously repeated in both some earlier cases (The Supreme Administrative Court of Lithuania,

decisions of the panel of judges of 30 April 2014 in the administrative case No. A-261-146/2014 and in the administrative case No. A-261-144/2014, 2014) as well as later cases such as the decision of the panel of judges of the Supreme Administrative Court of Lithuania of 30 April 2014 in the administrative case No. A-352-556/2017. However, neither in the administrative case No. A-377-556/2016 nor in other mentioned cases, the Court didn't provide any specific argumentation explaining the nature of this precedent in the context of the EU customs law. Besides, in one recent case, that is, in the administrative case eA-1671-575/2016 (2016), the Court has deviated from this practice and stated that even in case when anti-dumping customs duties are applied, the case of a taxpayer is required to justify why the calculated amounts of tax are incorrect, that is, to provide an evidence on the exact origin of imported goods. This conclusion was based on the requirements of Article 67, para. 2, of the national Law on Tax Administration (2004), which states that it is the taxpayer who must justify why the calculated amounts of taxes are incorrect.

Summarising the foregoing, we can notice that even after the adoption of the UCC on the practical level, there is no uniform practice related to the distribution of the burden to prove the customs origin in Lithuania. This may negatively impact the proper implementation of the UCC, which states one general rule that an obligation to prove the customs origin, in general, belongs to the taxpayer. Additionally, it is important to mention that whilst Lithuanian practice considered the application of different standards for such rules to preferential customs duties and anti-dumping customs duties, even the EU Anti-Dumping regulation doesn't include any provisions that may justify such differences (it doesn't include any specific rules on customs origin as they are codified in the UCC). Therefore, it is advisable to adjust the national customs inspections rules (Rules for the application of the preferential customs tariff, approved by the 16 November 2016 Order No. 1B-925 of the Director General of Customs Department under the Ministry of Finance of the Republic of Lithuania, 2016) and to establish that the taxpayer is obliged to provide an evidence that proves the declared customs origin during the customs inspections, otherwise the customs authorities can make a final decision only on the basis of information available to them. Such procedural regulations may help to avoid unjustified separation of legal practice in future. It would also create the proper conditions for the implementation of the UCC as well as other national laws (Article 67, para. 2, of the national Law on Tax Administration (2004)) and even national legal doctrine (Medelienė, 2004), which is based on the presumption that whilst the tax administrator has an obligation to motivate its calculations of taxes in case of doubts over the calculated amount of taxes, the final word belongs to the taxpayer.

Practical aspects related to the implementation of the UCC in the Republic of Lithuania: electronic declaration of customs procedures. As it was already mentioned in this article, one of the main goals of the UCC is to ensure electronic registration of customs clearance procedure and the use of electronic customs declarations (Article 6 of the UCC). Whilst, on the one hand, Lithuania is moving very rapidly towards this goal (as more than 99% of customs declarations are processed electronically; see Annual report on the activity of Lithuanian customs 2016, 2017), on the other hand, some practical problems arise when the authorities try to ensure effective feedback between customs authorities and taxpayers. The problem stems from the fact that under the applicable scheme (see Law on Customs of the Republic of Lithuania, 2016; Article 30, para. 3), the taxpayer must first submit electronic declaration (message) and after that the imported or exported goods and other documents may be submitted to the customs authorities for the actual inspection. For example, as it is provided by the 26 June 2009 Order No. 1B-357 of the Director General of Customs Department under the Ministry of Finance of Lithuanian Republic 'On the rules of electronic data to be used for export and import customs formalities and approval of the model contract for exchange of electronic data to be used for export and import customs formalities' (2009), the electronic customs declaration may be accepted only when the goods declared in this declaration are presented for the customs control in a place which is established and(or) authorised by the customs authorities. The presentation of such goods to customs control is formalised by the electronic message sent by the person who is providing a customs clearance declaration. If, after acceptance of these electronic documents, the customs authorities makes the decision to carry out a documentary investigation and (or)

physical examination of the goods, the person, who presented an electronic declaration, receives systematic electronic notification. The notification indicates that specific documents are needed for the performing of customs control (they may include not necessarily all documents that were declared in electronic declaration). Only, in this case, the written documents are delivered physically though, otherwise, there is no obligation to submit the physical documents (it is only sufficient to declare them and to keep them in a site that is declared to the customs authorities).

To secure that this system is functioning effectively and that the legitimate expectations of the taxpayers are protected, it is absolutely necessary to ensure that the customs authorities will also electronically provide a backlink, feedback and confirmation of the final results of customs clearance and investigations. For example, it is important to inform the taxpayer of the fact that certain customs procedures are not yet fully completed and their results may be reviewed (such information should be available to him in electronic customs databases). On the other hand, as it is confirmed by the recent Lithuanian practice (since 2013, i.e. after the adoption of the UCC), the results of electronic customs procedures are quite often challenged in a tax disputes (the official information system of Lithuanian courts 'LITEKO' recorded at least six such cases relating to the use of electronic customs declarations that were examined in the Supreme Administrative Court of the Republic of Lithuania; Lithuanian courts information system 'LITEKO', 2017).

In particular, we can distinguish cases (see administrative cases No. A-261-1338/2013, A-143-1314/2013, A-143-787/2013, A-143-776/2013, A-143-56/2013 and A-261-453/2013; Lithuanian courts information system 'LITEKO', 2017), when the goods that were imported to the Republic of Lithuania (basically only one category of goods – cars (transport vehicles)), and on the basis of electronic declarations (notifications), they were placed under the inward processing procedure (currently regulated by the article 256 of the UCC). The result of this customs procedure (i.e. proper completion of the procedure) should be the export of the processed goods from the customs territory of the European Union because it is in this case when an obligation to pay customs duties on the EU customs territory does not arise (see, e.g. Article 250 of the UCC). However, as it is confirmed by these cases, even after finishing (closing) customs clearance procedures and after the submission of an electronic declarations about their completion (i.e. the export of relevant goods), the legal status of customs procedures (e.g. the fact that the relevant goods were really exported) has been successfully questioned by the customs authorities on the basis of other factual evidence (non-electronic documents, such as written information received from the third countries and written sources of evidence from criminal investigations case). In all such cases, the Supreme Administrative Court of Lithuania as well as the customs authorities themselves, has adopted the decisions that were unfavourable to taxpayers and under additionally payable amounts of customs duties, were registered.

In other words, in all these cases, the national courts, basing their practice on the practice of the CJEU (namely, case C-230/06, Militzer & Münch GmbH v Ministero delle Finanze, 2008), agreed that the mere formal presentation of electronic sources evidence (such as primary electronic declarations and notifications) does not release the taxpayers from the import tax obligations potentially arising because the customs procedure has not been properly completed. For example, as it was stressed in the ruling of the panel of judges of the Supreme Administrative Court of Lithuania of 22 March 2013 in the administrative case No. A-261-453/2013, 2013, data extract from the electronic computer system cannot be considered as an adequate proof of completion of customs procedures and cannot create any legitimate expectations or legal certainty regarding proper implementation of customs procedures. Therefore, the electronic records of the computer systems are only considered as the fixation of some legal action (or fact); the presence of such records does not deny the right of customs authorities to carry out all the additional control measures that are considered as necessary to ensure the proper implementation of customs legislation as well as to take all measures that are necessary to regularise the situation of goods in respect of which a certain customs procedure has not been completed under the conditions set in the customs legislation. Thus, even in the presence of an appropriate electronic record that proves the completion of customs procedure (in this case, the inward processing procedure), such procedures can later be recognised as not properly

completed, for example, if disputed goods have not been delivered to the destination customs office (see also the ruling of the panel of judges of the Supreme Administrative Court of Lithuania of 7 May 2013 in the administrative case No. A-143-56/2013, 2013).

In this case, although the Lithuanian judicial practice can be explained and justified by the existing practice of the CJEU (case Militzer & Münch GmbH v Ministero delle Finanze, 2008, and case C-300/03, Honeywell Aerospace GmbH v Hauptzollamt Gießen, 2005), the relative numerousness of such disputes on the national level causes the need to improve electronic systems of customs procedures and to introduce additional safeguard measures for the taxpayers. For example, according to the currently existing rules for issuing authorisations to perform specific use and inward processing customs procedures (28 April 2016 Order No. 1B-344 of the Customs Department under the Ministry of Finance of the Republic of Lithuania, 2016), when the customs authorities make a decision rejecting the taxpayer's request for completion of the customs procedure, he or she should get an appropriate electronic message 'The decision to suspend the release of exported goods' (E551LT), see para. 13 of these rules. In addition, according to the para. 21 of the rules, customs officials who are examining the accepted electronic request of a taxpayer for a completion of customs procedure should immediately check whether the information is complete and there are no doubts on its credibility and certainty of documents that were submitted together with the request. On the other hand, to safeguard the legitimate expectations of the taxpayer, the commented rules should clearly establish the provision that even a receipt of positive primary decision shall not release the person from the obligation to provide additional evidence later (this should also be reported to the taxpayer). At the same time, certain cases should be specified and clearly defined when, even after a preliminary investigation of taxpayer's request and adoption of a positive decision, additional investigation procedures can be initiated once again (e.g. upon reception of certain information from a third parties/countries). This is especially important for the investigation of customs procedures related to an individual specific group of goods, such as motor vehicles (cars), because all the practical disputes were solely associated with them. Such provisions could create a greater legal certainty and increase taxpayers' confidence to use the electronic customs procedures.

Conclusions

The adoption of the UCC in 2013 and its entry into force in 2016 was the result of the modernisation of the EU customs and trade legislation that regulates uniform administration of customs duties and other import taxes in the EU Member States and application of other related international trade regulatory measures towards the third countries that are trading with the European Union. Therefore, the main aims of the UCC are, first, the creation of the paperless environment for the international trade operations throughout the European Union and its individual Member States (full electronic declaration of customs procedures) and, second, ensuring of even a more harmonised administration of customs duties in the tax and customs authorities of the Member States in the European Union (comparing the level that was achieved since the adoption of the CCC in 1992).

Considering regulation of the key elements of the EU's Common Customs Tariff (tariff classification, origin, and value of imported goods), after the adoption of the UCC, tariff classification has changed only minimally. However, regarding the rules of customs origin, we should stress that the UCC regulates the acquisition of non-preferential origin of goods much more in detail and sets clearer criteria that define non-preferential origin. Certain changes have taken place in the customs valuation area: here the customs valuation methods remain the same but the procedures for calculation of transaction value were revised.

Notwithstanding, after the adoption of the UCC, the biggest changes took place in the field of customs clearance procedures. The UCC provides that general import declaration and other customs declarations shall be submitted electronically, and until 2020, all the data exchange between customs authorities and taxpayers must take place in electronic environment. The UCC also provides the possibility to carry out centralised customs clearance and ensures facilitation of customs procedures for international trade operators that acquired the special status of the Authorised Economic Operator. Besides, the UCC has also

limited the rights of the EU Member States to regulate this area of legal relations by reducing the scope of their powers to enact national customs laws on specific issues (which existed previously).

The theoretical analysis that aimed to explore the practical implementation of the UCC in the EU Member States (considering the Republic of Lithuania as an example) leads to the conclusion that on the formal level, the Republic of Lithuania has taken some necessary steps to ensure the compatibility of its customs legislation with the provisions of the UCC. It introduced a completely brand and new Law on Customs (2016), which regulates mainly the status of the national customs authorities and completely removed old national regulations on customs value, customs origin or tariff classification of goods. It has also changed the system how disputes with customs and appeals against the decisions of customs authorities are examined and is rapidly moving towards the full achievement of a goal to ensure full electronic exchange of data between the customs authorities and taxpayers.

However, the practical research based on the national judicial practice since 2013 and its comparison with the relevant practice of the CJEU, which is binding for all the EU Member States, has shown that even despite these changes, some problematic areas in the national legal system remain. For example, the national courts still continue to apply the specific national customs valuation rules for imported motor vehicles that differ from the provisions of the UCC and may be considered as not having a sufficient legal background, the burden to prove the customs origin of imported goods is also perceived differently than described in the UCC and even in the newest practice of the CJEU and, finally, we may notice a lack of legal guarantees that the results of electronic customs clearance procedures will not be changed without sufficient reason.

Therefore, we should state the successful practical implementation of the UCC in all the Member States of the European Union has not yet been achieved and its efficient functioning needs further national legislative developments (such as withdrawal of national rules on customs valuation, changes in the national customs inspections rules to regulate procedures for the establishment and proving of customs origin of imported goods), replacement of rules, regulating electronic formalisation of customs procedures to ensure more effective feedback and backlink between customs authorities and taxpayers).

References

Action programme: Customs 2007 (2003-2007). Decision No 253/2003/EC of the European Parliament and of the Council of 11 February 2003 adopting an action programme for customs in the Community (Customs 2007) (2003). *Official Journal, L 036.*

Barnard, C. (2016). *The Substantive Law of the EU: The Four Freedoms*. Cambridge: Cambridge University Press.

Baronaitė, M. (2010). Naudotų apgadintų transporto priemonių muitinio vertinimo ypatumai [Particularities of used damaged motor vehicles' evaluation for customs purposes]. *Teisė*, (77), 63-80.

Case C-104/81, Hauptzollamt Mainz v Kupferberg, 1982 E.C.R. I-3641.

Case C-116/12, Ioannis Christodoulou and Others v Elliniko Dimosio, 2013 EU:C:2013:825.

Case C-125/94, Aprile Srl v Amministrazione dello Stato, 1995 E.C.R. I-2919.

Case C-188/91, Deutsche Shell v Hauptzollamt Hamburg-Harburg, 1993 E.C.R. I-363.

Case C-230/06, Militzer & Münch GmbH v Ministero delle Finanze, 2008 E.C.R. I-01895.

Case C-256/07, Mitsui & Co. Deutschland v Hauptzollamt Düsseldorf, 2009 E.C.R. I-01951.

Case C-26/62, Van Gend & Loos v Nederlandse administratie der belastingen, 1963 EU:C:1963:1.

Case C-263/06, Carboni e derivati v Ministero dell'Economia e delle Finanze and Riunione Adriatica di Sicurtà SpA, 2008 EU:C:2008:128.

Case C-291/15, EURO 2004. Hungary v Nemzeti Adó-és Vámhivatal Nyugat-dunántúli Regionális Vám-és Pénzügyőri Főigazgatósága, 2016 EU:C:2016:455.

Case C-339/09, Skoma-Lux v Celní ředitelství Olomouc, 2010 E.C.R. I-13251.

Case C-386/08, Firma Brita GmbH v Hauptzollamt Hamburg-Hafen, 2010 E.C.R. I-01289.

Case C-416/15, Selena România v Direcția Generală Regională a Finanțelor Publice (DGRFP) București, 2016 EU:C:2016:501.

Case C-438/11, Lagura Vermögensverwaltung GmbH v Hauptzollamt Hamburg-Hafen, 2012 EU:C:2012:703.

Case C-450/12, HARK GmbH & Co KG Kamin- und Kachelofenbau v Hauptzollamt Duisburg, 2013 EU:C:2013:824.

Case C-456/08, Commission v Ireland, 2010 E.C.R. I-859.

Case C-49/76, Gesellschaft fur Uberseehandel mbH v Handelskammer Hamburg, 1997 E.C.R. I-41.

Case C-53/96, Hermès International v FHT Marketing Choice BV, 1998 E.C.R. I-03603.

Case C-539/10 P, Stichting Al-Aqsa v Council of the European Union and Kingdom of the Netherlands v Stichting Al-Aqsa, 2012 EU:C:2012:711.

Case C-595/11, Steinel Vertrieb GmbH v Hauptzollamt Bielefeld, 2013 EU:C:2013:251.

Case C-6/64, Costa v E.N.E.L., 1964 EU:C:1964:66.

Case C-74/69, Hauptzollamt Bremen-Freihafen v Waren-Import-Gesellschaft Krohn & Co, 1970 E.C.R I-451.

Case C-300/03, Honeywell Aerospace GmbH v Hauptzollamt Gießen, 2005 E.C.R. I-00689.

Commission Implementing Regulation (EU) 2015/2447 of 24 November 2015 laying down detailed rules for implementing certain provisions of Regulation (EU) No 952/2013 of the European Parliament and of the Council laying down the Union Customs Code (2015). *Official Journal*, *L 343*.

Council Regulation (EEC) No 2913/92 of 12 October 1992 establishing the Community Customs Code (1992). *Official Journal, L 302*.

Council Regulation (EEC) No 2658/87 on the tariff and statistical nomenclature and on the Common Customs Tariff (1987). *Official Journal, L 256.*

Customs Department under the Ministry of Finance of the Republic of Lithuania. (2017). *Lietuvos muitinės veiklos 2016 metų veiklos ataskaita* [Annual report on the activity of Lithuanian customs in the year 2016]. [Accessed 17.04.2017]. Available from Internet: http://www.cust.lt/mport/failai/veikla/ataskaitos/2016 _Ataskaita.pdf

Edward, D., Lane, R. (2013). *Edward and Lane on European Union Law*. Edward Elgar Publishing: Cheltenham.

Fabio, M. (2010). Customs Law of the European Union. Alphen aan den Rijn: Kluwer Law International.

Gavier, P. D., Verhaeghe, L. (2012). Eu-Korea Free Trade Agreement: Origin Declaration and Approved Exporter Status. *Global Trade and Customs Journal*, (7), 315-325.

Holdgaard, R., Spiermann, O. (2011). Case C-386/08, Brita GmbH v. Hauptzollamt Hamburg-Hafen (Notes). *Common Market Law Review, 48* (5), 1667-1686.

Joint cases C-129/13 and C-130/13, Kamino International Logistics BV and Datema Hellmann Worldwide Logistics BV v Staatssecretaris van Financiën, 2014 EU:C:2014:2041.

Laurinavičius, A., Sarapinienė, S., Gurevičienė, J.J., Matiuševskaja, E. and Jablonskis, A. (2014). *Muitinė tarptautinės prekybos logistinėje grandinėje* [Customs within the International Trade Logistic Chain]. Vilnius: Mykolo Romerio universitetas.

Law on Customs of the Republic of Lithuania (2004). *Official Gazette, 73* (2517).

Law on Customs of the Republic of Lithuania (2016). *The Register of the Legal Acts, 26857.*

Law on Tax Administration of the Republic of Lithuania (2004). *Official Gazette, 63,* (2243).

Lux, M., Douglas-Hamilton, J. (2008). Modernizing the Community Customs Code. *Global Trade and Customs Journal, 3* (9), 281-316.

Lithuanian courts information system "LITEKO" (2017). *Detali paieška* [Detailed Search]. [Accessed 20.04.2017]. Available from Internet: http://liteko.teismai.lt/viesasprendimupaieska/detalipaieska.aspx

Lyons, T. (2008). *EC Customs Law*. Oxford: Oxford University Press.

Medelienė, A. (2004). Įrodymai ir įrodinėjimas mokestinių ginčų nagrinėjimo procese [Evidence and Burden of Proof in Tax Disputes' Process]. *Teisė*, (53), 117-159.

Medelienė, A., Sudavičius, B. (2011). *Mokesčių teisė* [Tax Law]. Vilnius: Registrų centras.

Pablo, M. (2015). Preferential Origin Disputes: Is the Good Faith Defence under EU Law Being Enforced. *Global Trade and Customs Journal*, (10), 368-379.

Radžiukynas, J., Belzus, A. (2008). *Importuojamų prekių muitinis įvertinimas ir kontrolė* [Customs valuation and control of imported goods]. Vilnius: Lietuvos pramonės, prekybos ir amatų rūmų asociacija.

Radžiukynas, J., Rimkus, V., Sarapinienė, S., Žitkienė, R. and Povilauskienė, D. (2011). *Europos Sąjungos bendroji prekybos politika* [Common Commercial Policy of the EU]. Vilnius: Mykolo Romerio universitetas.

Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code (2013). *Official Journal, L 269*.

Regulation (EC) No. 450/2008 of the European Parliament and of the Council of 23 April 2008 laying down the Community Customs Code (Modernized Customs Code) (2008). *Official Journal, L 145.*

Regulations for the examination of complaints to the Customs Department under the Ministry of Finance of the Republic of Lithuania approved by 27 December 2016 order No. 1B-1074 of the Director General of the Customs Department (2016). *The Register of the Legal Acts, 29681.*

Rules for the application of the preferential customs tariff, approved by the 16 November 2016 order No. 1B-925 of the Director General of Customs Department under the Ministry of Finance of the Republic of Lithuania (2016). *Register of Legal Acts, 27106.*

Sarapinienė, S., Avižienis, J. Š. (2008). Muitinės procedūros [Customs Procedures]. Vilnius: Mykolo Romerio universitetas.

The decision of the panel of judges of the Supreme Administrative Court of Lithuania of 30 April 2014 in the administrative case No. A-261-146/2014. Available from Internet: <http://liteko. teismai.lt/ viesasprendimupaieska/tekstas.aspx?id=7fed64e2-d0fd-4a7b-aa04-4eb9217e9394>.

The decision of the panel of judges of the Supreme Administrative Court of Lithuania of 30 April 2014 in the administrative case No. A-261-144/2014. Available from Internet: <http://liteko.teismai.lt/ viesasprendimupaieska/tekstas.aspx?id=bd0247d2-356e-4884-af9b-4e13af675f67>.

The decision of the panel of judges of the Supreme Administrative Court of Lithuania of 20 March 2017 in the administrative case No. A-352-556/2017. Available from Internet: <https://www.e-tar.lt/rs/legalact/fdfa74b0156111e79800e8266c1e5d1b/format/ISO_PDF/>.

The 15 December 2016 order No. 1B-1027 of the Director General of Customs Department under the Ministry of Finance of the Republic of Lithuania "On the approval of the rules on the control of customs valuation of imported goods" (2016). *Register of Legal Acts, 29003.*

The 26 June 2009 Order No. 1B-357 of the Director General of Customs Department under the Ministry of Finance of Lithuanian Republic "On the rules of electronic data to be used for export and import customs formalities and approval of the model contract for exchange of electronic data to be used for export and import customs formalities" (2009). *Official Gazette, 78*, (3256).

The 26 June 2009 Order No. 1B-361 of the Director General of Customs Department under the Lithuanian Ministry of Finance "On the approval of customs valuation rules for imported used transport vehicles" (2009). *Official Gazette, 78* (3259).

The 28 April 2016 order No. 1B-344 of the Customs Department under the Ministry of Finance of the Republic of Lithuania „On approval of the rules for issuing authorizations to perform specific use and inward processing customs procedures" (2016). *Register of Legal Acts, 10826.*

The decision of the panel of judges of the Supreme Administrative Court of Lithuania of 17 June 2015 in the

administrative case No. I-5-442/2015. Available from Internet: https://www.e-tar.lt/portal/lt/legalAct/ LITEKO.94010F416299.

The ruling of the panel of judges of Supreme Administrative Court of Lithuania of 2 April 2015 in the administrative case No. A-729-442/2015. Available from Internet: < http://eteismai.lt/byla/258873163293263/A-729-442/2015>.

The ruling of the panel of judges of the Supreme Administrative Court of Lithuania of 4 March 2014 in the administrative case No. A-143-312/2014. Available from Internet: < http://eteismai.lt/byla/168360412296548/A-143-312-14>.

The ruling of the panel of judges of the Supreme Administrative Court of Lithuania, 14 January 2013 in the administrative case No. A-261-102/2013. Available from Internet: < http://eteismai.lt/byla/28527893066526/A-261-102-13>.

The ruling of the panel of judges of the Supreme Administrative Court of 5 September 2016 in the administrative case A-377-556/2016. Available from Internet: <http://eteismai.lt/byla/151489826098556/A-377-556/2016>.

The ruling of the panel of judges of the Supreme Administrative Court of 26 January 2016 in the administrative case eA-1671-575-2016. Available from Internet: <http://eteismai.lt/byla/21957144333451/eA-1671-575/2016>.

The ruling of the panel of judges of the Supreme Administrative Court of Lithuania of 22 March 2013 in the administrative case No. A-261-453/2013. Available from Internet: < http://eteismai.lt/byla/25031184343813/A-261-453-13>.

The ruling of the panel of judges of the Supreme Administrative Court of Lithuania of 7 May 2013 in the administrative case No. A-143-56/2013. Available from Internet: <http://eteismai.lt/byla/274744678197658/A-143-56-13>.

Truel, C., Maganaris, E. (2015). Breaking the code: the impact of the Union Customs Code on international transactions*. World Customs Journal, 9* (2), 12-23.

Truel, C., Maganaris, E., Grigorescu, D.-R. (2015). The Development of EU Customs Law: from the Community Customs Code to the Union Customs Code. *Journal of Legal Studies, 16* (30), 83-106.

Valantiejus, G. (2013). Pre-Trial Settlement of Disputes with Customs in Lithuania: Development of Legal Regulations, it's problems and prospects. *Social Transformations in Contemporary Society: Annual Journal*, (1), 130-141.

Van Doornik, E. (2014). *In 2016 the European Union will have a new Customs Code. But what's new*? The Netherlands: Deloitte.

Wolffgang, H.-M., Harden, K. (2016). The new European customs law. *World Customs Journal, 3* (16), 3-16.

Wolffgang, H.-M., Ovie, T. (2008). Emerging Issues in European Customs Law: Part III. *World Customs Journal, 2* (1), 3-16.

PHYSICAL INVESTMENT FINANCING: THE CASES OF POLAND AND LATVIA

Katarzyna Żak

The University of Economics in Katowice, Poland, katarzyna.zak@ue.katowice.pl

Abstract. The aim of the article is to present and compare the major sources of financing of physical investments in Poland and Latvia and to attempt to identify their determinants. The subject of the diagnosis is the corporate sector in Poland and i Latvia in the years 2005–2015.The article uses methodology, developed by C. Mayer, J. Corbett and T. Jenkinson, that is based on the net sources of finance. The financial data analysed in the article come from the capital and financial accounts, constituting the element of the integrated system of national accounts. Assuming that in a given period of time, the sources of finance (revenue) are equal to their use (expenditure), it is possible to estimate the structure of financing of physical investments in the corporate sector. The practical dimension of the analysis should be viewed as an indication for identifying changes in the area of financing of physical investments in enterprises in the two countries.

Introduction

One of the major drivers behind every economy is investment, including investment implemented by the corporate sector. Economic entities engage in investment activity as this is a prerequisite for their effective performance, stable market position and keeping up with the competition (Pastusiak, 2010). Literature identifies two major trends in defining investment. One – the monetary trend – perceived investments as the movement of money. This means that the material dimension of an investment is not emphasised, but investments are treated as the flow of funds involving outflows and inflows of capital. The physical trend, also referred to as material, highlights the necessity to achieve a material effect of a given investment. An important role in this approach is played by the balance sheet as the compilation of an entity's assets and sources of finance. According to the physical approach, turning capital into assets or using new capital is perceived as investment (Rogowski 2013).

A number of authors (Jajuga, Słoński 1997, Wypych, 2007, Rogowski, 2013) define investments as long-term, risk-carrying allocation of economic resources (as investment outlays) aimed at a future benefit. They highlight their characteristic features, such as:

- outlay (the allocation of own capital, usually at the cost of current consumption, and external capital through asset acquisition),
- benefit (the expected outcome of an investment),
- time (how long capital is engaged and how long it takes to achieve a benefit),
- risk (the chance of deviations from the expected value of planned outlays and costs, benefits from the time of capital engagement, the length of the lifecycle of an investment).

In terms of what an investment concerns, there are two major types of investments: physical investments (tangible assets and intangible assets, but those that carry ownership rights – licenses, trademarks and patents) and financial (capital) investments – in financial and capital market instruments (Towarnicka 2000). On the basis of the general definition of an investment, physical investments of enterprises are risk-

carrying expenditures of an investor's funds (own and /or external) on creating and/or rebuilding of fixed tangible assets and currents assets in order to achieve expected benefits in the future. Physical investments are usually made with the view of long-term exploitation. Accordingly, managers have to manifest due diligence whilst planning investment outlays and the sources of their financing and they need to make projections for their financial and economic implications in the future.

The aim of this article is to present and compare the major sources of financing of physical investments in the corporate sector and to attempt to identify their determinants. The article uses the methodology of the net sources of financing proposed by Mayer.

The subject of the diagnosis is the corporate sector in Poland and Latvia in the years 2005–2015. The article presents the review of reference literature and the analysis was conducted based on the information from primary sources, that is, the national accounts of the two countries.

Methodology

The prerequisite for any investment, including a physical investment, is access to capital. Two sources can be indicated: equity capital and debt capital. Equity capital comprises funds at an enterprise's disposal contributed by its owners (e.g. retained profit, depreciation), whilst debt capital includes funds at an enterprise's disposal on a temporary basis provided by its creditors, for example, long-term bank loans, bonds and leasing (Sierpińska, Jachna 2004).

In order to compare two basic sources of finance for physical investments, the article applies the methodology of net sources of finance developed by Mayer (1988, 1990). Investments cause economic flows, creating economic value. Hence, it seems justified to ground research in financial flows. The methodology pioneered by Mayer applies the flows of funds, instead of their balances, correcting the gross sources of finance by their use in order to estimate a net contribution from banks, equity capital, commercial papers, trade credits and other instruments to the financing of the corporate sector (Suzuki, Cobham, 2005).

One of the universally available sources of data on the flow of funds in enterprises is the European System of National and Regional Accounts. It is used to estimate flows of funds to and from the domestic corporate sector as a whole (Corbett, Jenkinson, 1997). The European System of National and Regional Accounts (ESA 95) offers a coherent international methodological and accounting standard that can be used for in-depth analysis of an economy, its structure and links with other economies (Council Regulation (EC) No 2223/96 1.01). The strength of national accounting is the fact that the system is adjusted to market economy and verified in practice.

Figures used to estimate physical investments in the corporate sector were obtained from two accounts, out of four accounts recording the accumulation, that is, the capital account and the financial account, characterised briefly in Table 1.

Table 1. The capital and financial accounts (*Source:* own elaboration based on Samborski (2011) and Studia i analizy statystyczne (2016))

Specification	Characteristic
The capital account	It describes the changes in the value of non-financial assets held by institutional entities. The aim of the accumulation accounts is to present the process of capital transactions financing (i.e. investments and an increase in tangible working capital as well as acquisition and disposition of financial assets and liabilities). The capital account shows the acquisition of non-financial revenue and capital transfers for the capital transactions financing. On the revenue side (the sources) (the changes in liabilities and net worth) of the capital account are recorded as the net savings and capital transfers. The growth of non-financial assets and depreciation of fixed assets are recorded on the expenditures side (the uses) (i.e. the changes in assets) of the capital account. The balancing item of the capital account is the net lending

	(+) or the net borrowing (−).
The financial account	This account records the financial transactions of financial assets and liabilities that occur between institutional entities and between these entities and abroad. The assets changes side of this account records the acquisition of financial assets less their use, that is, the increase in financial claims, whereas the liabilities changes side and net worth records the incurrence of liabilities less their repayment, that is, the increase in financial obligations. As it has already been mentioned, the financial account does not have a balancing item, transferred to the next account; however, the net result of this account and the net incurrence of liabilities less the net acquisition of financial assets equal in values but with the opposite sign of the net receivables/payables – the item balancing the capital account.

The net result of the financial account (the net incurrence of liabilities less the net acquisition of financial assets) is equal in value but with the opposite sign, to the balancing item in the capital account (the net receivables/payables). This results from the fact that in a given period, the sources of finance in the corporate sector (revenues) are equal to their use (expenditure). Hence, based on the flow of funds account, it is possible to estimate the structure of financing in the corporate sector. We should remember that part of the funds raised by enterprises is contributed towards the accumulation of financial assets. In consequence, the identification of the sources of finance for physical investments involves subtracting the net acquisition of financial assets (an increase in financial claims) from the net incurrence of liabilities (an increase in financial obligations). The logic behind the estimation of the sources of finance for physical investments in the corporate sector is presented in Table 2.

Table 2. Flow of funds account (Source: own elaboration based on Samborski (2011))

'Net pay-off' method	
Gross revenues (Gross sources)	Gross expenditure (Gross uses)
1. Gross saving	9. Currency, deposits and loans
2. Loans	10. Shares and other equity
3. Shares and other equity	11. Securities other than shares
4. Securities other than shares	12. Other accounts (receivable/payable)
5. Other accounts (receivable/payable)	13. Capital transfers
6. Capital transfers	14. Other(insurance technical reserve)
7. Other (insurance technical reserve)	15. Gross capital formation
8. TOTAL REVENUES (TOTAL SOURCES)	16. TOTAL EXPENDITURE (TOTAL USES)
'Net balance' method	
Net sources	Net uses
Internal (1)	
Bank finance (2-9)	
New equity (3-10)	
Bonds (4-11)	
Trade credit (5-12)	
Capital transfers (6-13)	
Other (7-14)	

NET SOURCES (8-9-10-11-12-13-14)	PHYSICAL INVESTMENT (15)
Internal = gross savings; bank finance = short-term loans+ long-term loans; bonds = securities other than shares; shares = shares and other equity; other accounts receivable/payable = trade credits and advance payments + other receivable and payables except for trade credits and advance payments; other = technical and insurance reserves; currency and deposits = currency and deposits + short-term loans + long-term loans; physical investment = gross capital formation = gross fixed capital formation + changes in inventories + changes in valuables	

Following the logic presented in Table 2, we can determine the significance of different sources of finance used in financing physical investments in the corporate sector within a given period of time. This procedure, however, does not show how specific investment projects are financed in particular enterprises.

Diagnosis of the condition of non-financial corporations in Poland and Latvia. The evaluation of the economic condition and investment processes in Poland's and Latvia's corporate sectors was conducted based on the selected macro-economic indicators classified by Eurostat as key indicators (Table 3).

Table 3. Key indicators of non-financial corporations in Poland and Latvia, 2005–2015 (Source: own elaboration based on Eurostat Database (2017))

Specification	Year										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
POLAND											
Investment rate (%)	23.24	24.89	27.61	27.68	23.87	21.16	21.84	21.67	21.55	22.10	22.59
Profit share (%)	48.53	49.30	47.79	46.10	50.33	49.43	49.95	50.09	50.39	50.25	51.78
Gross return on capital employed before taxes (%)	26.04	25.54	22.97	25.08	27.61	27.68	30.34	28.87	28.09	28.03	30.53
Net debt to income ratio after taxes (%)	151.45	138.62	178.67	237.30	161.83	134.89	151.12	175.81	177.91	180.61	166.77
Net return on equity after taxes (%)	13.57	14.33	12.04	15.07	18.54	20.58	25.39	22.95	22.55	24.02	26.57
LATVIA											
Investment rate (%)	36.74	38.55	40.06	35.18	24.84	19.62	23.72	28.22	26.49	24.60	25.35
Profit share (%)	51.43	47.59	44.38	41.21	46.32	50.30	53.67	52.49	50.97	48.20	45.94
Gross return on capital employed before taxes (%)	40.36	31.77	28.26	25.33	26.29	27.32	30.89	31.72	30.62	27.76	:
Net debt to income ratio after taxes (%)	181.21	278.70	344.44	599.31	488.34	439.08	321.30	268.98	246.11	302.59	:
Net return on equity after taxes (%)	44.30	31.55	26.97	18.08	26.23	27.62	35.89	29.39	27.13	24.44	22.92
: not available											

The gross investment rate of non-financial corporations is defined as gross fixed capital formation divided by gross value added. This ratio relates the investment of non-financial businesses in fixed assets (buildings, machinery etc.) to the value added created during the production process. The gross investment rate in Poland's corporate sector in the years 2005–2015, except for 2010, remained significantly below the values observed in the Latvian economy in the same period. The average share of gross expenditure on

fixed assets in gross value added stood at 23.4%. In the years 2005–2008, there was a growing trend concerning in this area, which peaked at 27.68% in 2008. The consequence of the global financial crisis was a drop in 2009 – to 23.87%, the lowest value, however, was reported in 2013 – at 21.55%. In Latvia, the years 2005–2007 saw a steady growth in the investment rate, reaching the peak of 40.06% in 2007, only to fall to 24–25% in the years 2008–2015. The lowest value was reported in 2009 – 19.62%, considerably lower than the average (29.40%) in the country in the researched period of time.

The profit share of non-financial corporations is defined as gross operating surplus divided by gross value added. This profitability-type indicator shows the share of the value added created during the production process remunerating capital. In the years 2005–2015, the Polish sector of non-financial corporations reported a slightly higher value of the operational surplus share in gross value added, which was 49.54% compared to that of Latvia, which stood at 48.41%. In Latvia, the indicator was volatile, whilst in Poland, it grew steadily starting in 2011.

A gross return on capital employed, before taxes, of non-financial corporations is defined as a gross operating surplus divided by major financial liabilities. The latter include currency and deposits, debt securities loans and equity and investment fund shares/units. The indicator is a measure of the effectiveness of capital allocation in an economy. In 2005–2015, Poland had an average share of a gross operating surplus in net financial liabilities at the level of 27.34%. In the subsequent years, the indicator stayed high, exceeding 30% in the years 2011 and 2015, which indicates the improvement in capital allocation in the corporate sector in Poland. In Latvia, the average rate of the indicator in 2005–2015 was 30.03%, with the peak of 40.36% reported in 2005 and the trough of 25.33% in 2008. In the years 2009–2012, the indicator grew steadily to reach 31.72%, only to fall to 27.76% in 2014. The volatility of the indicator reveals the problems that Latvian corporation had with effective capital allocation.

A net debt-to-income ratio, after taxes, of non-financial corporations is defined as main financial liabilities divided by net entrepreneurial income less current taxes on income and wealth. Main financial liabilities include currency and deposits, debt securities and loans. The indicator shows the ability (or inability) of the corporate sector to pay its current obligations from operating activity. In 2005–2015, the net debt-to-income ratio, after taxes, was very volatile in Polish non-financial corporations. From 2010 to 2014, it grew substantially from 134.98% to 180.61%, which means a deterioration in the capacity of the corporate sector to pay current obligations from operating activity. The situation improved in 2015 when the ratio fell to 166.77%, which is still relatively higher than that in 2010. In Latvian corporations, in turn, the ration increased in the years 2006–2008, reaching the peak at 599.31%, only to fall gradually to 246.11% in 2013, which was the lowest level in the researched period. It recovered in 2014 when it increased to 302.59%.

A net return on equity, after taxes, of non-financial corporations is defined as net entrepreneurial income less current taxes on income and wealth divided by equity and investment fund shares/units, liabilities. In 2005 and 2006, the Polish corporate sector had a net return on equity, after taxes, of approximately 14%. It fell to the lowest value of 12.04% in 2007, whilst from 2008, it started to grow to reach 26.57% in 2015. This means the improved effectiveness of equity capital allocation in the corporate sector. In Latvia's corporate sector, the years 2005–2008 saw a steady decrease in a net return on equity, after taxes, from 44.30% to 18.08%, the lowest value in the researched period. In 2009–2011, the ratio gradually increased to reach 35.89%, only to fall again over the subsequent years to 22.92% in 2015.

Results

In the years 2005–2015, significant changes occurred in the ways of financing physical investments in the sector of non-financial corporations operating in Latvia (Table 4).

Table 4. Sources of financing of physical investments in Polish and Latvian non-financial corporations, 2005–2015 (Source: own elaboration based on Eurostat Database)

Specification	Year										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
POLAND											
Internal (%)	121.81	110.37	85.04	102.53	146.68	143.86	138.18	141.03	157.87	142.77	151.63
Bank finance (%)	−9.29	17.00	18.14	48.73	−9.50	−16.65	18.79	27.23	4.26	5.24	2.77
New equity (%)	9.43	22.21	34.48	−12.20	7.34	−16.41	−13.14	19.98	8.14	0.00	−8.44
Bonds (%)	−3.26	−5.22	6.88	−1.06	−1.24	3.23	12.37	8.81	4.94	8.56	1.60
Trade credit (%)	−1.50	−16.24	14.27	3.52	0.00	0.00	5.62	−12.12	0.00	−2.21	8.96
Capital transfers (%)	5.43	7.04	4.77	6.27	11.07	5.98	5.47	9.61	11.39	6.98	13.63
Other (%)	0.00	−0.01	−0.01	−0.01	−0.01	−1.32	−1.27	−0.01	−1.29	−1.10	−0.01
LATVIA											
Internal (%)	64.61	41.18	44.27	48.94	161.77	175.61	130.90	122.10	125.12	136.82	133.18
Bank finance (%)	34.41	53.19	47.82	35.45	−22.12	−11.60	16.40	−25.82	−5.82	−58.98	6.82
New equity (%)	0.00	8.36	−16.18	−4.76	−3.02	9.96	70.22	−41.17	11.53	12.75	18.94
Bonds (%)	2.38	0.00	−0.01	−1.65	−0.01	−4.71	−2.31	1.80	2.72	3.60	1.06
Trade credit (%)	21.64	12.28	24.89	9.50	29.34	−10.56	−2.46	−6.62	−45.15	61.65	−16.44
Capital transfers (%)	4.23	4.62	4.51	2.74	16.91	24.57	9.59	9.23	7.11	13.73	8.67
Other (%)	−0.01	0.00	−0.01	0.00	−0.01	0.00	0.00	0.00	0.00	1.01	0.00

In 2005–2008, internal financing remained on a relatively low level, ranging from 41% to 64%, only to rise significantly, starting in 2009, exceeding the level of 100%. Internal financing was the highest in 2009 – at 161.7% – and in 2010 – at 175.61%. Also in the subsequent years, 2011–2015, physical investments of Latvian non-financial corporations were predominantly financed from interval sources.

In Latvia, the way of financing physical investments is strongly correlated with the country's economic situation. In the economy of Latvia, one of the Baltic tigers, three periods can be differentiated: the economic boom (2004–2007), the economic downturn (2008–2010) and the economic recovery (after 2011), which is illustrated by the data in Table 3.

Latvia's economic boom was characterised with a high economic growth rate stemming mainly from strong domestic demand. In 2005–2008, Latvian corporations financed their physical investments from a variety of sources – both internal and external. The use of corporations' own capital was supported with bank loans. This was facilitated by the modern, restructured banking system developed with the involvement from foreign banks, Scandinavian in particular, and German capital. In late 2007, Latvia had 31 banks, including foreign subsidiaries. In 2005–2007, there was an increase in an annual inflation rate – from 6.2% to 10.1% – which contributed to the depreciation of the Latvian lats. In consequence, price competitiveness decreased and costs went up. At the same time, real interest rates remained relatively low, which translated into growing debt in both households and corporations. It should be emphasised that the majority of loans were granted in foreign currencies. Latvia, the fastest growing economy in Europe, until then started to feel the coming economic crisis, still unaware that it would strike the hardest blow to the economic growth in the EU member states (Gostomski 2014).

In 2008–2010, Latvia, similar to many other countries, was affected by an economic downturn caused by the global financial crisis. In 2009, its GDP fell to an all-time low – 14.3% down on the previous year – and the unemployment rate increased to almost 20%. This was mainly caused by a fall in investment expenditure and a decrease in consumer consumption. Latvian banks reduced borrowing to both corporate

and individual customers, which led to a fall in internal demand. It should be noted that in 2008, one of the largest Latvian banks – Parex Banka – faced a massive bank run and the withdrawn deposits were exchanged into foreign currencies. This state of affairs was attributed to the operations of the Swedish government, which offered substantial bailouts to its banks, also the ones present on the Latvian market. As a result, many customers of Parex Banka chose to transfer their deposits to those banks. Only thanks to the assistance from the Latvian government, which bailed out the bank in return for an 85% stake, Parex avoided bankruptcy (Gostomski 2014, Havemann 2010).

From 2009, it could be observed that more loans were paid back rather than taken out by corporations. The weakness of the economy caused enormous payment backlogs, making it impossible to support the financing of corporate operations in Latvia with trade credit.

As a result of the outflow of foreign capital, Latvia had to resort to applying for international assistance, comprising funds acquired from the European Union, the *International Monetary Fund*, Nordic countries (Denmark, Estonia, Finland, Norway and Sweden), World Bank and the Bank for Reconstruction and Development. Aid was granted on condition that Latvian authorities agreed to implement rigorous austerity and corrective measures. In late 2008, the government adopted the Economic Stabilisation and Growth Revival Programme, which aimed to strengthen the financial sector, reduce fiscal imbalance and maintain the lats exchange rate within ERM II. The reforms and outside financial aid contributed to the recovery of the Latvian economy from the crisis, whilst from 2011, the major macroeconomic indicators started to improve. Another effect of the reforms was also Latvia's accession to the euro zone in 2014 (National Bank of Poland 2014).

The signs of recovery in the Latvian economy did not fully translate into the ways of financing physical investments of non-financial corporations. On the basis of the data presented in Table 4, it can be concluded that managers, who remembered the experiences of the economic crisis, preferred to use internal capital, whilst manifesting reluctance to acquire capital from other sources of financing. Payment backlogs and poor use of corporate bonds are still a problem in Latvia. Moreover, the shallow stock market in the country fails to play an important role in raising funds to finance investments, despite the occurrence of single events, for example, a rapid growth in the share price of the logistics company Ventspils Nafta (by nearly 200% within several days in September 2015), following the announcement by the fuel concern Vitol informing about the acquisition of a 93% stake in Ventspils Nafta for USD 80 billion.

Figure 1 presents the shares of internal financing and bank financing (as the second most important source of finance for physical investment) in the sector of non-financial corporations against the gross investment rate in Latvia's economy in the years 2005–2015.
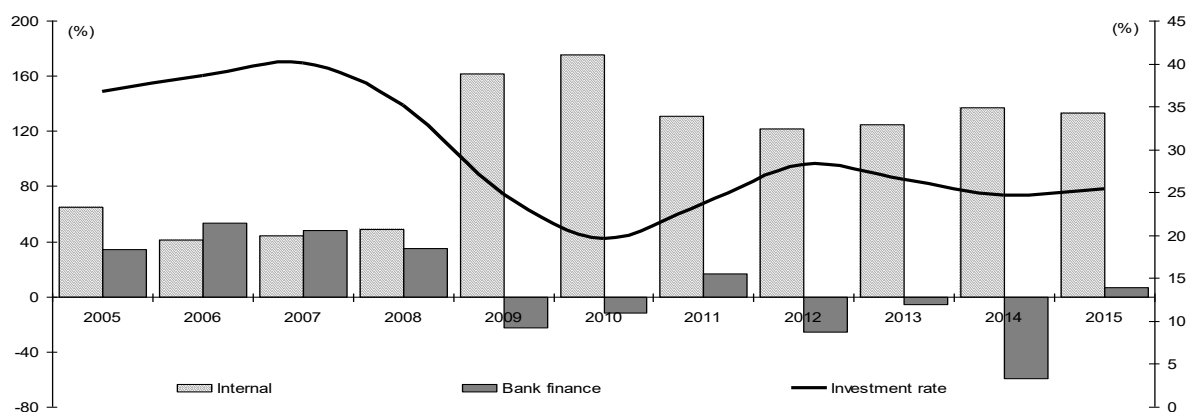
Fig. 1. Investment rate, internal and bank finance of Latvian non-financial corporations, 2005–2015
(Source: own elaboration based on the Eurostat Database)

Whilst discussing the situation in the Polish economy, it can be assumed that it went through the stages similar to the Latvian economy, that is, a growth stage, a slowdown stage and an economic recovery after 2011. Poland, similar to Latvia, struggled with the consequences of the world crisis in 2009, but in the case of Latvia, a term often used is the overheating of the economy, whereas Poland went through the economic downturn more gently.

On the basis of the data presented in Table 4, it can be stated that Poland's sector of non-financial corporations also tends to use internal financing more frequently than bank loans. In the researched period, only in 2007, this value went below 100%. In the other years, however, it exceeded 100%, with a significant growth occurring after 2008 and lasting until 2015. It is worth to note that in the analysed period, the corporate sector experienced a considerable reduction in the gross investment rate. Weaker investment activity in the corporate sector was accompanied by a significant improvement in its performance. As a consequence, the period of the intensive restructuring of Poland's economy was followed by an increase in the share of internal financing sources in the structure of financing physical investments. Figure 2 shows the use of internal and bank financing of physical investments in Poland's sector of non-financial corporations against the investment rate.
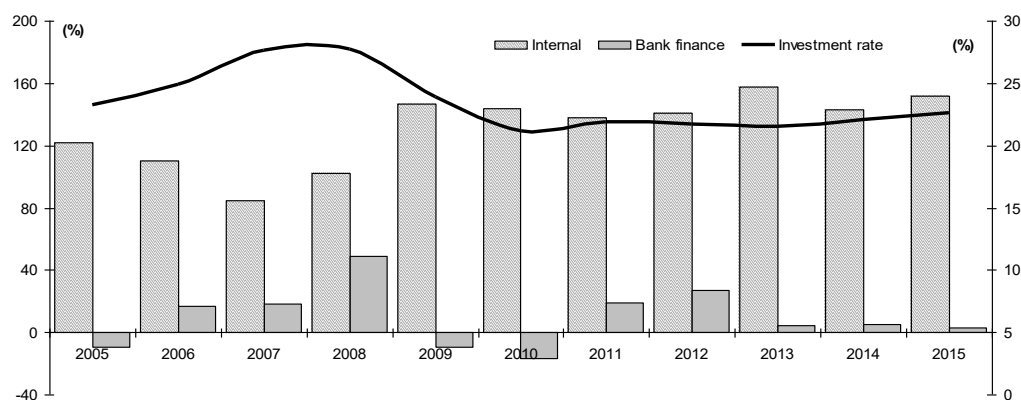
Fig. 2. Investment rate, internal and bank finance of Polish non-financial corporations, 2005–2015
(Source: own elaboration based on the Eurostat Database)

The Polish economy is dominated by small- and medium-sized enterprises, which by nature should support their growth with bank finance. Yet, in 2005 and 2009–2010, Polish businesses paid back more loans than they took out. It is estimated that approximately 20% of enterprises in Poland have not taken any loans for their entire period of operation. The data lead to a conclusion that a large number of enterprises operate – out of choice or necessity – without financing provided by bank loans. The survey conducted by the National Bank of Poland (Poland's central bank) revealed that the main reasons why enterprises were not interested in bank financing were their own sufficient resources and the use of non-bank finance. This means that financial security is more important for enterprises than the opportunity to take advantage of high positive leverage. More specific reasons for adopting the attitude of a discouraged borrower towards the possibility of obtaining a bank loan to support the growth of an enterprise can be identified as uncreditworthiness, high costs of a loan and unfavourable repayment conditions, a mismatch between a bank offer and the needs of an enterprise, overly complex procedures, the reluctance of enterprises to reveal their documentation, concerns related to credit terms, market uncertainty, bad experiences of cooperation with a bank and fear of the rejection of an application (Sawicka, Tymoczko, 2014).

In Poland, as in many other countries in the wake of the 2008 crisis, the banking sector attempted to implement favourable loan policies for enterprises by introducing low margins and applying more lenient risk assessment in particular sectors. Special programmes were pursued, aiming to encourage the use of bank finance, especially by the small- and medium-sized enterprise sector. In 2013, Poland's government launched a programme of guarantees, *de minimis*, targeting the SMS sector. Its main goals were (Sawicka,

Tymoczko, 2014)

- offering loans to banks so that they can provide borrowing to enterprises,
- introducing a system of guarantees for enterprises applying for loans whilst not having collateral,
- giving access to interest-free funds by the central bank to domestic banks in order to support borrowing targeted at small- and medium-sized enterprises,
- grating loans with reduced interest repayment to small- and medium-sized enterprises.

According to the representatives of banks, the programme of guarantees has helped to reach many enterprises that would not be granted a bank loan on commercial terms, which contributes to reduced borrowing discouragement, especially amongst small- and medium-sized businesses.

Considering the remaining sources of finance for physical investments, it should be stated that in Poland, capital acquisition from the stock exchange through the issuing of a corporation's shares plays a more important role than bond issues. Significant factors determining the volume of capital acquired through the issuing of securities on the stock exchange are the climate on the stock exchange and the size of investments planned by corporations. It should be added that Poland has an alternative to the issuing of bonds, which is – in addition to bank finance – the OTC corporate bond market, run by banks. Moreover, Poland's bond market is still relatively young, has limited liquidity and carries significant risk for investors.

The use of trade credit in supporting the growth of the corporate sector in Poland is stronger than that in Latvia, which does not mean that Polish corporations did not experience payment backlogs, the severity of which intensified in the years 2005–2006, 2012 and 2014.

Conclusions

The choice of the suitable source of capital used to finance investment is one of the crucial problems faced by corporations, especially that they can use a variety of ways of capital acquisition, depending on their needs and capabilities (share and bond issues, commercial papers, bank loans). According to Meyer (1984) and his concept of the hierarchy of sources of finance, investment projects are first financed from internal and then from external sources.

The comparative study on the ways of financing physical investments in Poland's and Latvia's sectors of non-financial corporations confirms this theory. It should be additionally pointed out that the diversification (or its absence) of sources of financing growth depends, *inter alia*, on the differences between the economies in macroeconomic terms, the characteristics of a market financial system and factors typical of a given market (e.g. cost of capital), legal regulations, alternative methods of capital acquisition and their accessibility, including the role of a stock exchange, as sources of raising capital. Taking all these factors into account, it can be stated that:

- A macroeconomic situation, before, during and after the world crisis, significantly affected the way of financing physical investments by corporations in the two countries.
- Both Polish and Latvian corporations prefer financing based on internal sources. On the one hand, this was caused by limited investment activity during the crisis, which contributed to the accumulation of internal capital; on the other hand, internal capital is a safer source of finance.
- The reluctance of corporations to use bank finance was triggered by the condition of the banking sector and the terms of loan provision.
- Both Polish and Latvian corporations, in a limited scope, finance physical investments through the stock or bond market.
- Trade credit, which is not a primary source of financing investment, also did not play a positive role. The threat that in the Latvian corporate sector, long-term payment backlogs may contribute to many bankruptcies exists.

Putting aside the size of the countries, the number of corporations and the share of particular sectors in the growth of the national economies, it should be stated that what the countries have in common is the fact

that both Poland and Latvia have been in transition towards market economy since the early 1990s. The corporations in the two countries face new prospects of financing their growth. There are grounds for optimism as recent years have seen the activity of the banking sector aiming to stimulate borrowing amongst corporations. Additionally, the EU membership of the two countries gives them more opportunity with respect to the freedom of capital flows. Finally, initiatives pursuing the strengthening of the stock exchanges as the markets for acquiring funds for investment activity also play a significant role.

References

Corbett J., Jenkinson T. (1997). How is investment financed? A study of Germany, Japan, the United Kingdom and the United States. The Manchester School Supplement, Oxford: Blackwell Publishers Ltd., pp. 69-93.

EUROSTAT DATEBASE: Key indicators by country, [Accessed March 2017]. Available from Internet: http://epp.eurostat.ec.europa.eu/portal/page/portal/sector_accounts/data/annual_dat

Gostomski E. (2014). *Łotwy droga do strefy euro,* Prace naukowe Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu.

Havemann J. (2010). The Great Recession of 2008–09: Year In Review 2009. [Accessed March 2017]. Available from Internet: https://www.britannica.com

Jajuga, T., Słoński T. (1998). *Finanse spółek. Długoterminowe decyzje inwestycyjne i finansowe.* Wrocław: Wydawnictwo Akademii Ekonomicznej im. Oskara Langego we Wrocławiu.

Meyer S. (1984). The capital structure puzzle, „*Journal of Finance*" 1984, No. 39, pp. 575–592.

Mayer C. (1998). New issues in corporate finance. "*European Economic Review*" , No. 32 (5), pp. 1169-1189

Mayer C. (1990). Financial systems, corporate finance and economic development. [in:] R. Hubbard (ed.), Asymmetric information, corporate finance and investment. *National Bureau of Economic Research*, New York, pp. 307-331.

NBP (2014). *Przygotowania Łotwy do członkostwa w strefie euro i pierwsze doświadczenia związane z wprowadzeniem wspólnej waluty*, Warszawa: Narodowy Bank Polski. [Accessed March 2017]. Available from Internet: https://www.nbp.pl/cie/download/Ksiazka_Lotwawstrefieeuro_2014-PK_v2.9.pdf

Ostrowska E. (1999). *Ryzyko inwestycyjne*, Gdańsk: Wydawnictwo Uniwersytetu Gdańskiego.

Pastusiak, R. (2010). *Ocena Efektywności Inwestycji*. Warszawa: Wydawnictwo CeDeWu.

Rogowski W. (2013). Rachunek efektywności inwestycji. Warszawa: Wolters Kluwer.

Rozporządzenie Rady (WE) Nr 2223/96, 1.01 (1996). [Accessed March 2017]. Available from Internet: *http://ec.europa.eu/enlargement/ccvista/pl/31996r2223-pl.doc*

Samborski A. (2011). *Wykorzystanie rachunków narodowych w analizach ekonomicznych*. [w:] W. Czakon (red.), Podstawy metodologii badań w naukach o zarządzaniu, Warszawa: Oficyna Wolters Kluwer business.

Sawicka A., Tymoczko I. (2014). *Dlaczego polskie przedsiębiorstwa nie korzystają z kredytu?* Warszawa: Instytut Ekonomiczny Narodowego Banku Polskiego, pp. 29 and further.

Studia i analizy statystyczne (2016). *Rachunki narodowe według sektorów i podsektorów instytucjonalnych w latach 2011-2014*. Warszawa: Wydawnictwo Głównego Urzędu Statystycznego, p. 9. [Accessed March 2017]. Available from Internet: http://stat.gov.pl/obszary-tematyczne/rachunki-narodowe/roczne-rachunki-narodowe

Suzuki K., Cobham D. (2005). *Recent trends in the sources of finance for Japanese firms: has Japan become a 'high internal finance' country.* Scotland: Discussion Paper Series, No. 0501, University of St Andrews, p. 1.

Towarnicka H. (2000). *Strategia inwestycyjna przedsiębiorstwa*, Wrocław: Wydawnictwo Akademii Ekonomicznej we Wrocławiu.

Wypych, M. (ed.). (2007). *Finanse przedsiębiorstwa z elementami zarządzania i analizy*. Łódź: Wydawca: Absolwent Sp. z o.o.

PROBLEMS OF 14–18 YEARS OLD YOUTH AND THE TRENDS OF ORGANISATION OF PREVENTION ACTIVITIES: LITHUANIAN CASE

Sandra Valantiejienė

Mykolas Romeris University, Lithuania, valantiejiene@gmail.com

Abstract. The World Health Organization (since 1998) recognises that many modern diseases and disorders (including social problems) are caused by risky behaviour. Youth risky behaviour is generally defined as a behaviour that directly or indirectly threatens the young person's well-being and health. This is usually understood as smoking, abuse of alcohol and psychoactive substances and early initiated and unprotected sexual relations. However, the risky behaviour also includes basic things such as the failure to comply with diet regimen, sedentary lifestyle, not wearing the safety belt in the car and failure to wear a helmet whilst cycling or rollerblading. Adolescence itself is a risky span of the human life, as it is associated with moving from childhood into the adult world and intensive search for the personal identity. To ensure a consistent development of personality, adolescent risky behaviour prevention include harmonisation of education processes to help teenagers to develop responsible behaviour skills by reducing the risk factors and increasing protective factors. The article aims to overview the factors that influence youth risky behaviour and the factors that determine the planning and organisation of preventive activities for the pupils in the higher classes of the schools of general education. The study was completed in the form of a questionnaire that was conducted in the schools of the Lithuanian Republic in 2016. The results of the study describe trends of the prevention policies applied in the system of education, considering the national context of the individual Member States of the European Union.

Keywords: youth risky behaviour; adolescence; prevention of risky behaviour; schools of general education.

JEL Classification: I21; I28; I29.

Introduction

Recently, in the world and in Lithuania, much attention is paid to the research on adolescent behaviour and the implementation of prevention activities in general education schools. The term 'prevention' (Lat. praevenire – preventing) is generally understood as an activity for controlling certain negative phenomena in human and society life or to reduce their potential effects (Dictionary of International Words 2000).

In the sphere of social relations, prevention is defined as a certain social policy and social activity that is used to reduce specific and predictable problems of society, protect public welfare and develop desirable forms of person's behaviour (Valantiejiene et al. 2010). The theoretical and practical analysis of preventive activities is particularly important for the science of education because the value system of children as participants in the educational system is very fragile and quickly affected (Bankauskienė 2013). Thus, the negative factors and the risky behaviour influenced by the negative factors especially harm young people and children because the system of their values is still not formed. In addition, the formation of the education system is significantly impacted by economic changes, the growing popularity of new media and other factors that are known to have negative social effects. To control these negative effects, children need to be taught skills of decision-making, motivation, flexibility and self-control to effectively manage their life (Lopes, Solovey 2004; Sklad et al. 2012; Farmer et al. 2013). Therefore, protection against negative social phenomena such as violence, bullying, alcohol, drugs, tobacco, suicide and non-attendance of school greatly contributes to the development of students' learning environment that supports safe and healthy lifestyle (Reeves, Kanan, Plog 2010) and reduction of risky behaviour amongst adolescents. The specified circumstances determine the relevance of chosen theme and its practical significance in the context of the science of education (educology/pedagogics).

It is also important that the provisions of the legislation enacted by the United Nations, the European

Union and the Republic of Lithuania (e.g. Law on Education of the Republic of Lithuania, 2016) emphasise that a safe school environment is the most important factor for the implementation of general prevention oriented to all children. The implementation of systematic prevention activities in schools of general education reduces aggressive behaviour and probability of psychoactive substance abuse; improves children's mental health, their academic achievements and the microclimate in the classroom; and develops the behaviour that is accepted in society. For this purpose, certain preventive programmes are also implemented in Lithuanian general education schools. The preventive programme as the systematically implemented activity that is structured and formalised according to pre-defined model can be named as one of the most effective forms of preventive activities to help achieve the desired results. Over the past 10 years, much attention has been paid to prevention programmes in the Lithuanian general education schools. The aim of this study is to determine the prevalence of risky behaviour characteristics of 14- to 18-year olds and to compare them with the preventive measures used in general education schools. To achieve this aim, the following objectives were formulated in this article: (1) to analyse the general theoretical components of adolescent risky behaviour, (2) to investigate the characteristics of prevalence of risky behaviour amongst 14- to 18-year-old Lithuanian pupils and (3) to determine the selected preventive activities for the reduction of adolescent risk behaviour in general education schools of Lithuania. The problematic research question was chosen: how risky teen behaviour responds to selected preventive activities in general education schools?

Quantitative research methods were selected to analyse the problematic question of the study. Quantitative analysis was used to carry out the risky behaviour assessment questionnaire survey of young people (Youth Risk Behavior Survey 2017). The obtained data was compared with the survey of Lithuanian general education schools on the implementation of prevention programmes in general education schools in the 2015–2016 academic year (see Auškelis et al. 2016), and the results of the comparison are the basis for the conclusions of the article.

Literature Review

Risky behaviour of adolescents. The World Health Organization recognises that many diseases and disorders are caused by risky behaviour. The risky behaviour in literature is defined as behaviour that directly or indirectly harms the young person's well-being, health and even the progress of life (Jessore 1998, Irish 2011; Whitesell et al. 2013), the investigators of the United States (e.g. Eaton et al. 2012) describe the deleterious behaviour as risky behaviour, which is attributed to the forms of behaviour that are the main causes of morbidity and mortality. In addition, six types of health-risk behaviours are listed: (1) unsafe behaviour (not wearing a helmet whilst cycling, not wearing the safety belt in the car, travelling with intoxicated drivers, carrying of weapons and so on.), (2) smoking, (3) using alcohol and other psychoactive substances, (4) sexual behaviour, (5) an unhealthy diet and (6) physical inactivity. Risky behaviour often starts at a very early age and forms in adolescence (Costa 2008). Adolescence itself is a risky stage of the human life. During the stage of adolescence, teenagers intensely search their personal identity and move from childhood into the adult world, so they often plunge into the extremes, they often face a variety of objections, the desire to take risks (Dowell, Burgess, Cavanaugh 2009). Besides, during adolescence, such risk factors occur that could easily lead to further long-lasting changes in the behaviour of adolescents (Pickett et al. 2002).

In recent years, there were more and more discussions about the risky behaviour of young people in Lithuania. According to the results of a study of Pupils health and lifestyle (Healthy Behaviour of School Children), the prevalence of risk behaviour amongst young people is so large that the existence of an epidemic of risk behaviour can be stated (Starkuviene, Zaborskis 2005). The behaviour that is harmful to the health is the cause of diseases and deaths; therefore, it is important to implement the prevention of such behaviour in childhood and especially in adolescence (Keeler, Kaiser 2010). Socio-demographic factors make a huge influence on adolescent risky behaviour as well, and the researchers confirm that the risky behaviour is very related to two factors – age and gender (Costello et al. 2008; Olsson et al. 2008; Ruangkanchanasetr et al. 2005). Scientific studies also confirm that the riskiest types of behaviour are

more common for boys than for girls (Eaton et al. 2012; Sychareun, Thomsen, Faxelid 2011; Starkuviene, Zaborskis 2005). It also states that the risky behaviour is characteristic which is especially prevalent in the stage of adolescence (Pickett et al. 2002; Feldstein, Miller 2006). Other scientists emphasise the connection of risky behaviour not only with morbidity and mortality but also with all the personal development and well-being (Guzman, Bosch 2007). Risky behaviours can influence that a young person will not be able to finish school or will have enough free time with to spend with his or her peers. The reason for this might be the consequences of various risky behaviours – teenage pregnancy determined by unprotected sex, living in the rehabilitation community because of the drug use, long medical treatment after the injury and so on (Duberstein et al. 2000).

In addition, adolescence as a biological phenomenon begins with the sexual maturation. This is one of the most important periods in the development of health. The behavioural and lifestyle characteristics and approach to health in this period often determines the quality of life in the future (Kardelis et al. 2001). Many scientists in Lithuania and other foreign countries have analysed adolescent problems and approaches of teenagers to their body during adolescence (Erikson 2004; Lenhart 2009). They identified the developmental stages of adolescence, its influence on the formation of personality, understanding and formation of the image of adolescences' own body. For example, Sakalauskaite and Tutkuviene (2009) argued that the image of the perfect body usually is more important for women than for men, that's why to most girls, especially during adolescence, their appearance is very important. However, striving to reach the ideal of the perfect body, teenagers often break the principles of a healthy diet, which results in states such as bulimia, anorexia nervosa and obesity. Research has shown that in other countries and in Lithuania, eating disorders are common amongst women and girls (ratio between boys and girls is 1:20 (Gaigalaite 2007)). It should be emphasised that healthy behaviour habits that formed in adolescence can affect the rest of former adolescences life (Norkus 2012).

Keeler and Kaiser (2010) distinguish three main components of risky behaviour: risk and protective factors, risky behaviour itself and its consequences to the health. The authors investigated the risk and protective factors and the importance of risky behaviour. According to them, protective factors increase the possibility to engage in risky behaviour. Protective factors also have a significant impact on risky teen behaviour. Adolescents who have more friends in their own environment (in school and outside of school) are more satisfied with their lives in the environment where they feel more confident and are getting involved in less risky behaviours (Bulotaite 2009; Livingstone, Helsper 2008; Wasserman et al., 2003). Teenagers whose relationship with their parents and peers are not strong will likely consume more alcohol, smoke or will use unsafe search possibilities in online communication (Christofidis et al. 2012). Whilst analysing the risky adolescent behaviour problems, more and more authors are focusing on adolescent behaviour in social networks (Christofidis et al. 2012; Kolpakov et al., 2012; Guan, Subrahmanyam 2009; Lenhart 2009). An important factor that limits the risky behaviours of young people is a feeling of safety at school. The sense of security is one of the main requirements to ensure a consistent development of personality (Milam, 2010; American Psychological Association Zero Tolerance Task Force 2008, Astor et al. 2009).

The main goal of preventive activities in the school of general education is strengthening protective factors for teenagers. It is also an important measure to prevent risky behaviour. Various ways are being researched to reduce the risk factors to stop this behaviour. Many types of prevention of risky behaviour in Lithuanian general education schools are included in the implementation of preventive activities at schools, such as smoking, alcohol and drug abuse prevention actions; preventive activities on stopping suicidal behaviour or violence; and so on. It is expected that these preventive programmes and activities will provide information to the person about the consequences of the negative, harmful behaviour and will help to develop social skills that will affect a teenager's decision to abandon risky behaviour and choose a safer behaviour (Green et al. 2000; Branstrom et al.; June 2007; Lopes, Solovey 2004; Sklad et al., 2012; Farmer et al. 2013).

Preventive activities in Lithuanian general education schools. The start of preventive activities in Lithuanian schools can be traced back to 1999 when the Government of the Republic of Lithuania

approved the National Drug Control and Drug Prevention Programme for 1999–2003, which was the basis of the state-wide initiation of organisation of systematic preventive measures in general education schools, such as analysing existing instruments and resources, setting up various commissions on the organisation of preventive actions, publishing of methodical literature, ensuring of teachers' professional development in this field, professional involvement into the international studies on drug use in European schools (the European School Survey Project on Alcohol and Other Drugs; ESPAD), initiatives to fund prevention activities in general educational schools and implementing the competitions to gain additional funding for preventive activities (Valantiejiene et. al. 2010, Bankauskiene 2014). In later periods, a lot of different types of legislation sources were enacted, which formed the basis for preventive actions in the education system and which were aimed to prevent the use of alcohol, tobacco and other psychoactive substances; to pre-empt suicides; to pre-empt the prevalence of HIV/AIDS as well as to preclude violence and legal offenses. These activities were related to the strategic priorities at the state level in the field of preventive actions: to make prevention work more as school's daily routine in formal and non-formal education; analyse the causes of students' risky behaviour, promote the development of targeted prevention programs and apply them as needed; to ensure the quality of targeted prevention programmes. During this period, the preventive action planning and their implementation practices have changed several times. The development of a safe environment for school, the self-education of mature personality and academic achievement issues were also analysed at the national level (The National Centre for Special Needs Education and Psychology 2016). In 2016, the decisions were made on the legislative level concerning the implementation of mandatory preventive programmes in schools for the 2017–2018 school year. Besides, para. 11 of Article 43 of the Law of Education of the Republic of Lithuania (2011) has established that every educational institution must allow each student (pupil) to take part in at least one coherent, long-term, preventive programme where social and emotional competencies are developed on the regular basis, including programmes on the prevention of violence, use of alcohol, tobacco and other psychoactive substances and promotion of health and other types of programmes approved by the recommendations of the Minister of Education. These provisions also require the leaders of all schools to carry out prevention programmes. Accordingly, at this stage, the issue of quality of prevention programmes becomes very important as well as responsible decisions of school heads when choosing them, whilst Committee of the child welfare has an important role as an advisory body in each school of general education. In conclusion, it can be stated that various authors define risky behaviour of young people as a behaviour that directly or indirectly endangers the well-being of a young person. Mostly, this behaviour occurs in adolescence when the search of personal identity starts. The researches carried out by other authors also confirm that the riskiest types of behaviour are more common for boys than for girls. Therefore, when working with adolescents, it is necessary to strengthen the protective factors and reduce the risk factors. Whilst strengthening the protective factors, the most effective preventive measure is the implementation of prevention programmes, and therefore, their practical implementation in Lithuania (based on the conducted quantitative research/empirical study) is presented in other sections of this article.

Methodology

The stages of the empirical study. To assess the identified problems on a practical level, a quantitative study was conducted in two stages. The use of assessment questionnaire about risky behaviour of young people was selected in the first phase of the quantitative investigation (Youth Risky Behavior Survey 2017). This questionnaire was designed to determine the prevalence of risky behaviour between pupils. The 11 groups of questions were identified and used in the questionnaire according to the recommendations provided by authors such as Eaton et al. (2011). Therefore, the questionnaire consisted of questions about the personal safety; about carrying of the weapons, about bullying, about attempts to commit suicide and tobacco use; about the electronic cigarette smoking, alcohol consumption and smoking of marijuana; about using of other psychoactive substances; about sexual relations; and about body weight, eating breakfast and physical activity. According to the results of other conducted studies in Lithuania (such as European School Survey Project on Alcohol and Other Drugs (ESPAD)), a block of questions about the use of other psychoactive substances (except marijuana) has been removed from the

questionnaire because the data of the ESPAD study has shown the low consumption of such psychoactive substances in Lithuania. Additionally, the group of questions related to carrying guns (weapons) to school was removed. We should note that the surveys about youth risky behaviour in the United States usually always ask about carrying weapons because such behaviour is quite common amongst students (pupils). However, such questions were considered as not suitable in Lithuanian context. To reveal smoking (including electronic cigarette smoking), alcohol and marijuana smoking habits, the questions in the questionnaire have been harmonised with the European model questionnaire of the European Drugs and Drug Addiction Monitoring Center (EMCDDA 2009), which is also used in the studies of psychoactive substance abuse that are carried out by the Drugs, Tobacco and Alcohol Control Department of the Republic of Lithuania.

The general characteristics of the respondents. The questionnaires were filled in by 196 students. The random sampling of pupils has been selected as a basis for the questionnaire survey. The principle for selecting the sample was nested random sample, which means that the classes in schools from the city of Vilnius were randomly selected and the sample was formed from all the pupils in the class whose parents signed the written consent to participate in the study. Random survey sample was selected to ensure that the results of questionnaire survey would be sufficiently comprehensive and reliable and to avoid any intentional bias (e.g. based on gender) in the process of formation of the research sample.

About 69 (34.4%) of participants were girls and 127 boys (65.6%). The study included ninth to eleventh grade students, of which 21.5% were students of the ninth grade, 52.7% tenth grade and 25.8% eleventh grade. The age of the respondents was as follows: 2.2% were 14-year olds, 19.9% 15-year olds, 54.3% 16-year olds, 23.1% 17-year olds and 0.5% 18-year olds. It should be noted that even 75.3% of respondents live with both parents, 22.6% with a single parent, 1.6% in foster homes and 0.5% with foster parents, grandparents or other relatives.

The sample and the participants of the survey. The study was conducted in December of 2016, and the sample of the survey was calculated according to the data of Lithuanian Education Management Information System (ITC Education Management Information System 2017). According to the data of this System, in the academic year of 2016–2017, in total, 78,504 ninth to eleventh grade students has studied in schools of general education in Lithuania. The gymnasiums of Vilnius, in which students are accepted without entrance examinations, were selected for the second stage. The survey sample has been determined with 95% accuracy with 7% error of calculation: n = 196. By simple random sampling, one ninth, tenth and eleventh grade was selected from each school. From the city of Vilnius (capital of the Republic of Lithuania), 14–18 years old pupils were selected for the forming of the survey's sample because according to the data of Lithuanian Education Management Information System (ITC Education Management Information System 2017), one-third of all Lithuanian pupils are studying in the Vilnius city. So, it was assumed that the investigation (surveying) of pupil's population in Vilnius can better disclose trends of the total Lithuanian pupil's population.

Processing of the empirical research data. Collected data was analysed by using the SPSS 22.0 software. The specific questions of the survey's questionnaire were analysed jointly and severally according to gender, age and grade of learning classes. Mann–Whitney, Kruskal–Wallis and χ2 methods were used for the analysis of categorical data (nominal and ordinal variables). Prevalence estimates were calculated by applying 95% confidence intervals. Continuous amounts were analysed based on Student's t-test and ANOVA (the analysis of variance) statistical test. The criteria of Kolmogorov and Smirnov, Shapiro and Wolf, Pearson's as well as chi-square were used for the processing of the statistical data. The coefficient of Spearman correlation, Mann–Whitney criteria and multiple linear regression was also applied in this process.

In the second stage of the research, the data obtained during the questionnaire survey was compared with the overall results describing the preventive actions in the Republic of Lithuania, which was received during the state-organised Survey of the Lithuanian general education schools on the implementation of prevention programmes in general education schools in the 2015–2016 academic year. This survey was aimed to assess the implementation of prevention programmes, the scale and characteristics of the use of

methodological instruments in the Lithuanian general education schools and to project the potential directions for the improvement and development of preventive activities. It should be noted that 98% of all Lithuanian general education schools were surveyed during this study.

Results

In total, 196 questionnaires answered by pupils (whose parents or guardians signed an agreement to participate in the survey) were analysed during the questionnaire survey. From all the pupils surveyed, 69 (34.4%) were girls and 127 boys (65.6%). The pupils of ninth to eleventh grades have participated in the survey, from them 21.5% were of the ninth grade, 52.7% tenth grade and 25.8% eleventh grade. According to their age, respondents were distributed as following: 2.2% of the respondents were 14 years old, 19.9% 15 years old, 54.3% 16 years old, 23.1% 17 years old and 0.5% 18 years old. It should be noted that even 75.3% of all respondents lived with both of their parents, 22.6% with one of their parents, 1.6% lived in a foster homes or boarding schools and 0.5% lived with the foster parents, grandparents or other relatives.

The conducted study (questionnaire survey) raised the hypothesis that well-being feeling of boys and girls in school are different and this may affect the risky behaviours. It was expected that the feeling of girls was better than boys. The results showed that the average rank of males (mean rank 91.00) is less than that of girls (average rank of 95.38), but no significant difference between the well-being of the schoolboys and schoolgirls were found (p = 0.594), so we cannot argue that boys and girls feel differently at school. Calculated signal strength was −0.0390, that is, it means very small gender effect to the feeling of safety in school. Thus, the feeling of security and well-being in school doesn't depend on the character of gender.

Evaluation of the risky behaviour. Results of the survey based on the analysis of the group of questions about personal security protection in certain life situations showed that risky behaviour rates of boys are significantly higher than those of girls, especially behaviour related to driving using various means such as bikes, skateboards and roller skaters and not wearing a helmet and other safety measures (p = 0.006). The results of the survey showed that 82.2% of boys and 33.1% girls never wear a helmet whilst cycling, skateboarding or rollerblading. Risky behaviour rates of boys are significantly higher than those of girls (p = 0.004); when they were answering about travelling with a vehicle that is driven by a drunk person, 59.8% boys and 34.8% girls agreed that they would travel together with someone who is driving a vehicle after drinking alcoholic beverages. The boys are much more involved in fights on school grounds (p = 0.008) – even 91.7% of boys and only 8.3% of girls said that they were sometimes involved in a fight on school grounds. The results showed that risky behaviour rates of girls are significantly higher than those boys when they were answering about staying in the same room with a smoking person (p = 0.001). For example, only 14.8% of boys and 37.9% girls have indicated that they always stay in the same room with a person who is smoking (Fig. 1).
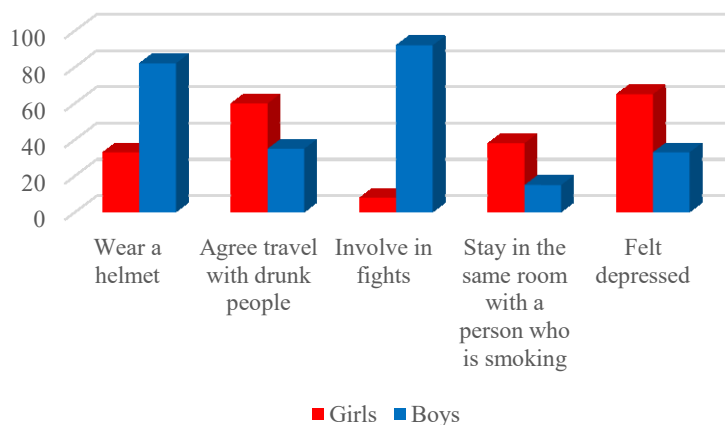
Fig. 1. The forms of risky behaviour between respondents (expressed as a percentage)

The study was also designed to evaluate how many pupils are at risk of harm to their health when (i) they are staying in a room with someone who is smoking, (ii) they are consuming alcohol daily and (iii) they are occasionally taking other drugs. On the basis of the application of the Friedman criterion to the results of the survey, it was noticed that the approach to the risky behaviour differs between the pupils surveyed and the attitude of the students to a three different risk types was statistically significant (χ^2 = 86.448, df = 2, p = 0.000). The pupils have evaluated daily alcohol consumption as the biggest risk (the average estimate is 2.23), much lower risk was attributed to the occasional use of drugs (the average estimate is 2.09) and the lowest risk was attributed towards staying in a room with a person who is smoking (the average estimate is 1.58).

The study was also aimed to find out how much the attitudes of boys and girls differ towards the risks to harm their health by a daily alcohol consumption and occasional smoking of cigarettes. The results showed that approach of pupils (the difference between different sexes (boys and girls) was not established) to these two variables was statistically significant (p = 0.004), and amongst the same surveyed pupils, in 105 cases, the risk of daily consumption of alcohol was considered better and in 19 cases, daily alcohol consumption risk was considered worse. Thus, it can be concluded that the opinion of both boys and girls towards the daily consumption of alcohol is that daily consumption of alcohol is riskier than occasional smoking.

Besides, one of the additional aims of the study was to examine an approach to the three groups of respondents (students of ninth , tenth and eleventh grades) towards the risk to harm their health when cannabis is regularly smoked. A statistically significant difference (p = 0.004, df = 1) was established: the ranks average of the eleventh grade students was 113.27, tenth grade students was94.25 and ninth grade students was 67.20. As we can see from the differences in the ranks, the greatest risk of harm to their health when cannabis is regularly smoked is attributed by pupils of eleventh grade and the lowest risk by pupils of the ninth grade.

Assessment of bullying and prevalence of depression. The Lithuanian study on Health Behaviour in School-aged Children (HBSC) which was carried out in 2014 shows that bullying in school affects almost every third pupil: 31.2% of boys and 27.7% of girls (p < 0.05). The results of the questionnaire survey carried out by the author showed relatively similar results, that is, 37.6% of 14- to 18-year olds have been bullied in the school environment, whilst 31.4% of pupils have experienced bullying in cyberspace (via text messages, e-mails or social networks). From the pupils who experienced bullying, boys more often than girls were getting bullied (p = 0.002) – 61.4% of boys and 38.6% of girls reported that they were bullied in a school environment. Comparison of the numbers of bullying by age shows that pupils in the upper classes (despite the gender of pupils) are more exposed to bullying. Fifteen-year olds were bullied four times less than 16-year olds – respectively 15.7% and 64.3% were bullied (p = 0.001). We should note that according to the questionnaire survey, the level of bullying is declining again between 17 years old (18.6%) and significantly decreases between 18 years old (0.1%). From the other established trends, we may note that girls are more often bullied in the cyberspace (39.2%) than boys (27.3%) (p = 0.002).

The analysis of the answers of pupils who participated in the survey, conducted by the author, also shows that 33.1% of boys and 64.1% of girls (p = 0.000) has indicated that at least once they felt so sad and without hope that they ceased to engage in their normal activities. Comparison of the prevalence of depressive state of mind according to the age factor (as no gender-related differences were found (p = 0.123)) shows that the 16- and 17-year-old students have experienced this state twice more often (49.5% and 50.0%, respectively) than 14- and 15-year olds (25.0% and 24.3%, respectively). The prevalence of the depressed mood in adolescence is a major public health problem, as it is related to a high risk of suicide. The results also showed that girls (39.1%) have contemplated suicide whilst being in a sad mood twice more often than males (19.2%) (p = 0.002).

Assessment of the prevalence of psychoactive substance abuse. According to the questionnaire survey, 65.1% of 14- to 18-year olds (69.7% males and 56.3% females, p = 0.001) have ever tried smoking cigarettes. The number of pupils who tried to smoke ranged from 59.4% to 81.1% according to different ages of students. The largest numbers of pupils who had tried smoking were recorded between 15-year-old

students (81.1%), and the smallest numbers between 16-year-old students (59.4%) (p <0.001). The data of the survey shows that the age when pupils tried to smoke for the first time ranges from 7.5% (9- to 10-year olds) to 24.7% (13- to 14-year olds). The survey also detected that in the last 30 days, 75.8% of boys and 56.7% girls did not smoke at all. From the pupils who have smoked in the last 30 days, 7.5% of boys have indicated that they smoked every 30 days and 13.3% of girls have indicated that they smoked at least 1–2 days from an overall 30 days period. The prevalence of smoking amongst pupils that was detected by the author is similar to the results of European School Survey Project on Alcohol and Other Drugs (ESPAD) survey conducted in 2015.

The study found that 81.2% of the respondents (77.9% of boys and 87.5% of girls, p = 0.001) tried to consume the alcoholic beverages at least one time in their life. The consumption of alcohol that occurred several times in a week was reported by 16.9% of respondents, more often by boys than girls (20.6% of boys and 11.5% of girls has indicated this factor) (p <0.001). About 35.5% of boys have stated that they drank alcohol for the first time at 13–14 years of age, and 28.1% of girls stated that they drank alcoholic drinks for the first time at 15–16 years of age.

According to the results of the survey, at least 35.5% of respondents notified that they have ever tried smoking cannabis at least once (37.7% males and 31.3% females, p < 0.001). Both boys and girls tried smoking cannabis mainly at 15–16 years of age (23.0% of boys and 20.3% of girls).

Assessment of sexual behaviour. The risky sexual behaviour of adolescents is an important component for the evaluation of (un)healthy behaviour, and the key factors of it are the age when sexual relations starts and occurrence of sexual relations without using protection means. The analysis of data showed that 26.5% of respondents have had sexual relations at least once and from them, only 45.8% used adequate protective means (by 47.1% of boys and 42.9% of girls). Both boys and girls (a statistically significant difference between different gender types was not determined) usually start sexual relations at the age of 15–16. According to the data of the survey, we should note that sexual behaviour amongst 14- to 18-year olds is in general unsafe.

Assessment of physical activity. Physical activity is considered one of the most important determinants of health and components of a healthy lifestyle. Therefore, the question was raised whether the physical activity of the 14- to 18-year olds depends on the pupils learning outcomes. The analysis of the questionnaire results (e.g. analysis of one-factor ANOVA calculations) has shown (p = 0.260) that the physical activity of pupils is no different from the pupil learning outcomes. According to the survey, the percentage of physically active respondents ranged from 4.8% to 19.4% during the last 7 days. During this period, the largest proportion of pupils was physically active for 2 days (19.4% of pupils who were surveyed) and 5 days (11.8% of pupils who were surveyed) and 10.8% of respondents have indicated that they were completely physically inactive. The results also showed that boys are 1.9 times more physically active than girls – 65.6% of boys and only 34.4% of girls were physically active in the last 7 days.

The survey also intended to find out whether the girls and boys played computer games at the same level in the last 7 days. The analysis of the results showed that involvement of boys whilst playing computer games in the last 7 days is statistically significantly different from the involvement of girls (p = 0.000). Girls played computer games 3.2 times less than the boys –20.7% and 67.2%, respectively. Even 93.9% of boys have indicated that they played video games for 5 h or more per day.

The general peculiarities of the implementation of preventive activities in Lithuania: comparison with the results of the questionnaire survey. As it was mentioned in section on 'Methodology', in the second stage of the research, the data obtained during the questionnaire survey was compared with the general results describing the preventive actions in the Republic of Lithuania, which was received during the state-organised Survey of the Lithuanian general education schools on the implementation of prevention programmes in general education schools in the 2015–2016 academic year (see Auškelis et al. 2016). The general results of this state-level study showed that prevention activities in Lithuanian general education schools are focused on the deployment of various preventive programmes. For example, the already-mentioned results showed that at least one prevention programme was implemented in 62.8% schools of Lithuania and 37.2% of schools in Lithuania hasn't implemented any preventive programmes at all. The

study also tried to find out whether participation of schools in the implementation of prevention programmes was related to the type of school. The results showed that at least one prevention programme was implemented in most junior gymnasiums (87.6%), in two-thirds of primary and secondary schools and only in 51.6% gymnasiums attended by 14- to 18-year olds.

The results also showed that in one gymnasium (the highest level/type of general education school), only one preventive programme was usually implemented (46.4% of all cases); quite often, two programmes were implemented (32.5% of all cases); and less often, three programmes were implemented (15.2% of all cases). Usually, gymnasiums are implementing violence and bullying prevention programmes (38.8% of all cases) and psychoactive substance abuse prevention programmes (12.4% of all cases).

Analysis of this data shows that only 18.6% of teachers in the gymnasiums have worked based on violence and bullying prevention programmes. According to the other data provided by schools, only 4.5% of violence and bullying prevention programmes in gymnasiums were attended by all pupils and in the rest of schools, this number has reached only 22.5% of all pupils. Only 20.6% of pupils of gymnasiums in total have ever participated in violence and bullying prevention programmes. These figures can be explained on the basis that so far there is no selective general violence and bullying prevention programme for pupils in ninth to twelfth grades at the national level at all.

Only 12.4% of all gymnasiums in Lithuania have implemented psychoactive substance abuse prevention programmes. The state study (Auškelis et al. 2016) has found that these programmes were attended by a very small number of pupils (10.2%) and teachers (2.4%). Although the use of psychoactive substances in schools remains a problem in the country, only 12.,4% of gymnasiums have implemented specific substance abuse prevention programmes. They involved only a small part of the country's general education schools and even smaller proportion of students and teachers.

Effects of the preventive activities towards adolescent risky behaviours: comparison of the results (Fig. 2).
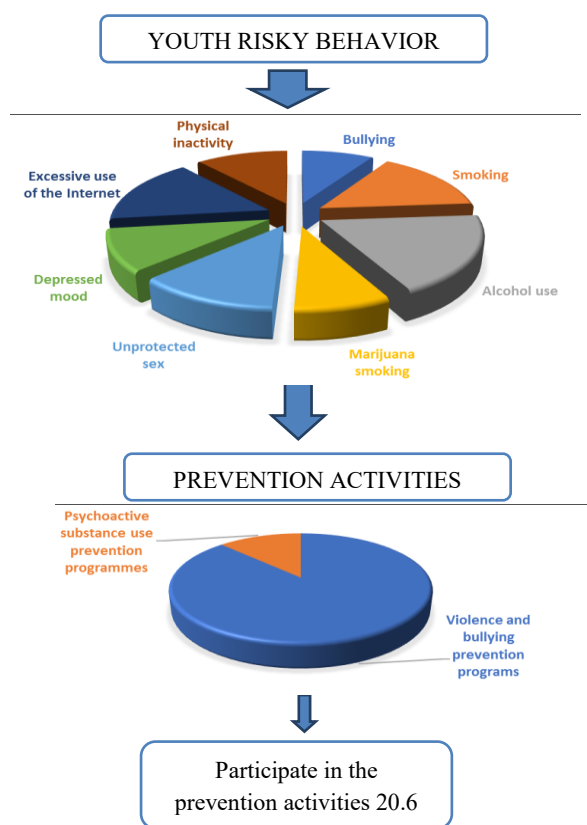
Fig. 2. Youth risky behaviour and factually implemented preventive activities in Lithuania

The analysis of the risky behaviours of 14- to 18-year olds, which was conducted by the author and based on the questionnaire survey in Vilnius city, and the comparison of this analysis with the above-mentioned data describing ongoing overall prevention activities in Lithuania (in 2015–2016) show the obvious gap between the problems experienced by young people and preventive activities that are selected for the factual implementation. Currently, Lithuania is increasingly focused on the prevention of violence against children as well as the problems of finding effective ways to reduce bullying in the general education schools. However, the implementation of preventive actions and the methods that are selected for the implementation of preventive measures does not correspond the actual problems experienced by youth (abuse of psychoactive substances, sedentary lifestyle, etc.) (Fig. 2).

Conclusions

The results of the survey questionnaire based on the surveying of pupils in the Lithuanian schools of general education during December 2016 (in the city of Vilnius, the capital of the Republic of Lithuania) about the risky behaviour (unsafe behaviour in certain situations, psychoactive substance abuse, physical inactivity, etc.) between 14 and 18 years old adolescents has showed that the most important factors that determine the adolescent risky behaviour are their gender and age. The survey shows that, in general, risky behaviour (such as unsafe driving using various transport mean, travelling with a drunk person and involvement in a physical fighting) is more typical to boys than to girls. However, there are some areas in which the population of girls has also shown worse attitudes than boys towards certain forms of risky behaviour or social risk factors; this can be attributed to the bullying in a cyberspace, prevalence of the depressed mood, consumption of alcohol and physical inactivity. The riskiest period for both boys and girls is 16 years of age, as during this age, pupils suffer from the highest levels of bullying, quite widespread prevalence of a depressive state of mind. Besides, as the results of the survey showed, 16-year olds usually start to use psychoactive substances (to smoke cannabis) and are getting started to be involved in sexual relationships.

On the other hand, the general situation in Lithuania related to the organisation of preventive activities in the past years (2015–2016) can be characterised by such general tendencies that: (i) despite the quite large overall number of general education schools that implemented at least one preventive programme (more than 60% of all general education schools have participated in these activities), in reality, only a small number of pupils and teachers have participated (participation percentage haven't exceeded 30% of all pupils and teachers). Most prevention programmes have been implemented in the lower grades and in the lower levels of general education schools, such as junior gymnasiums and primary and secondary schools. Only about a half (51%) of general education schools of the highest level (i.e. gymnasiums) have participated in the preventive activities, even though largest part of adolescents belonging to the highest risk group (according to the age factor, i.e. 16-year olds) are learning in the gymnasiums. The most common types of implemented preventive programmes were violence and bullying prevention programmes.

The comparison of the results of the questionnaire survey and the official data about the implementation of preventive activities shows that, currently, the practical level planning and implementation of preventive activities in Lithuania is not related to the objectively existing types of risky behaviour between pupils. It is especially important to note that most of the programmes were not concentrated towards the riskiest age groups (such as 16-year olds) and towards types of general education schools where pupils belonging to the riskiest age groups are studying (i.e. gymnasiums). Instead of that, they focused on the prevention between pupils of lesser age cohorts. The topics of the preventive programmes don't cover some very problematic areas of risky behaviour, such as psychoactive substance abuse and inactive/sedentary lifestyle. As many aspects of the risky behaviour depend on the gender factor and are different between girls and boys, we should note the lack of gender-oriented prevention programmes. For this reason, it must be concluded that the implementation of the policy of risky behaviour prevention in Lithuanian general education schools amongst the pupils of higher grades (starting from the ninth grade) need to be reformed and reviewed by considering the established trends.

The results of the research prove the necessity to ensure that the youth risk behaviour surveys are carried out in a systematic and consistent manner, and prevention activities are planned regarding the problems that are encountered on the practical level (to avoid any gap between practical problems and performed preventive activities, which in Lithuania is observed at present time). The results of the study can also be used by the scholars and policy makers to explain the causes of teenager's risky behaviour, especially psychoactive substance use.

References

American Psychological Association Zero Tolerance Task Force. (2008). Are zero tolerance policies effective in the schools? An evidentiary review and recommendations. American Psychologist, (63), 852–862.

Astor, R. A., Benbenishty, R., Estrada J. (2009). School violence and theoretically atypical schools: The principal's centrality in orchestrating safe schools. American Educational Research Journal, (46), 423–461.

Auškelis, R., Dulinskaitė, I., Valantiejienė, S. (2010). Lietuvoje įgyvendinamos prevencinės programos. Tarptautinėje praktikoje taikomos prevencinės programos ataskaita [Preventive programs implemented in Lithuania. The report on the preventive programs which are applied in international practice]. Vilnius: Specialiosios pedagogikos ir psichologijos centras. Available from Internet: http://www.sppc.lt/index. php?1767916592.

Auškelis, R., Bieliūnė, S., Ignatavičienė, K., Stupurienė, V., Šiautkulis, R., Valantiejienė, S. (2016). Prevencinių programų įgyvendinimas Lietuvos bendrojo ugdymo mokyklose 2015-2016 mokslo metais [Implementation of the preventive programs in the Lithuanian schools of general education in 2015-2016 academic years]. Vilnius: Specialiosios pedagogikos ir psichologijos centras. Available from Internet: https://www.smm.lt/uploads/ documents/kiti/PREVENCINI%C5%B2%20PROGRAM%C5%B2.pdf.

Bankauskienė, I. (2013). Psichoaktyviųjų medžiagų vartojimo prevencija: samprata ir modeliai [Psychoactive substance abuse prevention: the concept and models] Vilnius: Narkotikų, tabako ir alkoholio kontrolės departamentas.

Botvin, G. J., Griffin, K. W. (2007). School-based Programmes to Prevent Alcohol, Tobacco and Other Drug Use. International Review of Psychiatry, 19 (6), 607-615.

Christofides, E., Muise, A., Desmarais, S. (2012). Risky dislocures on facebook: the effect of having a bad experience on online behavior. Journal of Adolescent Research, 27 (6), 714–728.

Compas, B. E. (2004). Processes of risk and resilience during adolescence. In: Lerner R. M., Steinberg, L. (eds.), Handbook of Adolescent Psychology. New Jersey: John Wiley & Sons Inc., 263-296.

Costa, F. M. (2008). Problem-Behavior Theory – A Brief Overview. Available from Internet: http://www.colorado.edu/ibs/jessor/pb_theory.html.

Costello, D. M., Swendsen, J., Rose J. S., Dierker, L. C. (2008). Risk and protective factors associated with trajectories of depressed mood from adolescence to early adulthood. Journal of Consulting and Clinical Psychology, 76 (2), 173-183.

Dowdell, E., Burgess, A., Cavanaught, D. (2009). Clustering of Internet risk behaviors in a middle school student population. School Health, 79 (11), 547–553.

Duberstein, L., Boggess, S., Williams, S. (2000). Teen risk-taking: A Statistical Portrait. Urban Institute. Available from Internet: http://www.urban.org.

Eaton, D. K., Kann, L., Kinchen, S., Shanklin, S., Flint, K. H., Hawkins, J., Harris, W. A., Lowry, R., McManus, T., Chyen, D., Whittle, L., Lim, C., Wechsler, H. (2011). Youth Risk Behavior Surveillance – United States. The Morbidity and Mortality Weekly Report, 61 (4), 1–162.

Erikson, E. H. (2004). Vaikystė ir visuomenė [Childhood and society]. Vilnius: Adomo Jakšto spaustuvė.

Farmer T. W., et al. (2013). Conceptual Foundations and Components of a Contextual Intervention to Promote Student Engagement During Early Adolescence: The Supporting Early Adolescent Learning and Social Success (SEALS) Model. Journal of Educational and Psychological Consultation, 23 (2), 115-139.

Feldstein, S. W., Miller, W. R. (2006). Substance use and risk-taking among adolescents. Journal of Mental Health, 15 (6), 633–643.

Gaigalaitė, G. (2007). Valgymo sutrikimų rizikos paplitimas tarp moterų [The occurrence of eating disorders risk among women and its determinants]. Kaunas: Lietuvos kūno kultūros akademija.

Green, K., Krcmar, M., Walters, R. H., Rubin, D. L., Hale, J., Hale, L. (2000). Targeting adolescent risk-taking

behaviors: the contribution of egocentrism and sensation-seeking. Journal of Adolescence, 23 (5), 439–461.

Guan, S., Subrahmanyam, K. (2009). Youth Internet use: risks and opportunities. Current Opinion in Psychiatry, (22), 351–356.

Guzman, M. R., Bosch, K. R. (2007). High-risk behaviors among youth. NebGuide. Families, Adolescence & Youth. Available from Internet: http://www.ianrpubs.unl.edu/pages/publi¬cationD.jsp?publicationId=786.

Lithuanian Education Management Information System (ITC Education Management Information System) (2017). [Accessed 17.04.2017]. Available from Internet: http://www.svis.smm.lt/.

Irish, L. A.(2011). Development, reliability and validity of the health risk behaviors inventory: a self-report measure of 7 current health risk behaviors. Open access thesis and dissertations. [Accessed 11.02.2017]. Available from: <http://rave.ohiolink.edu etdc/view?acc_num=kent1302034344>.

Jessor, R. (1998). New Perspectives on Adolescent Risk Behavior. Cambridge: Cambridge University Press.

The United Nations Convention on the Rights of the Child (1995). Official Gazette, 60, (1501).

Keeler, H. J., Kaiser, M. M. (2010). An Integrative Model of Adolescent Health Risk Behavior. Journal of Pediatric Nursing, (25), 126–137.

Kolpakova, O., Liubimova, A., Levina, O. (2012). Understanding risky online behavior of 14–17 years old Russian children. Available from Internet: http://www.childcentre.info/robert/public/Kolpakova.pdf.

Lenhart, A. (2009). Teens and Social Media. Available from Internet: http://isites.harvard.edu/fs/docs/icb.topic 786630.files/Teens%20Social%20Media%20and% 20Health%20-%20NYPH%20Dept%20Pew%20Internet.pdf.

Law on Education of the Republic of Lithuania (2011). Official Gazette, 38, (1804).

Livingstone, S., Helsper, E. (2008). Parental mediation and children's internet use. Journal of Broadcasting & Electronic Media, 52 (2), 581–599.

Lopes, P. N., Salovey, P. (2004). Toward a broader education. In: Walberg H. J., Wang M. C., Zins R. J. E., Weissberg, P. (eds.), Building school success on social and emotional learning. New York: Teachers College Press.

Milam, A.J., Furr-Holden, C.D.M., Leaf, P.J. (2010). Perceived School and Neighborhood Safety, Neighborhood Violence and Academic Achievement in Urban School Children. The Urban Review, 42 (5), 458–467.

Norkus, A. (2012). Sveika gyvensena Lietuvos studentų populiacijoje: edukacinis diagnostinis aspektas [Healthy lifestyle in the Lithuanian student population: the educational and diagnostic aspect]. Šiauliai: Šiaulių universitetas.

Olsson, A., Fahlén, I., Janson, S. (2008). Health behaviours, risk-taking and conceptual changes among schoolchildren aged 7 to 19 years in semi-rural Sweden. Child: Care, Health and Development, 34 (3), 302-309.

Pickett, W., Schmid, H., Boyce, W. F., Simpson, K., Scheidt, P. C., Mazur, J., Molcho, M., King, M. A., Godeau, E., Overpeck, M., Aszmann, A., Szabo, M., Harel, Y. (2002). Multiple risk behavior and injury: an international analysis of young people. Archives of Pediatric & Adolescent Medicine, 56 (8), 786-793.

Reeves, M. A., Kanan, L. M., Plog, E. M. (2010). Comprehensive Planning for Safe Learning Environments. New York: Taylor and Francis Group.

Ruangkanchanasetr, S., Plitponkarnpim, A., Hetrakul, P., Kongsakon, R. (2005). Youth risk behavior survey. Bangkok, Thailand: Department of Pediatrics, Faculty of Medicine, Ramathibodi Hospital, Mahidol University.

Sakalauskaitė, E., Tutkuvienė, J. (2009). Kūno įvaizdis: veiksniai ir sąsajos su fizine būkle [Body Image: Factors and Parallels with the Physical Status]. Laboratorinė medicina, 4 (44), 15-19.

Schmidt, H., Voigt, K., Wikler, D. (2010). Carrots, sticks, and health care reform – problems with wellness incentives. The New England Journal of Medicine, 362 (20).

Sychareun, V., Thomsen, S., Faxelid, E. (2011). Concurrent multiple health risk behaviors among adolescents in Luangnamtha province, Lao PDR. BMC Public Health, 11 (36).

Sklad, M., et al. (2012). Effectiveness of school-based universal social, emotional, and behavioral programs: do they enhance students' development in the area of skill, behavior, and adjustment? Psychology in the Schools, 49 (9), 892-909.

FORMS OF EMPLOYEE TRAININGS CONCERNING ASPECTS OF COLD KNOWLEDGE

Marcin Komańda

University of Economics in Katowice, Poland, marcin.komanda@ue.katowice.pl

Abstract. *Research relevance*: Cold knowledge is perceived as a key issue in terms of the composition of the company and the sense of the procedures being implemented. Thus, organisation of appropriate forms of employee trainings in this regard becomes essential. *Aim of the paper:* Distinguishing the existence of schemes of applied forms of employee trainings in the contexts of relation between two aspects of cold knowledge (internal documentation and data bases) and the types of enterprises (their formal independence). *Research methods applied*: A survey based on the purposive sampling of respondents was conducted. A two-tiered clustering analysis and an analysis of correspondence were applied. *Main findings:* It was possible to distinguish four groups of particular forms of trainings. Three groups are represented by the same main forms of trainings in both cases (documentation/databases). The analysis of correspondence established that respondents from branches as well as head offices of multi-branch enterprises were, in case of trainings concerning internal documentation, more prone to point at two forms of trainings: blended and special, whereas, in case of training within the scope of databases, they were more willing to point at a special form of trainings. *Theoretical and/or practical value of the study:* Results allow to associate the forms of employee trainings in the chosen aspects of cold knowledge and show the differentiation of their use depending on the type of enterprise. These facts open up a new theoretical perspective for the description of organisation of employee trainings based on formal relations.

Keywords: training; knowledge, employee; organisation.

JEL Classification: M12, M19

Introduction

The problem of learning within an enterprise is a comprehensive issue. It requires making references to multiple issues related, amongst other things, to the level of learning within an organisational hierarchy, the nature of this process (adaptability to changes, anticipation of reality, review of the learning process itself) and, finally, conditionings of its course (Senge 1997). Today, dynamic capabilities are identified as the main perspective of the organisational learning description. The most important is the absorptive capacity, which is related to the organisational learning in the context of new external knowledge (Sun, Anderson 2010). All of these issues together in the management sciences are referred to as a learning organisation, and they are related to the issues of knowledge management within an enterprise; however, the relationships between these two concepts tend to cause a lot of difficulty in their unambiguous comparison.

Learning of an organisation, including its members, is related to gaining knowledge, understanding it as well as understanding of the learning process itself and improving the effects of the conducted activity (Garvin 2003). It may be connected with entrepreneurial orientation (Real *et al.* 2014). These challenges are, in turn, connected with the necessity to obtain knowledge from any available source and to apply it in practice, which leads to initiation and undertaking of changes (Senge *et al*. 1999). From this perspective, not only do these changes become a natural aspect of conducting business activity, but from the perspective of the competitive battle being waged, they also require an enterprise to devise suitable competences, which are connected with gaining and using knowledge and which have been shaped in the situational context of the organisation itself (Dziubińska 2009).

Nowadays, the sources of competitive advantage are to be looked for within implemented innovations.

Therefore, ensuring, above all, appropriate organisational culture that supports the process of devising and introducing changes constitutes a significant issue of a learning organisation. In the light of the conducted studies, the size of an enterprise itself seems to be insignificant in this case (Ismail 2005). For organisational learning to be able to bring desirable results, it is postulated that it should also be based on (by means of organisational culture, amongst other things), above all, understanding of the dynamics and complexity of the circumstances of conducting a business activity, as well as development of skills of particular individuals connected with comprehension and assessment of a real situation, within an organisation itself, and development of these skills on a group level. These issues are related to the use of knowledge to improve the results of the performance (Jaafar *et al.* 2014). It is also postulated that the aspects of the assumed ethical model in enterprise management should be taken into consideration and applied or that the common vision in an organisation of what is being done should be revived (Rowley, Gibbs 2008).

The related issue of knowledge management seems to be very interesting in this context. It may be presented in three main perspectives. First, as an aspect of a conducted business activity concentrated on the processes of gaining knowledge, its assessment, processing and use. The second perspective concerns the form of knowledge assets gained by an enterprise as well as those that an enterprise already possesses. The third perspective (cognitivist) concerns the insight into the essence of knowledge itself and ways of its transformation into various manifestations (Dalkir, Liebowitz 2011). Knowledge management in an enterprise is, therefore, focused on, above all, knowledge resources themselves (Geisler, Wickramasinghe 2015) and procedures of their dissemination and application (Aggestam 2015). The efficiency of these actions depends, in turn, on the adjustment of knowledge to the existing need. Therefore, both codification of knowledge into desirable forms as well as its transfer with the use of appropriate tools take place (Ruggles 2009). Nowadays, these tools are related to, above all, information infrastructure and software (including database structures, data processing and visualisation), and they are involved in the use of available functional options not only of members of an enterprise but often also of its contractors or clients (Sztangret, Bilińska-Reformat 2014), dependent companies and enterprise representatives in various geographical locations (Jędralska *et al.* 2013). At the same time, the results of research works indicate that ICT practices contribute to financial performance only when they are linked to human resource management (HRM) practices (Andreeva, Kianto 2012).

Therefore, mentioning of the concept of knowledge management makes it possible to establish the complexity of organisational learning that must be characterised by not only the understanding of learning itself and the necessity to translate gained knowledge into a practical dimension but also the awareness of possibilities and limitations of tools being used for this purpose and knowledge-oriented leadership (Donate, de Pablo 2015). The enterprise, as Kim states, learns regardless of its individual members but not regardless of all of them. The key aspects of relationships between individual and organisational learning are the aspects related to the understanding of this process (mostly in the following dimensions: 'what for' and 'how') as well as their confrontation with organisational routines and visions shared within an enterprise (Kim 1998). Individual mistakes should be allowed and individual contribution evaluation should be implemented (Driscoll 2014). Organisation of employee's trainings becomes an aspect that requires special attention in the light of the concept of learning organisation and knowledge management.

The rules concerning creating, circulation as well as use of information resources connected with internal documentation and databases within an enterprise are regarded as a significant element of cold knowledge in the knowledge system of the enterprise. Cold knowledge offers the understanding of organisational routines, sense and rules of employee performance. Thus, organisation of appropriate forms of employee trainings in this regard becomes essential. Therefore, the specific objectives of this paper are to distinguish the schemes of applied forms of organisation of employee trainings within business entities represented by the surveyed respondents and to determine whether there is a relationship between them and the type of an enterprise itself (in prospect of its formal independence). A survey based on the purposive sampling of respondents was conducted for the purposes of the paper (in the number of 215). In order to achieve objectives, a two-tiered clustering analysis and an analysis of correspondence were applied. Non-

probabilistic sampling of respondents makes the results of the conducted analysis impossible to be referred to the entire population.

Literature Review

The scope of training programmes offered to employees of enterprises should be considered in the wider perspective. It consists of the needs of an individual member of an organisation resulting from their skills, competences and situational context of their professional responsibilities in the system of the enterprise (Sergeev, Babkin 2015). The context of professional responsibilities from the perspective of planning and organisation of trainings, in turn, consists of the foregoing experiences of an organisation related to who should be trained and what problems an employee who was given the responsibilities will potentially have to face (Mathieu, Martineau1997).

It is assumed that an organisation and conducting of employee trainings are supposed to promote an increase in productivity within an enterprise. It needs to meet the goals of enterprise and employees (Ocieczek *et al.* 2016). Development of employee skills as a desirable effect of such training justifies this expectation. However, the condition for such mechanism to exist is not only a properly selected training but also engagement of employees themselves. What seems to be of key significance in this perspective is noticing that trainings may concern particular aspects of the job done or they may be of general nature. Employee's engagement and, as a consequence, an increase in their productivity seem to occur, above all, in case of general trainings. There are two possible explanations for this fact. First, such trainings may be regarded by an employee as a professional bonus that favours psychological effect of employee's attachment to an enterprise. Second, general trainings may be considered by employees to be an opportunity to develop additional skills, which may turn out to be useful in a different workplace (Barrett, O'Connell 2001). The conducted studies also pointed out that trainings are organised mostly for technical employees and specialists (Osterman 1995). Contemporary research papers also touch on the problem of the emotional state of employees and its impact on job satisfaction (Vatansever, Karamaraş 2017).

Apart from specially organised trainings for employees, there is also a form of practical knowledge acquisition within an enterprise. This practical learning by means of performing professional duties is even regarded as the main form of knowledge acquisition within an organisation. However, this form is very often used by managers as an unstructured and cost-efficient (or even cost-free) one. It means that conducting trainings sometimes becomes the responsibility of other employees who may be professionally experienced but do not necessarily possess high training qualifications within the scope of practical teaching and conducting trainings. This kind of freedom in organisation and implementation of this type of trainings within organisations is often criticised (Jacobs 2003).

From the theoretical perspective, however, learning by means of practical implementation of professional duties, however, should meet a number of requirements. There should be a person appointed to supervise and monitor the learning process itself, offer essential assistance and advise to a person being trained or to prepare prospective training materials that would support completion of tasks. It is also significant, from the perspective of prospective effects of such trainings, to encourage an employee to engage in the implemented training (Billett 2001). Stimulation of professional development and simultaneous motivation of employees are still outstanding challenges of human resources management (Livitchi *et al.* 2015).

Nowadays, for the purposes of each form of training and subject information technology, tools might be applied. The information system of an enterprise may serve as an environment where employee trainings may be organised and monitored. In the case of using the information technology, the training of employees indicates positive results: reduction of the costs, saving time and improvement of learning (Rezaei *et al.* 2014). Apart from the access to standard documentation of an enterprise, databases and prepared materials, the system may also offer the possibility to contact experts and review specialist reports (Rosenberg 2001), which causes a fully implemented training of this kind to have a more organised form as it assumes a mixed form between an implemented, and very often cost-efficient, form

of learning by acting and a specially organised training. It is postulated that in a contemporary enterprise with fully developed human resources management, employee trainings of varied forms should take place everywhere and any time (Lendzion 2015).

Taking this fact into consideration, it should be made clear that implemented practices within the scope of employee trainings may also involve issues related to learning and transfer of knowledge between the units of an enterprise, including its various geographical locations (Minbaeva *et al.* 2003). From this perspective, employee trainings are implemented by taking into account formal relationships between units of an enterprise that create the context of tasks of a unit as well as responsibilities of its employees, and they are implemented together with other activities concerning human resources management (Minbaeva 2005). The problem of formal and legal association of enterprises also remains in the interest of researchers in the perspective of work organisation between partners (above all in the context of strategic alliances) (Albers *et al.* 2016).

Therefore, it becomes necessary to properly solve the issue of employee learning whilst placing the potential solution between the dimensions of their personal motivation and experience (hot knowledge within an organisation) and formal rules and regulations of work, including organisational routines (Komańda 2016). These aspects become especially significant in the context of procedures of creating and using specific resources of knowledge of an enterprise, such as internal documentation of an enterprise as well as organisational databases. Together with formal rules, they constitute the so-called resources of cold knowledge within an organisation (Komańda 2017). Such direction of research seems to be justified by the current research results, which suggest that in case of companies operating in the so-called less knowledge-intensive conditions, the key aspects of the creation of new knowledge resources are organisational documentation and knowledge sharing (Andreeva, Kianto 2011).

Methodology

A survey based on the purposive sampling of respondents was conducted for the purposes of the work. The selection of respondents was not probabilistic, and it assumed the form of convenience sampling (Martens 2014). The availability of respondents became the discretion criterion for their selection for the researcher (Rószkiewicz *et al*. 2013). This enabled the researcher to obtain a broad group of respondents who were requested to fill in the survey in the paper form (PSAQ – Paper Self-Administered Questionnaires). The number of respondents whose questionnaires were qualified for the research amounted to 215. Each of the respondents represented a different enterprise. They were also people holding various positions in an organisation. The majority of respondents (184; 85.6%) represented enterprises located on the territory of the Silesian Voivodeship. This may be regarded as a result of the applied method for the selection of respondents.

Two research questions were formulated in relation to the issues concerning organisation of trainings in the context of cold knowledge resources within an enterprise outlined in the theoretical perspective. The first one is related to whether it is possible to group the surveyed entities according to schemes of applied organisational forms of professional trainings within the scope of popularisation and consolidation of formal rules of creating and using internal documentation and databases. The following answer variants corresponding to the levels of formal training organisation were assumed: special training, training by performing responsibilities, a mixed form of the first two trainings and lack of trainings. The other question is about establishing the structure of relationships between respondents' indications concerning the type of trainings conducted within an enterprise in the above-mentioned areas and the type of an enterprise itself. Whilst speaking about the type of an enterprise, one might take into consideration whether it is a single-branch enterprise, a unit of a multi-branch enterprise or a seat of a multi-branch enterprise. Single-branch enterprises were represented in the study by 99 people (46.05%); next there were respondents who represented the companies that were the units of multi-branch enterprises (91; 42.32%) and those that were the seats of multi-branch enterprises (25; 11.63%). The issue of potential formal independence of an entity or its subordination/precedence in relation to another entity has an impact on

internal formal regulations. Therefore, it also seems to translate into the issue concerning organisation of employee trainings within an enterprise. Respondents were allowed to indicate one version of the answer to each question.

The collected data of nominal nature determined the choice of statistical analysis methods. The two-level clustering analysis was applied for data processing in case of the first question, whereas in case of the second one, the correspondence analysis was used (symmetric normalisation method). The gathered data was analysed with the use of the programme for statistical computing PS Imago (SPSS 23).

Results

The conducted two-level cluster analysis made it possible to group the respondents' opinions about applied forms of trainings in their enterprises within the scope of popularisation and consolidation of formal rules of creation and use of internal documentation of databases (regarded in this case as predictors) into two clusters. This grouping obtained a satisfactory cohesion and separation measure (the so-called Silhouette coefficient). The value of this coefficient amounted to 0.6, and it signifies the so-called serious class structure (Kisielińska 2009).

The 'form of training within databases' variable turned out to be the most significant predictor (the value of 1.00). The value of the 'form of training within internal documentation' as a predictor of grouping amounted to 0.49. The count of particular groups is presented in Table 1. The ratio of the size of the largest group to the smallest one amounted to 1.73.

Table 1. The results of grouping of entities according to the form of trainings within the scope of popularisation and consolidation of formal rules of creating and applying internal documentation and databases (Source: author's compilation)

| Group	1	2	3	4
Size (number of assigned entities)	60 (27.9%)	40 (18.6%)	46 (21.4%)	69 (32.1%)
Forms of trainings within the scope of formal rules of creating and applying databases (the most frequent attributes amongst indications of the group)	Mixed form (41.7%)	Special trainings (100%)	Lack of trainings (100%)	Through performance of responsibilities (100%)
Forms of trainings within the scope of formal rules of creating and applying internal documentation (the most frequent attributes amongst indications of the group)	Mixed form (43.3%)	Special trainings (60%)	Through performance of responsibilities (56.5%)	Through performance of responsibilities (100%)

Forms of trainings such as 'mixed form' and 'through performance of responsibilities' may be distinguished in group 2 in case of forms of trainings within the scope of internal documentation. In group 3, in case of trainings concerning internal documentation, 'lack of trainings' may be distinguished as well, whereas the case of group 1 seems to be the most diversified. In case of trainings regarding databases, 'lack of trainings' and 'through performance of responsibilities' may be distinguished apart from the dominant indication, whereas in case of trainings within the scope of documentation for this group, another three forms of trainings occur apart from the main indication.

The correspondence table (Table 2) reveals the structure of respondents' responses to questions about the type of an enterprise and the form of trainings in the scope of internal documentation. Figure 1 shows the results of the correspondence analysis conducted for the purposes of answering the question concerning

the structure of relationships between the type of enterprises and applied forms of trainings within the scope of popularisation and consolidation of formal rules of creating and applying internal documentation.

Table 2. Correspondence table for trainings within the scope of internal documentation and the type of an enterprise (Source: author's compilation)

Trainings within the scope of internal documentation	Type of an enterprise			
	Single-branch enterprise	Seat of the multi-branch enterprise	Unit of the multi-branch enterprise	Active margin
Lack of trainings	14	0	11	25
Through performance	60	8	37	105
Special trainings	13	8	29	50
Mixed form of trainings	12	9	14	35
Active margin	99	25	91	215
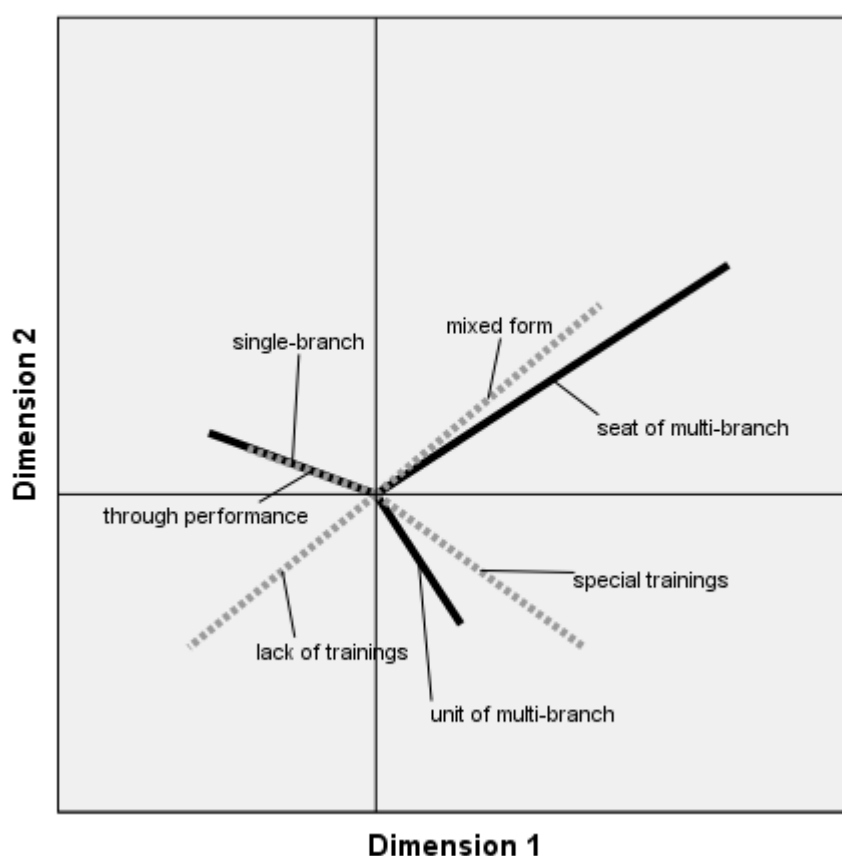
Fig. 1. The results of the correspondence analysis for variables related to trainings within the scope of internal documentation and type of an enterprise (Source: author's compilation)

It should be emphasised that two dimensions served as an explanation of the whole inertia of the table. Dimension 1 explained 80.3% of inertia. The value of the chi-square test amounted to 24.123, whereas the level of significance was p = 0.000. All categories were characterised by mass values above 0.05; therefore, it was not necessary to mark any of them as passive. Dimension 1 distinguishes a single-branch enterprise from a unit of a multi-branch enterprise as well as from a seat of a multi-branch enterprise. Respondents representing single-branch enterprises in the structure of answers were more likely to point at 'lack of trainings' or organisation of trainings 'through performance of professional responsibilities'.

'Lack of trainings' and 'special trainings' accounted for a relatively large share in the structure of indications for units of multi-branch enterprises (dimension 2). The indication 'through performance of responsibilities' has the largest share in the structure of indications for a single-branch enterprise, whereas in case of a headquarters of a multi-subsidiary enterprise, it was 'mixed form of trainings' (approach of points). Variability of distribution was mostly influenced by 'mixed form of training' and 'seat of a multi-branch enterprise' (the longest vectors in particular groups of the category).

The correspondence analysis was conducted again; however, this time it is for the variable form of trainings within the scope of popularisation and consolidation of formal rules of creating and applying resources of databases. Table 3 reveals the structure of respondents' responses to questions about the type of an enterprise and the form of trainings in the scope of databases.

Table 3. Correspondence table for trainings within the scope of databases and the type of an enterprise (Source: author's compilation)

Trainings within the scope of databases	Type of an enterprise			
	Single-branch enterprise	Seat of the multi-branch enterprise	Unit of the multi-branch enterprise	Active margin
Lack of trainings	30	4	27	61
Through performance	46	9	34	89
Special trainings	10	7	23	40
Mixed form of trainings	13	5	7	25
Active margin	99	25	91	215
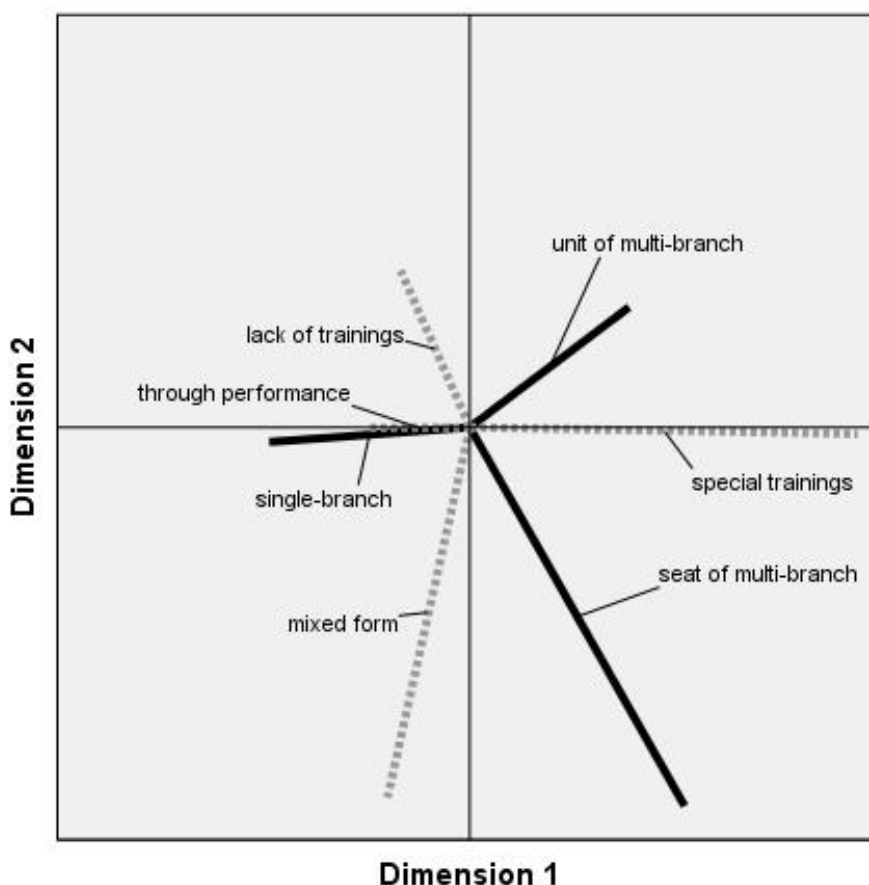
Fig. 2. Results of the correspondence analysis for variables connected with trainings within the scope of databases and type of an enterprise (Source: author's compilation)

104

The two dimensions again accounted for the whole inertia of the table. Dimension 1 accounts for 69.60% of inertia. The value of the chi-square test amounted to 12.803, whereas the significance level reached $p = 0.46$. It was not necessary to mark any of the categories as passive. Figure 2 presents the results of this analysis. It should be highlighted that the values of the category 'through performance of responsibilities' in particular dimensions are -0.252 and -0.001, respectively.

Dimension 1 once again distinguished a single-branch enterprise from other types of enterprises. This time, however, the respondents representing the seats of multi-branch enterprises as well as their branches were more likely to point at 'special forms of trainings' (this concerns the structure of answers). However, a relatively large number of indications 'lack of trainings' was observed in case of units of multi-branch enterprises (dimension 2). Once again a single-branch enterprise had a significantly larger share in indications 'through performance of responsibilities' (approach of points). The variability of distribution was influenced by 'mixed form of trainings', 'special training' and 'seat of a multi-branch enterprise' (the longest vectors in particular groups of the category).

Conclusions

Literature analysis allowed visualising a broad description of the problems of employee trainings in the enterprise. However, if this topic is related to enterprise knowledge management, depending on the perspective of the analysis, it is possible to find atypical issues for well-known descriptions. In case of distinguishing a cold knowledge from the enterprise knowledge system, employee trainings appear to be a problem entangled in formal relationships in an enterprise and eventually between enterprises.

Grouping of respondents' indications concerning the forms of trainings applied in their enterprises within the scope of dissemination and preservation of formal rules of creating and applying internal documentation and databases revealed two things. First, trainings within the scope of databases were the main predictor that led to the distinction of groups. Second, the same form of training within the scope of internal documentation usually corresponded to a particular form of trainings within the scope of databases in case of three groups. The only exception was group 3 whose respondents stated that there are no trainings within the scope of databases within their enterprises. However, the main indications of this group concerning trainings within the scope of documentation were related to learning through performance of responsibilities. Therefore, it seems that this group was dominated by two forms of trainings of the lowest level of organisation.

The correspondence analysis made it possible to distinguish a single-branch enterprise from other forms of enterprises in case of both areas of trainings. Moreover, forms of trainings of a higher level of organisation had a relatively large share in the structure of respondents' indications in case of units of multi-branch enterprises as well as seats of such enterprises.

It should be made clear that in relations to a non-probabilistic sampling of respondents, the results of the conducted analysis may only be referred to the surveyed group of respondents. The method of selection of respondents and the structure of representation of types of enterprises derived from this fact influenced the answers obtained in the survey and are the main limitations of the research conducted.

However, it makes it possible to suppose that formal relationships within an enterprise, which may be a derivative of both organisational culture and organisational and legal subordination of a given entity, have a good influence on the selection of the form of training. As the results of the above study show, such a relationship between the formal rules of work within an enterprise and forms of trainings should be looked for, above all, within the scope of the so-called cold knowledge. Detailed recognition of these relationships as well as their potential confirmation on a representative group of respondents may constitute a subject of further studies.

Acknowledgements

References

Aggestam, L. (2015). Learning organization or knowledge management–Which came first, the chicken or the egg?. *Information Technology and Control*, 35(3A), 295-302.

Albers, S., Wohlgezogen, F., & Zajac, E. J. (2016). Strategic alliance structures: An organization design perspective. *Journal of Management*, 42(3), 582-614.

Andreeva, T., & Kianto, A. (2012). Does knowledge management really matter? Linking knowledge management practices, competitiveness and economic performance. *Journal of Knowledge Management*, 16(4), 617-636.

Andreeva, T., & Kianto, A. (2011). Knowledge processes, knowledge-intensity and innovation: a moderated mediation analysis. *Journal of Knowledge Management*, 15(6), 1016-1034.

Barrett, A., & O'Connell, P. J. (2001). Does training generally work? The returns to in-company training. *Industrial & Labor Relations Review*, 54(3), 647-662.

Billett, S. (2001). *Learning in the workplace: Strategies for effective practice*. St Leonards: Allen & Unwin.

Dalkir, K., & Liebowitz, J. (2011). *Knowledge management in theory and practice*. Massachusetts: MIT Press.

Driscoll, M. A. (2014). Growing a Learning Organization. In *ACRL New England Chapter Annual Conference: We're All in This Together: Strengthening Librarians Through Professional Development*, College of Holy Cross, Worcester, MA. Conference proceedings. [Accessed 21.05.2017]. Available from Internet: http://eprints.rclis.org/24624/

Donate, M. J., & de Pablo, J. D. S. (2015). The role of knowledge-oriented leadership in knowledge management practices and innovation. *Journal of Business Research*, 68(2), 360-370.

Dziubińska, A. (2009). *Konkurowanie w gospodarce opartej na wiedzy jako przesłanka do modyfikacji modeli strategii korporacji międzynarodowych*. In *Współczesne i perspektywiczne kierunki badań w zarządzaniu przedsiębiorstwami*. J. Rokita, W. Czakon & A. Samborski (Editors), Katowice: Akademia Ekonomiczna w Katowicach, 83-92.

Garvin, D. A. (2003). *Learning in action: A guide to putting the learning organization to work*. Boston: Harvard Business Review Press.

Geisler, E., & Wickramasinghe, N. (2015). *Principles of knowledge management: Theory, practice, and cases*. New York: Routledge.

Ismail, M. (2005). Creative climate and learning organization factors: their contribution towards innovation. *Leadership & Organization Development Journal*, 26(8), 639-654.

Jacobs, R. (2003). *Structured on-the-job training: Unleashing employee expertise in the workplace*. San Francisco: Berrett-Koehler Publishers, Inc.

Jaafar, M. N., Kassim, N. A., Ghazali, M. F. I. M., Idris, M. A., & Khalib, M. L. H. (2014). Assessing Organizational Learning Culture, Leadership and Dialog in a Learning Organization. In *Full Paper Proceeding ETAR-2014*, Vol. 1. Conference proceedings, 1-13.

Jędralska, K., Komańda, M., & Dziubińska, A. (2013). *Kompetencje internacjonalizacyjne przedsiębiorstwa*. Katowice: Uniwersytet Ekonomiczny w Katowicach.

Kim, D.H. (1998). *The link between individual and organizational learning*. In *The Strategic Management of Intellectual Capital*. D.A. Klein (Editor), Boston: Butterworth-Heinemann, 41-61.

Kisielinska, J. (2009). Bezwzorcowa klasyfikacja obiektów w ekonomice rolnictwa. *Zeszyty Naukowe Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie. Problemy Rolnictwa Światowego*, 8, 104-115.

Komańda, M. (2016). Gorąca wiedza w przedsiębiorstwie. *Organizacja i Zarządzanie. Zeszyty Naukowe Politechniki Śląskiej*, 93, 197-206.

Komańda, M. (2017). Zimna wiedza w przedsiębiorstwie. *Przegląd Organizacji*, 1, 35-41.

Lendzion, J. P. (2015). Human resources management in the system of organizational knowledge management. *Procedia Manufacturing*, 3, 674-680.

Livitchi, O., Hacina, L., & Baran, T. (2015). Professional training-effective element of management in achieving of the personnel policy. *Economy Transdisciplinarity Cognition*, 18(1), 156-162.

Martens, D.M. (2014), *Research and Evaluation in Education and Psychology. Integrating Diversity with Quantitative, Qualitative and Mixed Methods*. Los Angeles: Sage Publications, Inc.

Mathieu, J. E., & Martineau, J. W. (1997). *Individual and situational influences on training motivation.* In *Improving training effectiveness in work organizations*. J.K. Ford (Editor), New York: Psychology Press, 193-221.

Minbaeva, D. B. (2005). HRM practices and MNC knowledge transfer. *Personnel Review*, 34(1), 125-144.

Minbaeva, D., Pedersen, T., Björkman, I., Fey, C. F., & Park, H. J. (2003). MNC knowledge transfer, subsidiary absorptive capacity, and HRM. *Journal of International Business Studies*, 34(6), 586-599.

Ocieczek, W., Łakomy, K., & Nowacki, K. (2016). The employee improvement process through training in light of the development of a work safety culture. *Organizacja i Zarządzanie*, 4(36), 53-65.

Osterman, P. (1995). Skill, training, and work organization in American establishments. *Industrial Relations: a Journal of Economy and Society*, 34(2), 125-146.

Real, J. C., Roldán, J. L., & Leal, A. (2014). From entrepreneurial orientation and learning orientation to business performance: analysing the mediating role of organizational learning and the moderating effects of organizational size. *British Journal of Management*, 25(2), 186-208.

Rezaei, M., Babadi, A. A. K., & Mimaei, A. R. (2014). The Effect of Information Technology on the Quality of Employees' Trainings (Case Study: Employees of Iranian Bank Melli). *International Science and Investigation Journal,* 3(1), 1-9.

Rosenberg, M. J. (2001). *E-learning: Strategies for delivering knowledge in the digital age (Vol. 3)*. New York: McGraw-Hill.

Rowley, J., & Gibbs, P. (2008). From learning organization to practically wise organization. *The Learning Organization*, 15(5), 356-372.

Rószkiewicz M., Perek-Białas. J., Węziak-Białowolska D., & Zięba-Pietrzak A. (2013). *Projektowanie badań społeczno-ekonomicznych. Rekomendacje i praktyka badawcza*. Warszawa: Wydawnictwo Naukowe PWN.

Ruggles, R. (2009). *Knowledge management tools*. Boston: Routledge.

Senge, P. M., Kleiner, A., Roberts, C., Ross, R., Roth, G., & Smith, B. (1999). *The dance of change: The challenges to sustaining momentum in a learning organization.* New York: Doubleday/Currency Book.

Senge, P. M. (1997). The fifth discipline. *Measuring Business Excellence*, 1(3), 46-51.

Sergeev, A., & Babkin, E. (2015). Towards Competence-Based Enterprise Restructuring Using Ontologies. *Advances in Enterprise Engineering*, IX, 34-46.

Sun, P. Y., & Anderson, M. H. (2010). An examination of the relationship between absorptive capacity and organizational learning, and a proposed integration. *International Journal of Management Reviews*, 12(2), 130-150.

Sztangret, I., Bilińska-Reformat, K. (2014). Knowledge management model in B2B relations – holistic approach on the example of IT products and trade sector. In the *Trade Perspectives 2014. People, technology, knowledge*. Conference proceedings, 34-54.

Vatansever, Ç., & Karamaraş, S. (2017). Power of person-job fit: emotional labour for salespeople and its relation to job satisfaction. *International Journal of Work Organisation and Emotion*, 8(1), 1-23.

BANKRUPTCY PRACTICE IN COUNTRIES OF VISEGRAD FOUR

Maria Misankova[1], Katarina Zvarikova[2], Jana Kliestikova[3]

[1]University of Zilina, Department of Economics, Faculty of Operation and Economics of Transport and Communications, Slovak Republic, maria.misankova@fpedas.uniza.sk

[2]University of Zilina, Department of Economics, Faculty of Operation and Economics of Transport and Communications, Slovak Republic, katarina.zvarikova@fpedas.uniza.sk

[3]University of Zilina, Department of Economics, Faculty of Operation and Economics of Transport and Communications, Slovak Republic, jana.kliestikova@fpedas.uniza.sk

Abstract. Numerous economists and analysts from all over the world have been trying to find an appropriate method to assess company health and to predict its eventual financial distress for many years. No economy is a small isolated subject, and the bankruptcy of a company can cause through its stakeholders' significant impact on the sustainable economic development. Otherwise, companies are very complicated entities, and it is not a simple task to estimate company's future development. Together with the best-known Z-Score model of bankruptcy prediction developed by Altman, numerous models worldwide that are based on different methodologies have been developed. We assume that individual state's economy has major influence on the final form of these models as well as there are several common characteristics between Slovak economy and economy of countries of Visegrad Four. Therefore, we applied chosen bankruptcy prediction models developed in countries of Visegrad Four on the set of Slovak companies and validated their prediction ability in specific condition of the Slovak economy. On the basis of the provided calculations, we compared gained results with the prediction capability of other popular prediction models also applied on the data set of Slovak companies. Through this, we pointed out the importance of the development of unique bankruptcy prediction model, which will be constructed in the specific condition of individual countries, and highlighted the weak forecasting ability of foreign models.

Introduction

Bankruptcy is one of the most important externalities of current modern economics and even with the maximum effort is not possible to avoid it. Kirkos (2015) and Dichev (1998) also validate that it is one of the most important business decision-making processes. Everywhere where exists investment opportunities are companies willing to assume financial liabilities and resulting risks in order to keep and develop their economic activities.

Corporate failures as well as failures of other subjects represents event that occurs not only in the market economy. Consequences of these failures are far-reaching and have impact on all stakeholders. According to Kumar and Ravi (2007), there are plenty of authors who dedicated their research to the issue of bankruptcy and consider that it is crucially important to pay attention not only to the actual financial situation of the company but also to focus on the prediction of future financial situation.

So in order to achieve good and healthy functioning of the market economy should be the main task given to the prediction of bankruptcy, which represents an important issue not only for banks, insurance companies and corporates but mainly for investors and creditors. On the other hand, also the number of bankruptcies has increased in recent years, and it is becoming harder to estimate, as companies have become more complex and have developed sophisticated schemes to hide their real situation. Therefore, the ability to discriminate between faithful customers from potential bad ones is fundamental for investors, commercial banks, companies and retailers.

In the economic science, as well as in the practice of real world, a huge variety of models are used for estimating bankruptcy probability of companies and organisations, based on different principles, techniques and methodologies. According to Davydenko and Franks (2008) and Amendola *et al.* (2013), the prediction ability of these models may vary over time and foreign models may not take into account the particularities of individual economies and may have less accurate predictions. Therefore, respecting the prerequisite that efficient methods can only be applied to companies of the same group in the same economic situation in the period for which the models were originally designed, the main goal of the presented study was the validation of prediction ability of chosen bankruptcy prediction models developed in countries of Visegrad Four in specific condition of the Slovak economy.

Literature Review

First researches dedicated to the issue of bankruptcy and corporate's failures had arisen in 1930s of the 20th century. These were oriented mainly on the comparison of financial ratios between bankrupt and non-bankrupt companies. Fitzpatrick (1932) published his work oriented on the major differences between successful and unsuccessful businesses. This work had become the inspiration for many of the applied studies that began to emerge in the middle of 1960s of the 20th century.

However, the breakthrough work of Beaver (1966) who applied univariate discriminant analysis that is based on various financial ratios connected into one final predictor serving as a classification criterion is considered as the turning point. Despite a lot of limitations and reservations of this method, it was an inspiration for a large amount of studies devoted to the issue of bankruptcy prediction and corporate failure (Kliestik and Majerova, 2015).

One of the most famous researchers dealing with bankruptcy prediction is Altman (1968) who was the first to apply multivariate discriminant analysis (MDA) for the construction of bankruptcy prediction models. His work is considered as a symbol of prediction of financial health of companies. More than hundreds of authors from different countries, such as Edmister (1972) and Springate (1978), applied this method. MDA is a popular method and, even nowadays, can be found many studies applying that approach. Barreda *et al.* (2017) proposed MDA bankruptcy prediction model for hospitality firms within the U.S. equity markets. Furthermore, the application of MDA can also be found in Slovakia and other Visegrad countries, such as Gajdka and Stos (1996), Chrastinova (1998), Binkert (1999), Zalai (2000), Wierzba (2000), Gurcik (2002), Prusak (2004), Maczynska (2004), Hamrol *et. al.* (2004) and Neumaierova and Neumaier (1995, 1999, 2001, 2005).

Another widespread mathematical–statistical method used for the bankruptcy prediction is logistic regression. Logit was first applied by Ohlson (1980), followed later by various researchers. Similar to MDA, logistic regression was also used in models designed in Visegrad countries (Virag and Hajdu, 1996; Michaluk, 2000; Gruszcynski, 2004; Wrzosek and Ziemba, 2009; Hurtosova, 2009).

There are plenty of studies that apply various methods for bankruptcy prediction worldwide. These are probit analysis (Zmijewski, 1984; Kasgari *et al.*, 2013), neural network (Jones *et al.*, 2017; Georgescu, 2017), principal component analysis (Achim *et al.* 2012; Onofrei and Lupu, 2014), rough sets (Kasgari *et al.*, 2013; Virag and Nyitrai, 2014), data envelopment analysis (Premachandra *et al.*, 2011; Mousavi *et al.*, 2015), decision trees (Tsai *et al.*, 2014; Zieba *et al.*, 2016), support vector machines (Alaminos *et al.*, 2016; Zhao *et al.*, 2017) and others.

Methodology

The data for the presented study were obtained from annual financial reports of Slovak companies (Register of financial statements, Ministry of Finance of the Slovak Republic) covering the year 2015. Nowadays, Slovak legal system considers company as default according to three criteria:

- the total amount of payable and not payable liabilities is higher than the value of company's

assets,

- company has at least two liabilities 30 days after due date from different creditors,

- the value of financial independence indicator is less than 0.04.

Additionally, to these criteria, we have detected other relevant characteristics, which are considered as significant according to the Slovak environment (Svabova and Kral, 2016; Svabova and Durica, 2016) to discriminate between bankrupt and non-bankrupt companies. Considering these specifications, we have specified three criteria for the subsequent classification of the company. Thus, the company is included in the bankrupt group of sample if it satisfies the following conditions:

- negative value of earnings after taxes,

- the value of current ratio indicator is less than 1.

- the value of financial independence indicator is less than 0.04.

Furthermore, to fulfil the given goal of the presented study, we applied chosen bankruptcy prediction models developed in countries of Visegrad Four on the set of Slovak companies and validated their prediction ability in specific condition of the Slovak economy. The final sample consisted of 384 bankrupt (marked 1) and 384 non-bankrupt (marked 0) companies following the suggestion of Agrawal and Maheshwari (2016).

For the purpose of this study, the selection procedure of the bankruptcy prediction models was provided. Based on this, we applied the following models:

Czech model: Neumarierova and Neumaier's model IN05 with the following formula:

$$IN05 = 0.13X_1 + 0.04X_2 + 3.97X_3 + 0.21X_4 + 0.09X_5 \tag{1}$$

where

X_1 = Total assets / Total liabilities

X_2 = Earnings before interest and taxes / Costs of interest

X_3 = Earnings before interest and taxes / Total assets

X_4 = Total revenues / Total assets

X_5 = Current assets / Short-term liabilities

IN05 = Overall index

Zones of discrimination:

IN05 > 1.60   Company creates value

0.90 < IN05 < 1.60   Grey zone of unallocated results – company doesn't create value and also doesn't bankrupt

IN05 < 0.90   Company is going to bankruptcy

Poland model: Poznanski's model with the following formula:

$$PM = 3.562X_1 + 1.588X_2 + 4.288X_3 + 6.719X_4 - 2.368 \tag{2}$$

where

110

X_1 = Net profit / Total assets

X_2 = Current assets – Stocks / Short-term liabilities

X_3 = Fixed assets / Total assets

X_4 = Profit from sales / Revenues from sales

Zones of discrimination:

PM < 0   Bad future financial health of the company

PM > 0   Good future financial health of the company

Hungarian model: Virag and Hajda's model with the following formula:

$$VHM = 1.3566X_1 + 1.63397X_2 + 3.6638X_3 + 0.03366 \qquad (3)$$

where

X_1 = Cash ratio

X_2 = Cash flow / Total debts

X_3 = Current assets / Total assets

X_4 = Cash flow / Total assets

Zones of discrimination:

MVH < 2.61612   Possibility of bankruptcy of the company

MVH > 2.61612   Company is classified as solvent / good

To compare gained results with the prediction capability of other popular prediction models, we also applied the following models on the data set of Slovak companies:

American model: Altman's model – for needs of this study, we apply the revised version from the year 2014, which is given as follows:

$$Z = 0.035 - 0.495X_1 - 0.862X_2 - 1.721X_3 - 0.017X_4 \qquad (4)$$

where

X_1 = Working capital / Total assets

X_2 = Retained earnings / Total assets

X_3 = Earnings before interest and taxes / Total assets

X_4 = Book value of equity / Book value of total liabilities

Z = Overall index

Zones of discrimination:

$Z > 2.6$ 'Safe' zone

$1.1 < Z < 2.6$ 'Grey' zone

Z < 1.1   'Distress' zone

Canadian model: Springate's model with the following discriminant formula:

$$SM = 1.03X_1 + 3.07X_2 + 0.66X_3 + 0.4X_4 \qquad (5)$$

where

X_1 = Net working capital / Total assets

X_2 = Earnings before interest and taxes / Total assets

X_3 = Earnings before taxes / Short-term liabilities

X_4 = Sales / Total assets

SM = Overall index

Zones of discrimination:

0.862 < SM   Good financial health of the company

SM < 0.862   Possible financial problems of the company

The UK model: Taffler's model with formula:

$$TM = 0.53X_1 + 0.13X_2 + 0.18X_3 + 0.16X_4 \qquad (6)$$

where

X_1 = Earnings before taxes / Short-term liabilities

X_2 = Current assets / Total liabilities

X_3 = Short-term liabilities / Total assets

X_4 = Sales / Total assets

TM = Overall index

Zones of discrimination:

TM > 0.3   Enterprise creates value

$0.2 \leq TM \leq 0.3$ Grey zone

TM < 0.2   Enterprise is going to bankruptcy

Therefore, we applied selected bankruptcy prediction models on the data set of Slovak companies to compare gained classification with the real data and validate prediction ability of these models. The validation was provided based on the confusion matrix and receiver operating characteristic (ROC) curve (Adamko and Svabova, 2016).

Confusion matrix (Table 1) is also referred as contingency table and compares the number of correct and incorrect firms' classification based on the actual and predicted values.

Table 1. Confusion matrix (Source: author's compilation)

		Predictive value			
		0 (non-bankrupt)	1 (bankrupt)		
Actual value	0 (non-bankrupt)	TP	FP	TP + FP	PPV = TP/(TP + FP)
	1 (bankrupt)	FN	TN	FN + TN	NPV = TN/(FN + TN)
		TP + FN	FP + TN	Total	PV = TP + TN/Total

Table 1 shows the number of predictive and actual values for bankrupt and non-bankrupt companies, where:

- TP (true positives) represents the number of companies predicted by the model as non-bankrupt as well as actually non-bankrupt,

- FP (false positives) indicates the number of actually bankrupt companies also predicted by the model as bankrupt, FP is also known as Type I error,

- FN (false negatives) denotes the number of actually bankrupt companies predicted by the model as non-bankrupt, FN is also known as Type II error,

- TN (true negatives) represents the number of companies predicted by the model as bankrupt as well as actually bankrupt,

- PPV (positive predictive value) represents the percentage of correct classification of non-bankrupt companies,

- NPV (negative predictive value) represents the percentage of correct classification of bankrupt companies,

- PV (overall predictive value) indicates the overall prediction ability of the model according to the data set of companies, also known as accuracy of prediction model.

The ROC curve is a graphical technique allowing visual analyses of the trade-offs between the sensitivity and the specificity of a test with regards to the various cut-offs that may be used (Fawcett, 2006). The curve is obtained by calculating the sensitivity and specificity of the test at every possible cut-off point and plotting sensitivity (the proportion of true positive results) against 1 − specificity (the proportion of false positive results). The curve may be used to select optimal cut-off values for a test result, to assess the diagnostic accuracy of a test and to compare the usefulness of different tests.

ROC parameters calculation is given by following formulas:

- Sensitivity = TP / (TP + FN)

- False negativity rate = 1 – Sensitivity = FN / (TP + FN)

- Specificity = TN / (FP + TN)

- False positive rate = 1 – Specificity = FP / (FP + TN)

- Accuracy (area under the curve)

Results

During the research process presented in this study, we applied three selected bankruptcy prediction models developed in the countries of Visegrad Four and compared their prediction accuracy in specific condition of Slovakia with three well-known bankruptcy prediction models developed worldwide.

Table 2 shows the results of provided calculations according to the given specifications determined in the methodology part of this study.

Table 2. Confusion matrixes for models applied on the data set of Slovak companies (Source: author's compilation)

IN05 model		Predictive value			
		0 (non-bankrupt)	1 (bankrupt)		
Actual value	0 (non-bankrupt)	149	235	384	38.80%
	1 (bankrupt)	137	247	384	64.32%
		286	482	768	51.56%

Poznanski's model		Predictive value			
		0 (non-bankrupt)	1 (bankrupt)		
Actual value	0 (non-bankrupt)	361	23	384	94.01%
	1 (bankrupt)	27	357	384	92.97%
		388	380	768	93.49%

Virag and Hajda's model		Predictive value			
		0 (non-bankrupt)	1 (bankrupt)		
Actual value	0 (non-bankrupt)	158	226	384	41.15%
	1 (bankrupt)	124	260	384	67.71%
		282	486	768	54.43%

Altman's model		Predictive value			
		0 (non-bankrupt)	1 (bankrupt)		
Actual value	0 (non-bankrupt)	3	381	384	0.78%
	1 (bankrupt)	2	382	384	99.48%
		5	763	768	50.13%

Springate's model		Predictive value			
		0 (non-bankrupt)	1 (bankrupt)		
Actual value	0 (non-bankrupt)	97	287	384	25.26%
	1 (bankrupt)	77	307	384	79.95%
		174	594	768	52.60%

Taffler's model		Predictive value			
		0 (non-bankrupt)	1 (bankrupt)		
Actual value	0 (non-bankrupt)	202	182	384	52.60%
	1 (bankrupt)	167	217	384	56.51%
		369	399	768	54.56%

According to the obtained results, it can be concluded that Poznanski's model provided the highest prediction accuracy (93.49%) on the data set of Slovak companies. Remaining five prediction models gained similar prediction accuracy a little bit more than 50%. We haven't found significant differences between the Czech model and the Hungarian Model in comparison to other bankruptcy prediction models developed in the world. This is proved also by ROC curve shown in Table 3.

Table 3. Classification results for models applied on the data set of Slovak companies (Source: author's compilation)

	AUC	Sensitivity	False negative rate	Specificity	False positive rate
IN05 model	0.517	0.5210	0.4790	0.5124	0.4876
Poznanski's model	0.935	0.9304	0.0696	0.9395	0.0605
Virag and Hajda's model	0.548	0.5603	0.4397	0.535	0.465
Altman's model	0.550	0.6	0.4	0.5007	0.4993
Springate's model	0.537	0.5575	0.4425	0.5168	0.4832
Taffler's model	0.546	0.5474	0.4526	0.5439	0.4561

On the basis of these results, we can see that more than 93% of Slovak companies from data set in this study were correctly classified by Poznanski's model. This is proved also by the calculated sensitivity and specificity of this model. Although this model gained very high prediction accuracy, other models gained

relatively low sensitivity and specificity and prediction accuracy.

Furthermore, gained results can be graphically illustrated by ROC curves for each model (Fig. 1), representing the ability of each model to discriminate between bankrupt and non-bankrupt companies.
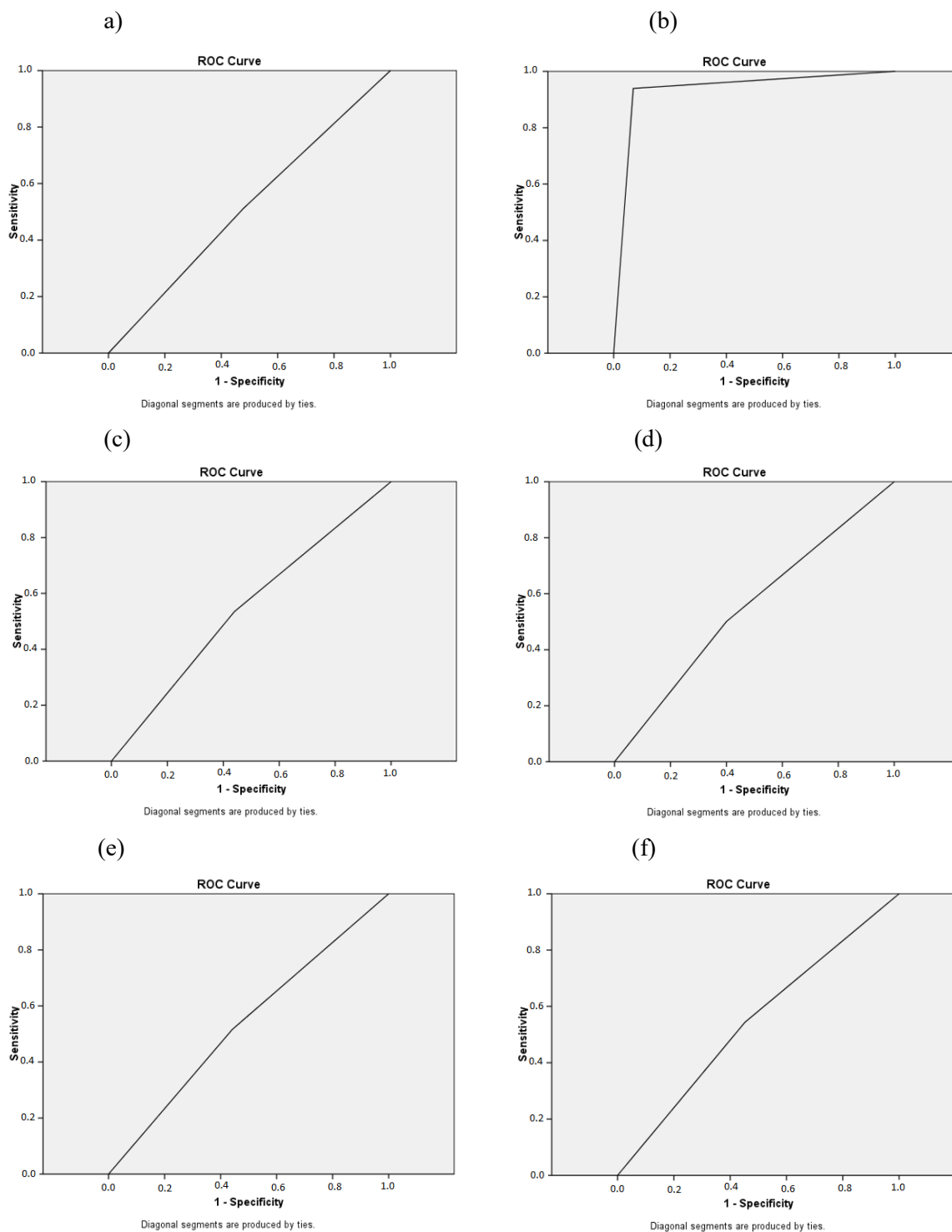
Fig. 1. ROC curves for models applied on the data set of Slovak companies: (a) IN05 model, (b) Poznanski's model, (c) Virag and Hajda's model, (d) Altman's model, (e) Springate's model and (f) Taffler's model (Source: author's compilation)

Conclusions

Despite the plenty of researches and publications dedicated to the issue of bankruptcy prediction, there are not many Slovak models that forecast the probability of bankruptcy with high prediction accuracy. On the other side, there have been numerous bankruptcy prediction models developed worldwide, but the applicability of a model can vary depending on the specifics of national economies, industry and other factors.

So the presented study has attempted to test these prerequisites, if the model developed in foreign country can be successfully used in other country. Therefore, we applied chosen bankruptcy prediction models developed in the countries of Visegrad Four on the data set of Slovak companies. We assume that these countries have similar economies and other several common characteristics with Slovakia, so we expected that the prediction accuracy would be higher than that of other popular prediction models also applied on the data set of Slovak companies.

On the basis of the gained results, it can be concluded that models constructed in Visegrad Four reached better prediction ability than other three models; in the case of Poznanski's model, it is more than 90%, but other models proved (prediction accuracy only little bit more than 50%) that it is highly important to develop a unique bankruptcy prediction model, which will be constructed in the specific condition of individual countries, especially in the Slovak republic. This was proved and highlighted by the weak forecasting ability of foreign models applied on the data set of Slovak companies, and it doesn't matter so much if the model was developed in country with similar economy or somewhere else.

Acknowledgements

References

Achim, M.V., Mare, C., & Borlea, S.N. (2012). A statistical model of financial risk bankruptcy applied for Romanian manufacturing industry. *International Conference on Emerging Markets Queries in Finance and Business*, Conference Proceedings, 132-137.

Adamko, P., & Svabova, L. (2016). Prediction of the risk of bankruptcy of Slovak companies. *Proceedings of 8th International Scientific Conference Managing and Modelling of Financial Risks*, Conference proceedings, 15-20.

Agrawal, K., & Maheshwari, Y. (2016). Predicting financial distress: revisiting the option-based model. *South Asian Journal of Global Business Research*, 5(2), 268-284

Alaminos, D., delCastillo, A., & Fernandez, M.A. (2016). A Global Model for Bankruptcy Prediction. *Plus One*, 11(11), e0166693.

Altman, E. I. (1968). Financial Ratios, Discriminant Analysis and The Prediction of Corporate Bankruptcy. *The Journal of Finance*, 23(4), 589-609.

Altman, E. I., Iwanicz-Drozdowska, M., Laitinen, E.K., & Suvas, A. (2014). Distressed Firm and Bankruptcy Prediction in an International Context: A Review and Empirical Analysis of Altman's Z-Score Model. 1-47. [Accessed 10.04.2017]. Available from Internet: https://poseidon01.ssrn.com/delivery.php?ID=5291060930870750131270670840010131260290690290530590240231040860101190711090961110230330100620370570981051090870861211080060050050490530810030841041221161171140690010490020070251241150861170730170840970880690830650101090720000010740860911240861 18014066&EXT=pdf

Amendola, A, Restaino, M., & Sensini, L. (2013). Corporate Financial Distress And Bankruptcy: A Comparative Analysis. In *The 6th Annual Euromed Conference Of The Euromed-Academy-Of-Business*. Conference proceedings, 107-120.

Barreda, A.A., Kageyama, Y., Singh, D., & Zubieta, S. (2017). Hospitality Bankruptcy in United States of America: A Multiple Discriminant Analysis-Logit Model Comparison. *Journal of Quality Assurance in Hospitality & Tourism*, 18(1), 86-106.

Beaver, W. (1966). Financial Ratios as Predictors of Failure, Empirical Research in Accounting: Selected Studies. *Supplement to the Journal of Accounting Research*, (4), 71-111.

Binkert, Ch. H. (1999) Fruherkennung von Unternehmenskrisen mit Hilfe geeigneter Methoden im deutschen und slowakischen Wirtschaftsraum. *Dissertation*.

Chrastinova, Z. (1998). *Metódy hodnotenia ekonomickej bonity a predikcie finančnej situácie poľnohospodárskych podnikov*. Bratislava: VÚEPP.

Davydenko, S., & Franks, Jr. (2008) Do Bankruptcy Codes Matter? A Study of Defaults in France, Germany, and the UK. *Journal of Finance*, 63(2), 797-1022.

Dichev, I.D. (1998). Is The Risk Of Bankruptcy A Systematic Risk? *Journal of Finance*, 53(3), 1131-1147.

Edmister, R.O. (1972). Financial Ratios as Discriminant Predictors of Small Business Failure. *Journal of Finance*, 27(1), 1-178.

Fitzpatrick, P.J. (1932). A Comparison of Ratios of Successful Industrial Enterprises with Those of Failed Firms, *Certified Public Accountant*, (10), 598-605.

Gajdka J., & Stos, D. (1996). Wykorzystanie analizy dyskryminacyjnej w ocenie kondycji finansowej przedsiębiorstw, *Materiały z Ogólnopolskiej Konferencji Naukowej „Restrukturyzacja w procesie przekształceń i rozwoju przedsiębiorstw", Wydawnictwo Akademii Ekonomicznej w Krakowie, Wydawnictwo Akademii Ekonomicznej, Kraków*, Conference proceedings, 56-65.

Georgescu, V. (2017). Using genetic algorithms to evolve type-2 fuzzy logic systems for predicting bankruptcy. *Kybernetes*, 46(1), 142-156.

Gruszczynski, M. (2004) Financial distress of companies in Poland. *International Advances in Economic Research*, 10(4), 249-256.

Gurcik, L. (2002). G-index – the financial situation prognosis method of agricultural enterprises. *Agricultural Economics*, 48(8), 373-378.

Hamrol, M., Czajka, B., & Piechocki, M. (2004). Company bankruptcy – a discriminant analysis model - Upadłość przedsiębiorstwa – model analizy dyskryminacyjnej. *Przegląd Organizacji*, (6), 35–39.

Hurtosova, J. (2009). Konštrukcia ratingového modelu, nástroja hodnotenia úverovej spôsobilosti podniku, *dissertation thesis, Economic University in Bratislava,* Bratislava.

Jones, S., Johnstone, D., & Wilson, R. (2017). Predicting Corporate Bankruptcy: An Evaluation of Alternative Statistical Frameworks. *Journal of Business & Accounting*, 44(1-12), 3-34.

Kasgari, A.A., Divsalar, M., Javid, M.R., & Ebrahimian, S.J. (2013). Prediction of bankruptcy Iranian corporations through artificial neural network and Probit-based analyses. *Neural Computing & Applications*, 23(3-4), 927-936.

Kirkos, E. (2015). Assessing Methodologies for Intelligent Bankruptcy Prediction. *Artificial Intelligence Review*, 43(1), 83-123.

Kliestik, T., & Majerova, J. (2015). Selected issues of selection of significant variables in the prediction models. *Proceedings of 10th international scientific conference Financial management of firms and financial* institutions, Conference proceedings, 537-543.

Kumar, P., & Ravi, V. (2007). Bankruptcy Prediction In Banks And Firms Via Statistical And Intelligent Techniques - A Review, *European Journal Of Operational Research*, 180(1), 1-28.

Mączynska, E., (2004). Globalizacja ryzyka a systemy wczesnego ostrzegania przed upadłością przedsiębiorstwa. *Upadłość przedsiębiorstw w Polsce w latach 1990–2003. Teoria i praktyka*. Poznań.

Michaluk, K. (200). Zastosowania metod ilosciowych w procesie przewidywania zagrozenia upadloscia przedsiebiorstwa. *doctoral dissertation*, Uniwersytet Szczeciński, Sszecin.

Mousavi, M.M., Ouenniche, J., & Xu, B. (2015). Performance evaluation of bankruptcy prediction models: An

orientation-free super-efficiency DEA-based framework. *International Review of Financial Analysis*, (42), 64-75.

Neumaier, I., & Neumaierová, I. (1995). Zkuste spočítat svůj INDEX IN 95. *Terno*, (5).

Neumaier, I., & Neumaierová, I. (1999). Finanční analýza INFA - Aplikace na energetiku. *Sektorové a odvětvové analýzy Aspekt Energetika*, 4(1), 32-75.

Neumaier, I., & Neumaierová, I. (2001). Analýza tvorby hodnoty - aplikace finanční analýzy INFA. *Sektorové a odvětvové analýzy Aspekt 8/V Investiční strojírenství*, 23-39.

Neumaier, I., & Neumaierová, I. (2005). Index IN 05. *Proceeding of the conference „European financial systems"*, Conference proceedings, 143-148.

Ohlson, J.A. (1980) Financial ratios and the probabilistic prediction of bankruptcy. *Journal of Accounting Research*, 18(1), 109-131.

Onofrei, M., & Lupu, D. (2014). The Modeling of Forecasting the Bankruptcy Risk in Romania. *Economic Computation and Economic Cybernetics Studies and Research*, 48(3), 197-215.

Premachandra, I.M., Chen, Y., & Watson, J. (2011). DEA as a tool for predicting corporate failure and success: A case of bankruptcy assessment. *Omega – International Journal of Management Science*, 39(6), 620-626.

Prusak, B. (2004). *How to recognise a potential bankrupt? Assessment of company insolvency risk, based on multiple discriminant analysis*. [Accessed 10.04.2017]. Available from Internet: http://www1.zie.pg.gda.pl/~pb/jrpb.pdf

Springate, G.L.V. (1978). Predicting the possibility of failure in a Canadian firm. *Unpublished MBA Res. project*, Simon Fraser Univ., 42-47.

Svabova, L., & Durica, M. (2016). Korelačná analýza prediktorov použitých v bankrotných predikčných modeloch na Slovensku. *Ekonomicko manazerske spektrum*, 10(1), 2-11.

Svabova, L., & Kral, P. (2016). Selection of predictors in bankruptcy prediction models for Slovak companies. *Proceedings of 10th International days of statistics and economics,* Conference proceedings, 1759-1768.

Taffler, R.J., & Tseung, M. (1984). The Audit Going-Concern. *Practise. Accountant′s Magazine*, (88), 263-269.

Tsai, C.F., Hsu, Y.F., & Yen, D.C. (2014). A comparative study of classifier ensembles for bankruptcy prediction. *Applied Soft Computing*, (24), 977-984.

Virag, M., & Hajdu, O. (1996) Pénzügyi mutatószámokon alapuló csõdmodellszámítások. *Bankszemle XV*, (5), 42–53.

Virag, M., & Nyitrai, T. (2014). Is There A Trade-Off Between The Predictive Power And The Interpretability Of Bankruptcy Models? The Case Of The First Hungarian Bankruptcy Prediction Model. *Acta Oeconomica*, 64(4), 419-440.

Wierzba, D. (2000). *Wczesne wykrywanie przedsiębiorstw zagrożonych upadłością na podstawie analizy wskaźników fi nansowych – teoria i badania empiryczn e*. „Zeszyty Naukowe" 9, Wyd. Wyższej Szkoły Ekonomiczno-Informacyjnej w Warszawie, Warszawa.

Wrzosek, M., & Ziemba, A. (2009). Construction of a rating based on a bankruptcy prediction model. *Credit Research Center, The University of Edinburgh*, 1-19, [Accessed 08.04.2017]. Available from Internet: http://www.business-school.ed.ac.uk/crc/conferences/conference-archive?a=45910

Zalai, K. (2000). Special Aspects of Forecasting the financial development of Slovak companies. *BIATEC*, 8(1), 12-14.

Zhao, D., Huang, C.Y., Wei, Y., Yu, F.H., Wang, M.J., & Chen, H.L. (2017). An Effective Computational Model for Bankruptcy Prediction Using Kernel Extreme Learning Machine Approach. *Computational Economics*, 49(2), 325-341.

Zieba, M., Tomczak, S.K., & Tomczak, J.M. (2016). Ensemble boosted trees with synthetic features generation in application to bankruptcy prediction. *Expert Systems with Applications*, (58), 93-101.

Zmijewski, M. E. (1984) Methodological issues related to the estimation of financial distress prediction models. *Journal of Accounting Research*, (22), 59-82.

ECONOMETRIC MODELLING OF INFLUENCE OF LEVEL OF THE SOCIAL AND ECONOMIC INFRASTRUCTURE ON QUALITY OF LIFE OF THE POPULATION

Ilchenko Angelina[1], Xiang Xiao Gang[2], Stepanov Vladimir[3]

[1] Ivanovo State University of Chemical Technology, Russia, dr.ilchencko@yandex.ru

[2] Wuhan Textile University, China, econom@isuct.ru

[3] Central Economic-Mathematical Institute of the Russian Academy of Sciences, Russia, econom@isuct.ru

Abstract. In this article, the index approach to an estimation of situational multifactor economic categories is considered: a level of development of a social and economic infrastructure of region and population living conditions. Author's mathematical models of formation of the integrated estimated indexes formulated on principles of the factorial analysis of hierarchies are used. The constructed estimated integrated indexes form a basis of ranging of territories, both in an annual cut and in dynamics on years that, in turn, allows to analyse the change in ratings of territories (during 5–10 years): on a level of development of an infrastructure and quality of life of the population. Authors give results of computer modelling of an index of development of a social and economic infrastructure. Here authors use additional parameters for the measurement of an index of capital investments in an infrastructure. Further, authors model an index of quality of life of the population. Here the methods used are the analysis of hierarchies, the factorial analysis and a method of the main things a component. Then the interrelation analysis between tendencies of change of indexes through comparison of ranks of territories is made. Theoretical offers of authors are accompanied by quantitative results of modelling experiments on materials of 30 Chinese provinces for the period of 10 years period.

Keywords: infrastructure; quality of life; mathematical modelling; integrated indicator; ranging of territories

JEL code: H54; O18; R58; C02

Introduction

Infrastructure is the general physical condition of development of a society within the borders of some territory, as well as the material means for a social production and necessary services in public service of the inhabitants living in this territory. The infrastructure includes transport service, mail and telecommunications, water supply, business administrative services, scientific research and technical services, gardening, environment protection, cultural service, education, health services and other municipal services of public life.

The basic infrastructural means play a huge role in the acceleration of social and economic activity of the population and the development of its spatial distribution. For the state, it is important to provide normal, under modern requirements, infrastructure, but it means long-term and huge investments. However, further, infrastructural investments have property of the saved up capital. They give effect within many decades, improving a business climate and quality of life of the population in region territory (Kularathe, 2006; Mc Kinsey, 2009; Kondratyev, 2010).

The concrete maintenance of quality of life includes actual level of the income, level of personal consumption and consumption structure, social conditions and working conditions, degree of development of social security, quantity of kinds of leisure, public health services and education and so on.

Authors investigate the fundamental scientific problem lying on a joint of sciences – the economic theory and optimum control of public processes: a problem of objective quantitative measurement of quality of life as criterion of comparison of economic development of certain territories. In the world economic science, the hypothesis about dynamic interference of infrastructural investments and qualities of life of

the population in borders of territorial and production agglomerations now was generated. However, there are no yet objective methods and mathematical models for the measurement of the development of a social and economic infrastructure and quality of life of territories. Hence, it is impossible to estimate the degree of influence of an infrastructure on a population standard of living and also to objectively define the priorities in directions of the state investment, for the elimination of a disbalance in development of territories.

The author's attention is directed towards the decision regarding the specific target within the limits of a problem: creation of a complex of mathematics and statistical models for the formation of system of integrated indicators of the quality of life, defined based on the official statistical information, for the purpose of perfection of an investment infrastructural policy of the state. On the basis of integrated indexes, authors do ranging of territories and give the analysis of two rating positions of regions of the country, with a log of delay of 5 years. The analysis shows how (during the previous period) infrastructural maintenance of territory influences the quality of life of the population (during the subsequent period, in 5 years).

In this article, the results of experimental check of a fundamental scientific hypothesis on the statistical information of China (30 regions for 10 years) are described. The offered methodology (models, algorithms and information technology) is theoretical base of tool means of support of operating decisions, which is a component of information and communication control systems of new generation.

Literature Review

The problem of joint measurement of the quality of life and condition of an infrastructure has no reflexion in the literature. However, each of the specified aspects of this problem has wide scientific discussion.

Since 1975, when professor Morris has offered for the first time the concept of an index of the quality of life, of the world literature many works under the analysis and comparison of internal and external standards of life, construction of system of indicators for qualitative research of a standard of life and its separate aspects (Aivazian, 2012) are published. The Russian, European and Chinese scientists, at calculation of indexes, take into consideration the objective factors to the statistical of sphere of services to construct the summary indicator, using principles of objective weighing. For example, Lin Nan (1987) and Lu Shu Hua (1992) used equal weight of factors, and on the contrary, He Chuan Qi, Zhou Chang Cheng and Feng Xiao Tian have proved the recommendations about the calculation of a non-equilibrium variant of model of the indicator of the vital standard, with reference to conditions of the Chinese economy.

The Russian school of thought of research of living conditions is presented by known economist-mathematician Aivazian S.A. (2010–2012) and its followers: Bakumenko L.P., Borodkin F.M., Verbik M. Their results are concentrated to the analysis of structure of integrated indicators and statistical measurement of scales of making components.

The design procedure of an index of development of human potential was extended in world practice, offered by experts of the United Nations. The index varies from 0 to 1, which allows ranging objectively territories on quality of life of the population (Kondratyev, 2010).

For the classification of territories based on the infrastructure level of development, now, there are no standard techniques. Creation of methodology of measurement of an infrastructure of regions is complicated, owing to the objective reasons. The main reasons – uncertainty of the concept and its structural elements, the official published data – are incommensurable and non-comparable amongst themselves. The problem of factorial uncertainty does not allow making a uniform integrated estimation of an infrastructure of territory; therefore, numerous scientific publications reflect only researches of separate sectors of 'infrastructural space'.

The generalised estimations of influence of 'infrastructures as a whole' on economic growth do not exist, as there is no conventional measuring instrument (indicator) of a level of development of an infrastructure

in territory (Kondratyev 2010). Ilchenko and Ma Jun (2012) are the first to put forward the idea of the integrated indicator of measurement of an infrastructure (index of development of a social and economic infrastructure, IDSEI) in 2012, then Ilchenko used for the first time IDSEI to measure the level of development of a social and economic infrastructure of some Russian regions in 2014 (Ilchenko 2014).

In this article, authors expand experiment scale to check up a scientific hypothesis on full information base: 30 provinces of China during 2009–2014.

Methodology

Authors use modern methods of mathematical and logic formalisation for the description of natural science processes:

- Mathematical and statistical methods used are the theory of statistical measurements and economic indexes, the factorial analysis, the theory of objective weighing and the analysis of multilevel hierarchies;
- Economic-mathematical methods used are classification of multidimensional supervision, cluster and discriminant analysis, optimum control models and scenary forecasting.

On the basis of these methods, authors offer original index models that are experimentally approved, using the official statistical information.

Thus, in the article, the attempt to unite studying of these two important phenomena becomes to conduct research on the influence of processes of investment in a social and economic infrastructure on the quality of life of people. The modern device of economic-mathematical modelling and means of experimental computer toolkit, in a combination to an easy approach to databases of national statistics of China, give the chance to solve this problem.

Experimental Modelling

Experimental modelling includes research for each province of China: 1) Calculation of an index of development of an infrastructure; 2) Calculation of an index of quality of life; 3) Construction of numbers of dynamics of all regions (ratings), for each index; 4) The analysis of rating positions of regions 'with the worst indexes', for revealing the influence of factors of 'quality of an infrastructure' on the 'quality of life in 5 years'; 5) The conclusion: a priority of regions in a choice of directions of infrastructural investment for the state forward planning.

Index of quality of social and economic infrastructure. Model IDSEI is intended for the analysis of development of social and economic infrastructure of the countries on the basis of an index method. On the basis of index calculation, model IDSEI allows to estimate a condition of an economic infrastructure in each separately taken region of any state. The model can be useful for working out the regional infrastructural policy of the national governments and for the creation of long-term investment plans on regional economic development and increasing the standard of living of the population. Authors offer appropriate updating of model for its application to the data of official statistics of the Government of the Peoples Republic of China in 2013 and 2014. The detailed substantiation of parameters is resulted in the previous author's works (Ilchenko & Ma Jun 2012, Xiang Xiao Gang & Ilchenko 2013 and Ilchenko 2014). Table 1 shows the structure of model and structure of statistical components.

The modelling information can be transformed to diagrams (an example on Fig. 1) with the use of SPSS software.

The received diagrams allow drawing an important conclusion: east coastal provinces of China have the developed economy and the provinces close to the western border have the big territories, but it is not enough manpower resources. The first of them show rather high values of IDSEI, whilst the western provinces characterised by backward economy and high level of environmental contamination show low values of a considered index. It is necessary to notice that the Chinese government can direct more

investments into an infrastructure of western regions to raise the level of their economic development and to improve a state of environment.

Table 1. Structure of statistics of model IDSEI

Indicators	Denomination of specific indicators	The statistical parameters used to determine the parameters
1	2	3
Socio-demographic component (Isoc) Isoc = (Ip + Ic + Ih + Ik)/4		
Ip	The index of the regional GDP per capita	The regional GDP per capita, unit: Yuan.
Ic	The index of population education and health services Ic= (Ic1 + Ic2)/2	The number of teachers per thousand people, unit: number.
		The number of doctors per 1000 people, unit: number.
Ih	The index of the per capita housing area	The per capita housing area, unit: square metre.
Ik	The index of the economically active population	The economically active population, unit: million.
Industrial component (Iter) Iter=(Itr + Iw + Iz)/3		
Itr	The index of the transportation network	The length of highway per 1000 people, unit: kilometre.
		The length of railway per 1000 people, unit: kilometre.
Iw	The index of the freshwater consumption	The amount of the per capita water consumption, unit: cubic metre.
Iz	The index of the ecological environment. Iz=1 − (Iz1 + Iz2)/2	The amount of exhaust gas emissions of sulphur dioxide per capita, unit: kilogram.
		The amount of wastewater discharged per capita, unit: tonne.
Integral index of socio-economic infrastructure (IDSEI) IDSEI = (Isoc+2·Iter)/3		
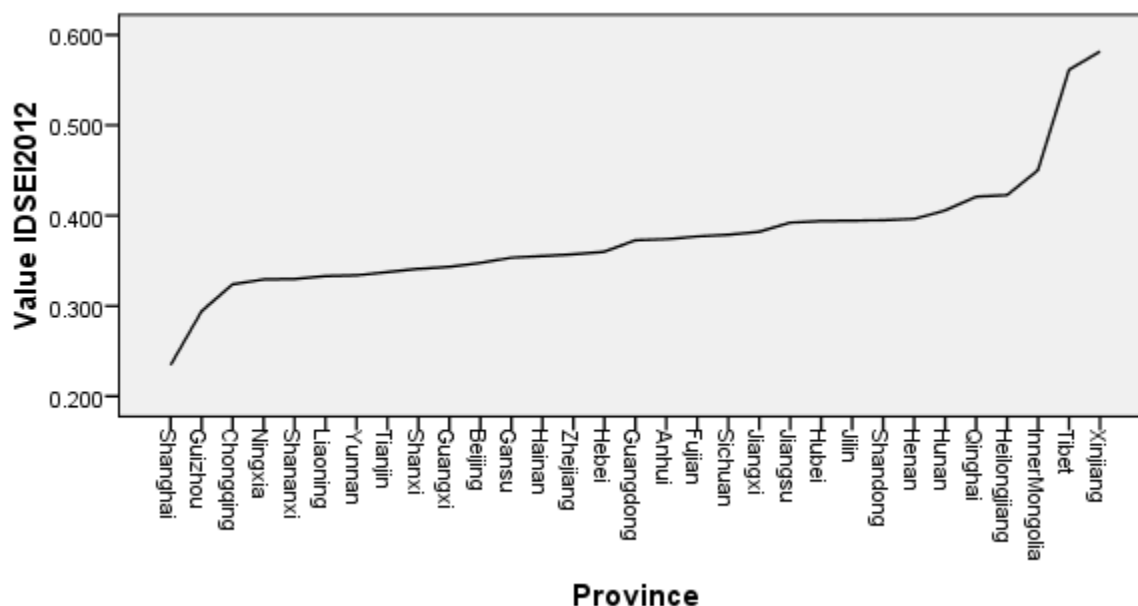
Fig. 1. An index of development of a social and economic infrastructure (IDSEI)
Municipalities of China – 2012 (authors' result)

Working out a new index of the quality of life of population. The Index of quality of life (ILQ) assumes system of indicators of quality of life of the population. The estimation of quality of life is based on the consecutive aggregation of local statistics. The integrated index pays off as three-level hierarchy of linear polynomial. Weight factors for model components have equal weight at the bottom level and special weight at the second and third levels. Model ILQ includes 26 local indicators of quality of life from the official statistics (Xiang Xiao Gang. 2015). According to the structure of ILQ resulted in Table 2, the system of the equations for index definition will look as follows:

Table 2. Decomposition of structure of an integrated index of quality of life

Level 1	Level 2	Level 3	Level 4	Signation
Index of life quality (ILQ)	Index of internal family life quality (IIFLQ)	Index of internal basic family life quality (IIBFLQ)	Food	X1
			Clothing	X2
			Live	X3
			Equipment	X4
			Traffic and communication	X5
		Index of internal additional family life quality (IIAFLQ)	Cars	X6
			Entertainment	X7
			Health care	X8
			Insurance	X9
			Mansions	X10
		Index of internal spiritual family life quality (IISFLQ)	Wealth	X11
			Marriage	X12
			Work	X13
	Index of external social life quality environment (IESLQE)	Index of external basic social life quality environment (IEBSLQE)	Water	X14
			Gas	X15
			Road	X16
			Bus	X17
		Index of external additional social life quality environment (IEASLQE)	Medicine	X18
			Education	X19
			Knowledge	X20
			Environment	X21
		Index of external spiritual social life quality environment (IESSLQE)	Equality	X22, X26
			Development	X23, X24
			Civilisation	X25

$$ILQ = \alpha_1 \cdot IIFLQ + \alpha_2 \cdot IESLQE \tag{1}$$

$$IIFLQ = \beta_1 \cdot IIBFLQ + \beta_2 \cdot IIAFLQ + \beta_3 \cdot IISFLQ \tag{2}$$

$$IIBFLQ = \gamma_1 \cdot X1 + \gamma_2 \cdot X2 + \gamma_3 \cdot X3 + \gamma_4 \cdot X4 + \gamma_5 \cdot X5 \tag{3}$$

$$IIAFLQ = \gamma_6 \cdot X6 + \gamma_7 \cdot X7 + \gamma_8 \cdot X8 + \gamma_9 \cdot X9 + \gamma_{10} \cdot X10 \tag{4}$$
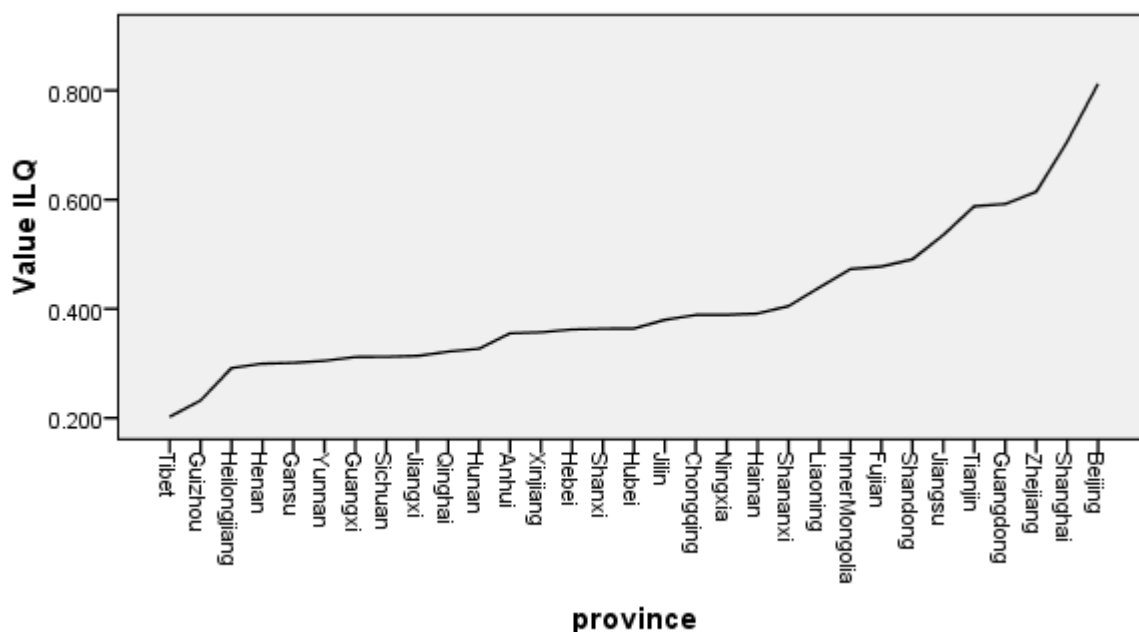
$$IISFLQ = \gamma_{11} \cdot X11 + \gamma_{12} \cdot X12 + \gamma_{13} \cdot X13 \tag{5}$$

$$IESLQE = \beta_4 \cdot IEBSLQE + \beta_5 \cdot IEASLQE + \beta_6 \cdot IESSLQE \tag{6}$$

$$IEBSLQE = \gamma_{14} \cdot X14 + \gamma_{15} \cdot X15 + \gamma_{16} \cdot X16 + \gamma_{17} \cdot X17 \tag{7}$$

$$IEASLQE = \gamma_{18} \cdot X18 + \gamma_{19} \cdot X19 + \gamma_{20} \cdot X20 + \gamma_{21} \cdot X21 \tag{8}$$

$$IESSLQE = \gamma_{22} \cdot X22 + \gamma_{23} \cdot X23 + \gamma_{24} \cdot X24 + \gamma_{25} \cdot X25 + \gamma_{26} \cdot X26 \tag{9}$$

Fig. 2. Distribution of an index of quality of life in the Chinese provinces for 2013 (authors' result).

The ILQ unites internal factors (requirement of the population) and external factors (state resources). In Fig. 2, we can see that the top 5 of regions of China on an index of quality of life are Beijing, Shanghai, Zhejiang, Shandong and Tianjin. These provinces are characterised by a high standard of living. Gansu, Henan, Heilongjiang, Guizhou and Tibet are the top 5 of the worst regions on the quality of life. The received picture of distribution of regions is objective, as it is based on the integrated index in a complex considering state of the economy, a way of life of people and quality of the government.

Table 3. Comparison of integrated indexes ILQ and ratings of regions for 2013–2014

Region (31)	IQLA-13	IQLA-14	Rank-13	Rank-14	Region	IQLA-13	IQLA-14	Rank-13	Rank-14
Beijing	0.778	0.810	1	1	Hubei	0.352	0.304	19	21
Tianjin	0.567	0.496	5	6	Hunan	0.331	0.316	21	20
Hebei	0.367	0.355	18	14	Guangdong	0.632	0.538	3	4
Shanxi	0.374	0.329	16	16	Guangxi	0.301	0.232	26	29
Inner Mongolia	0.469	0.451	9	7	Hainan	0.391	0.354	12	15
Liaoning	0.452	0.425	10	8	Chongqing	0.375	0.321	15	19
Jilin	0.388	0.324	13	18	Sichuan	0.293	0.279	27	25
Heilongjiang	0.313	0.292	23	22	Guizhou	0.206	0.225	30	30
Shanghai	0.619	0.608	4	3	Yunnan	0.314	0.283	22	23
Jiangsu	0.554	0.519	6	5	Tibet	0.199	0.164	31	31
Zhejiang	0.648	0.642	2	2	Shaanxi	0.380	0.359	14	13
Anhui	0.332	0.281	20	24	Gansu	0.244	0.255	29	28
Fujian	0.487	0.422	7	9	Qinghai	0.303	0.328	25	17
Jiangxi	0.305	0.277	24	26	Ningxia	0.397	0.398	11	11
Shandong	0.477	0.419	8	10	Xinjiang	0.371	0.372	17	12
Henan	0.259	0.263	28	27					

For the purpose of additional approbation of the author's approach to the formation of integrated estimated indexes (a social and economic infrastructure and quality of life of the population), calculation on model 'a method of the main things a component' (Aivazian 2012) is executed. Result of experimental modelling on model (Aivazian 2012) is a file of integrated indicators Π_j (j=1, 2, …, 31) and rankings' number of regions (on decrease in the value of Π_j). After comparison of results (Figure 2, Table 3), it is possible to speak about the correctness of practical application of author's model ILQ.

The dependence analysis between the level of development of social and economic infrastructure and the level of quality of life of population. Now, a lot of authors in the world economic science (e.g. Kondratyev 2010, Kularathe 2006) notice that the condition of a social and economic infrastructure influences the economic growth of territories, and through it, the quality of life of the population. Thus authors notice (McKinsey, 2009) that it is possible to measure the effect (in the monetary form) only with a delay log in 5–10 years. However, quantitative results about such influence are not published yet, because of objective difficulties. In this work, an attempt to confirm the dependence hypothesis between a condition of an infrastructure and a standard of living of citizens through the comparison of integrated estimated indexes of territories is undertaken. We estimate the influence of an infrastructure on quality of life through comparison of the ordered numbers of objects (regions), that is, ranks, within available time numbers (periods).

Table 4. Summary rating of regions: IDSEI (2009, 2010) and ILQ (2013, 2014)

Region	IDSEI09	IDSEI10	(09+10)	ILQ13	ILQ14	(13+14)	Summary
Beijing	18	23	21	1	1	1	7
Tianjin	24	25	25	5	4	4	11
Hebei	16	17	17	18	15	16	16
Shanxi	23	24	24	17	18	17	25
Inner Mongolia	3	3	3	9	7	7	1
Liaoning	26	26	26	10	10	10	21
Jilin	9	8	7	15	21	19	10
Heilongjiang	5	5	5	29	27	29	19
Shanghai	31	31	31	2	2	2	17
Jiangsu	12	7	10	6	5	6	3
Zhejiang	15	18	16	3	3	3	6
Anhui	14	14	14	20	22	22	22
Fujian	13	13	13	8	9	9	8
Jiangxi	8	10	9	23	26	24	18
Shandong	6	6	6	7	8	8	2
Henan	7	11	8	28	23	25	14
Hubei	11	12	12	16	19	18	12
Hunan	17	15	15	21	20	21	23
Guangdong	10	9	11	4	6	5	4
Guangxi	28	28	28	25	29	28	30
Hainan	22	19	20	12	14	13	15
Chongqing	29	29	29	14	17	14	27
Sichuan	20	16	18	24	24	23	26
Guizhou	30	30	30	30	30	30	31
Yunnan	21	22	22	26	28	26	29
Tibet	2	1	1	31	31	31	13
Shaanxi	27	27	27	11	12	11	24
Gansu	19	21	19	27	25	27	28
Qinghai	4	4	4	22	16	20	9
Ningxia	25	20	23	13	11	12	20
Xinjiang	1	2	2	19	13	15	5

For the maintenance of reliability and validity of conclusions, the following are the necessary conditions for planning of computer experiments:

Condition 1. Comparability of initial information based on all regions, for all years of the chosen period, for all applied settlement techniques and mathematical models.

Condition 2. Sufficient extent of the time period for revealing the tendency of the dependence of quality of life on infrastructure.

Condition 3. Volumes of sample of investigated objects (quantity of provinces in each number of a rating) should coincide.

For the increase of reliability of conclusions of the comparative analysis, calculation of indexes and ranging of regions are executed also on a method of the main things a component, which has shown close results. In Table 4, the information base for the comparative analysis is shown.

Results of Modelling

Now in the developing China, developments of a social and economic infrastructure and improvement of quality of life are not synchronous. The close order of values in a rating of quality of an infrastructure and quality of life means that the infrastructural investments of previous years are enough for increasing the standard of living now. And on the contrary, the presence of a return order of ranks testifies to insufficiency made before efforts on infrastructure development. We should consider that the qualitative effect of infrastructural investments on the population affects in some years. Values of indexes have defined system rankings numbers of objects (ratings of the Chinese provinces), which, in dynamics on years, indirectly show changes in an infrastructure condition, in initial year of the investigated period and in a population's standard of living, in a year finishing, as reaction (or effect) on the saved up infrastructural investments. In other words, we can track change of 'site' of region in rankings numbers for a number of years, that is, see how integrated quality of region has changed in this time.

The following result is the definition of regions with 'the worst' ratings on an infrastructure condition (in initial year of a 5-year period) and the quality of life (last year of the same 5-year period). If movement to the best is not present (there is no rating increase), this region should be investigated in detail, as priority, for the expansion of the state infrastructural investments – in a following planned period. For example, apparently from Table 4, priority applicants for the investments into an infrastructure during the period 2015–2020 are the Guangxi and Guizhou provinces (with "the worst" rating). On the contrary, in the current 5-year period, capital regions (district Beijing and district Shanghai) effectively used the saved up infrastructural investments into previous years and have achieved the best standard of living of the population by the end of the period. (We will add that the effect will affect in the following years).

The executed research on the limited statistical sample provided by the comparable data confirms the hypothesis about dependence of a level of development of an infrastructure and quality of life. The summary integrated index of quality of life (Table 4) defines a rating of objects (regions) – 'following the results of a 5-year period of development of an infrastructure'. The received summary rating of regions following the results of a 5-year period can serve as additional information support for the central government management, with a view of a substantiation and acceptance of administrative decisions in the field of an infrastructural policy on intermediate term prospect.

Conclusions

The new technique of the complex comparative analysis of rank indicators of regions (rating positions), based on the levels of development of an infrastructure and quality of life of the population, with a log of delay of 5–10 years, can be applied to experimental acknowledgement of an actual scientific hypothesis in the modern economic theory: 'About the presence of dynamic influence of a condition of an infrastructure of territories on quality of life of the population'.

The offered mathematical models and algorithms have important application for the state investment policy. Owing to the limitation of resources, the major problems of state planning of infrastructural investments are the establishment of priorities of directions of investment of regions, and the economic and geographical sequence of consumers of regions. For the decision of this problem, it is necessary to have an objective estimation of the level of development of a social and economic infrastructure of regions to do their rating. On the other hand, the state managers should lean against an objective estimation of a standard of living of the population of territories, it is ratings of regions. Comparison of two ratings of regions of the country based on the level of development of an infrastructure and on a population standard of living is a validity and expediency of the largest long-term state investments in infrastructural projects.

The further expansion of scale of experimental modelling, that is, use of possibilities of details of national statistics of the different countries in 10–15 years, will yield additional results for the scientific economic theory and application in management. Authors invite colleagues to take part in researches.

References

Aivazian S.A. (2012). *Analysis of the Quality of Life and Living Standards.* Moscow: Science.

Aivazian S.A., Borodkin F.M. (2006). *Social Indicators.* Moscow: Unity-Dana.

Bakumenko L.P. (2011). *Statistical Aspects of the Research of the Population Life Quality.* Yoshkar-Ola: MarSTU.

Feng XiaoTian, Yi SongGuo. (2000). The Quality of Family Life in Urban Areas: The Indicators and the Structure. *Sociological Studies*. (4), 107-118.

Ilchenko A. (2014). Integrated Estimation of Social and Economic Infrastructure of Territory: Experimental Modeling. *International Journal of Business, Humanities and Technology*, (2), 90-97.

Ilchenko A., Ma Jun. (2012). Integrated Estimation of a Level of Development of a Social and Economic Infrastructure of Region. *Modern High Technologies. The Regional Appendix,* (4), 37-43.

Kondratyev B. (2010). *Infrastructure as the Factor of Economic Growth*. [Accessed 10.11.2010]. Available from Internet: http: //www.perspektivy.info

Kularathe C. (2006). *Social and Economic Infrastructure Impacts on Economic Growth*. UCT School of Economics Staff Seminar Series.

Lin Nan, Wang Ling, Pan YunKang.(1987). Structure and Index of the Life Quality-the Material Analysis of the Thousand Family Surveys in Tianjin in 1985. *Sociological Studies.* (6), 73-89.

Lu ShuHua, Wei LuYing. (1992). The Action Mechanism of the Subjective and Objective Index of Life Quality. *Social Sciences in China.* (1), 121-136.

Mc Kinsey Quarterly. (2009). *The Right Way to Invest in Infrastructure.*

Morris M.D. (1980). The Physical Quality of Life Index (PQLI). *Development digest.* (1), 95–109.

National Bureau of Statistics of the People's Republic of China. (2013). *China Statistical Yearbook –2013*. Beijing: China Statistics Press.

National Bureau of Statistics of the People's Republic of China. (2014). *China Statistical Yearbook –2014*. Beijing: China Statistics Press.

Verbik M. (2008). *A Guide to Modern Econometrics*. The Scientific Book.

Xiang Xiao Gang. (2015). Factor Analysis Method of Chinese Provinces Life Quality Evaluation. *Modern High Technologies. The Regional Appendix,* (3), 142-152.

Xiang Xiao Gang & Ilchenko A. (2013). Social and Economic Infrastructure as the Tool of Alignment of Economic Development of Regions of China. *Modern High Technologies. The Regional Appendix,* (1), 66-70.

Zheng ZongSheng, Wu SuYao, He ChuanQi. (2006). The Comparison of the Quality of Life of the 120 Countries in the World. *Theory and Modernization*. (4), 15-20.

Zhou ChangCheng. (2001). *Social development and life quality.* Beijing: Social Sciences Academic Press, 52-60.

USE OF THE TAX PRISM METHOD WHEN FORMING TAX PART OF THE BUDGET

Ludmila Verovska[1], Alexey Leontyev[2]

[1]*Baltic International Academy, Latvia, ludmila.verovska@bsa.edu.lv*

[2]*Baltic International Academy, Latvia, kratovo490@mail.ru*

Abstract. The tax prism method is developed for the assessment of tax part of the budget as well as for forecasting the influence of tax optimisation on it. There are certain trends in global practice. Developing and transition economies are characterised by low tax burden. Economically developed countries with a high level of social security of population are characterised by high tax burden. The analytical and graphic-analytical research for the purpose of determination of optimum size of the taxation using the tax prism has been conducted. In addition to the concept of 'tax prism', concepts such as static and dynamic tax prisms have been introduced, allowing to consider changes in the part of the budget of interest in connection with a possibility of taxation subjects to reduce the size of a tax burden by various methods of tax optimisation, and also to consider the influence of other factors on it. The use of this approach helps effectively to enhance the tax legislation by modelling high-quality and quantitative consequences of one or another changes and innovations.

Key words: budget, taxation, tax optimization, tax burden, Laffer

JEL Classification: H21, H22, H30

Introduction

Now in many states of the world, the tax legislation is constructed so that it allows various subjects of entrepreneurship to search for optimal taxation variants to a varying degree. At the same time, there are no official techniques that are unambiguously regulating activities of private persons and legal entities in the field of taxation process improvement. General restrictions are set only by a framework of the legal framework.

In 1935, the judge J. Sanderlend expressed fundamental point of the U.S. Supreme Court, having declared that 'the right of taxpayers to avoid taxes … using all means permitted by laws cannot be challenged by anybody' (Russel 2012).

Determination of tax types, purpose of their amount as well as planning of a tax filling part of the budget shall be carried out by taking into account the so-called 'taxation optimisation', that is, the reduction of the amount of paid taxes that doesn't contradict the legislation and carried out by taxation subjects.

The tax prism method, the concept that is shown in this article, can help government to improve tax planning policy. Such improvements can also help taxpayers to lower their tax burden. The task of this article is to introduce the theoretical aspects of the tax prism method. To complete the task, methods such as differentiation, graphical differentiation, mathematical and geometrical approach to the economic problems were used.

Literature review

So far, there is no methodology allowing to estimate qualitatively and quantitatively the influence of taxation optimisation on the tax part of the budget (Козинова, Ошарина 2010; Лагоша 2004; Ногин 2008; Черника 2010).

Effectual functioning of modern tax system is an overriding priority of any state. However, there is no unified solution for all states. The form of solution depends on many factors: the level of economic development of the country, adopted social policy, fiscal literacy and awareness of the population, the focus of national economy on short-term or long-term goals and so on.

Almost all currently made publications are related to the analysis of various methods of taxations and addressed to the taxpayers taxpayers (Mulhere et al. 2017; Astrinos 2017; Dlugosh, Vashchenko 2017; Lidings 2016). All of them aimed into the improvement of the financial conditions of enterprises and, at the same time, do not take into account the losses of the tax part of the budget as a result of the tax avoiding manipulations.

There are certain trends in global practice. Developing and transition economies are characterised by low tax burden. Economically developed countries with a high level of social security of population are characterised by high tax burden. The state, whose main purpose is the current budget revenue, raises taxes at the expense of economic development. A low quality of tax legislation, insufficient fiscal responsibility and literacy of the population promote tax evasion and the development of shadow economy. The totality of these factors affects the value of the tax burden.

Methodology

There are two kinds of tax burden: nominal and actual. The nominal tax burden is planned on the assumption that all tax payers will pay taxes and that they have to pay according to the existing legislation. The actual tax burden may differ from the nominal one on the value of tax evasion and shadow economy.

In specialised economic literature and practical activity, various methods for determining the value of tax burden are applied.

It is recommended to introduce the concept of tax prism for geometrical interpretation of forming of budget's tax part.

The tax prism is a geometrical figure whose amount corresponds to the amount of the taxes received by the state in the current (reporting) period and the side corresponds to the cumulative amount of taxes.

Considering square prism *(Fig. 1)*, it is also filled with rectangular prisms of the smaller sizes whose volume corresponds to the contribution of each taxpayer.
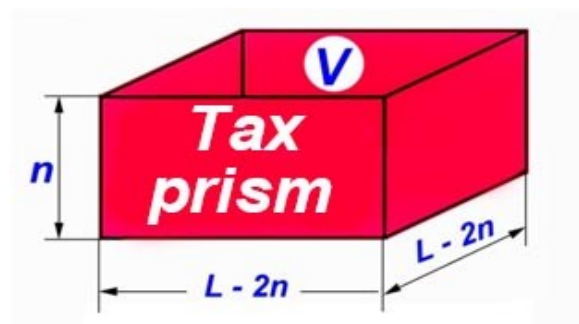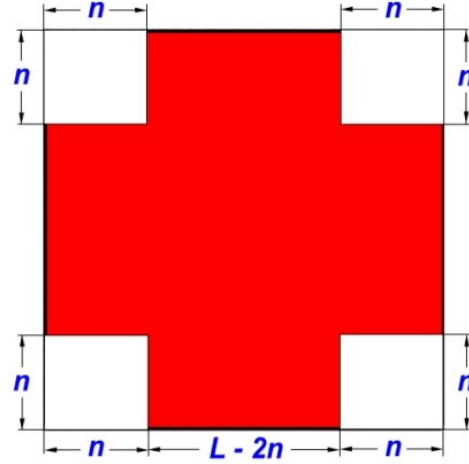

Fig. 1. The tax prism geometrical idea

On the one hand, the task of the state is to receive a maximum of taxes, from the other – not to put out of business the taxpayer, keeping his or her interest in profit earning by means of this type of activity. Therefore, the state shall also be engaged in taxation optimisation process.

This process can be considered by means of the offered tax prism.

For the creation of the prism, there is a page with the equal sides $L \times L$ *(Fig. 2)*.
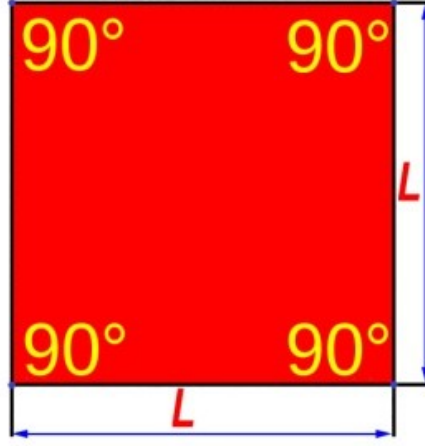
Fig. 2. Sample of the tax prism   **Fig. 3.** The prism with cut off

The task of optimisation consists in making of it a hollow prism whose volume is equal to V *(where V is the tax part of the state budget)*, having cut off a square of $n \times n$ size from each of four corners *(Fig. 3)*, whereby n is the general tax load established by the state for taxation subjects.

 It is necessary to determine the size of the general tax burden n which will correspond to the maximum size V.

V can be displayed as function n. The area of the basis of a tax prism is equal to

$$(L - 2n) \times (L - 2n). \tag{1}$$

The component of the state budget generated by taxes can be determined through the following expression:

$$V = (L - 2n)^2 n. \tag{2}$$

Value n has to be big enough so that value V would be maximum. However, it isn't necessary to go into extremes: when $n = 0$ and $n = 0.5 L$, budget will be zero. At these values of the general tax burden n, the tax prism won't exist because n in geometrical interpretation represents prism height.

 This can be considered on a conditional example. Let $L = 12$. In this case, the tax part of the state budget will be equal to

$$V = (12 - 2n)^2 n. \tag{3}$$

Then when $n = 0$ and when $n = 6$, the budget won't be filled.

The optimum size V lies in the range bigger than zero but smaller than 6. This range can be considered in integers.

In order to use the graphic approach, we visualise function $y = (12 - 2n)^2 n$

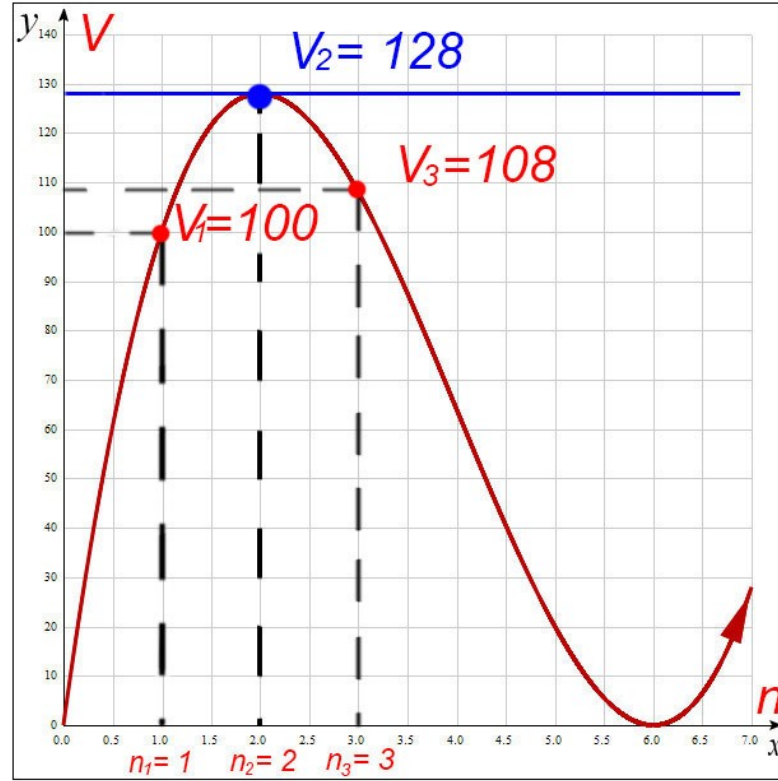for n values within the range from 1 to 6 (Fig. 4).

Fig. 4. Graphical visualisation of the function

If $n = 1$, fill rate of the budget will be $y = 100$; if $n = 2$, fill rate of the budget will be $y = 128$; if $n = 3$, fill rate of tax part of the budget will be $y = 108$. Value $n = 2$ looks promising, but in the range of values from 1 to 3, the other valid value can appear, which will correspond to the criterion of optimisation to a greater extent. It can be determined by analytical or graphic-analytical approaches.

Now differentiation of expression (3) can be carried out. For this purpose, we use the rule of the derivative multiplication:

$$\frac{d}{dx}\big(f(x)g(x)\big) = f(x)\frac{d}{dx}g(x) + g(x)\frac{d}{dx}f(x) \tag{4}$$

$$f(x) = (-2x + 12)^2. \tag{5}$$

Then we find $\frac{d}{dx}f(x)$, for what we execute replacement:

131

$$u = -2x + 12 \tag{6}$$

$$(u^2)' = 2u. \tag{7}$$

Then we multiply by $\frac{d}{dx}(-2x + 12)$, and differentiating $-2x + 12$ term by term, we get:

$$4 * 2x - 48 \tag{8}$$

$g(x) = x$; will find $\frac{d}{dx}g(x)$.

As a result: $x(4 * 2x - 48) + (-2x + 12)^2$.

After simplification, we finally get:

$$12x^2 - 96x + 144. \tag{9}$$

Now we can calculate equation roots:

$$y = 12x^2 - 96x + 144 \tag{10}$$

$x_1 = 2; x_2 = 6.$

Therefore, value $V = 128$ at $n = 2$ really is a maximum of a function (3).

In some cases, it is convenient to conduct the specified research using graphical-analytic approaches for descriptive reasons.

Graphical differentiation of a function diagram $y = (12 - 2n)^2 n$ must be carried out in order to determine an optimum combination of required size of the budget and the total tax load.

The method of graphical differentiation is based on geometrical interpretation of a derivative: the relation of an infinitesimal increment of a function to an infinitesimal increment of an argument on a graphics represents the tangent slope ratio against this curve in the considered point [3]:

$$tg\ \alpha_i = \frac{\overline{\Delta V}}{\overline{\Delta n}}. \tag{11}$$

Graphical differentiation can be executed by method of chords *(Fig. 5)*. For this purpose, we divide the diagram of differentiable function $y = (12 - 2n)^2 n$ into identical areas with a step 0.5 (these areas are located between black points in *Fig. 5*) and draw chords by connecting the closest black points. The chord inclination angle with regard to abscissa axis matches a tangent inclination angle to our function diagram on the considered area. We place axes of coordinates under the function diagram in which we build a function diagram $\frac{dV}{dn} = f(n)$.

We set polar distance Hp, taking into account the desirable vertical clearance of future diagram, and we designate a pole P. We draw the straight line parallel to the chord from a pole that connects two points

limiting the specific area on which differentiation is carried out at the moment before it crosses the ordinate axis ($\frac{dV}{dn}$). A straight line parallel to abscissa axis must've drawn from the obtained point before it crosses the straight line levelled down from the middle of a chord. The middle of chords are marked by lilac points in *Fig. 5*, which are designated by letters *a, b, c, d, e, f, g, h, i, j, k, l.*

Intersection points of the specified straight lines in *Fig. 5* are marked by blue points and letters *a', b',c' ,d' ,e', f', g', h', i', j', k', l'.*
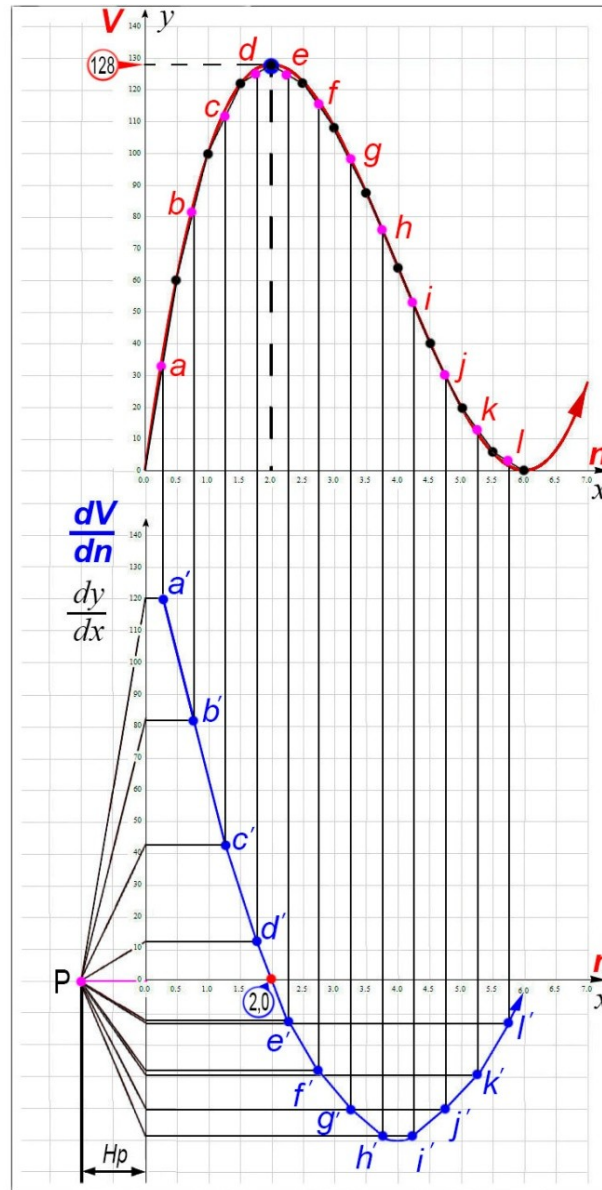
Fig. 5. Graphical differentiation of the function

As a result of differentiation, the parabola whose branches are directed to the up has been obtained. Parabola intersection points $\frac{dV}{dn} = f(n)$ with abscissa axis specify points of maximum and minimum of differentiable function. In the point corresponding to *n = 2*, the function derivative (the lower diagram in

133

Fig. 5) moves from positive area to negative, and the function changes from increase to decrease. Therefore, value of function when *n = 2* is its maximum.

The horizontal tangent will pass through a point in which function $y = (12 - 2n)^2 n$ will reach the maximum value (it is shown in *Fig. 4*).

To the left from a maximum function $V = f(n)$ grows; to the right, it decreases. On the left, the value of its inclination is positive; on the right, it is negative. In the most upper point, nothing occurs. Therefore, it is possible to draw horizontal (i.e. with a zero inclination) tangent *(Fig. 4)*. It will also be optimum value of the total tax load of *n* giving the maximum value of assignments *V* to the state budget in case of which interests of taxpayers are observed.

It is obvious that the studied function has two extrema because the parabola, received by differentiation, crosses abscissa axis in two points. Therefore, when solving similar tasks, it is necessary to stipulate that the positive maximum of function shall be found. In our case, when tax value *n = 6* production will become equal to zero, that will lead to zero the size of a tax part of the state budget as it was stated above; when *n = 0.5 L*, tax prism doesn't exist. For our case, when *L = 12*, this value is equal to *n = 0.5L = 6*.

It should be noted that on the falling part of function $V = f(n)$ located more to the right of maximum point, sharp reduction of business activity occurs. It should be noted that withdrawal of more than 50% of the income in the form of tax extremely negatively affects the initiative of entrepreneurs and completely blocks production expansion. At the same time, entrepreneurs begin to look for an opportunity to reduce the amount of the taxes withdrawn by the state by both legal and illegal methods. So far, exact threshold value of an effective rate in case of which occurs destruction of business activity isn't found. However, Laffer's concept states that in case of a tax burden of more than 35–40%, the entrepreneur gets to 'a tax trap' and thinks of advantage of the business [2].

Results

As the tax prism (Fig. 1) is filled with prisms of the smaller size whose volume corresponds to quantity of the taxes paid by each subject of the taxation, then optimisation of the taxation leads to reduction of its sizes. It is offered to introduce the concept of a static and dynamic tax prism accounting for the decrease in the amount of the collected taxes because of the use of legal tax optimisation schemes by the taxpayers. Static tax prism is a prism whose amount of V_{st} is interpreted as a tax part of the budget without possible tax optimisation. Dynamic tax prism is a prism whose amount of V_{dyn} is interpreted as a tax part of the budget by taking into account the possible tax optimisation.

$$V_{dyn} = k_{to} V_{st} \qquad (12)$$

where k_{to} – coefficient of tax optimization ($k_{to} \leq 1$).

When $k_{to} = 1$, taxpayer didn't take actions directed to tax reduction, using methods of tax optimisation. When $k_{to} < 1$, such actions were taken.

Therefore, when taxpayers use tax optimisation, the dynamic volume of a tax prism will be less than static: $V_{dyn} < V_{st}$

This model takes into consideration not only the possible tax optimisation but also some other factors influencing the tax part size of the budget.

For this purpose, it is necessary to enter the corresponding raising or decreasing coefficients into formula (12).

134

Conclusions

The use of the concept 'tax prism' and its division on static and dynamic versions allows to visualise the process of taxation optimisation that is carried out by state authorities in case of establishment of types and determination of the amount of taxes in both short-term and long-term periods, to make it more exact. The use of this approach helps effectively to enhance the tax legislation by modelling high-quality and quantitative consequences of one or another changes and innovation.

Herein introduced the theoretical concept of the tax prism. Practical researches can only be carried out on macroeconomics scale. At present, such researches are happening, but they require a widest amount of data processing. The concept of the tax prism can also be used to find illegal tax avoidance in the whole economy of the country as well as in different sectors of the economy. With future improvements, herein introduced the method that can also make able to find even separate economy units, who illegally avoid all or partly meant-to-pay taxes (here meant mainly all illegal avoidance that cannot be easily found by government structures with currently existing methods).

References

J. Dlugosh, M. Vashchenko. (2017). *THE WAYS OF ILLEGAL OBTAINING VAT IN POLAND* [Accessed 30.03.2017]. Available from Internet: http://www.ed.ksue.edu.ua/ER/EER/documents/blog.php?tag=fictitious+export

Jsse Russell, Ronaldm - *Cohn Supreme Court of the United States.* - Book on Demand Ltd. 2012. – 571 p.

Kaitlin Mulhere, Elizabeth O'Brien, Kerri Anne Renzulli, Taylor Tepper, Penelope Wang ,Martha C. White. (2017). *33 Smart Ways to Cut Your Taxes Right Now* [Accessed 09.03.2017]. Available from Internet: http://time.com/money/4657974/cut-your-taxes-2016-2017/

Laffer Arthur B ; Jan P Seymour *The economics of the tax revolt*, New York [u.a.] : Harcourt Brace Jovanovich, 1979, 138 p.

Lidings (2016). *Новый ориентир для налоговой оптимизации: по материалам «дела Орифлэйм».* [Accessed 15.03.2017]. Available from Internet: http://www.lidings.com/eng/articles2%3Fid%3D5?id=108

Mark Astrinos. (2017). *Reducing investment taxes in 2017* [Accessed 12.03.2017]. Available from Internet: http://www.journalofaccountancy.com/newsletters/2017/feb/reducing-investment-taxes-2017.html

Taxadviser (2017). [Accessed 02.04.2017]. Available from Internet: http://www.taxadvisermagazine.com/

Головнин Д. Н., *Графическая математика*, М. – Л., 1931г., – 216с.

Козинова А.Т., Ошарина Н.Н. *Экономико – математические модели: Учебное пособие.* – Нижний Новгород: Нижегородский госуниверситет, 2010. – 73 с.

Лагоша Б.А. *Оптимальное управление в экономике*: Учебное пособие. / Московский государственный университет экономики, статистики и информатики - М., 2004. - 133 с.

Ногин В.Д. *Введение в оптимальное управление*. Учебно-методическое пособие. – СПб: Изд-во «ЮТАС», 2008 г., – 92 с.

Черника Д.Г. *Введение в экономико-математические модели налогообложения*: Учеб. пособие / М.: Финансы и статистика, 2010. – 256 с.