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FACULTY OF BUSINESS ECONOMICS WITH SEAT IN KOŠICE**



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Marketing and Trade



MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL ASPECTS OF BUSINESS

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Factors and Determinants of the European Marketing

Viera Čihovská

Abstract

European marketing is a reaction to political and integration processes of the creation of a common European market and subsequent globalisation processes of global economy and growth of international competitiveness. As a result of deepening integration processes, the European Union market is a very specific market with global, supranational, national as well as regional special characteristics. Therefore, this paper aims at analysing and developing theoretical knowledge and relations regarding European marketing and identifying the key determinants of the environment for practice of businesses which want to establish themselves at competitive EU market.

Keywords: european marketing, common EU market

JEL Code: J11, A14

1. Introduction

The European Union currently represents the strongest political and economic grouping in the world with more than half a billion inhabitants living at its territory. The formation and gradual enlargement of the EU have resulted in a common market, which creates a strong economic area without internal borders with granted free movement of goods, persons, services and capital. It currently represents 40 % of global trade and is the greatest internal market with fixed conditions applicable for all EU member states. Such a common market requires the implementation of a specific marketing approach, which needs to reflect changes of market conditions depending on the market a business is carried out on. Environment for commercial activities on the European market is characterised by high-level competition, and significant turbulent and dynamic changes. Those are reflected in European economic, legal, social and cultural environments of most of the EU countries. The key characteristic feature of such changes is increasing globalisation of economic and social structures, resulting in a whole range of disparities of individual regions and whole states, regionalisation and localisation as a reaction to global expressions of the life of society, increasing significance of national cultures as well as mass customization of European consumers. Characteristic features of the EU market area include the fact that the common European market records a still quite high level of heterogeneity in spite of the efforts to converge individual member states.

Practice shows that the EU does not create a common market for the implementation of global, pan-European marketing strategies. Even though almost all barriers of free trade have been removed, and buying patterns of consumers have gradually been converged, there are remaining cultural, economic and social disparities, present in the long term, which still divide individual EU countries. Therefore, this paper aims at collecting, analysing and developing theoretical knowledge and relations regarding European marketing and identifying the key factors and determinants of the European marketing environment for both theory and practice of businesses which want to establish themselves at a highly competitive EU market.

2. European marketing – concept for efficient exchange of the single market of the European

2.1. Brief literature review and methodology

The European marketing theory has been little elaborated in domestic and foreign literature, as it is a quite new matter, which has been getting at the forefront more significantly only after formation of the common European market in 1993. Distinguished representatives who were the first to start dealing with the issues of European marketing include Halliburton, Ch. and Kaynak, E., who had published the first study on European marketing in International Business Press already in 1994. In 2004, he issued a publication “Euromarketing”, providing an interpretation of the transformation from national towards European marketing and considers the intensity of selected variables at the transition from national marketing to European marketing. Other theoreticians dealing with the issue of European marketing include Harris, P., McDonald, F. (Harris, McDonald, 2004) and Burton, F. (2002), who characterised the European marketing as marketing similar to international marketing, as it includes different decisions necessary to sell products across the borders of a country. Borders represent barriers differentiating the European marketing from national marketing. Of course, the EU member states have smaller barriers than non-members. The issues of Euromarketing are dealt with in more detail by Čihovská, V. within scientific projects VEGA 1/0251/08 “The Research of Factors and Determinants that Influence European Business Environment and Marketing Strategies for Slovak Firms at a Common Market of EU with the Support of Specific Marketing Instruments”(2008) and KEGA 018 EU – 4/2014 “Euromarketing

– Factors and Determinants of Common European Market” (2014), where she published a number of articles on Euromarketing (Čihovská, 2009, 2010, 2011).

We have examined and analysed the European marketing on the basis of our long-time examination of the issue within our educational process, and also based on the results of the research projects. Our paper is also based on many theoretical and practical papers of Slovak and foreign authors who are dealing with this issue and we have also used the statistical data available at the portal of the European statistics database Eurostat, analysed studies of the consulting company Deloitte, compared electronic databases of ec.europ and IGD Retail Analysis datacentre.

2.2. Formation and development of European Marketing

European marketing as a scientific discipline was established at the turn of the 1970s and 1980s within the German school of marketing as a reaction of theory to the political processes of creating a common European market and subsequent processes of globalisation of world economy. The initial vision of the European market was creation of a common market in the European area. Later, following the formation of the European community, this idea was transformed into the “European sector for global competition” (Halliburton, – Hunerberg, 2004).

The formation process of European marketing is thus a reaction to the establishment of European market, which enlarges the area of its examination from the originally separated markets to a single, big, multinational and multicultural market. Harris, P. and McDonald, F. characterised the European marketing as marketing similar to international marketing, as it includes different decisions necessary to sell products across the borders of a country (Harris, P., McDonald, F., 2004). Borders are barriers distinguishing European marketing and national marketing. Of course, the EU member states have smaller barriers than non-members. Eurozone members use the same currency – euro, which represents zero risk at rate exchanges as well as zero costs of foreign currency transactions. According to many authors, the basis of European marketing is creation and development of means how to achieve the convergence of legal, economic, social and cultural conditions in European countries, which are to facilitate mutual business transactions. It links global and local approaches with a maximum effort to use the strategies of standardisation of the offer of goods and services with regard to the specific features of individual markets of the EU member states. It can be defined as an adaptation of the elements and strategies of marketing mix, so called product, distribution, price and promotion policy to the conditions of common European market. At comparing the European market to national markets of individual EU countries, differences are quite significant. The common European market brings greater competitiveness; however, on the other hand, businesses can use savings from the extent, resulting from the market size. It also contributes to the formation of closer cooperation relations between companies, which can increase the effectiveness of research and development activities. Higher effectiveness in logistics and distribution is also expected. As the European market includes a great number of consumers and corporate customers, more numerous product variations than on national markets are expected. Specific features of European marketing include the fact that Europe is perceived as a clearly geographically defined segment, behaving homogeneously from the viewpoint of Europe however diversely from the viewpoint of other global regions. The key concept of European marketing is therefore market segmentation, applying national borders as the basic criteria of segmentation policy. From the viewpoint of global marketing, the world behaves as a single market segment, while European marketing perceives individual European economies rather as different countries with their national specific characteristics. Definition of whether the European market is a suitable area for global marketing and globalisation strategies depends on the analysis of macro environment, which can serve as the first step at decision-making on Euromarketing strategies from the business viewpoint. Arguments of some authors in favour of the global approach can be reduced to two complementary directions – customer convergence (global consumer or European consumer) and the effectiveness of global products (global product or Euro product), or customer divergence especially resulting from cultural and economic disparities. We agree with the global viewpoint supporters, who perceive European marketing as a transition from national towards global marketing approach, which however accentuates the intercultural marketing approach. This concept reacts to weaknesses of the global marketing, which does not take into account social and cultural differences of consumer markets in a sufficient extent, and does not enable a prompt reaction of companies to competition.

We can essentially compare it to the approach of Perry, who claims that European marketing is a unique phenomenon comprising exogenous factors, which are part of a continuous process of shaping and combining marketing strategies due to changes of local, regional and global development (Halliburton, CH. – Hunerberg, R., 2004). This approach points to certain similarities of individual marketing system, however it also confirms their natural disparity.

2.3 Determinants of the European Marketing

The fact that the European market is significantly heterogeneous in spite of gradual unification of norms and standards and convergence of the economic power of individual countries and regions is a persistent feature of the European market, which is reflected in economic, social and cultural environments.

Economic environment of the European market is created by a number of factors affecting the possibilities of companies to make offers on the one hand, and the possibilities of citizens to buy such offered products and services on the other. Factors and determinants of economic environment therefore have an immediate impact on the purchasing power of consumers and structure of their expenses. One of the most significant indicators of state economic power is gross domestic product (GDP) expressed in current prices, or gross domestic product per capita. From the factual viewpoint, GDP can be defined as a summary of final goods (consumer and investment goods) and services produced and provided over a certain time (usually a year) at the territory of a country. GDP thus represents the most complex

criterion of the overall level of production of goods and services in a country. The 28 EU member states record very different data on their economic power, however collectively they represent great economic power and strength in the world economy. All tables have to be numbered. The headings should be placed under the images and aligned to the center. The source should be included under the heading and aligned to the center.

The most efficient EU economies according to the financial value of final products and services produced in the country over 2013 included: Germany, Great Britain, France, Italy and Spain. The lowest economic efficiency out of the 28 member states was recorded in Latvia, Lithuania, Cyprus, Estonia and Malta. Differences in the efficiency of individual national economies of the EU countries are even clearer at comparing the achieved GDP per capita, converted to standard purchasing power parities against the EU average. Different levels of GDP per capita not only show different levels of individual national economies but also differences in the living standards of its citizens, which affects, besides others, the average consumption and structure of household expenditure as well as other indicators. That needs to be a matter of interest of business entities, as they are directly reflected in the purchasing power and demand structure of potential customers. Average GDP per capita in the EU-28 was EUR 25,700 in 2013. The EU countries with GDP per capita exceeding the average of EU-28 are Luxembourg (EUR 67,900), Sweden (EUR 32,700), Austria (EUR 33,200), Netherlands (EUR 32,600), Ireland (EUR 32,500), Austria (EUR 33,200), Denmark (EUR 32,100), Germany (EUR 32,000), Belgium (EUR 30,500), Finland (EUR 28,700), France (EUR 27,800). The significant difference in the average GDP per capita between the EU-28 and Luxembourg results to a significant extent from the fact that Luxembourg has a great number of foreign employees in relation to own citizens. Foreign employees significantly contribute to the GDP amount; however they are not included in the number of citizens applied in calculating the GDP per capita. That is not to imply that the first place of Luxembourg in the GDP indicator is not correct, it is only necessary to point to the correct interpretation of the result. Other countries significantly lag behind the EU-28 average. The lowest GDP values per capita are recorded by the poorest EU countries – Romania (EUR 13,900) and Bulgaria (EUR 12,000), where this indicator only amounts to 40 % of the average of EU-28.

Not only differences between individual EU countries but also differences between individual regions (currently in the amount of 271 within EU-28) have deepened with the increasing number of members. Up to 61 % of the citizens of new member states live in regions where per capita income is lower than 50 % of EU average (EU-25). Original member states only had 32 so called poor regions. The richest regions currently include central London, Brussels and Luxembourg. The poorest regions include areas in Bulgaria, Romania and Poland with the average of 25 % up to 36 % (EU-28 = 100 %). Only four regions of the new member states achieve higher than average EU level. They include capitals: Prague (162.3 %), Bratislava (148.7 %), Budapest and Warsaw. EU regional policy and national resources should have changed the structure of the poorest regions by 2015 in order for them to be able to develop effectively and reach the level of developed regions faster; however the recession would delay such efforts.

Household expenditure and its distribution is another important economic indicator. The biggest share of EU-28 overall household expenditure is created by three important groups: expenditure on food, living and transportation. Each of them represents approximately 15 % of expenditure on final consumption in both EU-28 countries and the Eurozone countries. Approximately 10 % share is created by expenditure on recreation and culture, while the share of such expenditure is slightly bigger in the EU than the Eurozone. Only a slightly smaller share is created by the expenditure on restaurant and accommodation services, which is also higher within the whole EU.

Expenditure on food in individual countries is between 10 and 12 % (Great Britain, Luxembourg, Germany and Austria) up to 36 % in Romania. Expenditure on transportation is between 8 and 12 % (Romania, Lithuania, and Latvia) up to 19 – 22 % (Slovenia, Portugal and Luxembourg). Share of expenditure on recreation and culture is between 5 % (Romania, Portugal, and Greece) and 12 – 15 % (Sweden, Great Britain). The category of accommodation expenditure is at the level of 9 % (Malta, Cyprus, Greece, and Luxembourg) up to 19 – 23 % (Romania, Germany, Poland and Slovakia). It is necessary to point out that this item is only created by financial expenditure not related to services provided by the owners of occupied flats (rent). It means that countries in which a greater share of citizens live in rented flats have a bigger share of expenditure on accommodation than countries in which majority of citizens live in their own flats.

In relation to this item, the economic crisis mostly affected the poorest countries, especially Romania, Bulgaria and Lithuania, where expenditure on food and transportation are the highest, and the expenditure on recreation and culture are the lowest in the whole EU.

Knowledge of the situation on labour market provides an additional view for the analysis of economic performance and growth as well as social status of citizens. Unemployment has a significant impact on the consumption of Europeans, which is why it is necessary for companies operating on this market to monitor these indicators. Long-term unemployment is one of the greatest worries of the governments of the member states. Besides its negative influence on personal lives of consumers, it restricts social cohesion and decelerates economic growth of countries.

Years 2008 and 2009 resulted in a significant unemployment increase due to the global economic crisis in all EU countries. Unemployment level in EU-27 amounted up to 8.9 % in 2009, and up to 9.7 % in 2010-2011, which can be attributed to adopted austerity measures of companies which were reducing the number of their employees in order to maintain profitability. However, unemployment indicators are considerably different in individual countries. The highest unemployment levels of the EU countries were recorded in 2013 in Spain (22.5 %), Greece (18.3 %), Latvia (16.2 %), Lithuania (15 %), Slovakia (13.6 %) and Estonia (11.3 %). High values were also recorded in Ireland (14.3 %). States with the lowest unemployment levels include Netherlands (4.8 %) and Austria (4.1 %).

Further serious difficulties have persisted on the labour markets of individual EU countries. The most urgent one is the fact that unemployment of especially young people is very high in many EU states and that young people have not achieved proportionate benefits from the EU economic boom before the crisis. Even though there was a positive development recorded also in the level of unemployment of young people (between 15 and 24 years of age) in 2007, the

unemployment level of this group was more than double compared to the unemployment level of the whole workforce. Almost one in six young people in EU-28, i.e. around seven million people is leaving the educational system early and the level of achieved education has not increased. Every sixth young person (15.3 %) within the EU member states at the age between 18 and 24 leaves school after achieving the maximum of lower secondary education (men: 17.5 %, women: 13.2 %) and they neither participate in further education nor training afterwards. In some states (Spain, Italy, Malta, Portugal), the number of such young people is very high (approximately 20 %), while in other countries, the results have actually deteriorated since 2000 (Luxembourg and Slovakia). Although there has been certain progress achieved in relation to the number of people who have completed higher secondary education, it has not been sufficient to achieve the goal of at least 85 % young people at the age of 22 with completed at least higher secondary education by 2010. The longest compulsory school attendance out of the 28 EU countries has been implemented by Germany (until 19 years of age) and Great Britain (18 years of age), while majority of other countries including Slovakia has implemented the compulsory school attendance until 16 years of age. Slovakia is also among countries reporting the highest share of young people with a completed secondary school (men: 86 %, women: 95 %), which is by 23 % more than such a developed country as Luxembourg.

Data of a report presented by the European Commission in December 2013 showed that every fifth young person of the EU on average, i.e. 5.4 million people younger than 25, are unemployed, which is alarming. This group of young people was defined by Brussels as LOST GENERATION, which is also the name the European Commission used for a group of socially excluded people whom society has not enabled employment and success on the labour market. They are young people not having reached 25 years of age, who have graduated from school however are unable to find a job. The European Commission wants to solve such serious problems by adopting a strategy which could decrease the number of unemployed young people of the Union by 340,000. The member states are recommended to decrease the number of people without education, to improve the quality of education and interconnect schools with practice.

In spite of persistent disparities of individual EU countries (especially in economic and social environments), EU legislation, distribution systems and economic growth of individual member states (temporarily decreased by the finishing recession) are directed towards harmonisation of the European market.

3. Conclusion

European marketing has much in common with international marketing, especially in management and decision-making in products sales (goods and services and their combination) across state borders. These borders become barriers, which can be considered to be the key difference between European and international marketing. Even though the intensities of such barriers differ within individual EU countries, their common focus of interest is marketing activities. The key difference between European and internal marketing is based on cross-border trade barriers. These differ according to whether a country is part of the EU and Eurozone. Countries outside Europe trying to enter this market are exposed to a complex marketing environment, while there are similarities in economic and legal environment but there are also big differences in cultural and social spheres. European marketing can therefore be characterised as a special type of international marketing with certain characteristics in common with national marketing of the countries with minimum differences in legal, economic, social and cultural spheres. It means that the founding countries of the EU and Eurozone countries have the lowest level of political and economic barriers from among all EU countries. Many marketing experts expect that the common European market will support the convergence of taste of European consumers and will enforce a “European consumer”. Convergence of values, lifestyles, opinions, habits and taste still does not necessarily result in the convergence of needs. They can differ on individual national markets similarly to differing purchasing power and consumer habits of buyers. Europe as a mixture of different cultures and systems offers great marketing opportunities for businesses in the sphere of production and trade. Although it is possible to combine social and demographic characteristics and marketing strategies of consumer products companies in order for them to converge the styles of individual European countries, diversity will have an equally important role as convergence in the new global economy. Businesses should therefore identify regional, national and local specific features and create suitable marketing strategies reflecting such diversity. Pan-European strategies can be profitable where consumers have similar cultural values and homogenous taste in relation to a particular product or service. Standard marketing programme can be used e.g. for luxurious products (like jewellery, watches, sports cars, etc.), which are demanded by a small number of similarly thinking customers, or for fashion products, which are purchased by young people in all countries (global approach). However social and cultural characteristics differ significantly within Europe, which requires an adaptation of marketing strategies depending on individual EU regional markets. We can therefore say that Europe is far from becoming a common internal market for European companies but also far from becoming a common foreign market for companies outside Europe.

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MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL ASPECTS OF BUSINESS

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Logistics Performance

Jozef Gajdoš

Abstract

Logistics performance is a potential competitive advantage of the country. One of the methodologies for evaluating of logistics performance, established by the World Bank, is The Logistics Performance Index. In this paper we have done benchmarking the level of logistics in the Slovak Republic with the use this methodology. The result is a specification strengths and weaknesses of the Slovak Republic.

Keywords: logistics performance, benchmarking, Logistics Performance Index
JEL Code: F00, O10

1. Introduction

Logistics is a rapidly evolving discipline, which is a result of the integration of economic, technical and social disciplines. Logistics supports the movement and supply flow of many economic transactions, and is a necessary activity in the realization of the sale of any goods, respectively of service (Lambert, 2000). A functioning logistics is a prerequisite make the sale. It is one of the ways to enhance the competitive advantage of the country. In the article we used one of the standard approaches to the evaluation of logistics for international benchmarking of level on Slovakia market.

2. The Logistics Performance Index

The Logistics Performance Index (LPI) measures the on-the-ground efficiency of trade supply chains, or logistics performance. The World Bank has developed it with the help of more than 800 logistics experts. The results of the evaluation, using this methodology, were published in 2007, 2010, 2012 and 2014. The methodology can be considered as a benchmark - benchmarking on international valuation logistics performance. LPI is based on monitoring of selected areas. The result of the evaluation of logistics chains is a quantification of the country numerical valuation (scale from 1 to 5, the maximum value is 5).

The international LPI analyzes countries in six components:

- The efficiency of customs and border clearance (Customs);
- The quality of trade and transport infrastructure (Infrastructure);
- The ease of arranging competitively priced shipments (International shipments);
- The competence and quality of logistics services—trucking, forwarding, and customs brokerage (Logistics quality and competence);
- The ability to track and trace consignments (Tracking and tracing);
- The frequency with which shipments reach consignees within scheduled or expected delivery times (Timeliness).

In 2014 there were more than 6,000 assessments made by logistics professionals, in line with the last edition. The domestic LPI covers nearly 120 countries.

2.1. LPI 2014 – selected results

In Table 1 is the order of the countries examined by the total value of the index attached to the first ten places. In 2014 it was in the top 10 seven European countries.

Table 1. Top 10 country by LPI in 2014

Rank	Country	LPI Score	C	I	IS	LC	TT	T	Difference values
1.	Germany	4,12	4,10	4,32	3,74	4,12	4,17	4,36	0,62
2.	Netherlands	4,05	3,96	4,23	3,64	4,13	4,07	4,34	0,70
3.	Belgium	4,04	3,80	4,10	3,80	4,11	4,11	4,39	0,59
4.	United Kingdom	4,01	3,94	4,16	3,63	4,03	4,08	4,33	0,70
5.	Singapore	4,00	4,01	4,28	3,70	3,97	3,90	4,25	0,58
6.	Sweden	3,96	3,75	4,09	3,76	3,98	3,97	4,26	0,51
7.	Norway	3,96	4,21	4,19	3,42	4,19	3,50	4,36	0,94
8.	Luxembourg	3,95	3,82	3,91	3,82	3,78	3,68	4,71	1,03
9.	United States	3,92	3,73	4,18	3,45	3,97	4,14	4,14	0,73
10.	Japan	3,91	3,78	4,16	3,52	3,93	3,95	4,24	0,72
	average	3,99	3,91	4,16	3,65	4,02	3,96	4,34	0,71

Caption: C - Customs

I - Infrastructure

IS - International shipments

LC - Logistics quality and competence

TT – Tracking and tracing

T - Timeliness

Source: own processing on the basis on

lpi.worldbank.org/international/global?sort=desc&order=LPI+Score#datatable

Overall, in partial valuation, the total highest score received Luxembourg in the category Timeliness, 4.71 points (second partial highest score Belgium and Denmark 4.39 in category Timeliness). The total lowest partial score (1.5 points) received Congo in the category Customs and Somalia in the category Infrastructure. From among the top 10 countries are the most significant differences between partial value in USA and Norway. The top 10 countries were rated the best in the category Timeliness (average 4.34). The worst were evaluated in category International shipments (average 3.65).

In Europe have been evaluated a total of 40 countries (Table 2).

Table 2. European country by LPI in 2014

Rank	Country	LPI Score	C	I	IS	LC	TT	T	Difference values
1.	Germany	4,12	4,10	4,32	3,74	4,12	4,17	4,36	0,62
2.	Netherlands	4,05	3,96	4,23	3,64	4,13	4,07	4,34	0,70
3.	Belgium	4,04	3,80	4,10	3,80	4,11	4,11	4,39	0,59
4.	United Kingdom	4,01	3,94	4,16	3,63	4,03	4,08	4,33	0,70
6.	Sweden	3,96	3,75	4,09	3,76	3,98	3,97	4,26	0,51
7.	Norway	3,96	4,21	4,19	3,42	4,19	3,50	4,36	0,94
8.	Luxembourg	3,95	3,82	3,91	3,82	3,78	3,68	4,71	1,03
11.	Ireland	3,87	3,80	3,84	3,44	3,94	4,13	4,13	0,69
13.	France	3,85	3,65	3,98	3,68	3,75	3,89	4,17	0,52
14.	Switzerland	3,84	3,92	4,04	3,58	3,75	3,79	4,06	0,48
17.	Denmark	3,78	3,79	3,82	3,65	3,74	3,36	4,39	1,03
18.	Spain	3,72	3,63	3,77	3,51	3,83	3,54	4,07	0,56
20.	Italy	3,69	3,36	3,78	3,54	3,62	3,84	4,05	0,69
22.	Austria	3,65	3,53	3,64	3,26	3,56	3,93	4,04	0,78
24.	Finland	3,62	3,89	3,52	3,52	3,72	3,31	3,80	0,58
26.	Portugal	3,56	3,26	3,37	3,43	3,71	3,71	3,87	0,61
30.	Turkey	3,50	3,23	3,53	3,18	3,64	3,77	3,68	0,59
31.	Poland	3,49	3,26	3,08	3,46	3,47	3,54	4,13	1,05
32.	Czech Republic	3,49	3,24	3,29	3,59	3,51	3,56	3,73	0,49
33.	Hungary	3,46	2,97	3,18	3,40	3,33	3,82	4,06	1,09
36.	Latvia	3,40	3,22	3,03	3,38	3,21	3,50	4,06	1,03
37.	Iceland	3,39	3,54	3,34	3,15	3,46	3,38	3,51	0,39
38.	Slovenia	3,38	3,11	3,35	3,05	3,51	3,51	3,82	0,77
39.	Estonia	3,35	3,40	3,34	3,34	3,27	3,20	3,55	0,35
40.	Romania	3,26	2,83	2,77	3,32	3,20	3,39	4,00	1,23

43.	Slovak Republic	3,25	2,89	3,22	3,30	3,16	3,02	3,94	1,05
44.	Greece	3,20	3,36	3,17	2,97	3,23	3,03	3,50	0,53
46.	Lithuania	3,18	3,04	3,18	3,10	2,99	3,17	3,60	0,61
47.	Bulgaria	3,16	2,75	2,94	3,31	3,00	2,88	4,04	1,29
51.	Malta	3,11	3,00	3,08	3,23	3,00	3,15	3,15	0,23
55.	Croatia	3,05	2,95	2,92	2,98	3,00	3,11	3,37	0,45
58.	Cyprus	3,00	2,88	2,87	3,01	2,92	3,00	3,31	0,44
61.	Ukraine	2,98	2,69	2,65	2,95	2,84	3,20	3,51	0,86
63.	Serbia	2,96	2,37	2,73	3,12	3,02	2,94	3,55	1,18
67.	Montenegro	2,88	2,83	2,84	3,15	2,45	2,76	3,19	0,74
	Bosnia and								1,03
81.	Herzegovina	2,75	2,41	2,55	2,78	2,73	2,55	3,44	
90.	Russian Federation	2,69	2,20	2,59	2,64	2,74	2,85	3,14	0,94
94.	Moldova	2,65	2,46	2,55	3,14	2,44	2,35	2,89	0,79
99.	Belarus	2,64	2,50	2,55	2,74	2,46	2,51	3,05	0,59
117.	Macedonia, FYR	2,50	2,35	2,50	2,38	2,51	2,46	2,81	0,46
	average	3,28	3,10	3,18	3,22	3,23	3,28	3,69	0,71

Caption: C – Customs

I - Infrastructure

IS - International shipments

LC - Logistics quality and competence

TT – Tracking and tracing

T - Timeliness

Source: own processing on the basis on

lpi.worldbank.org/international/global?sort=desc&order=LPI+Score#datatable

Between European countries, in partial valuation, the total highest score received Luxembourg in the category Timeliness, 4.71 points. Next partial highest score received countries in the same category Belgium and Denmark 4.39 points, Germany and Norway 4.36 points. The total lowest partial score between European countries received Russian Federation in the category Customs, 2.20 points. Less than 2.5 points were rated countries:

3 categories - Macedonia, FYR (Customs, International shipments and Tracking and tracing) and Moldova (Customs, Logistics quality and competence and Tracking and tracing);

1 category - Russian Federation, Serbia and Bosnia and Herzegovina (Customs), Montenegro and Belarus (Logistics quality and competence).

The European countries were rated the best in the category Timeliness (average 3.69). The worst were evaluated in category Customs (average 3.10).

From these countries received the most significant differences between partial values (more than 1 point) Bulgaria (1.29 point), Romania (1.23 point), Serbia (1.18 point), Hungary (1.09 point), Slovak republic and Poland (1.05 point), Luxembourg, Denmark, Latvia and Bosnia and Herzegovina (1.03 point). The countries with smallest differences between partial values (less than 0.5 point) are Malta (0.23 point), Estonia (0.35 point), Iceland (0.39 point), Cyprus (0.44 point), Macedonia FYR (0.46 point) and Czech Republic (0.49 point).

2.2. Benchmarking

From the viewpoint of each country is especially important benchmarking. Slovak Republic initially we compare with the ratings leader - Germany (Figure 1.).

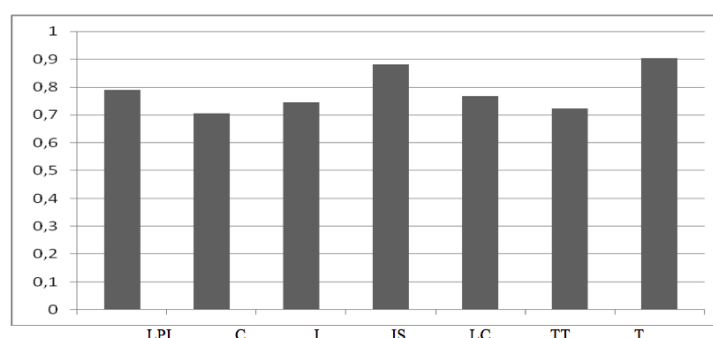


Figure 1. Compare level Slovak Republic and Germany by LPI 2014

Source: own processing

Caption: C – Customs
I - Infrastructure
IS - International shipments
LC - Logistics quality and competence
TT – Tracking and tracing
T - Timeliness

In comparison with Germany, Slovakia has a relatively good assessment of these components Timeliness and International shipments. In the same comparison, Slovakia has a relatively bad assessment of the component Customs. Next we compare Slovak Republic with countries that were assessed equally – Romania, Israel and Chile (Figure 2.).

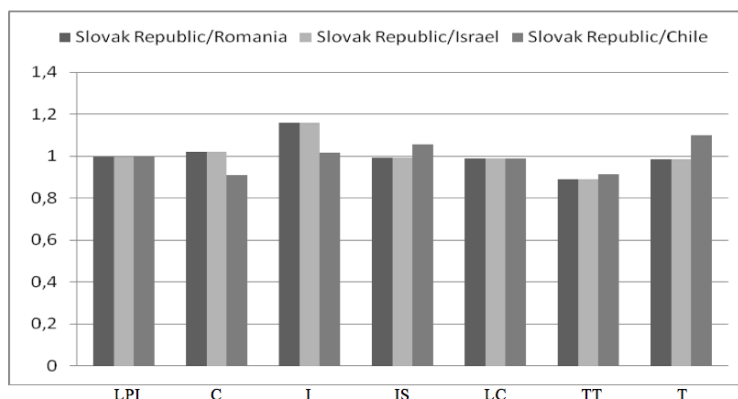


Figure 2. Compare level Slovak Republic and countries with comparable rating by LPI 2014
Source: own processing

Caption: C – Customs
I - Infrastructure
IS - International shipments
LC - Logistics quality and competence
TT – Tracking and tracing
T - Timeliness

In comparison with Romania, Israel and Chile, Slovakia has a relatively good assessment of these components Infrastructure and International shipments. In the same comparison, Slovakia has a relatively bad assessment of component Tracking and tracing. Interestingly almost the same evaluation compared countries in the component Logistics quality and competence.

Next we compare Slovak Republic with countries V4 (Figure 3.).

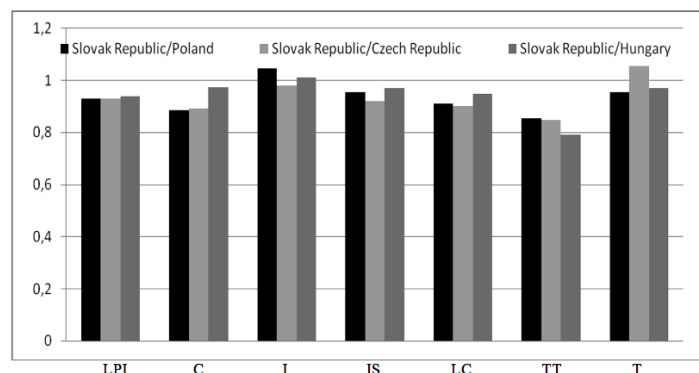


Figure 3. Compare level Slovak Republic and countries V4 by LPI 2014
Source: own processing

Caption: C – Customs
I - Infrastructure
IS - International shipments
LC - Logistics quality and competence
TT – Tracking and tracing
T - Timeliness

In comparison with Poland, Czech Republic and Hungary, Slovakia has worst rating by LPI. In the same comparison, Slovakia has a relatively good assessment of these components Infrastructure and Timeliness and a relatively bad assessment of component Tracking and tracing.

3. Conclusion

The evaluation of Slovak Republic by LPI is fluctuating, absolute and relative (Table 3.).

Table 3. Evaluation of Slovak Republic by LPI, 2007-2014

Year	Ranking	LPI	C	I	IS	LC	TT	T
2007	53.	2.92	2.61	2.68	3.09	3.00	2.87	3.26
2010	41.	3.24	2.79	3.00	3.05	3.15	3.54	3.92
2012	54.	3.03	2.88	2.99	2.84	3.07	2.84	3.57
2014	46.	3.25	2.89	3.22	3.30	3.16	3.02	3.94

Source: own processing on the basis on
lpi.worldbank.org/international/global?sort=desc&order=LPI+Score#datatable

Slovakia has made relatively best rating by LPI in 2010 (41st position). The values of the individual components are fluctuating. Only the evaluation of component Logistics quality and competence is relatively stable. Slovakia has a relatively good assessment of these components Infrastructure, Timeliness and International shipments. The largest reserves are in the ability to track and trace consignments and in the efficiency of customs and border clearance.

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Key factors of mystery e-mail customer service

Liliana Hawrysz, Roman Kozel, Šárka Vilamová

Abstract

This paper examines customer service process in retail companies using the method of mystery e-mail visits. The following research question was formulated in this article: Which factor(s) is/are essential to the communication effectuated by retail sector via e-mail in order to fulfill customers' expectations? The research was conducted in 60 car showrooms of the Škoda make in the period from June to October 2014 in Poland and the Czech Republic. Perfecting customer service standards by applying communication through e-mails for the entrepreneurs functioning on the contemporary market, constitutes a promise of adaptations of standards towards the expectations of a customer.

Keywords: *customer service, mystery e-mail, retail companies*

JEL Code: *D81, D83, M31, O14*

1. Introduction

The process of communication is one of the fundamental and important processes taking place in society. Owing to communication, people can interact, communicate, influence the shape of the world, build coalitions, and develop society. With the civilization progress, this process has been changed, because of the spread of writing and the formation of appropriate technologies, enabling communication across distances. The first technical means of communication, allowing the network communication, were letters and telegraphs. A great discovery was Alexander Graham Bell's invention, countless possibilities have occurred with the arrival of cell phones, but it was the Internet that has given humanity unfettered ability to communicate. At present, the computer acts as an intermediary in the communication process, and its importance in this subject increased after the dissemination of the Internet. Recent years have brought the rapid popularization of electronic communication in organizations - in particular, an electronic mail. According to an American study from 2009, the average number of corporate e-mail messages sent and received in one day by an employee ranged then from 124 to 149. In 2010, the employees in the surveyed American companies spent on average 61 minutes a day on communicating by phone, while on e-mail communication an average of 134 minutes. In 2010, 107 trillion e-mails were sent, in 2012, the Internet users send an average of 144 billion e-mails a day (Internet 2012 in numbers).

Researchers emphasize the fact that the Internet should be seen as a natural extension of technical and media development capabilities. Therefore, the Internet communication may be included within the communication media. The consequence of this situation is the next stage in the development of language communication which relies on the accumulation of all previously observed phenomena, because it allows the publication of both handwritten texts and the transmission of sound recordings and images, which were previously distributed between the different types of media. Therefore, various forms of media, including audiovisuals, enrich the Internet communication.

2. The Internet communication

The Internet communication is a type of computer communication, and more broadly electronic communication, the one that takes place through electronic media. Within the electronic communication (understood as a kind of media communication), there are two types (Law, 2009):

- asymmetric communication - the roles of the sender and recipient are clearly defined and not interchangeable, the interaction is impossible or possible to a limited extent (e.g. Radio, newspapers, TV),
- symmetrical communication - the roles of the sender and the recipient are equivalent and interchangeable, there is a choice, there are interactions, and one can talk about interpersonal communication (e.g. mobile telephony, computer network).

The Internet communication is mostly symmetrical communication with an intermediate character. Between the sender and the recipient, there is a powerful medium, the influence of which upon the process of communication is significant. Available forms of communication determine how people communicate. There are two basic types of the Internet communication (Nguyen, 2003):

- unilateral communication - the sender does not directly approach the intended recipient and does not wait for a response, e.g. publishing a message on a website, in a database, in electronic press, etc.,

- interactive communication - it requires the participation of at least two persons who interact with each other, the sender shall apply directly to the recipient, the responses are expected.

Within the interactive communication asynchronous and synchronous communication may occur. The asynchronous communication is a situation where the recipients have time to respond (e.g. e-mail, discussion on the internet forum), and the synchronous communication takes place in a real time.

Members of the team of authors investigated the influence of e-mail communication and online media, for example, in the university environment (Kašpar, 2011, or Kozel, 2012), where the interaction of target groups helped to improve marketing communications. Importance of internet communication to achieve the planned objectives the authors solved in the articles dealing with the global environment of industry (eg. Vilamová, 2011-2013).

2.1. The communication via e-mail

The communication via e-mail is the most widely used tool of computer-mediated communication (CMC). Originally, it was seen primarily through the prism of information targeted on the specific task. Asynchronous character is considered as one of the core strength of communication via e-mail. Therefore, there is no need for the simultaneous presence of the sender and the recipient of a message, which contributes to the comfort and reduces the cognitive efforts on both sides (Huang, 2009), (Hys, 2013). In order to understand the nature of communication via e-mail, it is necessary to trace the communication process. In brief, it includes the sender, the recipient, channel, information and feedback.

Communication via e-mail is a swift and simple method to create personalized relationships with customers and the key to shape customer's loyalty. Empirical studies have shown that the most important issue for customer satisfaction is quickly obtained response and contact information providing sender's name and surname. Additionally, empirical studies have revealed that more than 50% of companies respond to questions sent via e-mail the same day, but the quality of these responses is substandard. Forty percent of the companies surveyed have not answered any of additional questions raised by potential clients (Nguyen, 2003). Other researchers, who have suggested the need to concentrate on managing the customer relationship in order to improve on-line communication, also achieved similar results.

Researchers have suggested that from the point of view of shaping a positive relationship with the customer, it is important to develop service of frequently asked questions (FAQs), which helps reducing the burden of e-mail communications, at the same time bearing no negative consequences. For a company, e-mail communication should be one of the ways to meet the consumer expectations. Due to the dynamic development of modern technologies, this way of responding to consumer expectations is of a great potential (Hys, 2014).

Ch. N. Madu and A. A. Madu based on the analysis of literature of the subject adopted a more comprehensive insight into quality of e-services. The analysis of models: Garvin, Berry, Parasuraman, Abels has allowed to distinguish fifteen attributes affecting the perception of the quality by the client (Madu, 2002):

- Performance - the performance of a virtual operation is based on its ability to offer two key features: use and content. The use feature deals with the ease to use the web site, the ability to get an overview of the structure, and the ease of navigation. The content feature deals with a variety of factors including the accuracy of information presented, concise nature of the information, and the timeliness of the information.
- Features - anticipating and providing enough access to the questions that the user may have, linking to other sites that may deal better with some issues of the interest to the user, capability of the site and being able to get access to the website from any search engine.
- Structure - how information is presented on the Web site, how hyperlinks are used within the pages and whether such links lead to the source of information or to dead ends.
- Aesthetics - appearance of the Web site, namely its visual attractiveness (color combinations, type and size of fonts, animations, sound effects, clarity and readability of texts).
- Reliability - updating material from the Website promptly and providing accurate information to the customer, accessibility, speed and ability to quickly download information.
- Storage capability - information from the Web site easily available to customers.
- Serviceability - this deals with how well conflicts and complaints from customers are resolved.
- Security and system integrity - ability to safeguard and protect personal information.
- Trust - virtual operation must build trust by being highly reliable and dependable in the manner it responds to customer's inquiries and complaints.
- Responsiveness - courtesy, flexibility of customer service.
- Product/ service differentiation and customization- providing unique service online Website, maximize convenience to customer.
- Web store policies - information about policies available in major store department.
- Reputation - quality of past experiences, perception of the site's performance and other unexplainable intangibles.
- Assurance - knowledge ability, courtesy, ability to convey trust and confidence to users.
- Empathy - individual, cognizant attention to customer.

Understanding basic needs and expectations of potential clients, regardless of their economic status, is of a paramount importance as far as the quality of service is concerned. Devoting attention to all the queries received is essential for creating long-term relationships. Even if the recipient (employee) is unable to comply with the request, they should reply nevertheless, and indicate why they were unable to fulfill the request. In order to increase customer's satisfaction and foster prospective loyalty, it would be helpful to suggest action and escalate the problem to other entities that are in position to meet customer's request. Disregard to questions and lack of response will negatively influence customer satisfaction and loyalty (Hancer, 2008). Neglecting on-line communication is tantamount to neglecting the

opportunity to attract a potential customer (Zehrer, 2006). Communication with the customer via e-mail has become a vital part of shaping bonds and relationships. Studies have shown that email has become part of the consumer's lifestyle (Huang, 2009). E-mail offers numerous benefits for e-tailers to communicate with their customers. E-mail is often the only means of two-way communication between the e-tailer and a particular client.

The objectives of the communication via e-mail might be:

- to supplement or to conclude a transaction via e-mail,
- to provide a guarantee regarding the service/product,
- to create a relationship between the recipient and sender, to ensure secure transactions,
- to provide reliable information about the service/product,
- to provide additional services/goods to which the recipient is entitled due to previous transactions.

3. Methodology

The following research methods and tools were applied to carry out the article: critical analysis of national and foreign publications in subject literature, construction of a survey questionnaire, survey studies conducted by the random purposive method, determining the average values of standard deviations, levels of trust, correlation, regression test, chi-square test, the use of layer graphs for analysis and developing a model of a profile of factors influencing the quality of customer service. All statistical calculations / analyses were conducted using SPSS program.

4. Participants and procedure

The research was conducted in 60 car showrooms of the Škoda make in the period from June to October 2014 in Poland and the Czech Republic. The whole territory of the respective countries was covered: in Poland, the study was carried out in all 16 voivodships and in the Czech Republic in all 14 provinces of that country. The research was conducted in each province on the basis of two car showrooms according to three pre-defined performance scenarios:

- the purchase of a new economical urban car (Fabia),
- the purchase of a new family car (Octavia, Rapid),
- the purchase of a new big car (Superb) in the settlement of an old medium-sized car.

The auditor (as a mystery customer) got in touch with the customer services department of a given car salon by means of a contact form sent from different e-mail addresses. S/he sent three times a different question concerning the above mentioned situation to each of them. The mystery client, according to the adopted scenario, was to simulate the lack of awareness of current offer of the car showroom. Furthermore, s/he was to express intention to buy a car (the three target models) and solicit assistance in finding an appropriate type via e-mail.

As a result, 180 responses were obtained.

5. Data analysis

The following categories of evaluating the ways of responding were analysed: comprehensive, content developing, communicative, limited, understandable and professional. The response comprehensibility and then its communicativeness were the most important both in Poland and in the Czech Republic. An analysis by means of the chi-square test shows a statistically significant relationship between the way of responding and the country in which the assessment took place. The most important differences were in the assessment of the way of responding as content developing and it was considered to be the most important in Poland. An analysis by means of the chi-square test also shows a statistically important relationship between the way of responding and the product kind. Detailed results of analyses are presented in Table 1.

Table 1. Pearson Chi-Square

Pearson Chi-Square	country			situation			Response time		
	Value	df	Sig.	Value	df	Sig.	Value	df	Sig.
exhaustive	14,154	4	0,007	33,338	8	0,000	7,975	4	0,092
developing contents	33,602	4	0,000	16,483	8	0,036	15,984	4	0,003
communicable	30,745	2	0,000	12,502	4	0,014	4,649	2	0,098
casual	25,142	4	0,000	21,745	8	0,005	14,257	4	0,007
comprehensible	32,573	2	0,000	6,176	4	0,186	0,618	2	0,734
professional	18,146	4	0,001	24,249	8	0,002	10,597	4	0,031

Source: own elaboration on the basis of survey results

Those interested in particular products differed from each other in their assessment of the way of responding to an inquiry. For those willing to buy an economical car the response comprehensibility was the most important, while for those willing to buy a family car the response communicativeness was the most important.

The response comprehensibility and its communicativeness were also very important from the point of view of the response time. When the answer was received on the same day, the respondents indicated that, apart from the fact that

the response should be understandable, communicative and professional, it should also be comprehensive and well developed. Those two features were considered to be of vital importance.

For the analysed dependences, the Spearman's correlation coefficient was both positive and negative. The negative correlation was present in the case of dependences between the response limitation and its other features. A quite strong correlation takes place in the case of a comprehensive and content developing response, comprehensive and professional response, content developing and professional response, communicative and understandable response as well as communicative and professional response. In other cases, there existed a moderate positive correlation (for the coefficient values in the range from 0.4 to 0.7). Detailed results of analyses are presented in Table 2.

Table 2. Spearman's rho correlations

	exhaustive	developing contents	communicable	casual	comprehensible
exhaustive	1,000				
developing contents	,867**	1,000			
communicable	,725**	,661**	1,000		
casual	-,863**	-,792**	-,678**	1,000	
comprehensible	,622**	,560**	,796**	-,614**	1,000
professional	,897**	,815**	,740**	-,814**	,644**

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

Source: own elaboration on the basis of survey results

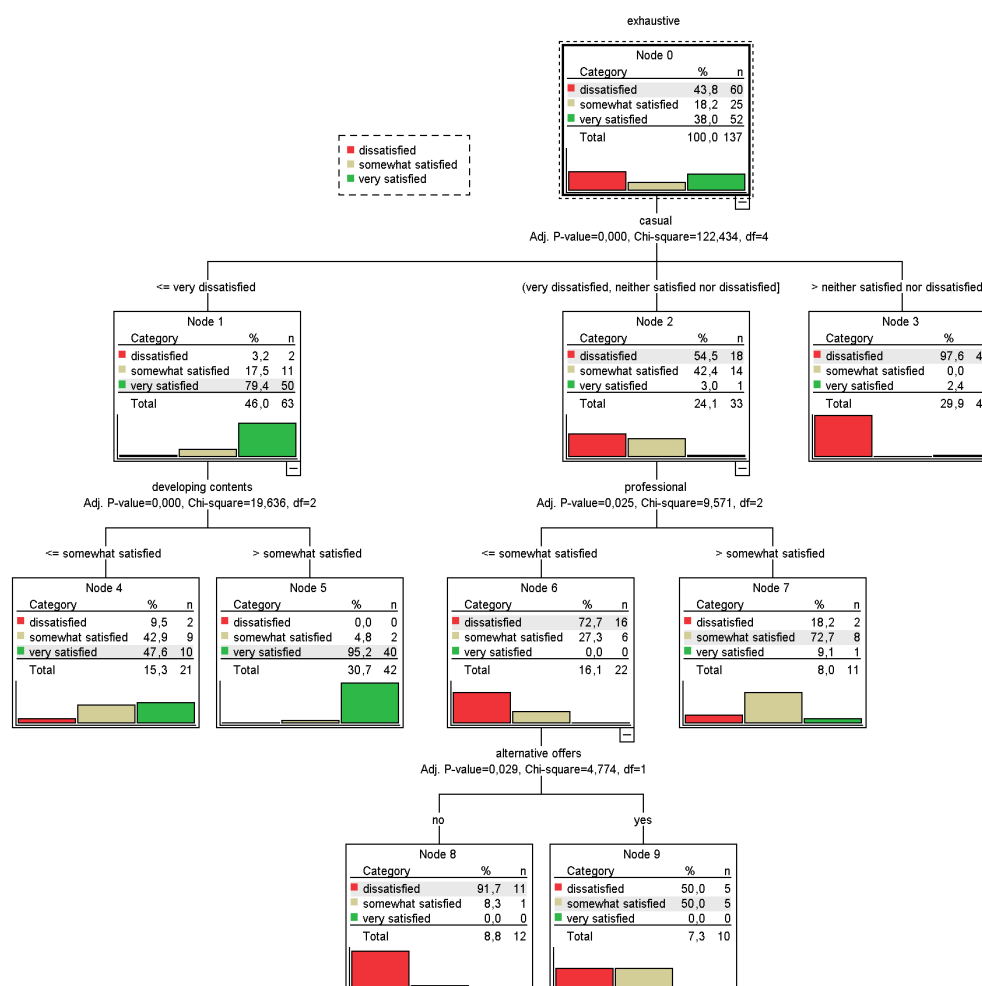


Figure 1. Decision tree - the estimation of standards of the service

Source: own study

Additional analysis carried using decision tree method allowed to identify features that were pivotal from the perspective of satisfying a client with usage of communication channel, that is e-mail. Exhaustive was identified as a key feature. It was construed as professional way of answering including presenting alternative offers.

6. Discussion

The analysis of the questionnaire does not indicate any important differences between the analyzed countries and between the groups interested in different products, either. In both Poland and the Czech Republic, the greatest importance was attached to the intelligibility of the answer, then to its communicativeness and professionalism. In Poland a way of answering which relied on expanding specific contents of the message was valued a little higher. There were slight differences between groups interested in different products. For instance, for the auditors interested in buying an economic car the most important was the intelligibility of the answer, while for those interested in buying a family car it was its communicativeness. Both features are also very important in terms of time of receiving a reply to a submitted query. Additionally, for a reply received on the same day, except intelligibility, communicativeness and professionalism, greater attention was attached to a comprehensive way of answering and to developing the content.

Therefore, there was another analysis carried using decision tree method. This analysis allowed to identify exhaustive as a key feature to satisfy a client. It was construed as professional way of answering including presenting alternative offers.

7. Conclusion

Answering customer e-mails has become a critical factor for daily operations of a company organization and any downtime in this regard may lead to a fall in productivity and profitability. Organizations may lose the opportunity to increase sales and build customer loyalty if they do ensure swift response to customer's inquiries (Zehrer, 2006). Therefore, electronic customer service is a challenge, and improvements in the area of correspondence with clients via e-mail are urgently sought. Research conducted among service organizations in Europe showed that 65% of companies did not respond to the request via e-mail within 24 hours, which is considered a minimum standard response time (Law, 2009).

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MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL ASPECTS OF BUSINESS

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Blueprinting - used in car showrooms (Research Polish-Czech)

Katarzyna Hys, Roman Kozel, Šárka Vilamová

Abstract

The purpose of this article is to present the results of the process visualization telephone service. Telephone service was carried out by employees showrooms passenger cars. The research was carried out in two European countries: in Poland and the Czech Republic. Included in the survey were the Skoda car showrooms. The visualization process was conducted using the method blueprinting. The basis of visualization was a conceptual model. The model determined the relationship between: a client and salon workers, including employees of liner shipping and back office and service support. The model was empirically verified.

Keywords: customer, customer service standards, mystery calling, blueprinting, Poland, Czech Republic, CRM
JEL Code: M31, D7

1. Introduction

In the highly developed countries, services provide 70-80% of GDP, a similar rate is as also for the number of persons employed in this sector. On the one hand, services are foundation of economic development and on the other hand, they affect formation of strong competition in the market. Thus, the market governed by the law of demand and supply is searching for solutions that will meet these requirements. Entrepreneurs, succumbing to environmental pressure and challenges of the service market, are seeking to find solutions to optimize their actions and service. Service activities are a process, which consists of a series of undertaken actions. The success in service business depends on the customer assessment of the given service. Therefore, designing of services is extremely important. Service designing, allows one to analyze various stages of this process. Therefore, a redefinition of customer service standards by entrepreneurs often occurred.

2. Background

One of the technique which is used to visualize the service is blueprinting. Services Blueprint is a proposal of L. Shostack in the field of modeling components of the service process (Shostack, 1982, 49–63; Shostack, 1987, 34–43). The aim of visualization is to develop a blueprint, which will mark all points of employee and customer contact. The blueprint also includes representation of interrelationships between employee and customer. As a result of obtained connections and correlations, one can realize the relations resulting from teamwork. (Hys, 2014). At the same time, through detailed analysis of the behavior of customers and employees, designing of a service development is precise. Service process should reproduce customer expectations and it should even exceed them. A customer who is served in an unusual way will immediately notice it and appreciate it. The entrepreneur is interested in obtaining the effect of a positive surprise, even infatuation of its service. Then there is a possibility that the customer will become the ambassador of the brand in his environment, and thus the customer will have a positive impact on shaping the marketing costs (Hawrysz, 2014; Hawrysz and Hys, 2014).

Conceptual development. From the customer point of view, following aspects are important: physical aspect of services and the employee work evaluation. However, from the entrepreneur perspective, it is important that the customer notices the offer of the company among competitive offers, get interest in the offer, recognize service purchase conditions and finally purchase it. This reasoning is consistent with expected by manager customer's behavior pattern described in marketing with the acronym AIDA (Kotler, 2000). Which means respectively: Attention, Interest, Desire, and Action. The combination of these two perspectives: the customer and the manager (and employees) is being analyzed in this article.

Customer and customer's perspective. Physical aspects evaluated by the customer relate to assessment of the material elements of the service. These include: buildings, structures, tools and machinery used in the process of services provision, interior aesthetics, and appearance of employees. Employees' competencies are also assessed along with their personal characteristics. Customers pay attention to knowledge, communication skills, commitment, ability to inspire trust, propriety, and way of speaking and style of language. All these features are taken into consideration while creating an employee's profile in the customer's opinion (Hys, 2013).

Entrepreneur and entrepreneur's perspective. Expectations of entrepreneurs focus on customer decisions to purchase a product or service. The transaction is acknowledged if the customer decides to buy the service. On a highly competitive market it is not enough to wait for the customer's decision. The actions undertaken by managers indicate that one have to actively participate in shaping the priorities of customers, and thus in affecting their decisions. Of key importance for the provision of service is its quality, comfort and convenience of purchase, transport and the cost of obtaining services (e.g. price, time needed to familiarize with the offer and their benchmark). Works in this direction were undertaken, among others, by (Lauterborn, 1990), (Berry et al., 2002), (Seiders et al., 2000), (Seiders et al., 2005), (Seiders et al., 2007), (Keh, 2010).

3. Model

When designing conceptual model authors were inspired of their previous experiences, when they have participated in the designing strategies of appropriate communication in the service of in the nonprofit sector (Kozel, 2012) or finding ways how can marketing approach help companies across the industry (Vilamová, 2013). Considering the customers and entrepreneurs' perspective we have developed the conceptual model (as shown in Fig. 1). The model takes into account various customer and entrepreneur perspective and service elements that are evaluated. Designated elements of the evaluation service process suggest that in fact it depends on entrepreneurs. Designing of services responding to customers' expectations is the responsibility of managers. It has an impact on the decision made by the customers in order to purchase or not the service.

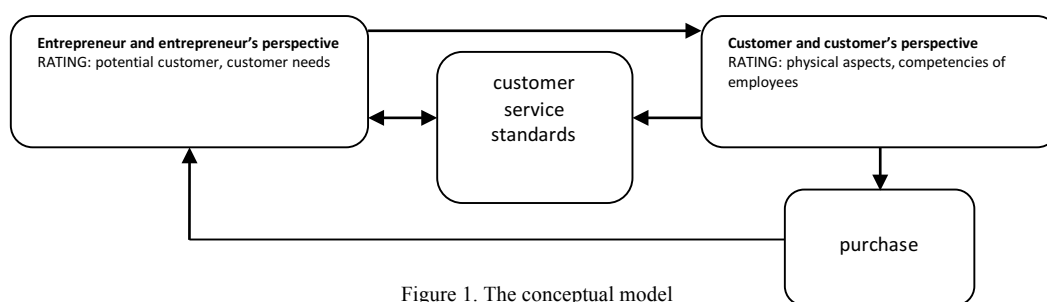


Figure 1. The conceptual model
Source: own study

4. Method

We applied a technique of a graphical representation of the service process - blueprinting. In the first stage, we visited selected Skoda dealerships in Poland and in the Czech Republic. Within the period of two weeks we visited 10 car dealerships in each country. The visit consisted of a detailed observation of processes related to customer service. As a result of observation, a working map of customer service processes was created. On this basis, we decided to choose the form of telephone contact. We checked contact details of selected car dealerships on their websites and we conducted test conversations, on the basis of which we drew all stages of telephone communication. We have completed 20 test conversations, ten in each country. Based on these results we designed an universal map of a telephone customer service taking into account the working environment of car dealerships in Poland and in the Czech Republic.

5. Results

Blueprinting is a technique thanks to which it is possible to perform mapping of the processes occurring during provision of the service. Due to the fact that this article applies only to assessment of the telephone calls, blueprinting scheme has been also limited to this range. Thus, presented map has taken into account only interactions between customer and employee during a telephone conversation. For car sale service, in particular, Skoda dealership, telephone service process runs as presented in Figure 2.

The construction of a blueprint contains fixed elements such as physical evidence, customer actions, onstage/visible contact employee actions, backstage/invisible contact employee actions and support processes. Within these areas, it is possible to determine the lines of interaction taking place between the customer and the employee whom contact with customer depends on the role they play in the company. The line of direct contact between the employee and customer is the most important in assessing the processes of customer service standards. However, processes carried out by the back office and support staff should not be underestimated. Quality of their work affects overall evaluation of customer service standards (including website responsiveness, speed of website service, up to date website information, and aesthetics of website).

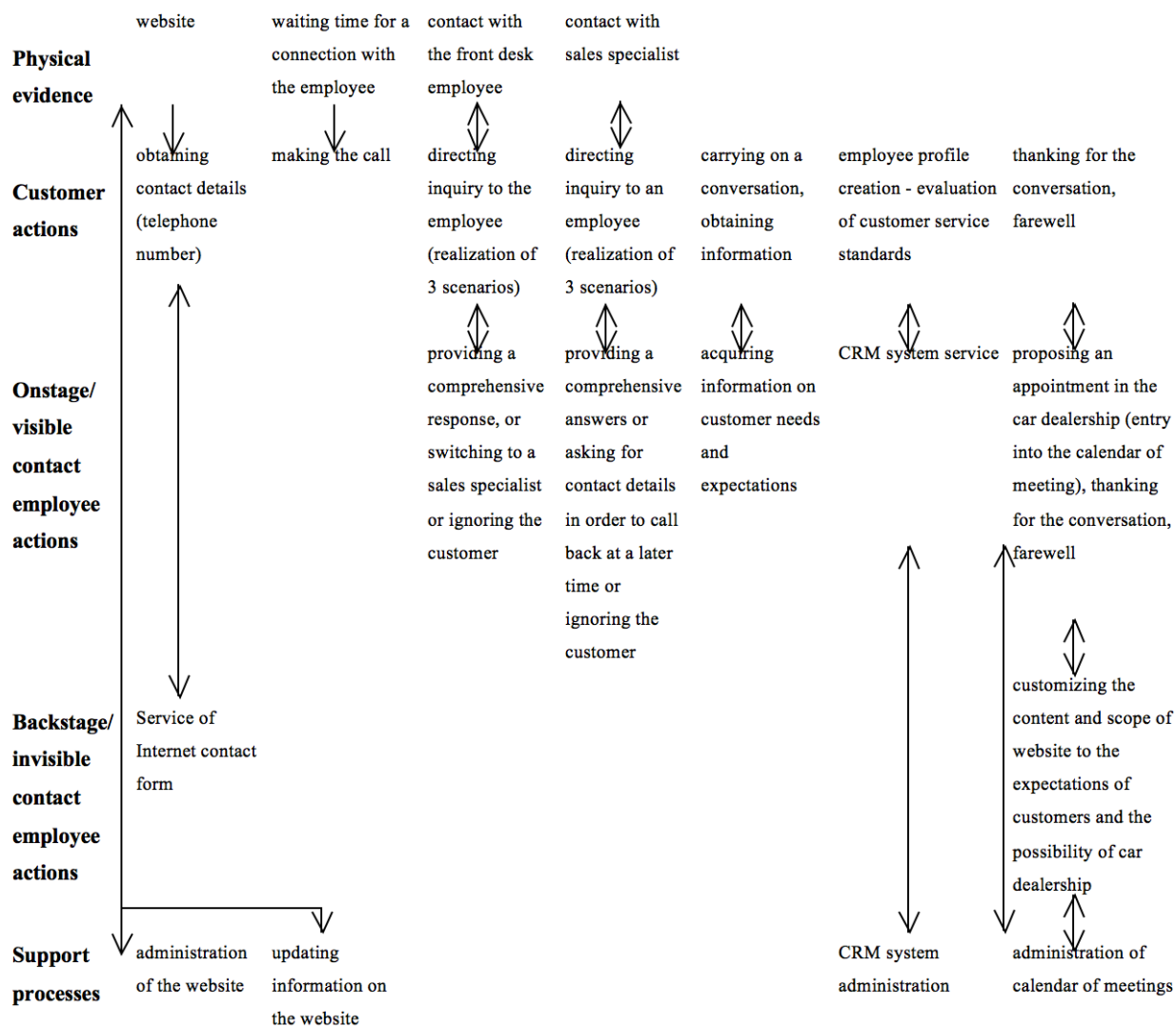


Figure. 2. Mystery Calling - Blueprint of the offer of car dealership e
Source: own study

The process of telephone customer service in Skoda dealerships often starts with the customer to obtain information from the car dealership website. When measured by Mystery Calling method - customers obtain information regarding telephone number from the website. If contact number was actual and correct, the customer would contact the car dealership employee (usually it was front desk employee). At this point, three situations were possible to occur: the employee gave comprehensive information to the question, redirected the customer to sales specialist or ignored the customer (did not take the call).

If the front desk employee redirected the customer to the sales specialist, then the customer was "taken care of" by sales specialist. In this case, also three situations may have occurred: the sales specialist gave comprehensive answer, asked for contact information to contact later (in the situation that he had a customer waiting at his desk) or ignored the customer (did not show interest in the customer).

If the sales specialist has taken up thematic conversation with the customer, a stage of assessment and verification of employee knowledge and competence by the customer occurred. At the same time, the employee was able to create a customer profile and create a record in CRM database. The conversation ended with thanking and farewell. The employee had also the opportunity to offer a customer F2F meeting in the car dealership premises. In order to run smoothly the service process a good quality of back office and support staff work is necessary. The main tasks of these employees include support of online contact form, customize content and scope of the website to the expectations of customers and possibility of the offer, administration of the website, update information on the website, administration of CRM system and administration of the calendar of employees meetings with customers.

4. Discussion and implications

Managers need to realize the importance of proper designing of services, which is the foundation for implementing modification processes in car dealerships. Our experience shows that adapting customer service process to the

customers' expectations affect the assessment of service standards. Customers pay attention to the physical aspects. In our case it was the website of the car dealership and its contents that was of high significance. The website was assessed in terms of availability and accuracy of contact data of the car dealership (in particular the contact number). Customers also evaluated the competencies of employees. As a result of conversation, researchers formed a so-called employee profile, and through the employee's assessment they create an opinion on the car dealership. On the one hand, it creates opportunities for entrepreneurs who, through careful preparations can obtain potential customers using this form of contact. On the other hand, if the telephone service is inappropriate, inconsistent with the standards of customer service or service standards do not meet customer expectations, the situation is likely to result in losing a potential customer. The blueprint indicated alternative possibility for the entrepreneur. Standardization of employees' activities in the field of telephone contact with the customer may affect establishing and completing of customers databases and CRM systems.

During a telephone conversation two profiles – profile of a potential recipient and profile of a potential service provider are being created. Therefore, it is important to understand the essence of the first contact and customer experience with the employee in the form of telephone communication. "First impression" can contribute both to attract and to retain customers. Both parties are interested in achieving optimum benefit. Therefore, in their best interest lies providing customers comfort, sense of satisfaction, inspire trust and encourage customer to purchase goods in the car dealership. Losing a customer is a 'transfer' of a customer to another competitive car dealership. In a conscious manner, entrepreneurs cannot afford to such a situation. Hence, conscious process of service design in order to meet the needs and expectations of customers and the opportunities and potential of companies providing services are of high significance.

5. Conclusion

Despite the dominance of services in modern economies and their rapid growth around the world, it is surprising how few research results are presented in this field and how few methods and techniques are to solve the problems of companies providing service. Presented solution is significant for all service companies in which service provision is realized, even in a minor extent, during a telephone conversation (except for call center services for which other solutions are applicable). The branch of a service company is of little importance since developed solution and suggested implications are universal and interdisciplinary. Importantly, they apply both at the strategic and the micro-implementation level. For managers they are a useful tool to develop standards of customer service and tools to control employees work and the consistency of employees' attitudes and actions against appointed standards.

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MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL ASPECTS OF BUSINESS

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SWOT analysis as a standardized application in industrial companies

Kateřina Chuchrová, řárka Vilamová, Roman Kozel

Abstract

This article is about applied demonstration model of strategic analysis, which our research team is working on. It is specifically about the performance of programmed screens for the analytical technique called SWOT analysis. The research team developed standardized, visualized form for this method, which is exercisable in industrial systems at all levels of management. Subsequently, the system is tested at one of the Ostrava companies. This company does the mining and processing of stone in the Moravian-Silesian region.

Keywords: Strategic analysis, SWOT analysis, SWOT maps, strengths, weaknesses, opportunities, threats
JEL Code: JEL O320, JEL M150, JEL M310

1. Introduction

A time when demand exceeded supply is gone. These days businessman must have a good dose of enthusiasm to cope with today's tumultuous business environment, which is especially in recent days characterized by frequent and sudden changes and ever-increasing competition. Early prediction of market opportunities, threat identification and dealing with solutions to potential problems of a strategic character brings business success, for this reason, the implementation of strategic analysis that can highlight potential opportunities and threats should be an integral part of the business activities of each economic entity.

The ideal model of strategic management of the company does not exist. But experts agree that the strategic management should be implemented in certain logically related steps, while important and starting point for formulating a strategy are the results of **strategic analysis** (Pawliczek, 2015). The aim is to identify and evaluate all relevant factors, which may be assumed that they will influence the final choice of goals and strategy. There is no strategy, whose application would fit into every enterprise. One of the biggest mistakes, which are businesses constantly commit, is an effort to use a universal strategy. Properly formulated strategy must be made to measure the company and must accept all its specifics (Sedláčková, 2006). Important methods of strategic analysis are the analysis of the environment in which the most famous is the SWOT analysis, which identifies four main groups affecting the operation of the business. The goal of the model is to identify and understand the forces that act in a given situation. Business that wants to succeed, should respond to these forces, deal with them and if possible change their work in its favor. SWOT analysis is a dominant strategic planning tool used by Czech enterprises regardless of their size (Navrátilová, 2014).

2. Theoretical basis of SWOT analysis

SWOT analysis, which was created by Albert Humphrey, who proposed it in the 60s of the 20th century, is universal analytical technique focusing on the evaluation of internal and external factors affecting the success of an organization or a particular project. It is an excellent coaching tool that through four ostensibly simple items will make long and hard think about the most elementary things that affect the business. SWOT is an acronym of the four words: Strengths, Weaknesses, Opportunities, Threats.

Because SWOT analysis is very versatile and one of the most widely used analytical technique is its use in practice very wide. It can be used for the company as a whole or for individual areas or products. SWOT analysis is one of the basic tools of strategic management. In addition, however, it will come in handy for example at selection procedures for project-oriented contracts, advertising, PR and many other fields. The essence of SWOT analysis is to identify key strengths and weaknesses of the internal environment of the organization and the key opportunities and threats of the external environment and work with these properties.

2.1. Internal and external factors

Internal factors include assessment of strengths and weaknesses. These elements are in fact defined by internal factors - notably human capital, experience, intellectual property of the company and its facilities and capacities. The most frequent inputs are financial analysis of the organization, evaluation using the EFQM model, the value chain analysis

and analysis of resources. The financial analysis was previously used by the authors for example in optimizing the costs in the company (Vilamová, 2015).

- **Strengths** - you need to find out what the company is doing better than the competition, how the company is perceived by employees and recognized by the customers or competitors in the market.
- **Weaknesses** - weaknesses identify potential internal weaknesses of the company. Finding, how is the company failing and what others do better.

External factors include evaluation of opportunities and threats related to the environment of the organization. But the fact is that these elements are largely influenced also by internal factors. The company may very well affect what the market opportunities will be and can also proactively prevent threats. Here are the most common inputs trend analysis remote environment (PESTLE analysis), sectoral analysis (Porter analysis) and analysis of competitive position (market segmentation, analysis of customer needs, analysis of competitors). The authors of the article, for example, spent time finding appropriate funding for industrial companies from EU funds because of this approach (Kušnierz, 2011) or they were searching for an alternative method of financing the companies (Vilamová, 2013).

- **Opportunities** - Examples of opportunities may be, for example, new markets, continuous improvement of products, new technologies, cooperation with partners, grant programs and so on.
- **Threats** - Threats represent the area that brings risks. If we do not systematically manage them, they can develop into a serious problem.

2.2. Factors evaluation

Some managers believe that by defining factors SWOT analysis is done, but the most important part is to evaluate predefined factors. There are many ways to evaluate the factors. In Article Evaluation Methods of SWOT analysis are presented two possible approaches to the implementation of SWOT analysis. The first approach is based on evaluation of the relationship between strengths and weaknesses, opportunities and threats using the symbols +, -, and 0. The second approach is based on identifying weights of individual effect factors of relational SWOT matrix (Vaněk, 2012). Quantified evaluation based on a point scale used to evaluate strengths and opportunities, for example, the positive scale 1 to 10, with 10 being the highest and 1 the lowest satisfaction. At the weaknesses and threats there is a negative scale, for example from -1 (lowest dissatisfaction) to -10 (highest dissatisfaction). Or you can also use a qualified evaluation when the factor can evaluate the number of plus and minus. The obtained values are then converted into a graph. (Kozel, 2006)

3. Analysis of the current state

SWOT analysis applications are currently engaged in a number of authors. This analysis is so popular that came out even article provides an overview of the literature of SWOT analysis. There is explained the origin and historical evolution of analysis, documented researches on trends and is also described methodical development. This article is designed to meet the needs of researchers and practitioners for simple links on the SWOT analysis (Ghazinoory, et al, 2011).

On most common errors when using SWOT analysis warns Article Ten Mistakes at the Usage of the SWOT Analyses in the Strategic Marketing Planning in the Healthcare Institutions (Valkov, 2010). SWOT analysis as a starting point of strategic management was also used in the evaluation of the most important mining company in Czech Republic, which is OKD, a.s. (Vaněk, 2014). In contrast, for example, the University of Warwick used the SWOT analysis including scoring of various aspects and propose an appropriate strategy (Dyson, 2004). Evaluation of potential of the cooperation between universities and practice using SWOT is engaged in article Towards an ecosystem for academic-industrial cooperation (Ministr, 2014), which identifies infrastructure, organizational and other measures supporting academic-industrial cooperation. In Article Evaluating multifunctional agriculture in Dalishu, China: A combined application of SWOT analysis and the analytic network process method (Zheng, 2013), is this analysis used in agriculture, which evaluates multifunctional agriculture using the strengths, weaknesses, opportunities and threats and is using in combination with the method ANP (Analytic network process). As can be seen, SWOT analysis is applicable in many different fields.

Companies that publish SWOT analysis as part of their profile, often applied this method but only in the basic framework, which provides specific strengths, weaknesses, opportunities and threats, but they are missing some output. After all, the most accurate indicator of the situation is a model or graphic scheme or numerized output, which immediately makes the image of the organization about the current state to managers. Text extensive evaluation would describe everything in detail, although, there is no essential brevity, clarity and transparency.

4. Software solution and modeling of SWOT analysis

This article follows on already published outputs of the team of authors, for example, Article Creation of system support for decision-making processes of managers (Kozel, 2015) in which was presented using the system for more strategic analysis.

The aim of the team of authors is to create a software program to analyze the current strategic position of the industrial company, products or services that the market offers. The team of authors is creating a user-friendly software environment that offers strategic analysis processing, a standardized inputs, built-in algorithms and calculation methods

and subsequent standardized outputs of in the form of tables and graphic displays. The system consists of a combination of Excel spreadsheets and programming background VISUAL BASIC for utility creation.

Our programmed software delivers comprehensive solutions of SWOT analysis. It is possible to maximally engage different parts of SWOT analysis, pros and cons affecting the business environment of the enterprise, but also the whole complex analysis.

4.1. The input user interface system

The input screen of the whole system, see Fig. 1 is fully functional and the user has the opportunity to choose what part of the SWOT analysis will be engaged, while it works such as teaching image as an example of SWOT analysis what each SWOT part means. The top bar gives the user the choice of the basic script file. For example, a script "Info" instructs on what was just done on screen or script "Help" guides the user how to proceed in individual analyzes.

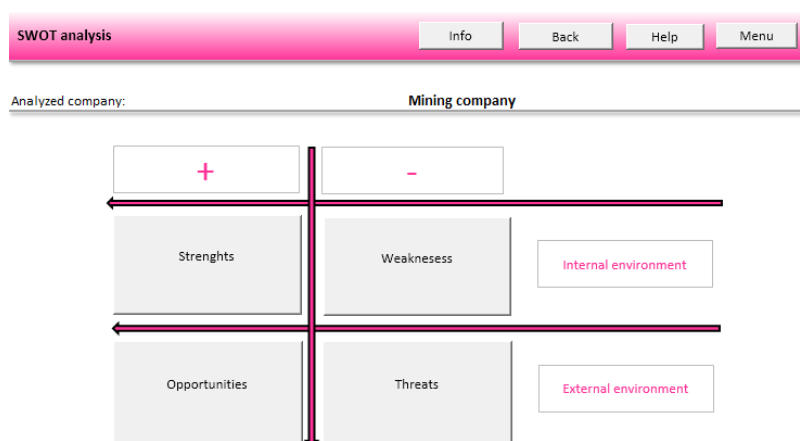


Figure 1. Initial Screen of SWOT analysis
Source: own production, Software SA

4.2. Principal outputs of partial evaluation of SWOT analysis

If a user wants to devote to each group separately, he clicks on the corresponding cell and gets to the screen of relevant group, see Fig. 2. Where management needs to define its strenghts (weaknesses) or opportunities and threats. For factors of internal environment is the most important to determine the appropriate performance on a scale of 1 -10, where one indicates that this factor is not very effective evaluation mark and ten means that the factor is very powerful. In the second column is the need to define the intensity factor, which is evaluated on a scale from 0 to 100%. The more important factor is for the main operation of the company, that much percentor user inputs. If it is a factor that is essential for business, it will be given a low percentage. Many authors or instructions to copy SWOT analysis directs user - the intensity or scale factor be selected so that the sum is equal to one. However, we believe that it is necessary to evaluate each factor separately - for example, here is assessing the opportunity: "Obtaining grants." With this factor the company's management believes that the chances of getting a grant is 90%. And therefore it is not appropriate to measure the likelihood of other factors.

STRENGTHS			
s.n.	Contention	Factor performance	Factor intensity
1	Financial stability	1	60%
2	Capable management	2	40%
3	Own rolling-stock	5	80%
4	Modern manufacturing equipment	4	30%
5	Information systém	7	40%
6	Certification to ISO standart	1	50%
7	Market share	9	60%
8	Tradition and company reputation	6	20%
9			
10			
	Average rating	16,50	48%

Figure 2. Table of strenghts
Source: own production, Software SA

To assess the strengths and weaknesses and the opportunities and threats initially evaluate each of the groups from two points of view which are the terms of its performance and intensity that are shown in Fig. 2 and 3. To compare all four groups also serves weighted performance of the group, which is calculated according to the formula:

$$WPF = \sum (Pf * If), \text{ where} \quad (1)$$

WPF - Weighted performance of the group
Pf - performance factor
If - intensity factor.

The weighted performance of the group will be used for the overall evaluation of SWOT analysis, see chapter 4.4.

After defining the base table is generated a graph for a given group, see Fig. 3. The matrix is divided into four quadrants when in the first quadrant are located those factors (in this case strengths) that are important to the functioning of the enterprise, but the company could improve this area. In the second quadrant of the graph are the most effective strengths, meaning those factors that are very important to the functioning of society, and the company is performing them at the highest levels. The third quadrant indicates the strengths that are bland in performance evaluation and have no significance for the company. The fourth quadrant defines those elements, which the company performs at a high level, although they are not significant for the company at its business.

For factors of external environment does not provide the performance and the intensity factor as for strengths and weaknesses, but for an opportunity there is the attractiveness factor (Points 1-10, where one is less interesting factor and ten is most attractive factor) and the probability of occurrence (0 to 100%, where 0% means no probability that the factor will occur and 100% is that the factor occurs with one hundred percent certainty) by threats we evaluate the seriousness of the factor (Points 1 to 10, where one means that factor is not too serious, and ten represents a very serious factor) and the probability of occurrence (0 to 100%).

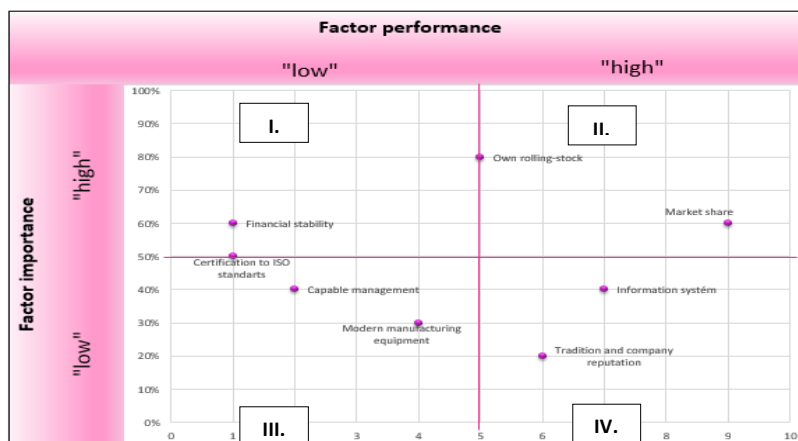


Figure 3. The matrix of strengths and weaknesses
Source: own production, Software SA

4.3. Principal outputs of the evaluation of environment of SWOT analysis

Our system offers the additional option of how to process the SWOT analysis through icons internal and external environment, see Fig. 1. Here, the user does not identify any particular strength, but evaluates factors collectively - according to whether they are factors that come from within the company and the company is able to influence them or whether they are factors that come from around the company and the company is unable to change them, company can only get ready to solve them. For this version is defined next table, see Fig. 4, when the user defines the factors that affect the company from the outside then evaluates their performance and severity on a scale from 0 to 5 (for external environment is scale: 1 - Very serious threat, 2 - Threat, 3 – Standard, 4 - Opportunity, 5 - Very attractive opportunity and for internal environment is scale: 1 - Very weak, 2 – Weak, 3 – Standard, 4 – Strong, 5 - Very strong). The result is a graphical diagram, see Fig. 5, which identifies the opportunities and threats that need to be further focus on and conversely those factors that the company would not focus its attention and should not devote too much attention to these factors.

EXTERNAL ENVIRONMENT			
s.n.	Rated factors of external environment	Performance rating	Severity rating
1.	Healthy lifestyle trend.	4,1	4
2.	Support for the regions and projects focused on sports.	4,9	5
3.	Development of information technologies.	3,8	2
4.	Globalization.	3,2	1,5
5.	Decline in real wages.	1,5	1,5
6.	Growth of the economically inactive population.	2,8	2,5
7.	Zero cost to customer during transition to competition.	2,9	4,5
8.	Strong competition in the sector.	2	4
9.	Strengthening consumer rights.	1,7	2
10.	Unfavorable demographic development.	1	1,5
11.	Unfavorable development of exchange rates.	2,9	4
12.			
13.			

Figure 4. Evaluation of factors of external environment
Source: own production, Software SA

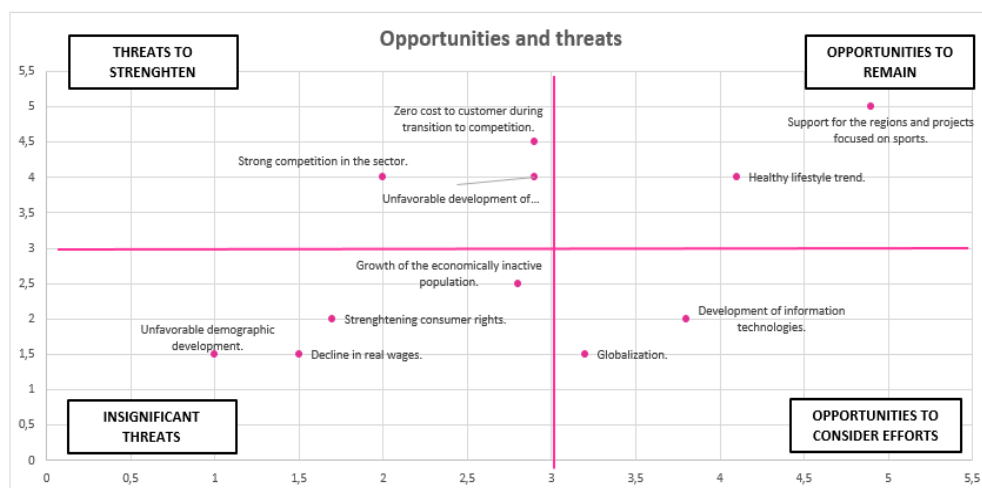


Figure 5. The graph overall evaluation of SWOT analysis
Source: own production, Software SA

4.4. Total outputs of SWOT analysis

After defining individual parts of SWOT analysis, the user sees a single table (Fig. 6). Such table, the user can use as part of their profile or when applying for project. SWOT table is in fact often required for different types of applications in banks or other financial and non-financial institutions.

There is also a graph included in the table - Overall rating of analysis, see Fig. 7 or Spider SWOT map, which shows the achieved values of partial areas. Violet square represents the achievable maximum, according to the number of specified factors. Pink trapezoid is a comprehensive ranking of sub-areas. In a practical example, it can be seen that the various forces are in this case relatively balanced.

SWOT analysis		
	Strengths	Weaknesses
Internal environment	Financial stability	Narrow services portfolio
	Capable management	Financial expenses in stocks
	Own rolling-stock	Higher transportation costs from remote center
	Modern manufacturing equipment	Dependence on customers in Ostrava region
	Information system	Not very sophisticated website
	Certification to ISO standards	0
	Market share	0
	Tradition and company reputation	0
	0	0
	0	0
	Opportunities	Threats
External environment	Development of markets in Slovakia and Poland	Market competition
	Obtaining grants	The recession of the world economy
	Increased sales of metallurgical division	Increasing energy prices
	Fusion with strong part.	Stricter environmental standards
	Gaining market leader position	Decline in demand
	0	Fluctuations in the prices of scrap
	0	0
	0	0
	0	0
	0	0

Figure 6. Table of SWOT analysis
Source: own production, Software SA

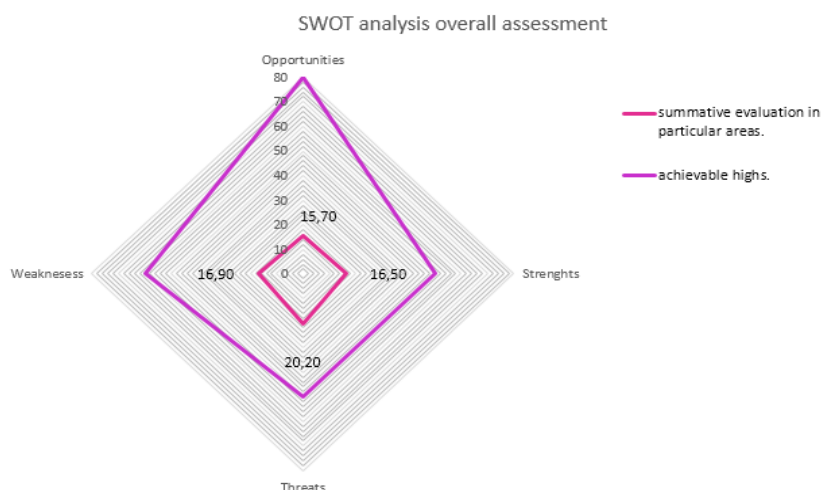


Figure 7. The graph overall evaluation of SWOT analysis
Source: own production, Software SA

5. Conclusion

The aim of the research team was to create a standardized and visualized form of SWOT analysis, as a method that is suitable for the determination of risk factors. Contribution shows and describes the various input forms and procedures for the preparation of this analysis. Given the scale it was not possible to present all the specifics of such programmed strategic analysis. It was shown that this is a good direction for the development of other important analyzes. Our software application and model will be gradually developed and elaborated on further analysis and tested in other major industrial companies of Moravian-Silesian region so that they are understandable and fillable showing useful results.

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The importance of logistics costs in enterprises

Mariusz Iskra

Abstract

All processes related to material or information flows and other logistics processes generate costs. There is a need of analyzing management decisions regarding the supply chain and other logistics processes but there is also a need of analyzing costs associated with them. Analysis of logistics costs, particularly in small and medium-sized enterprises, is difficult due to the way of accounting. The article presents types of costs related to logistics. There are also the methods and tools of managing these costs shown in the article.

Keywords: logistic costs, logistic development, enterprise
JEL Code: F00, O 10

1. Introduction (Times New Roman, 10pt, bold)

The market success of the enterprise consists of many factors. Changing market environment may be an opportunity or a threat for the enterprise and every economic decision is at risk. Exploiting the potential of companies in the changing market conditions requires making strategic, managerial and operating decisions at various levels of the enterprise. Undoubtedly, a necessary condition for taking accurate and rational management decisions is to base them on accurate, right and quickly prepared and processed information. In an era of ERP or higher systems growing and increasingly used in enterprises the possibility for gaining and processing is enormous.

This article focuses on decisions related to logistics, in particular on an analysis of the costs associated with broadly-defined logistics. Decisions concerning the whole process of product delivery to the customer related to storage, supply and distribution chain, flow of information and other aspects of this process are often decentralized. The reason of the decentralization is the increase of the scope of enterprise's services and the consequence is the need to indicate cost centers. The analysis of logistic costs is often difficult, particularly in small and medium-sized enterprises because of the way accounting economic events.

2. History and definition of the logistics

Logistics has a long historical traditions. Most of authors dealing with the logistics point its connection to the military. B.H Kortschak claims that the Byzantine emperor Leontos referred logistics to the sphere of military paying attention to satisfying the needs of the equipment, armaments and prepare any military operation (Skowronek, Sarjusz-Wolski, 2003). In those days logistics was not under its present name, it also has evolved and scope of logistics has changed.

For a long time logistics has been associated with the military, and has not arouse any interest in the field of economics. Processes specific to logistics were present in the economy, but they were not reported and investigated. The experience of World War II caused that there was a need to implement logistics in the economy. It has noted that the success of the Allies was based on a proper military logistics (Karmańska, 2007). The first monograph related to logistics in the enterprise "Physical Distribution Management: Logistics Problems of the Firm" by E. Smykay, D. Bowersox, F. Mossman appeared in the US in 1961 (Blaik, 2001). In 1962 the Council of Logistics Management – CLM was set in the USA. It has defined logistics as the process of planning, controlling and verifying the flow and storage of raw materials, semi-finished and finished products, and information – starting from sources of extracting raw materials to the place of consumption of the product, according to the customer (Gołomska, 1999). The authors of the first in Europe elaboration related to logistics were L. Poth, W. Kirsch, R. Wentorth – in the 70s (Blaik, 2001). In 1984, European Logistics Association - ELA was founded in Brussels. The concept of logistics in Polish literature for the first time occurred in the publication by W. Stankiewicz "Logistics" published in 1968 (Skowronek, Sarjusz-Wolski, 2003).

2.1. Stages of logistics development

There are several stages in the development of logistics. C. Skowronek and Z. Sarjusz-Wolski distinguished four stages of development (Skowronek, Sarjusz-Wolski, 2003).

Stage I - 50s of the twentieth century – logistics activities consisted of activities in three areas: purchasing, warehousing and distribution. However, organizing the purchase, transportation, warehousing, customer servicing,

demand planning and other activities of these three areas were not coordinated and they were not subordinated to one common goal.

Stage II - the 60s and early 70s – the most important feature of this period was to focus on the physical distribution of goods to the consumer. The aim was to deliver the goods to the customer at the right time and place, in the right quantity and the right price. The second area of activity during this period was the inventory management or "material management". However, activity in the area of distribution and inventory management were implemented separately.

Stage III - the late '70s and '80s of the twentieth century – at this stage appeared integration of logistics processes. Logistics management was seen as a flow of raw materials, semi-finished products, finished products and company information. In addition, logistic processes were subordinated to the strategic goal of the company.

Stage IV – the 90s till now – logistics is related not only to flows in enterprises, but also flows in country and in the world. There are new concepts such as logistics management e.g. just-in-time, lean management. Because of the fact that logistic is related not only to a company but even to flows between countries there are many analysis of global supply chains e.g. vehicle spare parts supply chain (Panga, Mchopa, 2014).

2.2. Phases of transferring logistics to economy

According to A. Stachowiak, there are five phases of transferring logistics to economy:

- Physical distribution
- Integration
- Logistics engineering
- Supply chain
- Logistics network

Phase 1 is associated with physical distribution processes including transportation of goods, warehousing, inventory management, packaging, preparation of contracts and after-sales service until delivery to the customer. This area of logistics activity is related to the area of trade and is associated with the rise of large supermarkets in the US in the 40s and 50s.

Phase 2 - logistics was related to the movement of goods in the enterprise. This movement has caused huge amount of data to process, but on the other hand there were a huge progress in using computers. Development in information technology enabled logistics operations support. ERP systems support the management of logistic processes.

Phase 3 – phase of logistics engineering. Because of the fact that the demand for basic products were fulfilled fast there was a grow in affluence of customers, they started to pay attention to the additional services related to the product. The increase of requirement and complication of products has led to an increase in the complication of logistics systems and the necessity of their proper design.

Phase 4 – supply chain – enterprises that have competed in every phase of the production started to work together in purchasing and manufacturing, while still competing in the sale and gaining customers.

Phase 5 – the phase of logistics networks or e-logistics – is a consequence of the creation and usage of the Internet. The speed, simplicity and low cost of searching contractors, comparing prices and quality of goods, availability and planning of transport and storage via the Internet, has led to the fact that supply chains have become the logistics networks – groups of independent companies that both compete and cooperate with together in order to improve the efficiency and effectiveness of the flow of goods and information.

Logistics can indeed be a true core competence, strategically positioning the organization for market success and a source of long - run competitive advantage (Yakup, Sevil, 2012).

2.3. Definition of logistics

There are many publications with many definitions of logistics. Despite the relatively short time of logistics development in the current meaning there are lots of studies on it. The conclusion is the importance and great interest in this field. There are many fields in which logistics is implemented e.g. logistical capital management theory which is based on the niche of the capital, as the capital growth area's finality concept (Barakauskaitė-Jakubauskienė, 2011). Therefore it is worth to present some definitions.

According to Skowronek and Sarjusz-Wolski there are three concepts of (Skowronek, Sariusz-Wolski, 2003):

- logistics is the processes of the physical flow of material goods: raw materials, semi-finished products, finished products in the enterprise, as well as between enterprises and flows of information related to material processes and controlling these processes
- logistics is a concept, a philosophy of real processes management (flow of goods) based on an integrated, systemic recognition of these processes
- logistics is a field of economic knowledge, which studies regularities and phenomena of the flow of goods and information in the economy, as well as in its individual cells.

Logistics, as one of the areas of the enterprise is to optimize the flow of goods and information system, not only in the enterprise, but also throughout the supply chain (Blaik, 2001).

The purposes of logistics illustrates the 7R definition by Shapiro, Heskett (Sołtysik, 2009) – the so-called logistics demands: right product at the right price, quantity and value for the right customer in the right time and place.

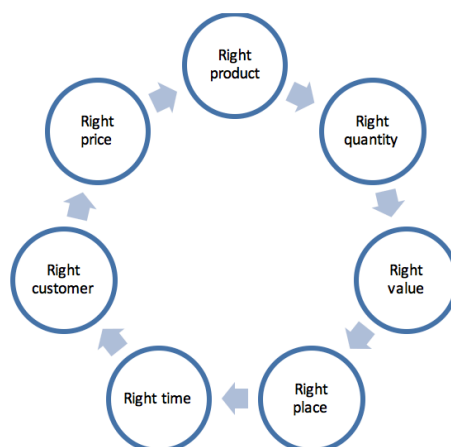


Figure 1. 7R definition of logistics
Source: on the base of (Softysik, 2009)

3. Costs in logistics

The cost is a basic criterion for choosing the enterprise's decisions. They are referred to as expressed in money intentional consumption of fixed capital, equipment, intangible assets, materials, energy, fuel, services, time of employees work. The issue of logistics costs is one of the most difficult and complicated issues, due to the extensive and vague structures of these costs and difficulties in their identification. (Twaróg, 2003) (Ficoń, 2001). Moreover, the definition of logistics costs are numerous and ambiguous. They appear and are used in different ways, which makes their identification and analysis very difficult. However, due to the growing share of logistics costs in total costs of enterprises and their role in gaining and maintaining competitive position is necessary to understand their nature and structure.

There is no uniform standard in defining logistics costs, individual authors focus on selected aspects of the group costs. Examples of definitions of logistics costs presented in the literature are provided in the table below.

Table1. Definitions of logistics costs

Author:	Source:	Definition:
Kufel M.	(Kufel, 1990)	Logistics costs are detailed cost category, meaning cash assets reflected consumption of the company, caused by planning, implementation and control of technological processes beyond the movements in time and space all forms of materials.
Kwejt J.	(Kwejt, 1982)	Logistics costs should include: the estimated costs of logistics (transport supply, manufacture, maintenance of the inventory, etc.), more than scheduled and unscheduled (maintenance of excessive stocks and loans, etc.), losses due to defective materials management
Szałek B.	(Szałek, 1994)	Logistics costs include direct costs (transport, storage, inventory, communications) and indirect, fixed and variable costs, procurement costs of production and distribution, tangible and intangible costs, costs of developing the logistics and projects commissioned by the logistics and costs strictly logistical.
Skowronek C.	(Skowronek, 1995)	Logistics costs are expressed in money consumption of human labor, resources and objects of labor, financial expenses and other negative effects of extraordinary events, which are caused by the flow of capital goods (raw materials, materials, products, goods) in the enterprise and between enterprises, as well as maintaining inventories.

Source: Kowalska, 2009

The common feature of these definitions is that they emphasize that the costs in logistics are related to all material and information processes, which are taking place throughout the supply chain.

3.1. Classification of logistic costs

Often defining the concept and structure of logistics costs is a complicated problem. The wide sources often show logistics costs in various aspects. Logistics costs are a collection of many components: material, tangible, intangible, financial, and personal. Classification of them can be made with multiple criteria. In accordance with the purpose of classification can be either cognitive or practical. In Figure 2 shows the distribution of costs in terms of cognitive criterion (Skowronek, Sarjusz-Wolski, 2003).

Logistics costs in the strict sense are related to the implementation of logistics processes and include:

- consumption of human labor and the means and objects of labor, as well as external services

- companies cash outflows, including, among others, property taxes, taxes on transportation, charges resulting from the use of the environment, the cost of frozen assets as the interest rates on foreign capital.

The costs of extraordinary events include an extraordinary loss of property resulting from failure of logistics processes. Belong to them:

- penalties imposed on suppliers and customers resulting from failure to meet the agreed parameters of logistic processes (e.g. penalty charges for late deliveries, the supply of poor quality or because of late payment of liabilities)
- losses due to poor production quality resulting from defective flow processes
- losses due to obsolescence, depreciation and revaluation of stocks

The costs of lost potential benefits – the result of a failure of logistics processes, e.g. due to the absence of stocks of products which are in demand, price reductions resulting from delayed delivery, poor quality, etc.

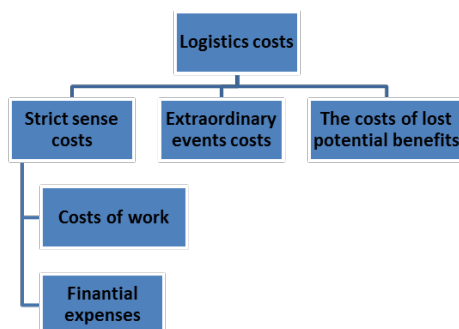


Figure 2. Classification of logistics cost
Source: Skowronek, Sariusz-Wolski, 2003

According to the phase flow criterion there are costs as below (Piechota, 2004):

- phase costs of supply (purchase) - related to the organization and implementation of the supply and maintenance of warehouse. In particular, these are the costs of the physical flow of materials from suppliers to of warehouse, transport costs, supply control, planning and management of process supply, maintenance costs of information processes involved in the movement of materials. At present there is even game theory used in supply chain analysis (Zouhar, 2012)
- costs of the production phase - in manufacturing companies and include company internal flows of materials, semi-finished and finished products. In particular, include the costs of the physical flow of materials between the seats of production, the cost of information processing that controls the process flow of materials and products within the company
- costs of the distribution phase - includes costs of organization and functioning of distribution channels and costs of information processes related to distribution
- logistical costs of storage and recycling of waste - the cost of the collection, transport and disposal of waste and the costs of information processes aimed at waste management. It can be related to the return or reverse process of the supply chain connected with used products: collection, inspection and separation, re-processing, disposal an re-distribution.

3.2. Causes of difficulties in logistic costs identification

Logistic has so broad meaning that there are many various matters verified which have impact on final cost of business activity. Even the value of trust in day-to-day social exchanges and its significance in business relationships, particularly in supply chain between enterprises, are investigated to improve efficiency in business activity (Cerri, 2012).

There are more and more complicated mathematical tools implemented in logistic management e.g. multi logistic regression might forecast stock performance (Upadhyay, Bandyopadhyay, Dutta, 2012).

Traditional cost accounting causes a number of problems:

- The actual cost of servicing different types of customers, distribution channels and market segments are difficult to determine
- Reported costs are characterized by a very high level of aggregation
- Cost accounting is functional structure, which limits its usefulness
- The emphasis on full allocation of costs between products makes it impossible to determine the cost per individual customer.

Characteristic of logistics costs that causes many difficulties in identification:

- dispersion among many groups of costs by traditional cross-sections
- high and often increasing share of the total cost
- variability in the individual periods
- separation of responsibility for the formation of these costs in a number of organizational units
- effort in determining the size of these costs.

4. Conclusion

Identification of logistics costs is difficult and it is not widely used. According to Blaik there are not regular and comprehensive analyzes in Poland. The reason for this state is the level of advancement of information systems used in companies that rely on outdated methods of accounting and do not provide operators with the right quality of information necessary in the pursuit of high-performance logistics system.

Separation of logistics costs is difficult because of their presence in all accounted costs and without precise identification is not possible to assess the efficiency of the logistics system. Traditional accounting methods used in enterprises constitute a major barrier to determining the cost of logistics. These methods provide the necessary information, which includes the financial activities of the entire company, but do not solve the problems of modern logistics. The task of the logistics system is to provide the highest level of coordination of logistics processes and optimum usage of the resources, which affects the development of the logistics costs, which should be controlled (Ślusarczyk, Cat, 2013).

By analyzing and managing logistics costs you it is easy to identify the strengths and weaknesses of the company, and thus improve the functioning and efficiency.

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MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL ASPECTS OF BUSINESS

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New trends in marketing communications of enterprises

Natália Jergová

Abstract

The current market environment requires changes in the use of traditional tools of marketing communication because of the enormous increase in both electronic and print advertising channel and also because of the fading trust or responsiveness conventional advertising media. Enterprises are forced to respond to customer sensitive, flexible and personalized. The paper deals with new trends in marketing communications with an emphasis on online marketing. The issue of online marketing is then differentiated on the digital forms, webs, shops, blogs and social networks.

Keywords: communication, viral marketing, event marketing
JEL Code: M30, M31

1. Introduction

The traditional concept of marketing was primarily focused on product and sales. From this stemmed the orientation and the role of marketing in the enterprise. Changes in understanding and finding new theoretical approaches in marketing focused on the customer, his requirements but also to the society begun to manifest in the 21st century. Marketing communication tools are concepts whose content has variable trend with regard to developments, new discoveries, opportunities and social phenomena and thus new insights and approaches to customer and their need.

2. Marketing communication

The marketing communication is based on the principle that communication is an integral part of cohesion policy, as it contributes to transparent implementation and administrative capacity building for the cohesion policy instruments. Communication strategy describes how it is necessary to carry out communication activities, and how to achieve their objectives. The actual communication strategy should be based on the objectives of the operational program. It should include measures in the field of information and communication aimed at potential beneficiaries and the public (Csikósová-Antošová-Čulková, 2014).

Communication strategy, while respecting all legislative requirements based on the general principles of communication with the following attributes:

1. Flexibility - covering current information.
2. Continuity - regularly inform.
3. Availability - use of the widest range of media (Mráček-Mucha, 2014).

3. New trends of marketing communication

Using knowledge of several disciplines, research and technological progress are constantly opening up new possibilities of communication to raise awareness about your product, service, we want to sell or ideas or views that we want to spread. New trends in marketing communication contains all new forms of marketing communication strategies and customer care, and perfectly linked together and form one "marketing body." For nearly two decades, it is the "mature marketing world of" manifest a number of key trends in marketing communications, in particular:

1. The promotion of the concept of integrated marketing communication.
2. Spreading elements of the marketing communication mix (especially for direct marketing and event marketing).
3. Emphasis on the use of marketing databases and application of the concept of building a customer relationship management (CRM).
4. Emphasis on the effectiveness of marketing communication and its perception as an investment which should bring profits.
6. The use of new media and communication technologies (eg. internet, email, mobile phone, digital)
7. Application of non-traditional forms and practices in marketing communications.

Between new trends in marketing communication we can include:

- Digital marketing.
- Viral marketing.
- Event marketing.

- Direct marketing.
- Guerilla marketing.

Mobile marketing. (Olšiaková-Miklenčičová, 2011)

3.1. Digital marketing

By the term “digital marketing” can be called all forms of marketing which mediate information about products and enterprises by digital format. Digital marketing is transforming the static advertising to the dynamic, cognitive. This is an interactive ad that converts virtual reality to reality. It is used by all as special technologies that use virtual tours. On such marketing it is therefore using LCD monitors, billboards, luminous film and others. These are all modern technologies which are able to project the picture. (Skudiene-Auruskeviciene-Sukeviciute, 2015).

„Digital marketing uses of technology in which a person senses a new dimension. Touch, smell, hearing and sight are the senses that can be used for a completely different level than it was for the use of conventional forms of marketing.” (Frey, 2008).

In the tourism sector is mainly used virtual tour. This is a tour with a computer, where the user can view step by step everything that interests him. The most famous virtual tour is from Google. It is a virtual tour of towns and villages. You can choose to place on the ground and, if Google has already processed, you know to move step by step through the streets and places on the planet and see everything you would date at the time and the place to see. For example, in the hotel industry, this option mainly used in viewing the rooms, hotel. Customers can see the room in 3D shapes with the entire detachment and thus get an accurate idea of where he is staying in what proportions and see all that awaits him (Yadava-Yatish-Rahman, 2015).

3.2. Event marketing

For event marketing is often used the name of experiential marketing. This is mainly because in the modern style of marketing is mainly about creating experience, largely through social events. Also helps to create a situation with which the customer connects the positive emotions and experiences and thus creates added value to the product. Added value certainly many times ruled in favor of the choice of the company.

„In the event marketing we can include: sales promotion, multimedia communications, sponsorship, communication with employees, fairs and exhibitions, direct communication with customers, direct marketing, public relations, advertising and others.” (Nízka, 2007).

In the context of event marketing it is also linked to sponsorship. Why sponsor some action? The answer is simple. This is an effort to become part of the special-attached a special moment in the lives of consumers and thus connect the brand with major events. They also get into the minds of consumers and thus deepen the significance of the brand in their lives (Zaušková-Bezáková-Grib, 2015).

3.3. Direct marketing

Direct marketing will be taken to the customers through a direct form. Direct marketing is marketing without the use of intermediaries in it. Here we can include, for example, personal sales, catalog sales, telemarketing, teleshopping, mail order ... It is direct communication between the company and its customers.

Direct marketing brings lower costs through the use of computer technology and can also open up new distribution channels, which will travel deliveries and orders from the customer directly to the customer. This will save additional funds, since we save for the omission of various middlemen and distributors. (Nash, 2003). Additional benefits include:

1. Targeted - here it is important to choose a certain number of customers, which will target. We selected from a database, which will be written in the next chapter.
2. Control and reliability - customer reactions can be assigned directly to a particular section of direct marketing, and we can easily measure the results. Further clarifies direction and facilitates a process of continual improvement of future events.
3. Speed and flexibility - eg. When a telemarketer - customer response to seeing soon as they establish contact and dialogue so that we can customize according to their responses.
4. The effectiveness of costs incurred - the initial cost of reaching people are initially higher but the cost of the request or order goods are considerably lower.
5. Possibility of testing - we can change at any time, any transformation - cost, timing, etc. lists (Zaušková-Bezáková-Grib, 2015).

3.4. Guerilla marketing

Guerilla marketing is mainly applied in small enterprises. The primary is interested in profit and a major investment time. This type of marketing is considered by one of the leading nowadays. This is a controversial type of advertising that can bring big profits but also big problems (Patalas, 2009). According to Kotler “marketing can be divided into several areas and the aggressive actions against competitors and those who, while aggressive competition but have so noticed.” Guerilla marketing is very demanding in terms of original ideas.

According to founder Levinson (2009) can guerilla marketing defined as “the achievement of common objectives unconventional methods. Before money is thus a need to invest time and guerrillas ideas.” Guerilla marketing is not a one-off action, it is necessary to monitor, maintain and improve. Main features are:

- unconventional way to reach potential customers realized low budget,
- psychology works with existing or potential customers and an aggressive variant attacks the competition,
- places it is a legal limit on advertising, and resembles the riots,
- it is an unusual kind of interventions in public spaces,
- a creative activity that has with the consumer to establish a relationship of trust and support,
- attracts attention by visual or physical output from the current visual environment (locally shock or surprise),
- mostly addresses its unusualness jokes,
- it represents the very latest marketing weapon small and medium businesses and entrepreneurs, and individuals,
- pool does not start negotiation but a matter where the customer buys the solution to the problem,
- major investment is time, energy and imagination,
- is spontaneous and easy to understand, is copy able easy, cost-effective and operational,
- the essence is not originality but profit (Frey, 2005).

4. Mobile marketing

Mobile marketing was built gradually with the development of mobile networks and their operators as well as manufacturers increasingly innovative mobile devices. In this new type of marketing communication is a huge virtual market. Mobile phones are equipped with technologies that would be able to replace the call - centers or other types of promotion. „The most commonly used form of mobile marketing are just SMS voting, accessing Internet services over mobile phone (ie. applications) and also consumer contests.” (Skudiene-Auruskeviciene-Sukeviciute, 2015).

Mobile marketing is composed of different forms, including marketing SMS, MMS Marketing, Mobile Advertising, MMR - Mobile Marketing Research (marketing research with the help of mobile devices and mobile data collection), etc ... We meet with concepts such as mCommerce, mobile banking (mBanking) mWallet (mobile wallet), mPay (payment via mobile phone), mSecurity (security in the mobile world), mBroadcasting (live broadcast television and radio via mobile phones), mobile Internet, Moblogging (mobile blogging), PhD (Mobile Instant Messenger) and others (Zaušková-Bezáková-Grib, 2015).

Unfortunately also experience negative forms, such as Mobile Spam (mSPAM) Mobile Hacking (mHacking), SMS snooping (reading messages directly in the database and access gate operator), SMS spoofing (receiving unsolicited messages disseminated by SMS from Internet Gate), SMS interception (interception, capture of SMS messages sent to mobile networks) and other forms of modern criminality. Summing up the positives that come with advergaming and mobilmarketing, they are clearly straightness, dynamism, flexibility, simplicity, convenience, attractiveness both of the above forms. In addition, they received the information requested and thereby useful and if already not the consumer was not interested, just when you disconnect from the Internet or turn off the receive messages. For the future has mobile marketing great potential, but is still not often used.

5. Conclusion

At present enterprises in the world are developing various kinds of marketing communications, among which is the most developed guerrilla marketing. This is the most complex a model that is gaining popularity because of its simplicity, wit and financial modesty. We are guerilla marketing still gets into awareness, as this demands the creativity and resourcefulness. Slovak nation is more conservative than other countries in using guerilla marketing; we must first learn to think more relaxed.

Another largely developed the digital marketing, especially when that government communication with the younger generation growing up in today's modern world full of computers and various digital technologies. People who use the Internet, they want to have access to as much information and they want to decide for themselves what they will get to know. Direct marketing is among one of the oldest modern marketing trends in communications and is represented through teleshopping, telemarketing and catalogs. Currently it is recording less interest on the part of market actors. Viral marketing is particularly preferred for reasons of low cost and the possibility of rapid dissemination. The advantage is that it appeals to a large number of people, but the disadvantage is the uncontrollable spread of the message. Mobile marketing has been a great growth with the development of mobile operators. also, marketers favor and welcome this new marketing trend, because it is the fastest and the most effective form of communication.

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MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL ASPECTS OF BUSINESS

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Relationship small business and private brands

Michal Pružinský, Anna Hrnčiarová Turčiaková

Abstract

At the current stage of globalization and internationalization associated with concentration leads to the strengthening of international retail chains. Retail chains use their economic power to drive their distribution brands. This trend is reflected in food products but also non-food. The paper reflects knowledge about how to use these brands to markets in developed countries and opportunities for growth of brand value from the customer when the consumer has high brand awareness, well it knows and remembers strong, favorable and unique associations with it. We examine whether the percentage growth in the value of branding and values are subject to consumer convinced that among various brands in the product category, there are differences.

Keywords: private label, branding, distribution brands, keyword4, keyword5

JEL Code: M210, M310, D840

1. Introduction

In the scientific literature in marketing management with an emphasis on brand, we meet with a wide range of interpretations related to brands (de Chernatony, Dall'Olmo Riley, 1998). To facilitate evaluation were different interpretations brands grouped into three categories (de Chernatony, 2009). Categories are based on the place in which, or in which time is interpreted:

- Interpretations based marks entry,
- interpretation of the brand based on the perspective of output,
- interpretation of the brand based on the perspective of time.

Among the basic functions of the brand are such:

- Identification of a product, service or company - mark allows the consumer orientation and simplifies choice,
- differentiation - allows the manufacturer or service provider to differentiate themselves from the competition,
- diversification of products and services - enables the creation of quality brands and price levels (Machková, 2006).

The label may also carry out other functions (e.g. the function of time and material continuity). The products are varied and modernized and are marketed under different names, but the main brand remains the bearer of continuity. Bearer of values (e.g. mark may be intangible investment in the joint venture may be in licensing transactions, increases the selling price of the company mergers and acquisitions), traditions and guarantee product quality, creator image consumer representative lifestyle and a symbol of its time and not least the brand is an important marketing tool that enables communication with consumers, business partners and the general public (Machková, 2006). In the field of brand policy, we meet with some of the new trends that are affected by globalization and its manifestations (e.g. internationalization, concentration), increasing competition, as well as some social factors, such as the emphasis on ecology, social responsibility companies. For the current management of the brand are characterized particularly following trends:

- Strengthening the role of corporate brands,
- building global brands,
- the growing importance of private labels,
- trend of international unification of brands,
- co – branding.

2. Development of a position of private labels

The phenomenon of private labels (further “PL” only) has been around for a long time. Traditional craftsmen and traders through private labels sought to obtain the loyalty of its customers to their products. History of private label is associated with the American continent, when in 1869 the company The Great Atlantic and Pacific Tea Company (A & P) launched the first private label (Hesková, 2006).

In Europe, the first private label brands emerged thanks to the British company Sainsbury's, in the seventies of the twentieth century. In addition to England for the European space of private labels it is also considered France, namely Carrefour shopping network. Slovakia penetrated to the private brands with the arrival of foreign retail chains. As

reported (Hesková, 2006) private brand and its formation is inversely associated with the growth of scales – meaning – commerce as an economic sector and development of internationalization and concentration in trading.

Retailers offer their customers through private label products cheaper alternative to branded product. Thanks to bulk buying, and also due to lower advertising marketing costs are spent on buying goods produced under their own brand much less than they would pay for comparable branded products (Bontemps, Orozco, Réquillart, 2008). The difference in cost is usually so large that private label can offer its customers lower prices and despite higher profit achieved in the form of a margin for them.

Retailers believe that higher profiles which generate sales of private label pass from four sources that identified (Kumar, Steenkamp, 2007):

- Better margins,
- greater influence and power in negotiations with producers,
- loyalty to the brand,
- higher profitability of customers.

Nowadays private labels credited to their accounts approximately 40% share of total products sold in five European countries such as France, Germany, Spain, the Netherlands and Belgium. They also strongly developed in the retail markets in Poland, the Czech Republic, Slovakia and Turkey, where they forms a solid basis for further growth in retail sales.

The results of a consumer survey conducted by Nielsen (PLMA, 2012) confirm the positive consumer attitudes towards private label resellers. One third of the shoppers surveyed across Europe believe that many of the products sold under private brand of retailer are higher quality than branded mark. On average, one in four consumers said that he/she is willing to pay as much or more for the product under private brand if he/she likes. The value of private labels remains strong, attractive to shoppers. Almost 50% of all consumers who were addressed by Nielsen think that sellers of private label offer very good value for a reasonable price. The economic downturn in Europe after 2008 further contributed to the attractiveness of the value of private brands by consumers. In the coming years we expect the expansion of private labels. Although the growth of private labels is an opportunity and a challenge for the suppliers of products it depends on their market share. It is assumed that penetration of private label by 2025, with 50% of the offers e.g. food products (Rabobank, 2011).

3. Methodology

In this paper we present an opinion on the appropriate use of the instrument to express the values of selected indicators of business performance ceding production for sale under private label and dependency – relationships – between these indicators. Attention was focused mainly on methods of mathematical statistics, correlation and regression analysis.

Regression analysis is suitable for the examination of the dependence of two or more numeric variables. It is used to estimate values or mean values of some satisfactory explanation by the variable values of one or more explanatory variables (Tkáč, 2001). The data underlying the regression analysis provided they have obtained at random. The mathematical model, which is expressed reliance stochastic variables and therein met the basic assumptions of regression analysis is called regression model.

Assume that the variable y follows dependency from a single explanatory variable x . In this case, the results observed of n two values $x_i, y_i, i = 1, 2, \dots, n$, which can be thought of as n points in the plane. In practice probably never it would be possible to isolate the variables x and y dependence of the interaction externalities, so we can assume that all the points (x_i, y_i) will satisfy the equation:

$$y_i = \eta_i + \varepsilon_i = \eta(x_i) + \varepsilon_i, \quad i = 1, 2, \dots, n.$$

In this case we are talking about the type or model of the summation of an **additive model**. Function $\eta = \eta(x)$ is called the regression function. Regression function can be straight $\eta = \beta_0 + \beta_1 x$, dish $\eta = \beta_0 + \beta_1 x + \beta_2 x^2$, or other function. Each regression function has a number of parameters, a line two (β_0, β_1) , parabola three $(\beta_0, \beta_1, \beta_2)$ and so on. These parameters in the regression analysis are considered unknown constants whose values can be estimated from the observed (sample) data.

The regression functions that have linear parameters $p = m + 1$ are called regression functions and a regression models with linear functions are called linear regression models. Regression function that is not linear with respect to the parameters is called the function of non-linear regression, and regression models with functions, are referred to as non-linear regression models. Linear regression function can be expressed in the form:

$$\eta = \beta_0 x_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_m x_m + \varepsilon,$$

where $\beta_0, \beta_1, \dots, \beta_m$ are the parameters and $x_0, x_1, x_2, \dots, x_m$ are known functions of one or several explanatory variables, sometimes we call them repressors. Regression function has therefore $p = m + 1$ parameters (including repressors). For example, the straight line has $x_0 = 1, x_1 = x$ repressors, the parabola has repressors $x_0 = 1, x_1 = x$ a $x_2 = x^2$, and the like. It is usually assumed that the side effects and act on the random influence variable y , on the whole. This makes the results of the observed variable y vary randomly about the regression function. It is therefore assumed that the interference components have a zero mean value, i. j. $E(\varepsilon_i) = 0, i = 1, 2, \dots, n$. Haze interferents are either assumed to be all the same and are equal to free – unknown – constant σ^2 , t. j. $D(\varepsilon_i) = \sigma^2, i = 1, 2, \dots, n$, or are expected to be different, it means:

$$D(\varepsilon_i) = \frac{\sigma^2}{c_i}, i = 1, 2, \dots, n$$

wherein c_i are constants which must be determined appropriately. Regression analysis of the spatial series is further generally assumed that the disturbing components are uncorrelated, so the covariance for all pairs of interfering components is zero. In our consideration, the problem of achieving economic indicators in the delivery of goods under private or own brand, we evaluated the effect of selected attributes – explanatory variables (repressors) – the dependent variable (i.e. profit margin) and the dependency between the explanatory variables – repressors (i.e. shopping the price of production inputs, seasonality, and production volume). Suitable for these models are the methods of mathematical statistics, correlation and regression analysis. Given that the case is investigated by analysis of time series is assumed to be zero covariance for all pairs of interfering components unattainable and must assume their correlation.

Correlation analysis

In the regression models, we assume that the values of the explanatory variables are given, while the values of the variable y values are random variables. Such models are used to describe the variable y depending on the variable x , or from a number of explanatory variables, t, j . the description of the one-sided dependence. But even when describing unilateral dependence is reasonable to assume that not only the value of the variable y , but also the values of the explanatory variables are the values of random variables, i.e., the selection data is the model for some multivariate distribution. This is also in the situation, where n is randomly selected units and measured several (k) explanatory variables, which detects the value of the variable y (Tkáč, 2001).

Models in which it is assumed that n is the observed value of (k -tuples) multidimensional random variables are called correlation models and analyze the data by means of such models is referred to as correlation analysis. From the correlation patterns are well developed models that assume that the observed data values are multidimensional random variable that has a multivariate normal distribution. These models are used in the analysis of linear dependence two or more variables.

The Pearson selective correlation coefficient

Correlation analysis examines the existence of ties correlation between the variables evaluated (Tkáč, 2001). Assume that the variable X and Y , there is a linear relationship. Let $(X_1, Y_1), \dots, (X_n, Y_n)$ the measured values are independent random sampling of size n of the two random variables X, Y of the two-dimensional normal distribution a and let them and the sample average. For Pearson correlation coefficient selection is valid relationship

$$r_{x,y} = \frac{\bar{x} \cdot \bar{y} - \bar{x} \cdot \bar{y}}{\sqrt{\bar{x}^2 - (\bar{x})^2} \cdot \sqrt{\bar{y}^2 - (\bar{y})^2}}$$

Where is

$$\bar{x}^2 = \frac{1}{n} \sum_{i=1}^n x_i^2, \bar{y}^2 = \frac{1}{n} \sum_{i=1}^n y_i^2, \bar{x} \cdot \bar{y} = \frac{1}{n} \sum_{i=1}^n x_i \cdot y_i$$

The Pearson correlation coefficient $r_{x,y}$ selection measures the linear relationship between the leakage of X and Y both sides, it means $r_{x,y} = r_{y,x} = r$. This coefficient takes values from $<-1; 1>$ and reflects the degree of linear correlation dependence between variables X and Y . The higher the value $|r|$ closer to 1, the stronger the linear relationship, and the r value is closer to 0, the weaker the linear relationship. If this ratio being 1 or -1, all points lie on the regression line and the dependence of X and Y is linear accurately. If $r = 0$, then we say that a linear relationship between X and Y does not exist. So there could be further dependencies, so in practice more correlation coefficients.

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Spearman's rank correlation coefficient

In evaluating statistical dependence us except Pearson correlation coefficients (linear correlation) occupies the relation order. This is a situation in which the random sample $(X_i, Y_i), (X_n, Y_n)$ not focus on the exact values, but only on their order. We have an order quantities X_1, \dots, X_n and the order of variables Y_1, \dots, Y_n . If the order of the X s' and Y s' values are very similar, suggesting no doubt a certain dependence between the X_i and $Y_i, i=1, \dots, n$. Exact

expression of this idea is called Spearman's rank correlation coefficient, called the serial correlation coefficient (Tkáč, 2001).

Suppose that $(X_1, Y_1)', \dots, (X_n, Y_n)'$ is a selection of two-dimensional continuous distribution. Variables X_1, \dots, X_n are arranged by size and determines their order of R_1, \dots, R_n . Then arranged according to size variables Y_1, \dots, Y_n and determine their order of Q_1, \dots, Q_n . Often the pairs $(X_i, Y_i)', (X_n, Y_n)'$ advance arranged by rising values X_1, \dots, X_n . In that case, we simply right $R_i = i, i = 1, \dots, n$. Spearman's rank correlation coefficient r_s is defined as the selective correlation coefficient calculated from the pair $(R_1, Q_1)', \dots, (Q_n, R_n)'$.

Valid

$$r_s = 1 - \frac{6}{n(n^2 - 1)} \sum_{i=1}^n (R_i - Q_i)^2.$$

Kendall serial correlation coefficient

Like Spearman's rank, Kendall correlation coefficient also measures the strength of dependence between two variables but provides serial nonparametric test of independence (significance test coefficient). For each sample consisting of n observations pairs of variables (X, Y) exists $n(n-1)/2$ possible comparison points (X_i, Y_i) and (X_j, Y_j) , where $i, j = 1, \dots, n$ and $i \neq j$.

If true $X_i > X_j$ a $Y_i > Y_j$ or $X_i < X_j$ a $Y_i < Y_j$, then the pair is called a few results (concordant).

If true $X_i > X_j$ a $Y_i < Y_j$ alebo $X_i < X_j$ a $Y_i > Y_j$, then the pair is called a few discordant (discordant).

If true $X_i = X_j$ a/alebo $Y_i = Y_j$, then the pair is called a draw (tie).

Let n_c is the number of concordant pairs, and n_d is the number of discordant pairs, then Kendall τ calculated:

$$\tau = \frac{n_c - n_d}{\frac{1}{2}n(n-1)}.$$

Kendall τ expresses the difference between the probability that the values of two variables are compared in the same order of probability that the values are in the same order.

The values presented of the three correlation coefficients are within the range $<-1; 1>$. A value close to 0 indicates no relationship and absolute values close to one strong relationship. Positive values indicate that the variables tend to vary in the same direction, negative values in different directions (Tkáč, 2001).

Interpretation of correlation coefficients question depends on the context. E.g. 0.8 value for verification of a physical law using precision instruments is very low, in the social sciences is very high. Cohen has created a simple tool for the interpretation of correlation coefficients in psychological research: correlation below 0.1 is trivial; $<0.1; 0.3>$ small; $<0.3; 0.5>$ medium and over 0.5 is large (Cohen, 1988). Calculate and interpret correlation coefficients must always be up-through XY graph.

Tkáč is indicative of the value scale of the correlation coefficient in the evaluation of the tightness of the bond of X and Y (provided that there is given a cause) is given as follows:

- Weak dependency, where $0 < |r| \leq 0,3$.
- Mild (mean) dependence, where $0,3 < |r| \leq 0,8$.
- Strong dependence, where $0,8 < |r| \leq 1$ (Tkáč 2001).

4. Results and Discussion solutions

4.1. A survey from the perspective of private labels manufacturers

Own research approach manufacturers to produce private label is an important starting point, because the manufacturer focuses (or should be) primarily for the production of own brand products. Manufacture of products bearing private brand brings to market its own products competing brands. The voluntary production of a competing product leads to losing an enterprise self-identity, or loyalty to the own brand. When evaluating the position of producers in respect of private brands, we must take into account recent changes in the dominance of trade relations for the benefit of traders. Traders now increase the pressure and determine the conditions in terms of price, quality, delivery, investment and so on. Paradoxically, these new conditions promote the emergence of private labels. The philosophy of private labels is to strengthen the market position, increasing turnover, profit and reduction of overall costs (Hesková, 2006). Filling this philosophy assumes acquiring loyal customer dweller to market saturation. Competences defined business conditions moved from the production sphere to the sphere of trade.

Issues of cooperation of the food business and retail chains should be examined on the basis of data from multiple sources. There are foreign research organizations available in EBSCO and on the web site. A valuable source of information is the official reports issued by the Ministry of Agriculture. Chains have different approaches and specifics of commodities in relation to the use of private labels.

4.2. The bargaining position of the producer

Retailer sells two different kinds of goods of varying quality. One of branded goods (NB) quality of q_{NB} , which are produced by manufacturers for M unit costs $c_M(q_{NB}) = q_{2NB}/2$

Empirical Analysis (Dodds, Kent, Grewal, 1991) showed that brand names have a positive effect on the quality perception and willingness to pay. Preferably therefore we devote private brands at low prices which are aimed to consumers with a low willingness to pay or brands that copied branded products, but it often sells at a low price. This does not apply to high quality private brands that have recently emerged to increase consumer loyalty and acquire new customers.

The consumer creates a different perception of the product characteristics, in addition to the perception of packaging and raw materials, which brings a greater willingness to pay for a branded product (Bell, Cuthbertson, Koskinen 2000). This can empirically tested using structural econometric models based on data from customer surveys scanner (Berges-Senn, Hassan, Monier-Dilhan, Raynal, 2007). Seller has the production PL two options: either asks the independent company of the competitive environment, or contacts the manufacturer of branded and try to negotiate advantageous terms and conditions of the production of the private brand. We think the sellers to argue the price conditions with brand-name product. The bargaining power of manufacturers of branded products we denoted α and bargaining power of seller will be $(1 - \alpha)$. It is important to add that these alternatives for making PL do not have the same implications for both sides. In the first case since the producer is considered as part of the competitive sector, will create a margin so all the profit from the PL will belong to the seller. We assume that in order to manufacture the same quality PL is an independent undertaking becomes about unit cost disadvantage compared with branded manufacturers:

$$c_M(q_{PL}) = \frac{q_{2PL}}{2} \quad \text{while} \quad c_I(q_{PL}) = \frac{cq_{2PL}}{2} \quad \text{and } c \geq 1 \quad (\text{Bontems, Monier, Réquillart (1999)}).$$

This situation may be due to differing technological equipment, experienced designer and manufacturer of the way leading brands handles services compared with independent producers in the production of PL. Seller is facing demand that is generated continuum consumers

$$U(\theta, q, p) = \theta * q - p$$

where:

U is a continuum of consumers,

θ is the "consumer willingness to pay" for the quality parameter evenly distributed between $\langle 0, 1 \rangle$,

q is quality of the product purchased for the price p (Mussa, Rosen, 1978).

The schedule process is as follows:

Step 1: The seller selects the range. He/she may sell branded goods and private label or both types of products. The decision for private label determines the quality of the product (q_{PL}) and whoever it will produce. Own brands may be entrusted either with brands or independent firms. Reseller agreements with selected businesses wholesale price w_{PL} and franchise fee F . If a dealer decides to sell a brand product, so even with brand manufacturers negotiate the wholesale price of the product w_{NB} . In this case, arrange a franchise fee F for sharing profits from the sale of PL and brand products. Another option is to negotiate his/she's own brand of quality before beginning the process because the quality seems to be more constant than the wholesale price and franchise fees. Let's look at a selection of private brand manufacturer. This choice has an impact on the technologies used and thus the quality of private labels. We assume that the seller determines the quality of our own brand, depending on the choice of the manufacturer PL.

Step 2. Seller will determine the final price of goods private labels (p_{PL}) and / or branded product (p_{NB}). Such proposed process includes the following steps: First, the range is levied concurrently with production decisions PL. Second, instead of the agreed contracts contain two charges a franchise fee for both types of goods from brand name manufacturers. This will take into account the fact that these two brands during negotiations strategically related. This assumption strengthens the bargaining position of the manufacturer brand and enables it to achieve a better position for its branded products. Linking branded product and PL where these are produced by a single manufacturer, allows us to take into account the risk of the seller if his income is fully dependent on one manufacturer. This argument often occurs in cases of competition policy. If on the other hand PL product produced by another company, the vendor also failed negotiations with a positive profit because the volume of supply PL is independent of the outcome of negotiations on the own branded product. Trader choice has two levels: the goods offered in their store PL and / or own branded product) and, if necessary, who should produce PL (brand name manufacturers or independent companies). Another strategic decision merchant quality and PL important is the identity of the manufacturer of private labels (Bergès-Sennou, 2006).

Selling only branded products

If a dealer decides to offer only brand of product quality q_{NB} for the price p_{NB} , consumers buy goods only if

$$\theta \cdot q_{NB} - p_{NB} > 0 \Leftrightarrow \theta > \frac{p_{NB}}{q_{NB}}.$$

The market is not covered and consumer demand for branded products is defined as:

$$D_{NB}(p_{NB}) = 1 - \frac{p_{NB}}{q_{NB}}.$$

Since reckon with the fact that for negotiating prices manufacturer and marketer along maximize vertical gain by setting the wholesale price according to marginal costs, while fixed part F paid by the dealer to the manufacturer, the manufacturer portion on the vertical gain, depending on the bargaining power (without reserve profit).

Sale only private label – brands

A trader can sell consumers only his own product quality about q_{PL} for price p_{PL} instead of selling a branded product. In this case, we define the demand for own brand products as:

$$D_{PL}(p_{PL}, q_{PL}) = 1 - \frac{p_{PL}}{q_{PL}}.$$

Unless the trader has entrusted the production PL of quality q_{PL} autonomous enterprise, the wholesale price is set according to the unit costs and franchise fee is zero because of competitive pressures in the industry. Merchant takes all the profit from the sale of PL.

The second option is for a trader to entrust the production of PL brand manufacturer. This strategy may make the seller two consequences: On the one hand, benefits from lower unit prices for the product PL thanks to the efficiency of the production process at the producer. On the other hand, the trader does not have full bargaining power as in the case of using an independent company and has a share gain from the sale of PL in his bargaining power. Wholesale price is set according to the unit cost, but the franchise fee will reflect the position of producer within the vertical structure.

Marketer and manufacturer of brand share a total gain from the sale of private brands. We provided that the trader has no other choice (outside option) at this stage of the process. This assumption is based on the liability faced by business in respect to the choice of the manufacturer its own brand. The likelihood of threats to the manufacturer that the dealer turns to producer competitors after he has already taken manufacturer brand product for PL is small. If it is an independent undertaking new market or a few well-established, the trader may face the coordination and communication problems (less information on capacities and description of the company), which could bring additional costs (Comanor, Rey, 2000). When the dealer decides the strategy, who has produced his PL compares the profits that may result from effective use of technology branded manufacturer (which is reflected in lower costs), with its weak position when negotiating the terms of the pricelist PL. Due to this vendor, and in order to raise the quality of his PL at a lower cost part of the profit leaves the manufacturer. Brand-name products can always offer more as an independent company thanks to its technological equipment of the fact that PL product is of lower quality than its own branded product.

Sales of branded products and private labels

In practice, the dealer often decides to sell competing products that aren't the same quality. There are both the PL and brand product. Demand for brand product on the quality of q_{NB} sold at the price p_{NB} upon PL of quality $q_{PL} < q_{NB}$ sold at the price p_{PL} is as follows:

$$D_{NB}(p_{NB}, p_{PL}, q_{PL}) = 1 - \frac{p_{NB} - p_{PL}}{q_{NB} - q_{PL}},$$

while

$$D_{PL}(p_{NB}, p_{PL}, q_{PL}) = \frac{p_{NB} - p_{PL}}{q_{NB} - q_{PL}} - \frac{p_{PL}}{q_{PL}}.$$

Is it really so that consumers, who buy brand product, are characterized by the expectation that they will receive better yield when buying branded products than in PL:

$$\theta \cdot q_{NB} - p_{NB} > \theta \cdot p_{PL} \Leftrightarrow \theta > \frac{p_{NB} - p_{PL}}{q_{NB} - q_{PL}}.$$

Consumers who are deciding whether to buy PL or not, are characterized as follows:

$$\frac{p_{NB} - p_{PL}}{q_{NB} - q_{PL}} > \theta > \frac{p_{PL}}{q_{PL}}.$$

The first option, as in the previous case, is entrusted PL to an independent firm. If the trader refuses deal to sell a branded product with branded manufacturers can still sell his PL and place on rack not two, but one product. In this case it can not affect the quality of the product since it was defined as a commitment to a product. But the dealer can change the price PL with regard to the fact that it becomes the monopoly supplier of one product. Profit, which thus obtained, forms an optimal solution in negotiations with producer prices of branded products.

The second option is to entrust the production of private labels branded the producer. Assuming, that the franchise fee arrangements with brand manufacturers concerning both the PL and brand product. This means that negotiations between dealers and manufacturers with regard to both products, even if PL is exclusively managed by trader. Such a contractual restriction is actually a kind of shortcuts that structural changes the game by depriving the trader of the possibility of using PL in negotiations branded product. The resulting loss of bargaining power merchant is reflected in bargaining advantage branded manufacturer. Profit from PL must be negotiated; the outcome depends on the bargaining power of stakeholders. In addition, the vendor has no reserve gain in the event that they fail to agree, when negotiating the prices brand products, as both goods are negotiated jointly. Here comes to the possibility to replace the manufacturer

PL by the merchant. This variant have higher assessed as unlikely and the space-time point of view, since the new cooperation requires define the characteristics of the product, negotiation, which takes time (Bergès-Sennou 2006).

Determinants of the decision referred to the seller in respect of production (manufactured brand identity of the manufacturer) also offer an explanation of the strategy of branded products relating to manufacture PL. If it is a branded manufacturer's production capacity is limited, never refuses to produce PL since, it is still preferred to accept such production (yield higher profit for complementary goods) such as the release of an independent production company and thus allow competition to its branded goods.

5. Conclusion

Capacity limitations for manufacturer will take effect when the total quantity of goods to be manufactured, is higher than the maximum amount which can produce. If the manufacturing process to replace one production line for a branded product for lines for PL with insignificant costs, then those restrictions relate to the total production. As the level of quality private labels and branded products are various according to the structure ($q_{NB} > q_{PL}$), because of the raw materials and processes, capacity constraints on the total production means the process by which PL and brand product is not so different and therefore it is easy the manufacturer as necessary to move some production facilities between brand product and PL. Conversely, if such a move is not possible, then it should be the capacity limitation concerns only the volume of production PL. Thus implicitly assumed, that the producer has an additional production capacity which decides to use exclusively and permanently for the production of PL.

Here some can argue about the high fixed costs associated with capacity constraints, borne by the firm. These fixed costs would have to be paid regardless of whether the manufacturer decides to produce PL or not. By definition, those costs would be linked to capacity limitations, whether these capacities are used or not. The only implicit assumption that we have, is that the minimum profit that the manufacturer, covers the fixed costs of capacity constraints. Since we were more interested in producer's decision making process if whether or not to produce PL, such formalization capacity costs did not appear to us to be relevant for further analysis.

In the event that there are capacity constraints at brand name manufacturer that applies to both types of products, retailers prefer to confer on the product its own brand by independent firms. The potential gains from increased efficiency in the production of PL brand manufacturers are negated and loosed of brand product due to increased prices and profits; the retailer negotiates an independent company. As far as the capacity limit is only concerns the production PL, there are cases where brand-name producer is nevertheless selected as the manufacturer PL, even if the amount of goods PL limited. However, if the cost advantage to the producer of branded minimal compared with independent firms trader be considered preferable to entrust its own brand competing firms.

Given the quality PL, if the distributor select of branded manufacturer, then selects a higher quality PL. This leads to a higher quantity PL as well as to a higher final price for PL. Producer branded product has no choice but to adapt their production so as to reduce the amount of branded products without altering their prices. One of the direct consequences of the reduction in income from the production of branded products while increasing income from PL. Seller may then be considered preferable to entrust its PL brand manufacturers on condition that the cost advantage in brand manufacturer is big enough to compensate for part of the revenue of the PL, which takes manufacturer. Eventually, however, capacity constraints hurting mainly branded producer, while sellers from the profits.

Producer of branded products that stand against competing firms in the battle for the manufacture of private label is still considered favourable to produce private labels as retain such independent production company. The lower the bargaining power of a merchant means the lower its share of the net profit.

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Airport Customer Buying Behavior

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Abstract

The article deals with the evaluation of customer buying behavior of Kosice Airport. The first part describes the customer as a basis for marketing and then discusses the factors that affect customer in the purchase. The next part of the article deals with the consumer's decision to purchase and the phases of the process of purchasing behavior. The article also describes traditional and current models of customer buying behavior. The final section presents the results of a questionnaire survey that covers the most important factors in choosing departure / return airport from the perspective of the passenger. The questionnaire also contained questions relating to the promotion of Kosice Airport. Factors influencing entry airlines to Airport Kosice are assessed, at the end.

Keywords: customer, customer purchasing behavior, factors affecting the customer buying behavior, Kosice Airport

JEL Code: M390 Marketing and Advertising: Other

1. Introduction

The customer and his behavior are central to the functioning of each company. Companies should not to produce for whom and also to their products and services to sell, without customers. Each customer is lead into buying for other reasons and the different intensity of motivation. It is clear that customers are influencing in buying with the various factors which tend to their decision to buy or not to buy or buy this or any other product. To be successful, the company must identify these factors and use to their advantage. In the literature we find different models of buying behavior of customers is whether the traditional or modern. Every company should know the model of the shopping behavior of its customers, as well as factors that affect those customers. This knowledge will affect its marketing strategy and helps make it to successfully meet the needs and wishes of its customers.

2. The customer basis for marketing

The central idea of marketing is customer orientation. According to Kotler (2003), the customer is the most important company visitors. A customer is not dependent on the company, but the company is dependent on the customer. That business can serve the customer does not give any favor, while the customer provides the company a favor by giving it to enable. The customer is a narrower concept of defining a person who under an act of his will order, shop and pay. A customer is someone whose needs we satisfy a desire for some form of payment.

Customer at consumer market has mostly little knowledge about the products that are offered and which it buys. Purchase decisions of consumers in the market are usually made on the basis of social and psychological needs.

By creating a hierarchy based on the information concerning the consumer we can, according to Nash (2003) compile a segmentation scheme by purchasing potential of the target group to:

1. The customer - the greatest purchasing potential. Customers are those market players who had previously responded to the marketing activities and the product once purchased. This group can be further divided into those consumers who bought the product only once, and for regular consumers.
2. Potential customers - have an average purchasing potential. This group consists of those who have expressed concern about the product or those on which it based on the information we can assume.
3. The eventual customers - have little purchasing potential. They are the ones of which can hardly be interested in the product.

3. Consumer buying behavior

Before preparing its own marketing plans, companies must analyze consumer markets and consumer behavior. It happens that customers behave differently from how declare their needs and their wishes. Sometimes consumers respond to identified circumstances that unexpectedly changed his mind at the last minute. The role of businessmen is to know what goes on in the minds of customers in the period between the acquisition of external stimuli and the buying decision. They must know the answer to two questions:

- How it affects the customer's specific characteristics - cultural, social, personal and psychological?
- How is the decision-making process and how it constitutes a final decision? (Rajt, 2000)

Marketers must analyze the "black box" that means consumers recognize the marketing initiatives that consumers do not react or react negatively.

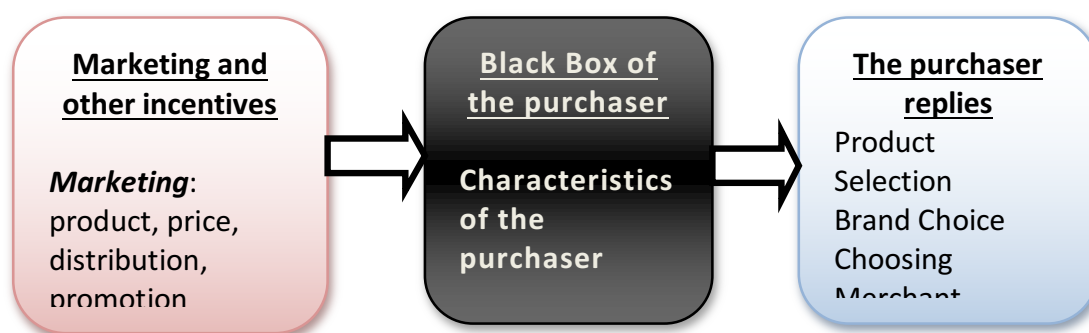


Figure 1. The relationship between marketing and consumer behavior in response stimuli

Source: Rajt, 2000

Marketing professionals need to understand how to convert incentives for answers inside the "black box" of the buyer. In "black box" are features which affecting the purchaser as an individual personality that is to say that how he responds to specific stimuli and how he are perceived.

Secondly, it is the purchasing process that affects their buying behavior. Customer buying behavior is influenced by various factors such as:

- Cultural factors - culture, subculture, social class
- Social factors - the reference groups, family, social role or status
- Personality factors - age and life stage, occupation, economic circumstances, lifestyle, personality, etc.
- Psychological factors - motivation, perception, learning, beliefs and attitudes.

Behavioral psychologists argue that stimuli within a physical environment not only trigger a cognitive response but also an emotional response and an emotional response has a significant effect on consumer behavior. The relationship between experiential marketing, emotional response and consumer behavior has been studied by many scholars. (Park^a, Park^b, 2015)

3.1. Customer Decision making about Buying

Consumer decision making was the main focus of much research. The beginning of this investigation started approximately 300 years ago when the first economists lead by Nicholas Bernoulli, John von Neumann and Oskar Morgenstern began to explore the fundamentals of consumer decision-making.

The most widespread model of this period was the "utility theory", which is based on the fact that consumers are decided based on the expected outcomes of their decisions.

Essential information necessary for merchants in terms of marketing is who actually decide on the purchase, what are the types of buying decisions and what steps include buying decision. The purchase has five different consumer roles:

- Initiator: the person who suggests the first to buy a product or service
- Influencer: the person whose views and advise influence the decision
- Decision-maker: the person who determines all components of purchasing decisions - whether to buy, what to buy, how to buy, where to buy
- The buyer: the person who makes the purchase
- User: a person who uses a purchased product or service

According to Geuens et al. (2004), there are four types of air passengers' purchase intentions or motivations: **Functional motivations** pertain to tangible aspects, such as product assortment, quality, and price. **Social motivations** reflect the need to communicate with others that share the same interests. **Experiential motivations** refer to the need for sensory stimulation and enjoyable experiences. **Travel-related motivations** include the waiting time, the desire to spend any remaining foreign currency, purchasing souvenirs and presents, unique duty- and tax-free wrapping, special designs, useful travel sets, additional promotional gadgets, and small presents. (Chunga et al., 2013)

The purchasing decision process

Decision making process in buying are called summary steps through which a consumer go from awareness of the need over the decision-making to purchase. The process of purchasing behavior typically consists of five steps (Nákupné správanie spotrebiteľov, 2009):

A. Identification of the problem

In the first step the buyer realizes the need, which may result from internal or external stimuli, or it can induce specific marketing tools such as advertising, price and so on.

B. Collection of information

If the consumer will recognize the needs, he start information gathering, ever it tends to to obtain as much information on products and services that are able to satisfy its needs.

C. The assessment of alternatives and selection of products

The consumer sets its own criteria for deciding between different products. On the basis of its decision, the consumer expects that his product will satisfy its needs

D. Purchasing decision

In the stage of the purchasing decision, customer classifies preferences between brands or he can create your own shopping intention. Between purchase intention, and consumer purchasing decisions may enter two factors: the views of other actors and factors unforeseen situation that could change the purchasing intention.

E. Behaviour after purchase

Satisfaction or dissatisfaction with the purchased of product affected the continued consumer behavior.

3.2. Models of purchasing behavior of customers

Customer behavior model is a simplification of reality, which is used to achieve the objective. Behavior models of customers looking for commonalities behavior in certain groups of consumers to know to predict how they will behave in a similar customer groups in similar circumstances.

Scope of models of consumer behavior is very wide, especially for several reasons:

- Consumers are different
- Choice of decision are different
- The context of purchase is different
- Management needs are different. (Roberts, Lilien, 1993)

Traditional models of customer behavior

- Economic Model - This model assumes that the limited purchasing power and the package needs and tastes, the consumer will allocate their spending on various products in order to maximize usefulness. Basis for the economic model are:
 - Price effect
 - The substitution effect
 - Income effect (Nani, 2013)

However, this model fails to explain how consumers will actually behave. The model does not take into account the wider perspective of the factors affecting consumer buying only the price and benefits.

- Educational model - This model helps traders to promote a strong relationship of products with strong motivators, which would lead to positive response from consumers. In marketing contexts will be "learning" to help sales people understand how the consumer is taught to respond in situations of new marketing situations or how to learn to respond in the past in similar situations. (Nani, 2013)
- Psychoanalytic model - This model is based on the work of psychologists who deal with personality. It monitors both human needs and motives influence the purchase. This theory was developed by Sigmund Fried. This model deals with personality and says that human behavior is largely governed by a comprehensive set of in-depth themes. It helps traders understand how buyers are influenced by symbolic factors when buying the product. (Nani, 2013)
- Sociology model - In this model is the individual purchaser part of institution called the company, which is influenced by and influences on the society. This interaction with a variety of companies may have an important role in their buying behavior. Traders can through the process of market segmentation to divide society by common behavior patterns for a certain class and group of buyers and thus try to influence their purchasing patterns. (Nani, 2013)

Current models

- Howard Sheth model - The theory of the buyer is a sophisticated integration of various social, psychological and marketing influences on consumer choice displayed in continuous sequence of information processing. Its aim is not only to explain consumer behavior in the field of cognitive function but also provide empirically testable representation of the behavior and its results. With a focus on repeat purchase model is based on four main components:
 - Input variables
 - Hypothetical constructs
 - The output variables
 - The exogenous variables.

This model is an important contribution to understanding consumer behavior by identifying variables that have a major impact on consumers. (Nani, 2013; Seborro, 2011)

- Nicosia model - Francesco M. Nicosia leading expert in consumer behavior proposed a comprehensive model for process analysis of consumer behavior in the 1966th. This model focuses on the communication process, which are exchanged between the consumer and the brand. It uses the flow of events through different phases, which are

identified as fields. Companies marketing communication attributes of consumer decision making and consumer feedback are the main components that are represented in this dynamic model. (Nani, 2013, Seborro, 2011)

- Engel, Balckwell and Minard model - Engel, Blackwell and Koll model, also known as the EKB model was designed to organize and describe the growing set of knowledge and research on consumer behavior. A comprehensive model shows the various components of consumer choices, and the relationships between them. This model has undergone many revisions and modifications. In 1990 was proposed modified model, which became known as Engel, Blackwell and Miniard Model (EBM). This model consists of five parts:
- Input information
- Information processing
- Decision making process
- Decision-making process variables
- External influences (Nani, 2013; Sahney; Bray)

4. Evaluation of customer behavior of Kosice Airport

Passenger behaviour is the study of how passengers think, feel, reason, select, and use products and services related to air travel. Aviation decision making explains and predicts a passenger's choices of air travel and future travel intention. (Boksberger, 2011)

Košice airport is the second largest airport in Slovakia with scheduled operation and is the largest airport in the catchment area of Eastern Slovakia. Due to its status of international airport is named Košice International Airport.

The aviation industry is in today's liberalized environment an important tool for the development of airports and offering them as many opportunities to attract new passengers, cargo or new airlines to its territory. In terms of competition on short haul flights Kosice Airport has an ideal location and the short distance between airport hall and aircraft. Other important elements of the airport, it provides the convenience and fast processing lines mainly low-cost carriers, who emphasize that the aircraft was on the ground as short as possible.

Marketing airport was not very used mainly in terms of their promotion in the past. Airports do not based on attracting passengers it was rather task of airlines. In today's competitive environment, where could customer - passenger choose from many airports, promotion is an integral part of their airports.

Marketing airport can be divided into two areas, which should address the marketing department namely marketing directed at airlines, which want to attract the airport and extended its range of flights and destinations. The second area is passengers living in the catchment area of the airport who could use the airport.

4.1. Košice Airport Customers

Airports provide their services to a wide range of customers. Customers of airport can be divided into two large groups, to:

- Legal entities - Legal entities include airlines and other companies operating at the airport
- Individuals - Individuals include the passengers as well as visitors to the airport.

Each group of airport customer has its own specific requirements and needs. The airport must adapt to these needs and to prepare the best possible product to attract them.

Legal entities

Among airport customers - legal entities operating in the Košice Airport include:

- Airlines – WizzAiar, Austrian Airlines. Czech Airlines, SmartWings
- Companies operating at the airport - Snack Bar Dolly, Snack Bar Steward, Souvenir Shop Dolly, Travel Value & Duty Free

Individuals

Airport customers are mainly of individuals, passengers, visitors of airport, procession of departing or arriving passengers. The problem of airports in question of attract passengers to its territory is that passengers flying to destinations not to the airport. Therefore, it is attracting airlines as airport customers "hand in hand" with attracting travelers and visitors to the airport. Airports for passengers mean only element of aviation infrastructure and as such are not particularly interesting for passengers.

4.2. Assessment of buying behavior at the Airport Košice

For evaluation of Kosice Airport customer buying behavior - specific individuals - the passenger, was created questionnaire administered to travelers directly or through the Internet.

The questionnaire is to obtain information about why customers are selected for their departure Airport Košice and vice versa. We find out how they are satisfied with the level of services at the airport, and with offer of destinations etc. An important outcome of the questionnaire is to establish whether customers opt for place of departure by airport, or are only interested in airline, final destination or fare.

Questionnaire administered to respondents contained four types of questions:

- General information about the respondent such as gender, age, education, economic activity
- Intensity in the use of air transport and efficient use of air transport
- Factors influencing the choice of airport of departure / arrival passengers
- Questions regarding satisfaction with the airport Košice and its promotion

4.3. Results in respect of passengers

Questionnaire was attended by passengers, who traveling by air transport especially in their free time - up to 89% of respondents. It follows that their journey is mainly used by charter flights or low cost airlines.

As far we look at the factors that influence traveler in choosing the airport - to 81% of respondents put most emphasis to destinations that are from the airport available. On that basis, we evaluate that the important aspect of choosing your departure / return airport is the amount of offered destinations and fare. Passengers who pay for their own ticket are more sensitive to fare variations. (Lucchesil et al, 2015)

The most important factors to choose departure / arrival airport, respondents chose:

- Availability of the airport - 81% of respondents,
- The price of tickets to the desired destination from the airport - 78% of respondents, and
- Destination, where the airport is located - 41% of respondents.

Destinations offer in Košice Airport is according 89% of respondents insufficient and extended the offer for example of connections to Paris, Rome or Berlin but also in Innsbruck, Brussels, Amsterdam, Dublin, Frankfurt, Copenhagen, Barcelona, Oslo, Warsaw, Budapest to Vienna. It is obvious that if the airport does not strengthen their efforts towards attracting new airlines and destinations and not to extend the offer, will still have considerable problems in attracting passengers.

63% of respondents answered that in its way deals with the selection of the airport not only choosing a destination and departure airport is an important aspect according respondents. The airport should strive to promote their services and destinations. 85% of respondents believe that promotion and advertising will significantly influence traveler in choosing your departure airport. The minimum positive of promotion, according to respondents, is passenger information on all the possibilities offered departures and destinations.

Another objective of the Košice Airport should be to attract new airlines, and it is very difficult without promotion. Airports need to focus their attention not only to promote the airport as such, but also to promote the region. As the airlines open connections to areas for which there is a demand, the airport should join efforts with the city and create a positive response to its catchment area. Towards the airline is appropriate to take as advantage little competition that would attract new carriers.

Regarding the promotion of Košice airport, we can observe substantial gaps because 59% of respondents think that promoting the airport is deficient and 22% of respondents with no propagation of the airport not met. The airport should increase their marketing efforts and find ways to promote its services.

Little is known about consumer preferences regarding the design of passenger areas, which is striking as the design of terminal buildings affects consumers' emotional state and shopping behaviour. This may be another area of promotion of the airport and increase its image. (Oel, Berfhof, 2013)

4.4. Results in Relation to the Airlines

Based on the study of various publications and articles We assessed as fundamental factors of influence airlines, following:

- Landing / airport charges - based on the study and comparison of charges Košice airport to surrounding airports have Kosice high charges. To attract airlines, airports developed incentive programs for airlines but the question is whether after these discounts are really that airport charges advantageous.
- Characteristic of the catchment area - airlines before imposing operation must focus on the catchment area in which the airport is situated. Based on information from this analysis, the airline can decide what the possibilities of this area are and how to make use of them in its favor.
- The economic situation of the region - at this point we see a major problem, as the region of eastern Slovakia according to the Slovak Statistical Office is defined as a region with persistently high unemployment after the Prešov region, which falls also within the catchment area of the airport Košice and Banská Bystrica, was third with an unemployment rate of 17, 23% (2013). In view of this characteristic airlines see the region as unsuitable for the introduction of regular lines. The economic situation is also linked to the purchasing power of the population, which is an important factor in the use of air transport.
- Competitive analysis - an important factor is, of course, competition in the field of low cost carriers at the airport Košice operates its services only airline, Wizz Air. Competitors of the company are, of course, the connection of airports in the vicinity such as the airport in Budapest or Bratislava airport. The new company must ensure afterwards

that the prices for its services were more advantageous than those of competing companies, including the cost of transferring.

- Tourism - Tourism as one of the most important areas of the economy in the territory of all districts of the region and has very favorable conditions for development. Natural beauties of Slovak Paradise are unique. Slovak Kras with many caves, chasms, platforms and other traits is without competition. Natural beauty, rich cultural-historical monuments and sights of these regions are an important motivating factor in increasing traffic of tourists from home and abroad. (Slovak Statistical Office)

5. Conclusion

Understand customer buying behavior is not easy. Every customer is Individual and reacts on affecting initiatives differently. Evaluation of shopping behavior in air transport is somewhat more difficult than it is for example in the case of products for everyday consumption. In air transport are a lot of factors, which influence to passenger and which the entity (airport, airline) must respond. Understanding passenger behaviour is the key for airlines and airports to improve their products and services as well as their marketing strategies. (Boksberger, 2011) If you look at increasing the attractiveness of the airport in Kosice, we can say, that the airport is increasing the number of connections, to cater to different destinations, which is an important aspect of the use of airport by passengers. Promotion plays an important role. The airport can benefit from joint promotional programs of airlines, where, for example, in advertising of flights from Kosice of particular company is still listed logo of Košice Airport on the campaign. This is easy way to get this airport into customer awareness.

Košice airport has, as any entity operating in the market, its positives and weaknesses. The truth is that in today's society, customers primarily pointed to weaknesses in companies whose services are used, and therefore should these companies seek to exceed those positive responses over negative. If the entity providing the service, which in this case Košice airport, will not fully know its customers, will not be able to adequately meet their requirements.

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Management and Social Sciences



MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL ASPECTS OF BUSINESS

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The use of marketing audit as a tool for efficiency

Dana Hrušovská, Martin Matušovič

Abstract

Marketing audit as a tool of marketing management is a significant contribution to orientation in a highly competitive marketing environment. The use and application of marketing audit in specific enterprises is engaged in research carried out in Italy and the Slovak Republic. Marketing audit completely and systematically examines the company's marketing environment, its goals and strategies, to identify problem areas, opportunities and recommendations for concrete actions to improve business performance. Marketing audit allows objectively monitor the rate adaptation on market conditions and optimize business marketing. The result of the audit are the proposed marketing management measures which correct marketing activities in the company and exerts its effects on business performance.

Keywords: marketing audit, audit marketing productivity, marketing strategy
JEL Code: M31

1. Introduction

The marketing audit is the first step in developing a marketing plan and marketing strategy. Its aim is to examine the business prerequisites for achieving the marketing results. According to Kotler (2010) marketing audit we are defined as a form of independent review of marketing performance of enterprises, which aims to identify problem areas and marketing opportunities and recommends a plan of measures to improve the marketing performance of the company. The main task of strategic management is to maintain consistency in the enterprise sources and targets with its external environment, market needs and market opportunities. Marketing audit enables objectively monitor the rate adaptation on market conditions and optimize business marketing. The marketing audit is a comprehensive, systematic, impartial and regular review of the overall marketing process of the holdings. It is a form of independent review of marketing performance of the company, which aims to identify problem areas and marketing opportunities. Marketing audit enables objectively monitor the rate adaptation on market conditions and optimize business marketing. The marketing audit is a comprehensive, systematic, impartial and regular review of the overall marketing process of the holdings. It is a form of independent review of marketing performance of the company, which aims to identify problem areas and marketing opportunities. Marketing audit covered six specific areas that must be the subject of direct interest to marketing audit. Most comprehensively mapped out their Kotler. These are the following areas:

Marketing Environment Audit - analysis of major macroeconomic forces and trends. It includes markets, customers, competitors, distributors, suppliers as well as customers and public attitudes. Analyzes the main environmental factors in terms of their past development, but also in terms of future trends, which may provide opportunities or threaten the enterprise.

Marketing Strategy Audit – assessment of marketing objectives and strategy in relation to its reaction to the market environment. This is the assessment of targets because of the opportunities and resources, and meet current and future marketing environment.

Marketing Organization Audit – aspect aimed at assessing the adequacy of the corporate structure and its suitability for implementation of the Strategy. Evaluates the ability of the marketing organization to implement the strategy in terms of its formal structure and functional relationships of the efficiency of operating units. Examine the efficiency of the organizational structure, the efficiency of the distribution of powers and responsibilities within it, but the fact whether this system is configured to positively affect customer satisfaction. Examines the personal relationships, communication between employees and departments. We explore how the relationship affects the functioning and effectiveness of marketing activities. It is essential to assess the cooperation between departments, marketing, manufacturing, financial, accounting and legal.

Marketing Systems Audit – deals with the quality of business systems analysis, planning and control of marketing. We focus here on the flow of marketing information system, methods of planning and verification, the area of new products. Test of the projected future sales, their effectiveness, sales quotas, sales revenue, timeliness, accuracy and sufficiency of information reconnaissance system to control the distribution routes, the profitability of markets, products and marketing costs. Also important is the development of new products and their research before beginning production.

Marketing Productivity Audit – profitability examines various aspects of the marketing program and the effectiveness of allocating marketing spending at various levels of the company. It examines where product, production lines, territorial territories, markets, industries and business travel company to raise funds and where they spend it. Also

examine the effectiveness analysis of embedded costs of various marketing activities. Marketing auditor may find that the company spends too much amount of funds to unprofitable activities, investing in research and development of new products, it applied to the stagnating market or use inefficient distribution channels. It may reveal that the company is not in a market where there is a high assumption that a business, losing marketing opportunity. The emphasis is also on the adequacy of costs incurred with respect to the effect brought.

Marketing Function Audit – includes a detailed evaluation each elements of the marketing mix. Examine the functioning of marketing activities: sales, pricing, work with range, distribution, advertising, and sales promotion. The result of audit work may include indications that the product meets its quality, appearance, style, or there is lack of trust users to the brand. Buyers may indicate that the price is not in line with its consumer value. Distributors, manufacturers, dealers can operate inefficiently. Advertising may not reach the target audiences, it may be unprofitable, the budget can be prepared wasteful, not paying her enough attention, it has a small budget. Audit marketing functions also includes the audit of labor, notes the number, organization, skills, effort, method of determining the workforce and evaluation of their performances. The role of marketing audit is to contribute to successful business management, point out shortcomings that hinder performance improvement and need to be removed.

2. Impact of marketing audit and business performance indicators

When measuring marketing performance to the assessment of economic performance using a comprehensive set of indicators (financial or non-financial, to the objectives or competition). O'Sullivan points to the need to measure the overall performance of the two types of indicators – both financial and non-financial. How it relates to measuring marketing performance with positive influencing business performance? Business performance is measured in relation to defining the essence of existence in the marketplace, its success and survival in the future. In connection with the evaluation of business performance and performance criteria attention is paid to value criteria of performance measurement, based on the financial information of the following statements: balance sheet, income statement and cash flows. It is a measure of the financial position, performance and changes in financial position. Performance as well as the ability to understand the business entity the best value investments made in its business activities. Differing opinions on the assessment of business performance are owners, managers and customers have a different view of the company.

The financial analysis and the indicators represent a very important element of financial management. Set of methods helps to determine the position on the financial position and through financial indicators, financial analysts can easily detect weaknesses and problems of the company. The main instrument of the ratios, provide feedback to the expected effects of management decisions and reality. Financial analysis is closely linked to the financial accounts, which provide data for financial decision making through the basic financial statements: balance sheet, income statement and cash flow statement. Monitor and evaluate the following indicators of profitability: return on assets, equity, return on sales, profit margin. Another group of indicators of activity are: commitment of total assets, total asset turnover, inventory turnover, inventory turnover, receivables collection period and maturity of liabilities. Liquidity ratios: liquidity level I, level II. And the degree of liquidity III. Debt ratios: total debt, the degree of self-financing, interest coverage, leverage, long-term coverage of fixed assets and indicators of market value: the book value of shares, the ratio of market value to book value of shares, earnings per share, the ratio of market price to earnings per share and we compare values over time, possibly with the situation in the sector.

Entering a marketing audit it is based on the initiative of top management. To take possible problems, rather than can adversely affect the functioning of the company. Thorough auditing compiled regularly provide important knowledge of the lines of business, market trends, competitors and customers, thus creating the basis for defining objectives and strategies. If it involves any marketing activities, we are talking about Complex audit, if it contains only some of the activities we're talking about a functional audit. Functional audit responds to the problem, its lack is that when a narrow focus can't cover all the facts which are related to the issue. It is less demanding in terms of time and money. The comprehensive audit covers all marketing activities. It is more difficult to sources of funding requires a more sophisticated and rigorous preparation and is time consuming. Objectivity marketing audit is achieved independent evaluation of external organizations and specialists who examined the marketing behavior of managers, performance and evaluation of existing opportunities. Marketing audit contribution to the organization is the possibility of detecting discrepancies between the invested funds and as a result, finding a strategic marketing opportunity. Prioritizing marketing programs focus on the important procedures or arrangements for example proper pricing of high quality products.

The most common deficiencies marketing audit can include lack of marketing planning, limiting the role of marketing as advertising and marketing, lack of knowledge of the behavior and attitudes and poor market segmentation misunderstanding. The strengths of the company understanding advertising in the short term include adequate organizational structure or sufficient investment in future human resources. Marketing audit results, the proposed management measures on correcting the marketing activities that are implemented in the company and act negatively to its prosperity. Marketing audit plan proposes a long-term and short-term measures to improve the marketing performance of the company.

3. Use of marketing audit firms in selected countries

Marketing audit as a tool of marketing management is a significant contribution to orientation in a highly competitive marketing environment. The use and application of marketing audit in specific enterprises is engaged in research carried out in Italy and the Slovak Republic. Survey by staff of Faculty of Commerce, University of Economics in Bratislava highlighted the main trends in marketing audit practice of companies in a particular enterprise. As part of marketing research in the Slovak Republic it was sent 3512 questionnaires and the rate was 7,7 % and in the case of the Italian Republic, a total of 3,306 respondents interviewed a response rate amounted to 5,9 %. The elaboration of the survey has been applied statistical methods of data analysis χ^2 – test good correlation to detect dependencies between variables of interest. Chi-square test enables comparisons of the height dependence. It's a test to verify the assumption on the distribution of random variable. It determines how well the actual data corresponding to the expected breakdown. Chi-square test enables comparisons survey found class numbers of the expected frequency, and the expected frequencies can be derived from the expected theoretical Dividing the sample or may be based on different forecast shares (Richterová, 2008). The survey confirmed the practice of marketing audit Slovak and Italian companies that comparable trends exist in approaches to marketing and marketing audit and its performance. Italian businesses were somewhat more active approach to marketing and rated it as an important element of the overall business process. 82 % of Italian companies stated that marketing audit considers it very important for the successful operation of the market, while at the Slovak respondents expressed the view that only 65,7 % of enterprises. The results of application of marketing audit practice in the Slovak Republic and Italy are shown in Table 1. In the application of marketing audit could be detected more favorable conditions in favor of the application of marketing audit in Italy, up almost 60 % of enterprises be applied regularly or occasionally while in case its application Slovakia reached only 47 % of the sample companies Table 1. Survey results indicate that marketing audit and its practical application needs to be adapted to the circumstances of a particular company. It is not centrally imposed action. There are well-defined period of time when it would be undertaking. In this respect, some companies such as state practices the marketing audit and its tools, but do not use them regularly, but apply them according to the actual needs of the business.

Table1. Application marketing audit practice in the Slovak Republic and Italy

Country	Do you use of marketing audit and its tools in your business?		
	Yes, we regularly use marketing audit and its tools in our business.	Yes, but we do not use it regularly, we apply them according to the current needs of the enterprise.	No, we do not apply them and we do not use it.
Slovakia	6 %	41 %	53 %
Italy	19,4 %	39,8 %	40,8 %

Source: www.tvp.zcu.cz/cd/2014/PDF_sbormik/cihovska%20klikkova.pdf [13.4.2015]

4. Conclusion

In conclusion, we can say as is clear from the above survey of merchant University of Economics in Bratislava that there are significant reserves in the exploitation of marketing audit in enterprises in Slovakia as well as in Italy. Marketing and its application and implementation in enterprises from different regions is different, which related to many factors, which are typical for this or that country. We can assume that it leads to increase using marketing audit. In spite of competitive environment marketing audit is a strategic element for improving the marketing position in the marketplace. Marketing audit as a starting point the marketing strategies and operational procedures has the benefits and its impact on business performance may at proper application to bring enterprises competitive advantage. This paper briefly described the marketing audit as a continual and structured process for the evaluation of the business performance of the company. Marketing audit is necessary to use for the gain feedback from the realized marketing actions from the previous planning period before the beginning of the creation new marketing plan. Marketing audit can give the company competitive advantage in fast changing business environment. Contribution originated as part of the project VEGA led by Ing. Grančíčova, PhD. 1/0546/15 (50 %) and project VEGA led by doc. Mgr. Dubcová, PhD. 1/0784/15 (50 %).

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MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL ASPECTS OF BUSINESS

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Social Innovation in Business

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Abstract

Social innovation in the business sector becomes increasingly frequent part of today's business. The official policy of the European Union, national economies and enterprises, this tendency is considered strategic. Common practice of business this requires a pragmatic dimension. Reasons are the an objective appreciation of human capital. A major challenge in Slovakia, however, becomes considerably lengthy pace of production, preparation and implementation of social innovation in enterprises compared with other countries. Our contribution aims at exploring complex relationships of social innovation, business economics and correlation of selected determinants.

Keywords: social innovation, business, innovation

JEL Code: M31

1. Introduction

Enterprises today are given the rapidly changing technologies, increasing globalization and competition also forced to a far greater extent innovate. Innovation is, in general, the result of the latest knowledge in practice, and is expected to bring the expected results. Design and innovation is predominantly a collective process that implements a variety of creative and knowledgeable operators who carry out their objectives in a difficult environment interactions as well as other relationships. (Matušovič, M., 2014) In the past, innovation mostly a matter of one undertaking to protect its innovations, it is now an emerging trend of cooperation between enterprises in the innovation process. Innovation is seen as an interactive learning in which emphasizes cooperation between actors. In the literature, innovation is understood as a contextual social processes of interactive learning. Present with new trends and innovations in focus. 16 In this regard, stresses the importance of the creation and use of social capital (intellectual capital), mutual cooperation, promotion of a highly participatory (participation) in internal and inter-networks. Recently, we faced with public order and implement innovations in the social area. The project VEGA no. 1/0784/15 "examining the social innovation and economics in order to increase Competitiveness of businesses "to pursue the examination of corporate social innovations.

2. Dimensional perception essence of innovation

One of the accompanying effects of advancing globalization is the increasing role of intellectual capital, corporate, regional, national and clusters. Increasing competitiveness of regions is based on the ability inovovaf. The innovative policy of the European Union provides an important tool for enhancing the economic performance allowed since effect on the structural policies and structural reforms.

Innovation theory was first processed and used Austrian economist Joseph Schumpeter (1883-1950). According to its definition of "Innovation is any change in the body firm, which leads to a new state. Through innovation explains the basic economic categories such as profit, interest, or competition. Innovation as the basis of economic development. Originally define the nature of innovation as "the promotion of new combinations." From a practical point of view it defines five cases of innovative behavior of subjects (Schumpeter, 1987)

- Production of a new farm, which is not known to consumers, livestock or a new quality,
- Introduction of a new production method, which is for the industry virtually unknown. The basis of the new production methods may not be new scientific discovery and may consist in a new commercial exploitation of the farm,
- Opening of a new market, namely the market which have not been represented on the sector in the country regardless of whether this market already exists or existed,
- Obtaining (use) of the new raw materials, intermediate products, or regardless of whether the source already existed and the body it is not used in a number of reasons, and an operator in the position of the originator,
- Implementation of the new organization, leading to a monopoly position of the entity or, conversely directed to the collapse of monopoly.

Later J. Schumpeter emphasizes the essence of innovation primarily as creative destruction. This understanding of innovations introduced in the monograph Capitalism, Socialism and Democracy (Schumpeter, 2007) to mark the process of industrial mutation that continuously constructs the economic structure from within, upsetting the old structure and

creates a new one. Creative destruction violates hitherto balanced economic system and raises that of the market, leaving old technology and organizational structures dead. This leads to the fact that there are new viable industry.

The first theorist who devoted in former Czechoslovakia was the issue of innovation in the world of a notorious scientist František Valenta (Valenta, 1969). Innovation understood as a change in the original structure of the production organism, that is, as the transition to the new state of its internal structure introduced levels (degrees) innovation which will change the structure of the subject. The level of innovation is defined as a development of innovative products range from original product. The fact that innovations are changing the very specific job, then allow the division level:

- Level (do not change the essential characteristics of a particular job, but there is a reduction of the amount of the initial elements);
- Level (do not change the essential characteristics of a particular job, but varies the intensity of its use);
- Level (changing the external characteristics of a particular work, eg. Plant, tools, machinery and so on. These adaptive changes);
- Level (varies partial functional characteristics particular work. This creates a new variant of this work);
- Level (there is a general functional changes specific work. The emergence of new generations of reproductive elements);
- Level (there is conceptual qualitative change particular work. Emergence of new types of reproductive elements);
- Level (there is a principled coup particular work. The emergence of new generations of reproductive elements)

Above quantitative breakdown can be further refined. Valenta later extended the original seven division and worked as a scheme of complex innovation of the production organism etc. Innovation is mostly individual levels regularly rotated at certain intervals, and lower levels of innovation have a higher frequency. Innovation rationalization nature tend to be unequally distributed. Kondratieva approaches N., J. Schumpeter and F. Valenta are complementary. F. Valenta saw the difference between innovation especially in the degree of change, ie the dimension in which the original structure of production passed into new states.

In the literature (Brains, 2000) meets the typology of innovation, which is based on the criterion of their commercial usefulness:

- Radical (creation of entirely new products)
- Incremental (gradually improving product parameters)
- System innovations.

Another theorist, to comprehensively address the issue of innovation was Ivan Perlaki, who authored the monograph innovation in the organization. In it the author has defined innovation that used the material and processual sense. (Perlaki, 1977). "In the factual importance of innovation means every function, positive and progressive innovation or change to a new, t. j. every thought, action, or material object, which is the person, group or organization that has been accepted and used, new. The processual meaning of the term innovation means the whole process of its creation, design, implementation, adaptation and exploitation. "

Ivan Perlaki term innovation means' purposeful, functional, positive and progressive change material and non-material elements (parameters) organizations t. j. Any change that contributes to the development, growth and efficiency gains. Innovation is the result of purposeful activities of members of the organization or its external consultants. Innovation is the process by author "implementation process of innovative change" is the process of creation, design and implementation of innovations. Investigation focused on the creation and design innovation. All innovation is considered as "the results of decision-making processes and solutions to organizational problems. When assessing the barriers to innovation I. Perlaki analyzes the "usefulness innovation t. j. the degree to which the proposed innovation socio-economically more advantageous than the current process of building functioning innovation. "

The relationship between technology, technology and organizational changes in the early eighties dealt Karel Riegel (Riegel, 1985). The paper describes the problems by replacing manual work on the production line. The analysis has shown that the cause of resistance to innovations was the limited feedback (Riegel, 1985). The author notes that in introducing such innovations as the new production line, to be reckoned with changes in its organizational arrangements.

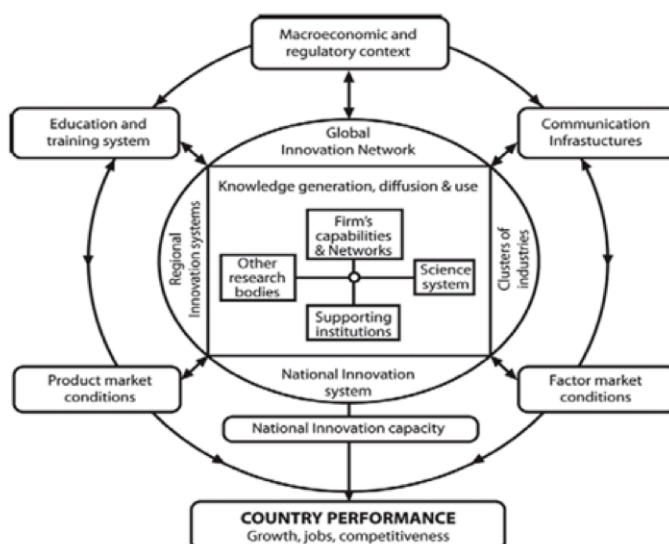


Figure 1 Global Innovation System
Source: National Science Board

3. Dimensional perception essence of social innovation

In this chapter very briefly we indicate when the previously first discovered the concept of social innovation, as developed definition of social innovation, as developed different concepts of social innovation, especially as developed theoretical concepts of social innovation applied outside the central government institutional background.

In principle it can be said that any change in social ties, or social structure, which results in improving the social situation of members of the Social Innovation. Simply put the example. in the 19th century, when child labor was common, unlimited working hours and there was no network of social security it was just a solution to these social problems de facto social innovation.

Many of the ideas for improving the social situation of members of society follows through mass movements become official procedures and instruments of social policy. In this analysis, we have no ambition to assess the development of individual social policies but focuses on how to develop the social innovation that should increase employment in general, or to contribute to the employment of marginalized communities (Mulgan, g., 2007)

The theories of social innovation:

A. Benjamin Franklin was one of the first modern thinkers that promote social change in the spirit of those ideas that is now considered crucial for social innovation - civic engagement, mikroplánovanie and microfinance, financial support for self-employment, regardless of the subsequent expected return. As one of the "Founding Fathers" advocated ongoing continuous evolutionary changes in social institutions, voluntary engagement in small local teams and charitable involvement. Franklin's most famous and most interesting social inventions were for example. the first volunteer fire department fund to support small businesses (which bequests substantial resources) below. (Kreis S., Owen, R., 2014)

B. Robert Owen English entrepreneur, philanthropist and thinker whose concepts operate with varying success and more times sklzávali the line of socialist utopianism. Robert Owen is known for its three major projects at that time were extremely innovator (which was also the cause of their failure). His most successful project was a factory for processing of cotton that are trying to operate on the principles of social entrepreneurship (ie to provide decent working conditions, to provide work for people in material need (orphans, prisoners, etc.). And provide social facilities for their employees. Unfolding of this project develop subsequent projects a closed community, as well as labor exchanges.

While the previous two personalities also focused on practicing their ideas about social innovation, the following personalities were primarily scientific theorists of sociology in the 19th century and within the concept of social innovations. Karl Marx, Max Weber and Emile Durkheim Although in his theoretical work pay and social interaction problems, and it goes without saying that pomenovávali and social innovation, practicality of their work is minimal. First, the fact that their theories are too theoretical, while focused on social makromechanizmy, study their theory has no practical significance for assessing the functionality and efficiency of modern concepts of social innovations.

A. Peter Drucker as a philosopher, university professor but mainly consultant worked primarily in the 50th to 70th years of the 20th century. Its main practical and ideological focus was on management theory (with the main concept of Management by Objectives), which addressed both commercially (as an employee of General Motors), academically and as a commercial consultant (except for GM and Sears, GE, IBM, etc.). Following these their practical experience to analyze in their theories about management and the concept of social innovation as such. Given the fact that Peter Drucker had built their theories on the public sector, which would have minimum dimensions, stressed that a substantial part of social problems should be addressed by NGOs and other philanthropic organizations.

Although this extreme liberalistic approach in practice overcome, Peter Drucker in his work devoted quite extensively and social issues. The supporting area of theoretical approaches to social innovation is a community development. Peter Drucker was among the first stated that the successful involvement of local communities in solving local social problems, has to be one of the key instruments such as lighten centralized social safety nets. At the same time he said that the key success factor for a good community development is a high proportion of voluntary work. Without getting community members participated voluntarily and without any financial consideration involved in solving their own problems, community development is not possible. According to Drucker's view, the state should promote the emergence of such community centers based on the existing informal social bonds, because in its view, thus increasing the chances that community members will be on problem solving participate voluntarily and on the same time maintain and deepen social relations in the community.

An interesting fact is that despite the fact that Peter Drucker detail devoted to the managerial theory of the management of large corporations and innovative solutions to social problems, both in their work explicitly states that profit-oriented companies and corporations are not at all tackled the social problems that They are out of their business. According to Peter Drucker was the most basic social function of profitable corporations their technological innovation, which actually negated the concept of Corporate Social responsibility.

B. Michael Young was an English professional politician (for Labour), who started working in the 60s of the last century. Their activities, publications and political organization, was in a way the founders of modern approach to social innovations. His first work concerned the analysis of the functioning of social bonds within the modernist large-scale projects accommodation (accommodation comparable manner as the panel residential buildings in SR). Young was not satisfied with the degradation of the natural social bonds within these housing projects, and already in 1954, he founded the urban think tank (Institute of Community Studies), who had analyzed a method for improving social ties in de facto anonymyzovanej society and eradicating this spôsoené negative phenomena (ignoring social needs of marginalized groups, ignoring the collective resources and property of the community, ignoring the environmental parameters in which communities to function and so on.). Later he devoted himself to works relating to education reform (elimination of meritocratic principles in encouraging and rewarding students).

Michael Young was also one of the initiators of organized activities for the protection of consumer rights in the UK (within the Consumers Association, National Consumer Council) and founded a charity Language Line, whose main objective was to ensure equal access to the office for all language minority (through translation services translators provided pro bono).

In terms of our analysis of individual concepts for social innovation we are, however, interesting to us particularly his later actions in regard to social entrepreneurship. Michael Young founded in the 90s of the last century, two organizations that operate and work

as the most important think tank for social entrepreneurship and also to define best practices for social entrepreneurship and also practical support social entrepreneurship projects:

1. The School for Social Entrepreneurs (SSE) SSE's post-secondary educational institution that was established to provide education and support opportunities for students to use creative potential for social benefit. SSE itself regularly basis various social enterprises and charities. SSE teaches that social change and social innovation must primarily be based on individual initiative, to support it, search stimulating and ethical use.

2. Young Foundation (the Young Foundation) was formed by the merger of Young's other charitable / social institutions after his death and named in his name. Currently, the Young Foundation is one of the most important think tanks in the field of social innovations. It represents the leader in social innovation research (analysis of social needs, changes in social ties), engineering innovative solutions for social needs, as well as the establishment of specific functions and projects. Partners Young's foundation is 130 organizations.

When proposing new solutions, the Young Foundation focuses on supporting and strengthening community ties, youth employment (as among financial benefits is as a positive building work habits positive impact on the social skills of young people, their self-esteem and commitment to personal growth) and direct and repayable investments with positive social impact.

Among the late Michael Young's activities related to the promotion of building community bonds (or sooner replacement building social bonds) for example, was Linkage Project, which was to create social bonds among seniors without grandchildren and young people without grandparents. This community project was de facto anonymised in the communities (by establishing both a high capacity urban design and hypermobility of the population) multigeneračné replace the natural family ties.

C. Akhtar Hameed Khan was one of the theoretical but also practical pioneers of community development in developing countries. Basically intuitively and practically he worked out the concept of community development and rural development support. Hameed Khan worked in Bangladesh (onset of 1954), when he realized that only education can help the development of underserved rural communities.

Work within these communities observed and theoretically and practically elaborated the proposal of promoting the development of rural communities, which is based on the following principles:

- Breaking the cycle of insufficient savings community outside interference. Hameed Khan was one of the first theorists that uniquely identifies the cycle of savings in the community on the investment property can be significantly longer than the useful life of the asset. It thus needs external support given by the community in the implementation of the investment costs. Under these assumptions made Hameed Khan development projects in various Bangladeshi rural community / primary was a construction projects) Although the strict investment point of view, these projects are fully

economically recoverable (because the real beneficiaries of) socially efficient, since the effective support of the activity in question as a community meet their own needs only financial transfers.

- Use of existing strong community ties in principle, the intense involvement of individual members of the rural community to build a common good (or address social needs of the community). Atomized (and essentially underdeveloped and rural) communities in developing countries have a comparative advantage in the fact that the informal social ties (to the head of the clan, the mayor - the leader of the community in general) are extremely strong and for individual members personally strongly binding. Therefore, according to Hameed Khan it was crucial to tackle rural development at the level of these communities and not in the form of comprehensive national programs (to which individual members of the community-engaged, resp. Directly involved hostile). This bottom-up approach to support the development of underserved rural communities took first in the pilot program "Comilla" and subsequently implemented in 400 communities. These projects coming up against a number of issues in addition to external factors were the main problems associated with the lack of external control and subsequent corruption. Nevertheless they serve as important benchmark for future projects.

Since the beginning of the last decade due to massive philanthropic campaigning got the concept of social innovation in a broad public awareness.

Mass media as such. Baidaid, LiveAid, Live8 and the participation of several philanthropic and pro-social activists in key economic forums (eg. Davos), get into the mainstream of political and cultural awareness of the concepts of "social impact" action / activities. Thus, beyond the normal social workers involved begins to focus on different innovative concepts to address social needs an ever wider section of the population.

Besides the above mentioned concept of social innovation (which of course are neither exhausted nor comb), there are new ideas of social innovations. Concepts with the greatest potential are as follows:

- Urban development: It is fundamentally about practices that mostly project-based community development activities combine multiple pages (volunteer activists municipality but also of profitable oriented real estate developers) to halt the decline of both onset or development of the district. They focus both on the development of industrial brown field, but also neighborhoods which have experienced social decline - Urban Decay (the cycle of decline in the number of high-income inhabitants / exodus employers> pokled real estate prices> increase in the number of unemployed population> growth of crime / decrease the quality of service municipality> Next the departure of high-income residents).

Under the "social impact urban development" is usually primarily involved volunteer organizations (of course with financial and organizational support developers and municipalities) for the improvement of the area (use of abandoned space for cultural oriented community centers, creating hubs for artists, voluntary adjustments outdoor spaces and green) to the territory becoming even more attractive to commercial developers and then realizes such commercial development, which offers high standard of civil as well as cultural infrastructure.

- Crowd founding: Basically purest Social Impact funding. Under the existing wide spread of the Internet and digitization, it is possible to implement financial support for activities with a positive social impact, without any intermediaries, ie the peer2peer basis. Thanks to digitization (eg. Internet database and specialized websites), any investor or potential donor to transfer directly to the recipient while watching the progress of utilization of these funds.

Crowd sourcing (or funding) is still narrower concept, which is overwhelmingly used for marking forms of financing investment activities, or long-term projects (currently mainly musical albums, films, computer games, etc.) Which the author wants to finance through mainstream commercial sources, but on the other hand, it is aware of the wide COST fans who are ready and willing to pre-finance such works. Donors then receive available both created works, but potentially also share in the profits (but is often times opt for the free circulation created work).

- Product RED - Ethical Consumerism: The concept of "product-RED" was created as an external stimulus (from Bona Voxa) for commercial companies producing and selling consumer goods to create specialized alternative product line for its clients, which will generate funds which will subsequently used for projects with a social impact.

These specialized product lines are qualitatively no different from conventional products of the company, but have significantly increased the price paid by the consumer for the social value of the product. As the profit corporations are only in the primary channels that enable its customers to allocate resources on socially beneficial projects this concept de facto initiated by consumers themselves and are therefore often described as ethical consumerism.

Of course this concept has a positive PR effect for producers of consumer goods, but due to the fact that "product-RED" is an independent brand, whose ownership is not under the control of the consumer corporations (but they only hire) is guaranteed a certain degree of control over that this brand does not only commercial and PR activities.

Corporations that have kept some of their products are certified by American Express, Apple Inc., Nike, Windows, Motorola, Starucks and pod.20

At present, in these new concepts of social innovation following the most committed theorists / thinkers:

Frank Moulaert: a Belgian academic and activist whose major work projects related to urban development. In his work it addresses both problems by creating a fast current and extensive urbanization (tearing basic family ties, high pressure on the labor market mobility of the workforce and the subsequent disruption of communities, etc.) As well as the concept of support for maintaining and building community ties in municipalities.

Moulaert is actively engaged in the centralized European organizations such as. ESDP-Network (European Spatial Development Planning Networ), a network of universities and educational institutions that aim through student exchange programs to support student learning in an effective spatial planning (to slow down or stop urban decay, promote pro-social and humanly comfortable redevelopment of falling areas.

4. Reviewing Community innovation performance of enterprises

Economists Prognostic Institute of SAV has been paid (Balaz, Kluvánková - Orava, bunny., 2007) in its analysis of changes in the institutional environment in Slovakia is the challenge of innovation in Slovak economy, in particular the diffusion of knowledge.

The authors evaluated the action of institutions that operate within the national innovation system. They note that the mission of some universities and institutes of the Academy consisting of non-profit research has not changed and remains as well as their funding from the state budget. The authors point out that the system of science and research in Central and Eastern Europe produces very little commercial output. Innovation system of the Slovak Republic, pursuant to isolate them from the rest of the Slovak economy.

As the authors note, national innovation system consists of a large number of basic elements and two of them - the Ministry of Economy and Construction and the Ministry of Education, Science, Research and Sport SR uncooperative. After all appointed by the ministry under the author has enough professional capacities that could be paid to issues of science and research. The authors argue that the government can not influence that Slovakia moved on research and development institutes of international multinational companies.

The authors come to the conclusion that the domestic research and development infrastructure is at a low level, which does not generate demand for that activity by foreign investors. The authors note that Slovakia does not have the financial infrastructure to support science and research. Past reforms created an environment for investment in venture capital. Existing attempts to connect businesses and failed research and knowledge transfer were made in very small scale, it is necessary to support activities that strengthen these links such as business angels networks, exchange of innovative solutions. Existing policies in this area refer to activities by the European Union ((Balaz, Kluvánková - Orava, Zajac, 2007).

Innovation activity of Slovak enterprises are characterized by assessing selected indicators:

- The introduction of new or significantly improved products;
- Introduction of new or significantly improved process in the new enterprise;
- Introduction of new or significantly improved organizational innovation;
- Introduction of new or significantly improved marketing innovation;
- Unfinished, suspended or innovation activities.

Recent surveys in the Slovak Republic recorded a 35.6% innovation activity of enterprises in industry 35.9% and 35.2% selected services. The development of innovation activities in industry and in selected services, a trend of convergence. Compared with the previous survey Statistical Office, the share of innovation activity of enterprises in industry decreased by 1.2% in the sectors of services was a small increase of 0.1%. The data of the last survey have not yet been disclosed. Decline in innovation activities responsible macroeconomic development of the Slovak economy. Recent opinions of analysts suggest the assumption of long-term recession, the Slovak economy. The reality of the last days, however, provides information on the recovery of the automotive industry. The share of non-technological innovation in the industry accounted for 2.7% and services 9.8% of innovatively active enterprises and a downward trend.

Innovation activities of enterprises in terms of size enterprises is directly proportional to their size. Small businesses have innovation activity 26.0% in industry and 32.8% in services. Medium-sized enterprises have innovation activity 46.5% in industry and 37.8% in services. Large enterprises have innovation activity, 64.8% in industry and 66.0% in services.

Innovation activity of enterprises in terms of innovation, the originator is not always the result of innovating enterprise. According to the results of the survey on average only 44.3% of product innovation in industry and selected services developed very innovating enterprises. On the whole, a significant proportion of 25.1% of innovation activities of enterprises was the result of cooperation with other entities / enterprises or institutions /. Innovation activities of enterprises in the range of 18%, were to some extent inspired by the presentation of products or selected services originally developed by other organizations / enterprises or institutions /. Only 12.6% of product innovation and selected services have been developed by other enterprises or institutions. Of the realized process innovations was as 78len 12.6% developed by other enterprises or institutions, 10.6% correction or modification of products or services originally developed by other enterprises, 25% for cooperation with other companies and to 51.8% of innovating companies themselves. Thus, we can summarize that in the case of product innovation and selected services is up 55.7% of innovation activities of enterprises accompanied by a partial or complete transfer of knowledge to others implementer of innovation. In cases process innovation is partial or complete transfer of knowledge realized in 44.3% of cases. The scope of knowledge transfer is when innovative activities share interesting indeed. Transfer may take place crosswise. Based on demand innovating enterprise, but also on the proprietor of knowledge.

The most intensive innovation activity in terms of selected types of products were recorded in manufacture of pharmaceutical products (53.8%), in manufacture of motor vehicles (53.4%), in manufacture of other non-metallic mineral products (53.1%), in manufacture of coke and petroleum products (50.0%), in manufacture of food, beverages

and tobacco products (48.6%), in manufacture of electrical equipment (45.1%), in manufacture of machinery and equipment (43.2%), in manufacture of products rubber and plastic products (42.5%), in manufacture of furniture (39.1%). Innovation activities of enterprises in other products, the figure ranges from 38.4% (in the production of chemical products) to 18.2% (in manufacture of metal and structures).

Innovation activity of enterprises in terms of selected types of services were recorded in particular information and communications (52.1%), the finance and insurance (45.4%) and professional, scientific and technical activities (38.7%). Innovation activities of enterprises in other services, the figure ranges from 34.8% (wholesale and retail trade and repair of motor vehicles) to 20.6% (transport and storage).

Innovation activities of enterprises in terms of a European comparison reflects "Summary Innovation Index", which was created by aggregating 25 indicators used to measure innovation activities of enterprises. EU Member States are classified into the following four performance groups innovators:

E) show a modest innovation performance below the EU average by more than

50% / Bulgaria, Latvia, Poland and Romania /;

F) show a slight innovation performance in the range of 50% and 90% of the EU / Czech Republic, Greece, Hungary, Italy, Lithuania, Malta, Portugal, Slovakia and Spain /;

G) innovation followers have done at intervals of 91% and 120% of the EU / Austria, Belgium, Cyprus, Estonia, France, Ireland, Luxembourg, the Netherlands, Slovenia and the United Kingdom /;

H) leaders have innovation performance above the EU average by more than

20% / Denmark, Finland, Germany and Sweden /.

A- modest ins. B- moderates innovators C-ins. Followers D-leaders

Source: OECD Statistics

Innovation activities of enterprises in terms of world comparisons monitors the position of the EU and the Slovak Republic. Innovation performance of enterprises in the United States, Japan and South Korea's innovation performance above the EU / fourth position / the Slovak Republic / sixth position at the Australia /. Compared with last year's results, South Korea joined the USA as a global innovator.

5. Conclusion

It requires innovation in business management in the field of science which includes the construction of scientific and research base and organize the transfer of knowledge. It is necessary to define innovation objectives, identify innovative strategies and innovation policies. It is necessary to develop innovative companies own staff involvement. Successful firms provide workers working space for their own development activities and the need to create conditions for long-term interest of the company to implement innovative strategies. We recommend using transfer of knowledge to streamline innovation activities of enterprises. The survey of innovation activities diagnose the position of the Slovak Republic in the European area, as average with a tendency to decline in the future. Therefore, we recommend to increase support for innovation activities of Slovak companies and state groupings.

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The minimum wage and its impact on youth unemployment

Mariana Ivaničková, Martina Sabolová

Abstract

The article deals with the influence of the minimum wage on youth unemployment, where we compare the minimum wage in European Union countries for year 2014. Impact of minimum wages on the development of unemployment is one of the deficiencies that must be taken into account when establishing the minimum wage and just this issue is discussed in the article. We assessed the unemployment situation from the available statistical data, depending on the age structure of job seekers in Slovakia, which compare with a rate of youth unemployment in the European Union. In assessing the impact raising the minimum wage to the development of unemployment young people it is necessary to consider several factors, therefore in the article we analysed the consequences and the actual effect of the minimum wage to unemployment young people.

Keywords: minimum wage, young people, unemployment jobseeker
JEL Code: J 3101, M 5202

1. Introduction

Financial reward in the form of wages is important not only from an economic and from a psychological point of view. Wage is the amount that employees receive for their work and contributes significantly to the performance of the staff that needs to be motivated. Well motivated employees have clearly defined objectives, are working efficiently and have a developed sense of duty. The rate of pay and cash remuneration realized in practice is pursuant to the laws and regulations wage, which defined the concept of minimum wage. Supporters of the minimum wage advocate the view that the minimum wage has several benefits and vice versa critics argue, that introduction of a minimum wage it has several shortcomings. One of these shortcomings is the impact of minimum wages on the employment, which the government must take into account when deciding on the introduction of a minimum wage.

It is generally known that unemployment does not endanger equally all people and therefore it also we present the risk groups of unemployed people in the job market. According Matoušek (2005) and Buchtová (2002) disabled people, school graduates, women, members of the Roma ethnic group, the elderly, workers with low qualifications or no qualifications includes the risk group.

School graduates are one of the risk groups in the labor market, as the above mentioned. Their main disadvantage is compared to other job seekers lack of work habits, lack of experience and in some cases, poor qualification which is not desirable in the labor market.

The article is devoted to precisely this risk group, which addresses the impact of minimum wage on the development of youth unemployment. We compared the minimum wage for 2014 in Slovakia and in other European Union countries and also reviewed the status of unemployment based on the age structure of Slovakia in comparison with the rate of youth unemployment in the European Union countries for year 2014. We reviewed based on the results of the studies the consequences and impact the minimum wage on unemployment young people.

2. Definition of the minimum wage and unemployment

The minimum wage legislation has a long history in Anglo-Saxon countries. It was introduced in New Zealand in 1894 followed by Australia in 1896, the UK in 1909 and some states in the US from 1912 and onwards. Minimum wages in European countries are sometimes determined via collective bargaining agreements whereas other countries have minimum wages set by law (Holmlund, 2014).

Effects of the minimum wage on the wage distribution became clearer with the declining real minimum wage in the 1980s nevertheless, the ability of minimum wages to equalize the distribution of family incomes remains quite limited (Brown, 1999).

The wage fulfills by Vincúr (2006) functions economic, stabilization, motivation and social. In the literature we can meet with these definitions of wages:

- Nominal wage is the amount of money that the worker receives.
- Amount real wage depends on the nominal wages, the level of prices of goods and services and taxation.
- Compensatory wages aims to compensate for certain disadvantages that are associated with the job and are related to the risk.

The minimum wage does have a visible effect on the wage distribution, particularly for young people, also for adults in years when it was high relative to average wages (Brown, 1999).

According Lee et al. (2015) is unemployment associated with possibly cigarette use and the effect of unemployment on drug use varies by of family of origin.

The minimum wage is bound to reduce economic efficiency by increasing labor costs and thereby creating involuntary unemployment (Holmlund, 2014).

2.1. The minimum wage in Slovakia and European Union countries

The minimum wage has many benefits, but also some shortcomings. The rate of pay and cash remuneration is in practice carried out on the basis of laws and wage regulations of which is probably the most important law no. 311/2001 Coll., Labour Code, as amended, and Act no. 663/2007 Coll. on minimum wage, which determines the amount of monthly and hourly wages. The exact amount of the minimum wage is set by law and generally regularly increasing. By law no. 321/2013 Coll. it establishes the minimum wage from 01.01.2014 in the amount of € 352.00 per month for an employee paid a monthly wage and of € 2.0230 for each hour worked by an employee who is paid an hourly wage. Minimum wage according to degree of difficulty the job force in 2014 is shown in Table1.

Table1. Minimum wage in Slovakia in force since 01.01.2014

Degree of difficulty job	Coefficient minimum wage	Minimum wage (gross)	Minimum wage hourly (gross)
1	1,0	352,00 €	2,0230 €
2	1,2	422,40 €	2,4276 €
3	1,4	492,80 €	2,8322 €
4	1,6	563,20 €	3,2368 €
5	1,8	633,60 €	3,6414 €
6	2,0	704,00 €	4,0460 €

Source: own processing

Dinga and Ďuran (2013) indicate, that the degree of difficulty in the job, the employer is obliged to assign to each post and for this stage do not arise only entitled to a minimum wage but also bonuses for night work and for work in harmful conditions. Degree of difficulty increasing employer's costs even in the event that all employees are paid more than the minimum wage. Interestingly, that in Germany, where in 2013 it was not yet established the minimum wage, received 8.000.000 employees in German wages lower than the minimum wage in France, but unemployment in Germany was in May 2013 at 5.3% and in France to 10.9%. Another interesting fact is also, that in Slovakia is currently higher the minimum wage than in the Czech Republic, but unemployment was in May 2013 in the Czech Republic at 7.20%, while the national unemployment rate in Slovakia during the same period to 14.20 %.

In 2014 in all 28 European Union countries, 21 countries had set minimum wage and only seven states had no fixed minimum wage. These countries are Cyprus, Denmark, Finland, Austria, Sweden, Italy and Germany. Since the year 2015 the minimum wage was also introduced in Germany, so the number of European Union countries with established minimum wage is a total of 22. The highest minimum wage was in 2014 in Luxembourg in the amount of € 1921.03 and the lowest was in Bulgaria of € 173.84. The Slovak Republic was in 2014 when the 15-th place with minimum wage € 352.00. The exact amount of the minimum wage in each country of the European Union on 01.07.2014 is summarized in the following Table2.

Table2. Minimum wage in the European Union countries on 01.07.2014

Country	Minimum wage (brutto)
Luxembourg	1921,03 €
Belgium	1501,82 €
Netherlands	1495,20 €
Ireland	1461,85 €
France	1445,38 €
United Kingdom	1301,31 €
Slovenia	789,15 €
Spain	752,85 €
Malta	717,95 €
Greece	683,76 €
Portugal	565,83 €
Poland	404,16 €
Croatia	398,31 €
Estonia	355,00 €
Slovakia	352,00 €
Hungary	328,16 €
Lithuania	320,00 €
Czech Republic	309,62 €
Latvia	289,62 €
Romania	205,34 €
Bulgaria	173,84 €

Source: own processing by Eurostat, 2014

The above amounts of the minimum wage are be gross, which means that it is the minimum wage in the country, before deduction of income, before deduction of social security contributions and health insurance contributions, which vary from different countries of the European Union.

2.2. The unemployment rate in Slovakia and European Union countries

By statistics of the Office of Labor, Social Affairs and Family (2014) is the total number of job seekers in Slovakia on 31 August 2014 a total of 380 668, which means that the previous month, compared with July 2014, when the number of job seekers was 384 002, decrease in the number of such persons about 3 334. Compared to 2013 the state decreased by up to 21 545 people less, because in August 2013 was in the total number of job applicants registered up to 402 213 people. The unemployment rate, which is calculated from the total number of jobseekers, was in August 2014 in the amount of 14.11%, representing an annual decrease of 0.79%, as the unemployment rate in August 2013 was 14.90%. To 31st August 2014 at labor offices was 10 446 vacancies, namely most of them were in the Prešov region 1 836 and at least 797 vacancies were in Trenčín region.

According to Dinga and Ďuran (2013) is in the Slovak Republic youth unemployment significantly higher than unemployment the general population. Young people under 30 make up more than a third of the unemployed, as evidenced by the statistics for the first quarter of 2013, when is the unemployment rate in the age group 20-24 years 31,70% and in the age group of 25-29 years was the unemployment rate 18,90%. In both cases, it was a significant above average over the national level, which was of 14.50%. Young people are usually after school without experience, all of which are still with the parents start their own families for them is a matter of the distant future. For this group of young people is the most important acquisition of experience, which would then provide them better job and a higher income.

The age structure of jobseekers in the Slovak Republic is in Table3.

Table3. The number of jobseekers in the Slovak Republic by age

Situation in Slovak Republic	The age structure of jobseekers								Total
	less than 25years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years	50-54 years	55 and over years	
at 31.07.2013	75695	55219	47124	48943	42685	43958	46217	51026	410868
at 31.08.2013	71730	54222	46628	48245	42091	43293	45577	50425	402213
at 31.07.2014	68472	50961	43456	46266	41230	40441	43332	49844	384002
at 31.08.2014	66238	50631	43476	46211	41102	40198	43147	49665	380668

Source: own processing

Council of the European Union (2014) states that in the European Union is youth unemployment more than double compared to adults, specifically was in June 2014 in Europe 5 100 000 unemployed young people aged 15-24 years. Individual differences in the rate of youth unemployment among individual member countries are quite large, as for example in Germany is youth unemployment rate of 7.8% and in Greece and Spain, is the unemployment rate over 50%. Measures to promote youth employment in the European Union can be included:

- The warranty for young people, whose mission is to contribute to ensuring that all young people under the age of 25 years were offered employment, further education, apprenticeships or internships within four months of completing their education or job loss.
- The quality of traineeships and apprenticeships aimed at facilitating the transition from school to work.
- Initiative to promote youth employment through European Union funds to support young people in the regions where youth unemployment exceeds 25%.
- Job mobility, which should help young people find a job, an internship or apprenticeship in the EU.

The youth unemployment rate in the European Union reached unheard levels due to the economic crisis. The European Union and its Member States have therefore agreed on a comprehensive approach to tackling youth unemployment. It introduces a series of concrete measures to help young Europeans back into employment or in education.

3. Impact of minimum wage on youth unemployment

The effect of the minimum wage on employment in Europe analyzed its work Dolado et al. (1996), which specifically focused on four countries. The selection of these countries was a deliberate, because each has its own unique characteristics in relation to the minimum wage. For negative effects in relation to the minimum wage is mentioned as an example France, the Netherlands again early 80s greatly reduced the minimum wage for young people and vice versa Spain in 1990 has the minimum wage for young people increased dramatically and in 1993 has in the UK completely abolished the minimum wage.

According to Dinga and Ďuran (2013) is seen precisely the youth unemployment effects of minimum wage most visible. This issue is devoted to the CATO Institute, where as part of the analysis, compared with total unemployment and youth unemployment came to the fact that youth unemployment in the US is long-term higher than unemployment in the economy. Increasing the minimum wage has been in recent years in the US accompanied by higher growth of youth unemployment in comparison with the growth in unemployment across the population. The US National Bureau

of Economic Research in 1982 came to the conclusion that raising the minimum wage by 10% in the US reduced youth employment by 1% to 3%.

Neumark and Wascher (2003) in his study working with panel data 17 countries OECD over the period 1975 to 2000 and by which examines the impact of minimum wages on employment of young people aged 15-19 years and 15-24 years. Data on employment and minimum wages are expressed as a ratio of the minimum wage to the median wage in the country and period. The data are supplemented by extending the model of differences between countries in the minimum wage system, which include forms of enacting minimum wage, and the mere existence of the minimum wage. Two-thirds of surveyed studies came to a relatively clear conclusion that the minimum wage has a negative impact on employment. The positive impact of the minimum wage was recorded in only 8 studies examined out of 100.

Burkhauser et al. (2000) examined the impact of its work minimum wage for teenagers and young people divided into groups by race and education level and concluded that raising the minimum wage has a very negative impact on youth employment. In his work, also they work with panel data, which related to changes in minimum wages at state and federal level between 1979 and 1997. The most significant effect was demonstrated for juveniles who have not completed second level education and those who have black skin.

Table 4 summarized the implications, reflecting the impact of minimum wages on the development of unemployment in the Slovak Republic.

Table4. Minimum wage and its impact on unemployment

The consequences of minimum wage on unemployment in Slovakia:	
A	causing an increase in unemployment
B	most harmful low-income citizens
C	largely harmful to people with low qualifications
D	it has a negative impact on the regions with higher unemployment
E	Slovakia directly affects more than 100 000 employees
F	Slovakia directly affects more than 300 000 unemployed
G	have a greater impact on youth unemployment
H	restricts the opportunity for young people to find their first job
I	it interferes with the business plan, are company by increasing labor costs
J	not reduce poverty across the board, but selective
K	has a negative impact on the general government fiscal balance

Source: own processing by Dinga, Ďuran, 2013

Neumark, Schweitzer and Wascher (2004) in their work focused on employment, working hours, wages and total income in different groups that have been created based on the amount of wages. Focus on different groups according to the amount of wages eliminates the many drawbacks associated with the most commonly used approach, examining the impact of the minimum wage for teenagers and adolescents. The authors also suggest that young people are only beginning their work experience, and therefore, unlike other workers with minimum wage likely to proceed further for better-paid jobs.

4. Conclusion

Conclusions on the minimum wage and unemployment resulting from the overwhelming majority of empirical studies are quite clear that the minimum wage limits the chances of young people to their first job and especially in regions with higher unemployment and lower wage level. Even a small increase in the minimum wage could significantly increase the company overall labor costs. Increasing the minimum wage is now the company a significant increase in annual labor costs, thus reducing the expected future development of the total cost.

Increasing the minimum wage causes an increase in unemployment and has a negative impact on regions with high unemployment. The minimum wage has a big impact on youth unemployment and it is also a barrier in finding a first job. Increasing the minimum wage also reduces the generation of profits employers, threatening jobs particularly in regions with high unemployment. In the assessment of individual impacts of increasing the minimum wage on youth unemployment it is therefore necessary to consider several factors and use other tools to reduce unemployment of risk groups of people.

Employment policy in Slovakia is aware of these negative impacts of the minimum wage on employment of young people, therefore, are employers motivated by different financial means, to engage in the employment of young people without experience.

On the basis of statistical data from the bureau of labor consists of young people in Slovakia more than a third of the total number of unemployed persons and therefore we agree with Dinga and Ďuran (2013), who state that in order to reduce unemployment among young people, the government could consider the validity of the minimum wage for young people the age of 30 years.

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Searching for predictors of ethical decision-making by using a pedagogic and research platform Gepard

Radim Kučera, Pavel Žiaran, Vít Janiš

Abstract

Objective of the article is to present a new platform for teaching and research, named “Gepard – Generator of Economic Behavior in Pedagogic Activities for Research and Development”. The platform integrates three functions: (1) Innovative inspirational teaching. (2). Generates data for scientific research. (3) Provides feed-back for participating students for their personal development. In this paper analyze relations between economic games dictator and ultimatum and several aspects of ethical decision-making. Participants in the experiment: 184 under-graduate students of business. Results show that the dictator game works as a statistically significant predictor of the following aspects: 1. preference for a managerial position in the ethically sensitive situation, 2. preference to leave the company with unethical practices and 3. strong ethical attitude to adhere to ethical principal regardless of the situational context. On the other hand, the ultimatum game did not work as a predictor of ethical decision-making.

Keywords: ethics, management, decision-making, predictors

JEL Code: M 540

1. Introduction

Ethics in managerial and business environment is an important factor of its sustainability, what was proved by a series of ethical scandals. The fall of the company Enron caused by unethical managerial activity and auditors significantly affected corporate world. Besides Enron, there were other ethical and legal scandals in other corporations, such as WorldCom, Tyco, America Online, Lucent, Vivendi, etc. Reaction to this are new legislative and controlling frameworks from the state and new perspective from companies, which are starting to perceive ethics as a strategic factor of successful business. The meaning of ethical values and attitudes was proved by many studies, e.g. Flynn (1994) found out that when recruiting new administrative workforce, 60% of managers perceive working ethics as the most important factor. Many other studies show a clear relationship between ethical values of employees and their work performance.

Objective of this article is to analyze capacity of economic games of experimental (dictator and ultimatum). This article analyzes predictors of ethical decision-making in the area of human resource management, especially in the frame of recruitment of managers.

2. Theoretical Framework

Games of dictator and ultimatum can be described as follows: player, also called allocator, has the task to distribute fixed amount of money between himself and other player, acceptor. Acceptor on the other side has an option to decide between accepting and declining the offer. If the acceptor agrees to accept, the offer is realized as suggested by the allocator. If the acceptor declines to accept, both players get a lower amount, discounted by a factor delta, which is also called the power of acceptor. If $\delta = 0$ and the acceptor turns down the offer, both players get nothing. If $\delta = 1$, offer is realized as suggested by the allocator. When delta is 0 and the acceptor has a chance to cancel the offer, the game is called ultimatum. If $\delta = 1$, the acceptor cannot influence the allocator's offer and the game is called dictator. (Suleiman, 1996).

Research shows that with growing power of acceptor, allocator has a tendency to distribute money more equally, and the acceptor strategically uses a fair approach to ensure that the offer is realized. (Van Dijk et al., 2004). In the game ultimatum, equal distribution of money includes two factors, pro-society approach on one side and the fear of cancelling the offer on the other side. Researches also show that in the game dictator, more acquisitive individuals, compared to those motivated by fair play, will realize more selfish allocations when the acceptor is without power, and far smaller allocations in the game ultimatum (Hasselhuhn – Mellers, 2005).

Behavioral experiment (or simulating game) in a classroom can, when following appropriate conditions, serve as a source, resp. generator of valuable data for scientific researches in the area of management. Allery (2004) defined stimulating game as a game based on reality, with specific rules and structure, according to which students learn directly

and implicitly from the process of playing and not from explicit academic content. Simulation does not have to have competitive element.

As long as the stimulation game is according to the requirements of structured experiment, as defined by e.g. Cooper (2007), it can be a platform for creation and verification of managerial theories. A good-quality experiment tries to capture the most important features of reality in simple, carefully monitored environment and is designed to test concrete hypothesis, derive from economic or managerial theory, or from previous observations in experiments or terrain data.

This approach is based on the principle of the Kolb's experimental learning, based on four phases: 1. activity, 2. reflection of activity, 3. generalization into theoretical framework, 4. practice, resp. improvement of own performance in managerial context. Connecting experience in a classroom with the theoretical conceptualization transforms the experience into a structured knowledge usable in real life (Young, 2002). A big advantage of this approach is that it offers students a deep confrontation of life decision-making experience within the classroom activity and at the same time it serves as a source of scientific data (Castilla, 2014). This pedagogic approach integrates the principles of connatural management (Ambrozová, Pokorný, 2015) where objective is to develop natural qualities of the human potential and cultivation of the capacity of humans to discern and distinguish among a wide range of factors influencing organizational environment.

Pedagogical platform Geparad integrates the above mentioned aspects and offers two functions. (1) It creates a valid research data to test managerial theories and to create new ones, based on experimental research. (2) The platform provides structured and scientifically reasoned feedback for students participating in pedagogical activity about their performance and effectivity in the activity.

3. Objectives, research questions and methodology

Objective of this research is to test how the preferences of managerial behavior will change in two different situations: (a) common situation and (b) ethically sensitive situation. We stipulated two research questions:

- (1) Do the economic games dictator and ultimatum function as predictors ethical attitude of an individual?
- (2) Do the economic games and ultimatum function as predictors of ethical behavior in organizational context?

There were 189 participants in the experiment, undergraduate students of business, second and third year of study, age 21 – 23. Reasons for selecting these group of participants are as follows: (1) Students in the field of business declare their orientation to become managers, what corresponds to the objective of research. This group is to a large extent homogenous as regards their values and interests. (2) Young people are not touched by heterogeneous experiences with different types of business environments. Therefore, they will manifest their primary personal values which are the main subject of this research. (3) Good availability of the group for research enables high number of observations.

Participants were given the following situations: (1) Common situation: "A company producing modern wooden ecological toys will implement new information system." (2) Ethically sensitive situation: "A company producing natural ecological furniture will be dismiss workers - women due to the high absences because they take care of their small children."

In both situations, students were asked to express their preferences on a five-level Likert scale. 1. I prefer a position of a manager, 2. I prefer to be an employee, 3. I will perform the task, 4. I will consider leaving the company.

Participants were also given a question about their ethical attitudes (1. Ethical idealism, 2. Ethical absolutism, 3. Ethical relativism) together with theory of ethical attitudes (Forsyth, 1980): 1. Respect of ethical principles and values is important. 2. Ethical principles must be always respected, without considering the specificity of the situation. 3. Ethical problems are necessary to be solved with respect to the specific situation, interests of company, owners, investors, etc.

Economic game ultimatum and dictator were a part of a questionnaire. Participants were asked *how they would distribute 1000 monetary units between themselves and the other person, whom they never met*. Subsequently, they were asked the same question with modification that *if acceptor will not agree with the distribution, both persons lose the money*. Information were then analyzed with help of correlation analysis.

Methodical inspiration for this experiment comes from the research of Hilbig and Zettler (2009) who studied relationship between games ultimatum and dictator and personal features "humility and honesty".

4. Results and discussion

The capacity of economic games dictator and ultimatum as predictors was analyzed by means of the correlation matrix. Table 1 displays correlation coefficients between the aspects of the ethical decision-making and the score in the economic game (dictator and ultimatum). Statistically significant results on the level of 5% are marked bold with asterisk, critical value of the correlation coefficient is 0,1447).

Tab. 1 Correlation matrix between the scores in the dictator and ultimatum games and the ethical aspects of the decision-making (*5% critical value, two-tailed = 0,1447, N = 184)

Ethical aspects of decision-making in the organization	Score, dictator game	Score, ultimatum game
Ethical values must be respected , regardless of the ethical context	-0,1888*	0,0337
Preference of a managerial position <u>in the ethically sensitive situation</u>	0,1998*	-0,0193
Preference of a managerial position in the situation <u>without an ethical problem</u>	0,0629	-0,0164
Preference to quit the company in the ethically sensitive situation	-0,1516*	-0,0485

Source: Own processing by authors

On the basis of the correlation analysis, following results were discovered, and we can interpret them in the three-fold way:

Prediction capacity of the preference of the ethical stand-point

Between preferences of ethical absolutism and the score in the game dictator appears a negative correlation. The lower the score in the game dictator is, the more the participant is likely to perceive ethical principles as generally valid and without exception based on the situational context. High score in the ultimatum game denotes people with a low ethical absolutism, and vice-versa. On the other hand, both games dictator and ultimatum do not generate statistically significant correlations with the other two ethical attitudes (ethical idealism and ethical relativism).

Prediction capacity of the preference of a managerial position in the ethically sensitive situations

The score in the game dictator creates statistically significant correlations with preference to be a manager in the ethically sensitive situation. Conversely, correlations with managerial position in the situation without an ethical problem a significant correlation does not appear. It is then possible to conclude that game dictator acts as a predictor of ethical decision-making in the ethically sensitive situations in organizations.

Prediction capacity of the preference to leave the company

The score in game dictator creates statistically significant (negative) correlation with the behavioral tendency to leave the company in ethically sensitive situations. The lower score the participants got, the more they were prepared to leave the company in an ethically sensitive situation. The game indicator acts as predictor also in this case as well.

One thing to be mentioned is the question why the score in the game ultimatum does not generate statistically significant correlation with the above mentioned behavioral tendencies. It is probably because the participants, which have relatively high scores in the game dictator (values from 700 to 1000) have, in the game ultimatum, chosen a fairer value (close to 500) as strategic choice. With that, their score approaches to a score of more altruistically oriented participants, who chose value close to 500 as a natural preference also in the game dictator, where there is no control of the opposite player.

5. Conclusions

In this article, economic experiments, games for determining social preferences dictator and ultimatum were innovatively connected with behavioral experiment. Meanwhile, ethical decision-making in organizations in ethically sensitive situations was stimulated.

The key discovery was the fact that the score in the game dictator is statistically significantly correlated with preferences of ethical attitude (ethical absolutism) and also with the spectrum of behavioral preferences in ethically sensitive situations (preference of a managerial position, preference to leave the company). If the experiment was conducted differently, score in the game dictator can be considered as a relatively good predictor of ethical decision-making in the organizational environment. On the other hand, based on the hereby presented results, the game ultimatum does not show similar results.

Within the discussion framework about validity of results of the experiment, it is important to point out that the validity of this research and level of threshold values is strictly based on the group of participants on which the experiment was conducted. The question is whether the results would be valid for other demographical and socio-professional groups, which would require expanding the research. However, there exists a strong presumption that with respect to the character of predictors, other groups would react in a similar way. Eventually, for the use of this predictor in other socio-professional group, it would be suitable to create a database of results and then determine the boarder values for specific groups.

To conclude, the results of the research are very encouraging since they proved statistically significant relationships between the economic experiments and behavioral tendencies. Furthermore, it was showed that economic games are

also predictors of ethical attitudes. Hereby presented results can be applied in human resource management in the future. And there is also a strong perspective to use these methods in the pedagogical process.

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MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL ASPECTS OF BUSINESS

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Research and development activity in Poland and its place in knowledge management

Paweł Marzec, Grzegorz Krawczyk

Abstract

The article presents data concerning expenditures on research and development in Poland. According to the data published by Central Statistical Office (GUS) in Poland in 2013 the expenditure on research and development (B+R) constituted 0,87% of GDP (compared to 0,89 % in 2012). In order to introduce Poland into the world of innovation, it is necessary to undertake initiatives allowing increasing the level of companies' expenditures on research and development. Cooperation with external institutions should be increased and more research and developmental activities should be conducted to create new and innovative knowledge.

Keywords: knowledge management, research and development

JEL Code: M00, O32

1. Introduction

Era of knowledge is an important and incredibly fascinating phase in the development of an organisation or economy (see: Balcerzak, 2009; Grzybowska, 2013) and the whole society where the optics of thinking, the way of solving problems, management, learning and social networking has been placed far away from what we were used to for many years. Information and knowledge are thought to be basic, strategic asset of a company. (Olszak, 2007)

Knowledge is defined as non-material organisation assets connected with human activity, the usage of which can be the ground of organisation's higher competitiveness (Kisielnicki, Sroka, 2005). An organisation, to be fully competitive on global and local markets must possess and absorb a certain knowledge and be able to use it properly (Kisielnicki, Sroka, 2005).

2. Knowledge management

B. Mikula mentions six main strategies of knowledge management. The criteria distinguishing particular strategies are as follows (Mikula, 2005 cite: Kłak, 2010):

- criterion of the main process connected with knowledge: creation or transfer of knowledge,
- criterion of the basic source of knowledge: external or internal knowledge,
- criterion of the dominant area of knowledge: non-existent or existent knowledge.

The array/matrix of strategic areas of knowledge, on which particular strategies are concentrated, is shown in Figure 1.

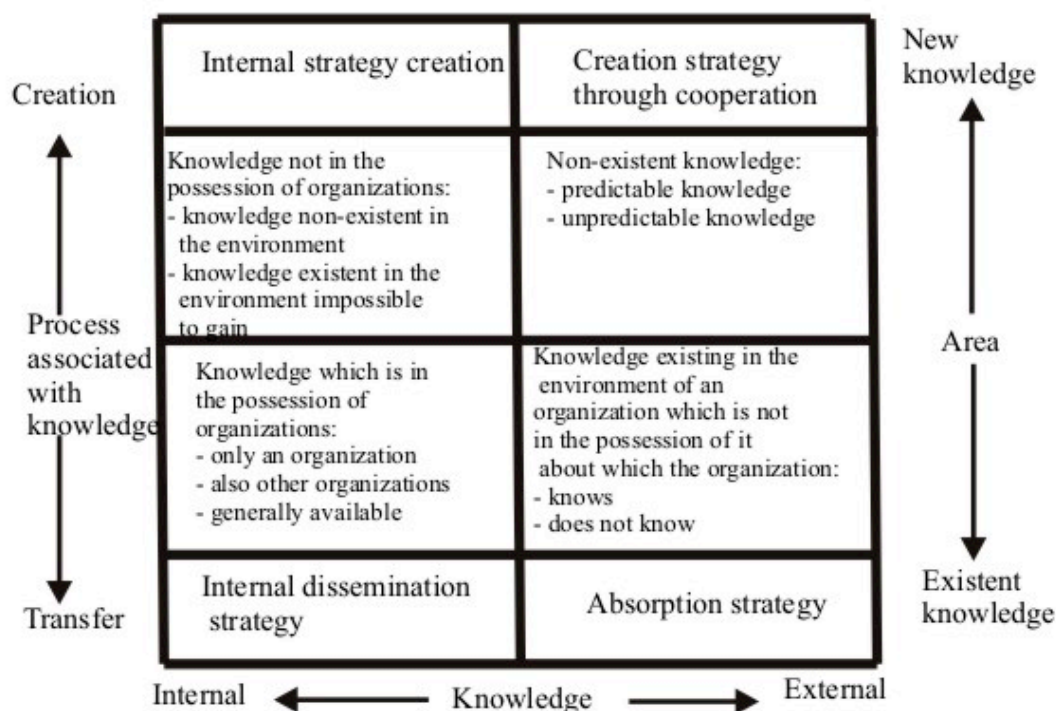


Figure 1: Array/Matrix of strategic areas of knowledge

Source: B. Mikula Geneza, przesłanki i istota zarządzania wiedzą, in: Zarządzanie wiedzą w przedsiębiorstwie, edited by. K. Perechuda, Wydawnictwo Naukowe PWN, Warszawa 2005, p. 29, cite. M Kłak, Zarządzanie wiedzą we współczesnym przedsiębiorstwie, Wydawnictwo Wyższej Szkoły Ekonomii i Prawa im. prof. Edwarda Lipińskiego in Kielce, Kielce 2010 p. 65.

The mentioned author includes the following to the first four basic strategies of management (Mikula, 2005 cite: Kłak, 2010):

- strategy of knowledge creation by cooperation - concerning the area of new knowledge, still non-existent for the corporation and its surroundings. Its main concept is cooperation with external institutions and conducting research and development actions to create new and innovative knowledge. The undertaken activities involve: market analysis (defining knowledge gaps), strategic alliances (creation of new knowledge), cooperation with institutions (B+R, universities), research outsourcing, personnel rotation. The implementation of this strategy often involves purchasing new knowledge in B+R institutions, which has been widely practised recently by many international corporations;
- strategy of internal creation - dealing mainly with new knowledge for a corporation, which is created by the corporation. It happens that the knowledge is totally non-existent or existent only in the environment. A corporation, considering limited access to a certain knowledge, decides to create it on its own. Sometimes the strategy is used for absorption and creation of knowledge in order to achieve a new quality of knowledge. The basic unit of knowledge creation process, with the use of this particular strategy, is the team. Apart from formal teams working within organisational structures (own B+R centers, laboratories), there are also project teams, quality circles and communities (e.g. practitioners, creative, knowledge);
- absorption strategy - dealing with knowledge obtained from the outside (environment), the knowledge already existent, but only in the corporation's environment. The main point of this strategy is obtaining knowledge from the environment of the corporation through: attending training courses, sessions, conferences, external and functional benchmarking, through cooperation with suppliers, customers and scientists, specialist literature studies, computer networks or even outsourcing. Obtaining knowledge by outsourcing is considered to be a substitute for know-how knowledge which belongs to the corporation, with the same kind of knowledge originating from the environment. Knowledge may be also obtained from government market research organisations, consulting or advisory agencies. Other depicted methods of obtaining knowledge are also strategic alliances, takeovers or fusions as well as employment of talented workers from other corporations. Another equally effective method might be cooperation with external chains of experts who can be corporation workers, and widely used recently, also in Poland - economic intelligence;
- strategy of internal diffusion - dealing with transfer of knowledge inside the corporation. Explicit or hidden knowledge is forwarded into the corporation by different IT tools and methods. In order to assure proper forwarding of knowledge it is necessary to systematically register previous knowledge and workers with access to the knowledge completing various projects on its basis.

The above described strategies should be treated as a whole since they complement each other. If a corporation decides to obtain new knowledge by using the strategy of knowledge creation through cooperation and absorption

strategy, it might develop the obtained knowledge by the strategies of internal creation and develop it further with internal diffusion strategy tools. (Mikuła, 2005 cite: Kłak, 2010)

The two remaining strategies refer to the necessity of knowledge protection (Mikuła, 2005 cite: Kłak, 2010):

- strategy of knowledge protection - aims at protection of key knowledge such as product or service protection, sustaining competition dominance, preventing innovation imitation or preventing new launches;
- strategy of knowledge sharing - it is contrary to the strategy of knowledge protection. It has many advantages as it is the main tool used in creating a positive image of the corporation and its brand, attracting, keeping and building satisfaction of customers, suppliers, cooperation partners and other potential market partners as well as attracting smart and talented employees.

3. Research and development

According to the data published by Central Statistical Office (GUS) in Poland in 2013 the expenditure on research and development (R+D) comprised 0,87% of GDP (compared to 0,89% in 2012). In order to guide Poland to innovation path it is necessary to undertake initiatives allowing to increase the level of research and development expenses spent by companies. (see: Gardocka-Jałowiec, 2012; Płowiec, 2008, 2010) Cooperation with external institutions should also be increased, more research and development activities should be undertaken to create new and innovative knowledge. Analyzing the number of research units we can observe their growth in the tested period (Figure 2)

Despite optimistic internal data covering the last years and apparently growing entrepreneurs' interest in R+D actions (Figure 3) Europe is still ahead of Poland. Private equity share in financing of research and development is far less than 1% GDP. According to Bloomberg's ranking 'Most innovative in the World: Countries' published in 2014 Poland is placed on the 24th position on a list of 50 countries researched on in terms of innovation.

Analyzing investment on R+D according to sectors in the tested period we can observe growth of investment. Only higher education sector is showing decline in 2013 (Figure 4). Analyzing investment on R+D according to kinds we also observe their growth in the tested period (Figure 5). Only current investment financed on budget measures and investment expenditures fall slightly in 2013. Analyzing expenditures on R+D according to branches of science we observe that the highest expenses appear in engineering and technical branches (Figure 6).

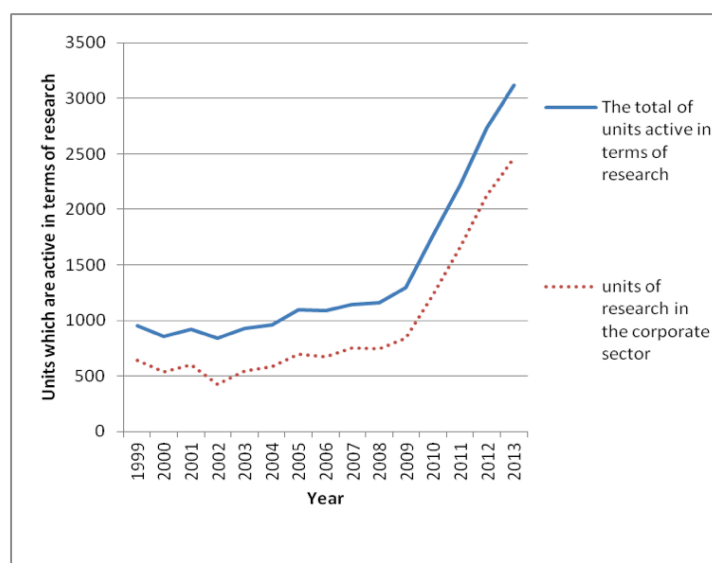


Figure 2: Units which are active in terms of research in Poland.
Source: Own research based on Central Statistical Office (CSO) data

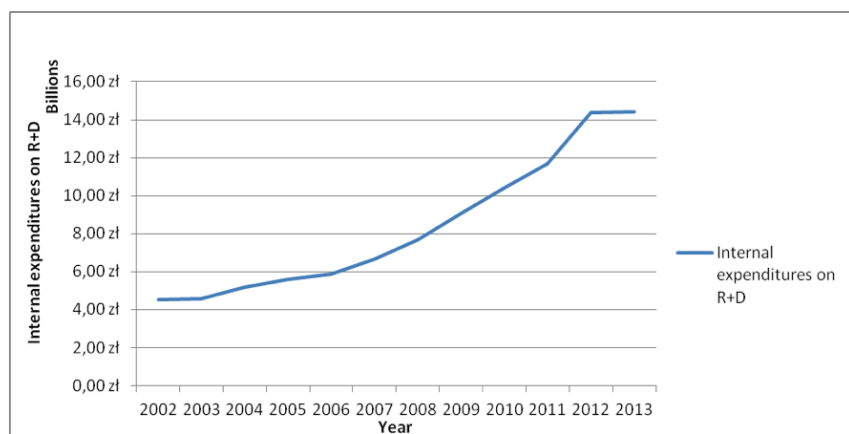


Figure 3: Internal investments on research and development
Source: Own development based on CSO data

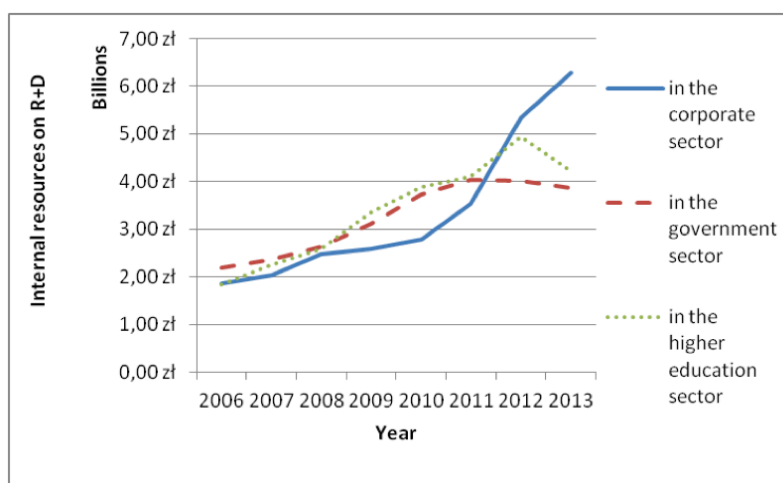


Figure 4: Internal investment on research and development according to sectors
Source: Own opinion development based on CSO data

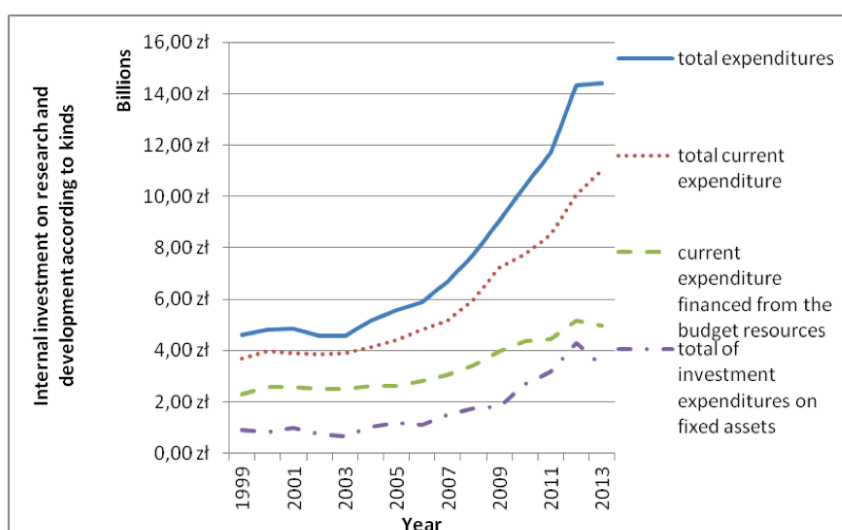


Figure 5: Internal investment on research and development according to kinds
Source: Own opinion development based on CSO data

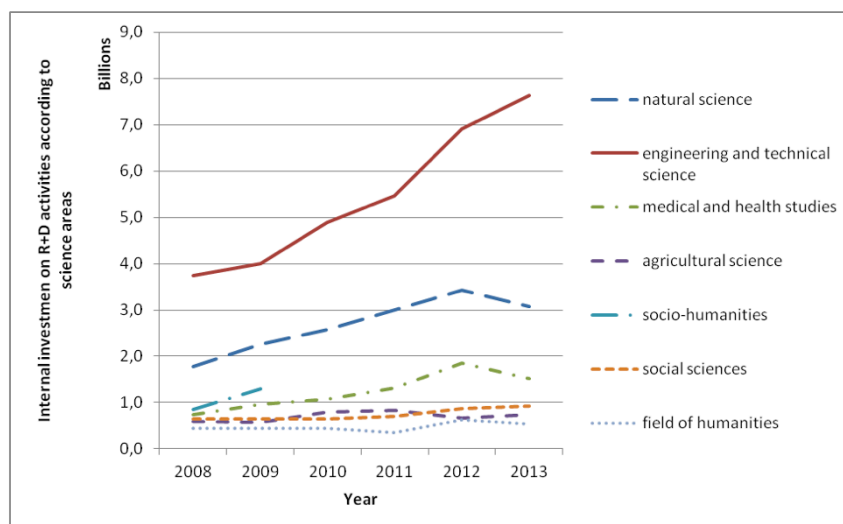


Figure 6: Internal investment on research and development according to science branches
Source: Own development based on CSO data

Table 1: Internal investment in corporation sector on R+D activity according to the origin of measures

	2008	2009	2010	2011	2012	2013
Resources spent	thousands of PLN	thousands of PLN	thousands of PLN	thousands of PLN	thousands of PLN	thousands of PLN
from the country's budget	299787,7	298089,9	369063,2	428601,9	572745,3	603689,4
scientific units of PAN and research institutes	4817,2	3918,6	10183,9	9864,8	16811,4	15385,8
schools of higher education	1663,7	1458,7	1503,9	6774,5	6022,1	2501,5
enterprises	178012,7	130229,1	151796,1	101784,9	172820,1	154123,1
non-commercial private institutions	504,2	147,3	522,5	139,0	900,0	1177,9
resources from abroad	70961,1	115331,1	190979,6	186821,1	407776,3	578748,9
own	1923832,6	2035556,8	2049496,7	2787616,2	4163994,6	4935614,6

Source: Own research on the basis of CSO data

Table 2: External expenditures on R+D

Resources spent	1999	2000	2001	2002	2003	2004	2005
thousand s of PLN	thousand s of PLN	thousand s of PLN	thousand s of PLN	thousand s of PLN	thousand s of PLN	thousand s of PLN	thousand s of PLN
overall	251228,6	274425,9	221213,2	230619,5	207976,6	294655,4	410241,5
resources passed on to international organisations	2309,8	1955,8	1051,4	1492,9	2623,1	3665,7	5167,5
resources passed on to scientific entities of PAN	8450,4	4521,5	6740,5	4612,4	6882,4	8970,0	9395,5
resources passed on to research institutions	71741,1	62715,8	54433,8	59144,2	57800,3	62031,0	106950,2
resources passed on to scientific entities of PAN and research institutions	-	-	-	-	-	-	-
resources passed on to higher education institutions	26042,5	21417,7	37434,9	18662,9	24466,7	31989,0	66635,8
resources passed on to companies	120796,1	165452,7	107906,1	132661,0	100106,3	157830,4	186394,1
resources passed on to non- commercial private institutions- national and foreign	3939,9	10529,5	8112,8	5724,5	7899,8	12478,0	13344,4
resources passed on to non- commercial private institutions belonging to natural persons	2551,6	6325,8	3711,9	2009,4	3625,8	8551,4	-
resources passed on to foreign institutions	17948,8	7832,9	5533,7	8321,6	8198,0	17691,3	22354,0
resources passed on to natural people employed on a contract of mandate	-	-	-	-	-	-	-

Source: Own research on the basis of CSO data

Table 2: External expenditures on R+D continuing

Resources spent	2006	2007	2008	2009	2010	2011	2012	2013
	thousands of PLN	thousands of PLN	thousands of PLN	thousands of PLN	thousands of PLN	thousands of PLN	thousands of PLN	thousands of PLN
overall	334408,2	428636,6	849143,2	1194831,6	3180241,3	1797301,0	2086640,1	2695545,6
resources passed on to international organisations	6878,5	10023,2	10899,7	70349,0	11021,9	7557,9	9511,3	6686,2
resources passed on to scientific entities of PAN	7248,3	11755,1	64707,2	24630,8	41846,7	22154,7	-	-
resources passed on to research institutions	115359,1	101726,9	393997,2	420918,9	1379128,0	228796,8	-	-
resources passed on to scientific entities of PAN and research institutions	-	-	-	-	-	-	316515,6	458062,3
resources passed on to higher education institutions	35694,2	51686,5	81277,8	72193,1	127189,5	174791,5	208510,3	-
resources passed on to companies/ enterprises	141300,1	234578,0	227717,2	555961,6	760494,5	1158991,7	1261132,4	1293107,4
resources passed on to non-commercial private institutions-national and foreign	12246,1	18866,9	70544,1	17324,2	-	20381,6	7470,2	-
resources passed on to non-commercial private institutions belonging to natural persons	-	-	-	-	-	-	-	-
resources passed on to foreign institutions	15681,9	-	-	-	-	-	-	-
resources passed on to natural people employed on a contract of mandate	-	-	-	-	-	63295,0	52361,1	64025,0

Source: Own research on the basis of CSO data

Analyzing internal investment in corporation sector on R+D activity according to background and origin of measures we can state that the highest number of measures in 2013 are own measures, next are the measures from the government budget (Table 1). The smallest part of measures comes from private non-commercial institutions. Analyzing external investment on R+D we can state that the highest numbers are those given to corporations (Table 2).

Conclusions

Research and development activities are creative actions conducted systematically aiming at enlarging knowledge resources and searching for new solutions to this knowledge. Knowledge is considered to be a basic, strategic resource of a corporation. It often happens that realisation of the strategy is based on: cooperation with institutions (R+D, universities), own R+D teams, laboratories, purchase of new knowledge in R+D institutions, which is now widely performed by many international corporations. The results of the conducted analysis let us conclude that the number of research units has been growing in Poland. Analyzing R+D expenditures in the tested period we can observe a growth of these investments. The highest expenses are observed in engineering and technical branches.

To implement Poland to innovation path some initiatives allowing to raise the level of expenditure on research and development must be undertaken. We should increase the cooperation with external institutions and conduct more research and development activities to create new and innovative knowledge. According to the data published by CSO in Poland in 2013 the expenditure on research and development (R+D) contributed 0,87% of GDP (compared to 0,89% in 2012).

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MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL ASPECTS OF BUSINESS

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Intellectual Capital in Business

Martin Matušovič

Abstract

Although the importance of intellectual capital is really striking, the fact remains that theory and practice are the same borrower of this issue. In terms of theoretical processing is the management and exploitation of knowledge assets given sufficient attention of foreign theorists, Slovakia has significant presence. In practice, it confirms that many organizations are actually dealing with intellectual capital or at least superficially. The strategic importance of intellectual capital at present still intense enters the lives of people, businesses and the global economy. These facts led us to the decision to examine the issue of intellectual capital, intangible assets and intellectual property in the theoretical field and in a particular company. The starting point of research focus on real data has been mapping the knowledge of understanding of key terms and processes. Subsequently we contacted selected respondents representing businesses, to comment on the issue includes the use of the term to the structure when recording and management of state values of the components of intellectual property, intangible assets and intellectual capital.

Keywords: intellectual property, innovation, technology transfer, business performance.

JEL Code: D45, M21, O31

1. Introduction

The Slovak economy is dependent on the performance of businesses, for achieving growth and structure of business entities. This can be considered as the main elements to successful management is to ensure competitiveness. The Slovak economy is now operated mainly on successful companies operating in the automotive, electrical engineering, ICT (transfer of knowledge, Knowledge Transfer Partnership) industry and services. We see huge potential in the use of intellectual property products. Our aim is to examine whether and how it is perceived nature of intellectual property and how companies implement innovative activities that are a source of growth performance and competitiveness of domestic enterprises.

2. Dimensional perception of essence of intellectual capital

An important contribution to established the concept of intellectual capital in economic science was the work of GS Becker's "Human Capital", first published in 1964. Gathered in it a large number of theoretical considerations, but mainly empirical evidence on the importance of intellectual capital in various areas of economic practice. (Becker, GS, 1964) In the same year 1964 was published in the edition of the International Labour Organisation study Galensona W. and G. Pyatt, which offers a mathematical analysis dealing with investments in intellectual capital and their relation to economic growth. (www.ann.sagepub.com, 01/09/2015) An important contribution to established the concept of intellectual capital in economic science was the work of GS Becker's "Human Capital", first published in 1964. Gathered in it a large number of theoretical considerations, but mainly empirical evidence on the importance of intellectual capital in various areas of economic practice. (Becker, GS, 1964) In the same year 1964 was published in the edition of the International Labour Organisation study Galensona W. and G. Pyatt, which offers a mathematical analysis dealing with investments in intellectual capital and their relation to economic growth. (www.ann.sagepub.com, 01/09/2015).

The authors identified four factors (education, health, housing and social security) that affect the quality of work (intellectual capital. Glossary of Political Economy defines intellectual capital as practical knowledge, acquired skills and learned abilities of the individual, which enhance its productivity potential and allow Thus earn an income in return for work. (www.auburn.edu/~johnspm/gloss, 01/09/2015) Intellectual capital is usually defined by other authors as the sum of own innate talents and abilities of the individual and the skills they receive education and training (sometimes within the definition also it includes health) without emphasis on the acquisition of income for these realities.

OECD defines intellectual capital as knowledge, skills, abilities, and other characteristics of humans which are relevant for economic activity. The bearer of intellectual capital is a man, his actions, thoughts and innovation. (OECD study "Insights Human Capital: How What You Know Shapes Your Life" sees the essence of the intellectual capital of the wider knowledge economy and globalization. It emphasizes relevant factors influence the economic role of intellectual capital. (www.oecd.org/publications/, 09/19/2015). Intellectual capital consists of the stocks and flows of knowledge within the organization. (OECD, 2015) For example, Karl Erik Sveiby understand the nature of intellectual capital j its internal structure. Intellectual capital encompasses human, organizational / structural / a relational / social / capital. Human capital is understood mainly as skills, abilities and experience of people at the level of individuals and

teams. The structural capital is understood mainly as the accounting evidovateľné patents, designs, licenses, software / Thus, as part of the components of the intellectual property subject to the possibilities for industrial property /. Customer capital is understood mainly as social ties with customers, their loyalty and the like. In the opinion of the structure of the intellectual capital of the views of the authors in the literature vary. Intellectual capital generated three basic resources, intellectual property, capital and people. Some authors consider intellectual property and the pinnacle of the pyramid. (http://www.thinkplank.com/storage/post-images/how-to-capital.JPG?__Squarespace_E_CACHEVERSION=1282386697738) Intellectual capital in business has three sources: Others have considered intellectual property and any of the components of the internal structure. Products of intellectual property, in the opinion of various authors (Edvinsson, 1997) are at various stages of the internal structure of intellectual capital resources. In the following case, the intellectual property came from the highest rank to the lowest level. (The First Step in an Intellectual Property Management Program Dave Tyrrell and Gary Floyd, Vertex Intellectual Property Strategies Inc., <http://www.vertexips.com/information/articles/identification.html>). There's a new concept of intellectual property, which has hardly been used in practice. In the accounts of it in the structure of assets also in use. (<http://www.vertexips.com/information/articles/identification.html>) Differences in opinion of the authors we have identified particularly in the typology of the internal structure of the components of intellectual capital, the number and relationships of superiority and inferiority. Some authors (Sveiby, 2010) indicate two components / human capital and structural capital, others are added to the structure of First Instance and relational capital (Seetharaman, 2004). In studying the literature, we also met with the four component interpretation of the structure of intellectual capital. The fourth component of intellectual capital are considered business models. Most often we met the definition of intellectual capital as a three-component body as part of the human, structural and relational capital. Content human capital represents employees / combination of features, knowledge, skills, creativity, the ability of individuals to perform tasks to include individual values, culture and philosophy. The structural capital is the knowledge of other assets / those remaining after consideration of their non-inclusion in human capital /. Structural capital refers to components such as software systems, distribution network, supply channels, databases, processes, selected intellectual property and other intangible components business assets. Internally the structural capital divided into organizational capital and customer / market, social / capital representing a value stored in relation to its business customers. This relationship enhances the ability to create value and use of knowledge, skills and knowledge. Unlike human capital, structural capital can be owned companies / entities / and you can barter with him (Berg, 2002). Organisational capital refers to the components and processes as the organization, software, databases, research, patents, trademarks, copyrights / Thus the intangible assets / other components and encouraging innovation performance and productivity through knowledge sharing. Practitioners consider this kind of capital for general indicator set times the power efficiency of monetary is an absolute measure of intellectual capital C. The studies we can distinguish according to whether we are examining a range of issues from a microeconomic and macroeconomic perspective, and depending on whether we focus mainly on monetary returns of human capital or those which are difficult to express in financial terms. Studies on the macroeconomic level, principally engaged in the analysis of the role and importance of human capital in economic growth of individual countries or just one specific country. In contrast, microeconomic studies addressing the examination of maximizing yields of individual and his decisions and their impact (Horváthová, 2013).

Organizational capital consists of two components and the process of capital and innovation capital. Process capital is a process, activities and associated infrastructure for the creation and management of knowledge. Innovative capital includes components of intellectual capital, which provide capacity to carry out innovation / research and development, patents, trademarks, copyright works, which can be determinant for the growth of competitiveness in the future. (https://www.google.sk/books?id=EJ7fk8DMga8C&printsec=frontcover&hl=sk&source=gbsge_summary_r&cad=0#v=onepage&q&f=false). Other authors (Edvinsson, Malone, 1997) in the scientific literature defines the typology of the structure of the intellectual capital through two-level three-component model. On the other / non-existent / level in the field of structural capital, the first level shifting relational capital. Human capital (human values such as intellect, experience, skill, creativity, procedures, etc.) The authors perceived identically as the two component models and intelektuálneho capital. The concept of organizational capital (tools and systems knowledge discovery and management, intangible assets, processes, databases, intellectual property, culture etc.) in the three-component models used. Its content (the components of organizational capital) model presented under the heading of structural capital without taking into account levels. relational capital (external relations with customers, suppliers, business partners and distribution networks, trade and regulation etc.), transfer to a higher level will become more important.

In the literature, we met with various presentations of the individual / three / components of intellectual capital. The difference of views is not essentially content, but the details of his hard-won. In our opinion, in defining intellectual capital / its individual components / appropriate use concepts that define the essence of a wider / content / individual components of intellectual capital. Refine / exhaustively / definition of the content of individual constituents may not lead to an exact representation of nature. (<http://www.i-capitaladvisors.com/wp-content/uploads/2009/06/ic-org-chart-tang-andintang2.jpg>). Other authors (Thomas Steward, Leif Edvinsson, David Skyrme, 2007) in the literature indicated the four component models of intellectual capital. The fourth component of the business model. (http://www.emeraldinsight.com/content_images/fig/2500050401001.png). Business models are recently the research objectives of several authors. The output of the activities of intellectual capital and lead to change in the financial and operational performance of business (Huang, Hsueh, 2007). Completed research intellectual capital are directed to the area of the environment, corruption, innovation (Nightingale, 2014) (http://www.emeraldinsight.com/content_images/fig/2500050401001.png).

Opinions of the author is to organize the internal structure of the components of intellectual capital partly vary. The author's approach to the content of the components could be other document views. For example Huang Chung-Fach and Sung Hsueh-Lin (Huang, Hsueh, 2007) see human capital as the sum of workers' abilities, knowledge sharing

staff and staff training. Compared with other authors lacking area of governance and ethical behavior of employees. Structural components of capital defined as a process, organizational structure and information system. Do not stress, unlike other intellectual property, intangible assets and innovation. Relational, market and social capital construed as customer care and how relationships and cooperation with partners. Not emphasize brand strategy and reputation, unlike other authors.

Thomas O. Davenport²⁶ perceiving the nature of intellectual capital, especially as ownership of individual entities with the fixed natural phenomena / abilities / have rights, or handle. It claims that it is "high time to change the metaphor of human capital and not to treat people as human capital, but for owners and investors human capital." The term investor evokes in us to emphasize the intention of the author to point out not only the existence of property rights, but also the possibility of existing property / potential / capitalize. The author also highlights the existence of a structure of intellectual capital, which describes, interprets, or characterized

in terms of ownership of the body of waste management options with such ownership. For the main components of intellectual capital, which are in mutual interaction also considers the human, organizational and social capital. Human capital is seen as the set of all capacities. It consists of accumulated knowledge, competence, skills and experience of the employees and managers of the organization, whether individuals or work teams as a whole. It is not in fact immaterial whether this knowledge is the result of individual talent or individuals have received education and learning. "Treat the people as human capital, but for owners and investors human capital" Human capital can own organization, the employer. Its owners are people who themselves decide when, where and how to invest it and thus contribute to achieving the objectives pursued. People have a choice. The work is thus two-way exchange of values and not unilateral use of any wealth of its owner. The theory of human capital therefore be seen as the embodiment of workers set of capabilities that employers can "rent". Efficient organization based on knowledge can transform human capital to structural capital, the organization that brings the desired effect - improving performance, productivity, flexibility, ability to innovate. Human capital is considered as the only active capital in the organization. An example of human capital is the ability to innovate, creativity, know-how, previous experience, teamwork capacity, employee flexibility, work motivation and satisfaction, loyalty, formal training and education. In terms of personnel work is human capital issues relate primarily to attract, stabilization, development and remuneration of people in order to shape and retain qualified, dedicated and well-motivated people in the organization.

Organizational capital, which some authors refer to as structural capital is composed mainly of knowledge held by the company. It is a rooted / author has probably mean structure preservation and dissemination of knowledge that generate informal organizational groupings and then gradually partially formalized / or institutionalized knowledge that can be stored using information technology in corporate databases, organizational directives, procedures, internal manuals and other business documents. Figuratively expressed, organizational capital is what remains in the organization at the end of the day when the worker moves (while human capital is what leaves every day with home workers). As an example, registered patents, designs, licenses, computer software etc. This area of intellectual capital is subject to accounting and it is usually a good grasp of it. Author of the above reported examples, documented / explained / the essence of organizational capital. However, it resonates from being read, that only a portion of intangible assets in the company clearly recorded. This knowledge we have come in our own analysis that we conducted in the past on business data. In terms of the financial structure of intangible assets (Cenigová, 2012) we find intellectual property as a component of intellectual capital in the records of the entry price of intangible assets. Negligible information, leading to more realistic valuation of registered intellectual capital include depreciation and provisions, reserves ... that corrects the award ingredients intellectual kapitálu²⁷ (depreciation of the components of intangible assets should reflect the wear process during the entire period of its use, in the light of the precautionary principle should reflect the reasonable assumption that there was impairment of assets, where the situation which gives rise to a reduction in the estimate of future economic benefits from the asset; rezerva²⁹ represents in terms of prudently cover possible risks and losses, always for a particular purpose. The provision represents the value of contingent liabilities after taking into account anticipated risks and losses). The intellectual capital of the company, we must also look at the ingredients of non-business. Within the meaning of the accounts we have in mind in particular the 'producer'. Transfer of property rights to intellectual property to give rise to authorized persons who have authority within range of intellectual property disposed of. Such entities may be active in relation to the company. Such fact shows the financial records of the company. Few, however, when we can identify them in suspense share awards. Source of information on intellectual property company are also various internal and external analyzes, statistics and databases that entity carries out although not arise from statutory record-keeping obligations. Can go and request others, especially foreign entities with respect to their majority equity relationship. These subjects require regular information on the structure of their registration, which is considerably different.

It is obvious that the structure of the accounts is sufficient space for the registration of the components of intellectual capital that the enterprise uses in business. Why then, in the records of companies we do not find quite a fair amount display of the components of intellectual capital, despite the fact that according to experts, their value is negligible share of the company's value! We can therefore for state awards and registration of intellectual capital to state that evidence of the components of intellectual capital is not always a picture of the fact that there is a problem the components of intellectual capital to appreciate and put into records (the risk of subjectivity evaluation of the components of intellectual capital is needed to objectify market, which is not in many cases, the companies do not pay individual components of intellectual capital, their valuation and updating awards enough attention. Similar experiences have sketchy registered in opinions of other authors. The social capital (social capital, capital relationships) organizations represent the knowledge obtained through networks of relationships in inside the company and its surroundings. The social capital of the company as such. relationships with customers, suppliers, government institutions, business associations, public and so on. The result of effective use of the components of intellectual capital

is the image of the company, its reputation, customer satisfaction and loyalty, ability negotiating with financial institutions, and other environmental activities, the value of which is on file with the company only weakly identifiable.

Another group of authors perceived intellectual capital as the amount by which the company's market value is higher than its tangible (physical and financial) assets. Measurement of actual value and total power of intellectual capital is often an important part of company management and optimization of stock prices using leverage intellectual property.

Thomas A. Stewart sees the essence of intellectual capital value creation especially in the enterprise 32. Tangible assets to lose its importance as a decisive factor in successful business and more valuable attributes of business have become so-called intangible assets. intellectual capital. This does not mean that the formation of the output is not important tangible assets or physical work, but it means that priorities have changed and prefer receiving knowledge. "Because knowledge has become the most important factor of value creation, the management of intellectual capital has become the most important task management."

Unlike conventional assets that can be widely recognized in the accounts, for intangible assets, only a small portion visible in the form of registered industrial property rights, subject to accounting, the rest in the form of knowledge is not recorded. It is a value rooted in people's thoughts, in processes, in the imagination of customers and stakeholders. Other authors extend understanding of the nature / content / intellectual capital and complement existing knowledge of applied experience, relationships and capabilities to enable it to carry out market competitive advantage. Essential content of the intellectual capital and perceptions of knowledge as one of the potential instruments of generating revenue (Sveiby, 2007).

According Janovčík, 33 but also the opinion of other authors, we can see the essence of intellectual capital as one of the most important instruments for generating inventions and innovations. This concerns the use of intellectual capital, which is aimed at improving products, processes, technologies, but also on improving their own knowledge, skills and so on. Intellectual capital, in terms of successful innovation represents the potential to find and exploit new knowledge. This potential is only the first step in a long process in which a new idea comes into production or on the market in the form of a successful or unsuccessful product, service, process, process, technical solutions ... Not all new knowledge will develop into the implementation phase not all become innovations, but certainly a product of intellectual capital. The share of innovative enterprises EU in the period 2010-2012 fell below 50%. Organizational and marketing innovations slightly outweigh product and process innovation. Just under half (48.9%) of companies reported innovation activities. The share of innovative enterprises in the EU dropped (in 2010-2012 compared to the period 2006 to 2008 (from 51.5%) compared with 2008-2010 (52.8%). Innovative activities 2010-2012 refer to product innovation (23.7%), process innovation (21.4%), organizational innovation (27.5%) and marketing innovation (24.3%). (SLCP research study. Ing. Michal Janovčík, PhD., et al. SLCP, 2010.) hat are a source of growth performance and competitiveness of domestic enterprises.

3. Dimensional perception essence of intellectual property

The essence (the definition of the concepts) intellectual property swells many authors. It emphasizes the need to address its legislation, improve governance, valuation, assessing and protecting property rights to these intangible assets. Other authors emphasize the focus on the knowledge economy, the knowledge society, the knowledge enterprise, the knowledge workers as part of the necessary process of globalization. Intellectual property and its nature is also examined in law, sociology, ethical conduct, socially responsible business, statistics and economic. Often we can meet with the opinion that intellectual property issues are the philosophical plane. Probably this is due to lack of progress in economic research, particularly value instruments. In the field of legal science is exploring the intellectual property position in the accredited disciplines. Research is focused on the definition and legislative provision of legal acts in this area. It emphasizes in particular the implementation of adaptation processes, methods and forms of protection of individual components of intellectual property. In the field of economic sciences, the examination of intellectual property not yet in a position disciplines. In practical life, however, we have long witnessed the existence of economic phenomena and their examination. Thus, economic research intellectual property already exists. It is aimed at defining content, in practice, it has long been used, the terms and the examination of ongoing processes in this field in terms of both material and value. Emphasizes in particular the Value and organizational level implementation processes, methods and forms of protection and use of the products of intellectual property. Existing knowledge in this area lead us to the definition of cardinal areas of examining intellectual property: the terms, ownership rights to intangible products, economics of intellectual property, intellectual property management, ethics, technology transfer, innovation and others.

Intellectual property related and similar terms are often in practical use are considered synonymous. In practice we are witnessing improper use of the concepts in terms of their contents. The literature is not found full compliance in the author's views on the concept of intellectual property. Also, there is no official definition of the notion of intellectual property worded authority. In our view, the definition of the mentioned intellectual property rights were not sufficiently comprehensive. In the opinion of the jurists we find efforts equated the concept of intellectual property with an existing legislation. This, however, in our view adjusts the current fair condition and regarding the process of implementation of the legislation lags behind reality part. In the auditor's opinion, it resonates with the precautionary principle. Differences in the value of intellectual property and are significant and therefore prevent registering products of intellectual property. Valuation of intellectual property not regarded as sufficiently reliable. Market operations with intellectual property and trade secrets are part of Paria and the operations with the highest degree of confidentiality. Publication would damage the commercial availability of these products. View Accountants intellectual property essentially, through precise respect of the accounting law and accounting. However, it is talking mainly about similar rights and software, but by far not a comprehensive understanding of intellectual property, but only the legislative Determination of the registration

view. Patent agents prefer in their perception of intellectual property only products capable of unanimous legal protection. Managers focus on performance, risk and increasing business value and these factors also prefer the perception of the nature of intellectual property. This view of intellectual property is understood as an economic one. It includes minimizing the cost per unit of consumer satisfaction and maximize the positive perception of affective outcomes. Consumers perceive intellectual property as a tool for improvement especially meet their needs to the drive for money. The producer, or writer in their perception of intellectual property accentuate personality attitudes. They feel parents intangible product, they want to stand next to him throughout his life, share their successes and failures, partly to intervene in his life and benefit from this experience in creating additional, more sophisticated siblings. The perception of the nature of intellectual property as a temporary or permanent ownership and capital. The view also perceived as an economic one. To maximize its value is similar to that of the manager. The difference in the perception of the nature of intellectual property see also taking into consideration the time horizon and the use of the generated resources for the improvement of their property, or to meet their needs. This perception of intellectual property is affected by many macroeconomic and microeconomic factors. This makes it possible to define priorities in views about the nature of intellectual property to other (more) entities (eg competitor, conservationist, meteorology) whose perception of intellectual property is not the same, because it is influenced by the status of the entity, philosophy operators, national practices. These facts, however, in our opinion, can not be regarded as the main cause of openness defining the nature of the content of intellectual property. Apparently, the official concluded on a uniform definition of the notion of intellectual property we still have to wait a couple of decades.

For intellectual property, some authors consider "the totality of ownership of copyright works, patents, inventions, trademarks and other intellectual property rights. Other authors also highlighting the need for protection of these rights as "specificity". footnote. Intellectual property is the author understood as a specific form of property rights, which, together with the law of obligations classified as property rights forming the "all intangible assets that are to be subject to private law available to their owners and have at least some potential asset value". The literature intellectual property is defined as a specific form of property rights that are associated with the need for protecting and application.

Leaders understand Microsoft's intellectual property as an important strategic asset of the company, which is significant for Microsoft, its customers and partners. Annually spend more than \$ 9 billion, Microsoft is among the world's best investors in innovation. Microsoft owns a portfolio of more than 35,000 issued patents. Windows and Microsoft Office are probably the two most successful software - intangible products - author's copyright works in history. Microsoft is the creator and owner of highly valued brands. Microsoft has entered into more than a thousand license agreements. Microsoft's innovation in their business. Thus, the understanding of top managers is a major strategic asset of the entity formed as a result of the research activity, a certain structure intangible products, for which it makes a successful copyright priemysl'no-legal and legal protection. Conducts a transaction with a portion of their rights by concluding license agreements. The perception of the nature of intellectual property Microsoft mainly associated with the implementation of innovations. Some lawyers consider intellectual property umbrella term for various forms of claims which are clamped to different ideas, thoughts or other intangible assets and rights. The wearer of such a title is generally entitled to exercise various exclusive rights in relation to the subject of intellectual property. The subject of intellectual property is the result of a creative or intellectual activity and it should be legally protected, like other forms of property, respectively. property.

From another perspective, however, we have the concept of "intellectual property" in particular linked to its creator, producer, and author and understand it mainly as immaterial product of his creative activity able to purposefully and systematically change the world, create new, useful items and values for themselves and the whole of society, without compulsory binding to its publication of legislation governing its nature, relationships or possible protection. Legislative regulation is not a condition for the existence of intellectual property, but only the instruments governing the concepts, processes, entities, relationships ... and not its existence. In our opinion, this is an "institute for proprietary rights, intellectual property and that it is necessary to associate particular its creator, producer, and author and understand it mainly as immaterial product of his creative activity which it itself effectively usable potential capable of purposefully and systematically change the world, create new useful objects or processes generating effects for all compulsory subjects without ties to the disclosure of intellectual property products, of legislation governing its nature, entities, relations, or possible protection. In our perception of the notion of intellectual property in the analysis of the concept we came to the conclusion that intellectual property can be understood, based on the regulations in force, as the creative potential of a natural person who does not author or inventor to disclose. If you do not publish, then it creates a space for the reproduction of an intangible product that enables its commercial advantage. It is talking about the economy of intellectual property. This broad view of the definition of the concepts we apply intellectual property in collecting information, processing and formulating conclusions of our previous and present research.

In view of the above-mentioned differences in the views of the author of the notion of intellectual property also we complement the respondents' opinions obtained through its own research. We carried out research on a selected sample of Slovak companies. The aim of the choice of undertakings was to reach particular companies whose activities imply an increased use of intellectual property products. The survey was actively involved 238 respondents who represented the views largely limited liability companies, limited liability companies and sole traders. 36% of surveyed enterprises had companions with foreign capital participation 51% and more. Nearly 80% of businesses were represented in the Bratislava region and takes 2-17 years with an average lifetime is 11 years. The average age of all surveyed companies is just over 14 years. Principal activity of enterprises surveyed are focused mostly on services and industrial production. Businesses up to 100 employees make up 79% with an average of 46 employees. The average number of employees of the group of enterprises surveyed is 36. Respondents were asked also to the concept of intellectual property. The answers to only 16% of respondents were absolutely certain our perception of the notion of intellectual property. Another 40% were not completely certain. The opinions of the authors and institutions, the essence of the

concept of intellectual property in the public domain. We detail all of our options, including a monograph reported. We must emphasize, however, that the opinions of the authors, not of respondents, and others have not been clearly clarified, nor any legislation does not provide a precise definition of the notion of intellectual property. From this perspective, we have not evaluated the answers of respondents negatively.

Respondents expressed views on intellectual property in relation to intangible assets. Survey respondents were processed and put them on the picture three. Nearly 56% of respondents did not perceive the diversity of the nature of intangible assets and intellectual property. The share of respondents who perceive intellectual property and intangible assets synonymous high. In the context of the interviews it was rather that the respondent was not a clear concept of intangible assets. We asked respondents therefore an open question to give their definition of the content of the two terms. To assess the accuracy of respondents' views of the concept of intellectual property, we have created six temperamentally similar categories into which we are opinions of the respondents were categorized.

We found that only 28% of respondents were located in the inferior half of us establish a categorization of quality answers. Weighted average success response rate was 29%. If we are not taken into account in the calculation of the respondents who have to formulate a definition or attempted, the success rate was reduced just above 23%. Positive, however, we can accept the fact that the understanding of the notion of intellectual property more respondents approached its essence, which is not well regulated. Unregarded differences between intangible assets and intellectual property Respondents were mainly attributed to a lack of understanding of the notion of intangible assets. When examining the content and use of the term intellectual property and we came across a group of authors who argue that intellectual property does not exist.

Various preferential nature of intellectual property rights is reflected in the different perceptions on the concept of intellectual property in various subjects. In theory, we can define more approaches. In the literature, object and rule prevails. In terms of the object (object) intellectual property represent its individual components, or products which are mainly discoveries, ideas, procedures, projects, research, works of authorship, inventions, suggestions for improvement, patents, trademarks, marks, utility models, designs, trade secrets and other intangible products that are the result of creative activity in the broadest understanding that intellectual property. In terms of legislative regulation of the rights of intellectual property represents a set of such intellectual property, as specified by the creator as a subjective entitlement. In a practical perception of intellectual property rights is also evident economic point of view. Recently, we feel it necessary to emphasize the ethical perspective and macroeconomic context. These moments, however, appear in the literature so far only indirectly (independently. Sketchy), without links to define the content of intellectual property. However, we are convinced that with him (his product) related. The consistent perception of the broader context allows us to perceive and define the nature of intellectual property in terms of its use, conservation, historical, or other definitions. Subjectivism in the perception of the notion of intellectual property is bound to the presenting organizations.

4. Transfer of technology

Transfer of science and research is realized through the innovation system, which predetermines the way of development, implementation, implementation and monitoring of innovation. National innovation system is the sum of entities and institutions whose activities are focused on the promotion and implementation of innovative actions. The basic elements of the national innovation system includes government agencies, businesses, educational and research institutions and financial institutions. Different countries developed different models of organization of the national innovation system. They have in common that the state can support the national innovation system in many ways - direct provision of public financial resources; tax relief; provision (concessional) loans; creation of venture capital; support (private, mixed) venture capital fund. The enterprise should implement a corporate innovation system. The source of business innovation are inherent, but also external R & D results. Such a system creates space for commercialization of research results. Practical implementation of the commercialization of scientific and research workplaces in the undertaking ties. One of the main causes of poor outcomes commercialization of R & D sector is the weak link research to the business sector. Few firms formed products with higher added value. Limited involvement in the working of Slovak providers of knowledge into innovative solutions businesses. It is necessary to improve the focus of research and development for specific market needs (corporate). By Chad successful commercialization brings an enterprise of cost and time savings. In the last step, in order to realize a successful, efficient innovation that will make a significant contribution to the growth of performance and competitiveness of the company. Innovation activities of enterprises (economies) in terms of world comparisons OECD statistics monitors the position of the EU and the Slovak Republic. Innovation performance of enterprises in the United States, Japan and South Korea's innovation performance above the EU / fourth position / the Slovak Republic / sixth position at the Australia /. Compared with last year's results, South Korea joined the USA and took up position at the club of global innovators.

5. Conclusion

In this article, we briefly present part of the results of our research on the perception and management of intellectual property in enterprises. Our research has shown that the concept of intellectual property is not spelled out. There are various, largely subjective views of the authors and respondents to the substance of intellectual property. We hit the ignorance of respondents, followed, in practice, the use of incorrect terms, but also the realization of wrong decisions. Successful innovation in business management needs in the field of science which includes the construction of scientific and research base and organize the transfer of knowledge. Therefore, we deal with our contribution in the transfer of technology. It is necessary to define innovation objectives, identify innovative strategies and innovation

policies. It is necessary to develop innovative companies own staff involvement. Successful innovative enterprises shall supply the space for their own development activities. It is necessary to create conditions for long-term interest to implement innovative strategies. We recommend using the external transfer of existing knowledge to streamline innovation activities of enterprises. Existing research innovation activities diagnose the position of the Slovak Republic in the European area, as average with a tendency to decline in the future. Therefore, we recommend to increase support for innovation activities of Slovak companies and state groupings.

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Economic impact of the energy transition

Jana Naščáková, Lucia Bednárová, Monika Tomčíková

Abstract

The paper describes the importance of the energy transition and energy democracy at the local level. An understanding of the mechanisms that link the energy transition to the stimulation of the economy on the ground is indispensable in terms of more efficient targeting of local energy transition policies. Objective evidence of economic results is required, as is a better understanding of economic analysis methods, in order to equip local and regional authorities with the tools required to demonstrate the economic benefits for all the key players. As with any complex, new and diffuse process, this field of research is still not fully understood. This paper provides suggestions on potential areas for further research in a range of fields which should be further explored and examined in collaboration with local authorities and voluntary partners.

Keywords: energy democracy, energy transition, local level, renewable energy sources, green growth, economic impact
JEL Code: P28, 013, 044

1. Introduction

Energy is embedded in every action we take and in all sectors of the local economy. We can reduce our territories' energy and carbon footprint by fostering local energy and goods production and consumption; short-circuit food-supply systems, energy efficiency renovation of buildings, improving public transport, keeping cities more compact. Sustainable urban development is often associated with a range of terms in relation to the economy, such as low-carbon economy, circular economy, green growth, attractiveness, etc.

Green growth is defined by the OECD as the stimulation of economic growth and development through activities that ensure that the natural asset base continues to provide environmental resources and services.

The economic opportunities brought by the energy transition are garnering recognition among business circles and political decision-makers. A new vision is coming to the fore: instead of being viewed as a threat or a constraint for business, environmental issues are now seen as a source of high levels of business activity and performance, as the basis for a new economic model based on respect for the natural environment.

2. Renewables, energy transition and energy democracy

In order to build an adequate low-carbon 21st century energy system that scientists have said is necessary to stave off the worst impacts of climate change, a new report argues that the world must look beyond large-scale, centralized renewable projects - such as industrial solar and wind farms - and take up efforts to build more democratically - controlled and decentralized power grids.

Contained as a chapter in the World Watch Institute's State of the World 2014: Governing for Sustainability, the research compiled by professor Sean Sweeney, who co-directs of the Global Labor Institute at Cornell University, says the world's energy systems must be "reclaimed to serve public interests, rather than focus on maximizing sales and profits" for the large corporations who now benefit from the burning of fossil fuels and the centralized grids that distribute most of the world's electricity.

"A timely and equitable energy transition can occur only with greater energy democracy, which requires that workers, communities, and the public at large have a real voice in decision making, and that the anarchy of liberalized energy markets is replaced with a comprehensive and planned approach," writes Sweeney (2014).

According to a 2010 report by the Center for Social Inclusion, true "energy democracy" is exemplified by renewable energy projects that are "small-scale, locally owned or controlled" and "structured to allow local investment, sweat equity, and a transparent process for setting fair market prices."

In order to achieve energy democracy, Sweeney says, three key ingredients are needed:

Resisting the dominant energy agenda

As of 2012, fossil fuel producing companies and utilities represented 19 of the world's 50 leading corporations. Their revenue and their critical role in the world economy lend them substantial political influence and staying power. Resisting the agenda of these companies and their political allies - through informed policy changes and opposition to projects that present serious risks to workers, communities, and the environment - is an indispensable part of a democratic approach. But this does not mean uncritically embracing the agenda of large renewable energy companies.

Reclaiming the energy system for the public benefit

Privatization has led almost invariably to worsening working conditions, falling quality of service, and corporate oligarchies. But energy systems can be reclaimed to serve public interests, rather than focus on maximizing sales and profits. This method would return public control to parts of the energy sector that have been privatized and to public energy entities that are run like private companies, while reasserting the right to develop socially owned energy systems.

Restructuring the energy sector

Compared to the current centralized system, decentralized generation is likely to be more conducive to local control, opening up off-grid and mini-grid potential even for remote areas struggling with poverty. Renewable energy is poised to grow spectacularly in many countries, but the energy transition that the world desperately needs will happen only if changes in the energy system are carefully planned and coordinated nationally or regionally.

"So far the kind of global political framework that is needed to drive a truly green transition has failed to emerge," writes Sweeney (2014). Though technically possible, he says the restructuring our energy system is being resisted by powerful forces.

Although global society has largely ignored them, for years there have been alternatives to the dominant worldview that the natural world is a platform for living situated in a warehouse of resources that are ours for the taking. Ecological economists and others repeatedly have made the case for operating within Earth's system limits. Other eloquent voices have urged consideration of perspectives on the human place in the world that would enable and support this mode of operation.

This worldview must go from being part of the marginal debate, to the centerpiece of the story around climate and energy transformation. Democratic, decentralized power systems must go from being "technically possible," to "politically irresistible."

3. Energy transition at local level

Citizens can become empowered the energy transition with relevant information. There must be awareness in the minds of consumers about energy, and how energy enters their environment and how it operates in their environment. When they are aware, they can choose to take action.

The energy awareness levels are low and that the information is difficult to understand. If people don't have information, they can do nothing really. They are slaves to the energy system because they have no control, writes Donnelly (2015), Director at the European Commission's Directorate – General for Energy.

The first issue is giving people information, and this information should be easily accessible and real-time information. People need to be empowered to understand that they can control their expenditure levels, and that they can choose to take action. Empowering information could include access to different tariffs, to simple technologies like a thermostat. There are levels of empowerment, which can go all the way up to becoming active in the demand-response space, either themselves or through aggregators.

The next issue is participation. The most obvious and also most established form of participation today is through local generation. This could be PV panels on the roof or it could be energy cooperatives. The issue of participation – this could be a job for local committees, local government, etc. to start the participation, to get people involved. That is engaging people in a very positive way.

Technology is also driving the energy transition. We have new technologies coming on stream, and these new technologies are of two different types. Firstly, big technologies like wind turbines and offshore wind farms. And then small technologies – like the PV panel. The small scale new technologies are driving the consumer side of the energy transition because it's facilitating their participation in a way that never would have been possible before. So it's opening up new possibilities.

This is leading to the fourth issue – to self-consumption or to the "prosumer". This is where people are saying 'maybe I could produce my own electricity and interact with the grid in a way where I use what I need and I sell when I have excess and we are symbiotic.' And that's also a growing trend from almost nowhere.

It's a collective job within the system to respond to the changing realities. For example, utilities won't change their business model unless they have to. But they do have to because of the Energy Efficiency Directive. Policy issues and

utilities have to respond. Then there are other changes – like technology. That's opening up possibilities that perhaps we didn't have before. And slowly but surely, there are growing numbers of consumers, who are also shaping the energy transition. – Donnelly (2015)

4. Energy democracy at local level

Energy democracy is a political, economic, social and cultural concept that merges technological energy transition with a strengthening of democracy and public participation. The concept is connected with an ongoing decentralization of energy systems with energy efficiency and renewable energy being used also for a strengthened local energy ownership. With new green technologies available, such a transition is possible involving new actors: prosumers, renewable energy co-operatives and municipal, community-owned power stations which replace centralized, power corporations.

There are various definitions for Energy Democracy. One broad definition has been agreed upon by the joint climate camps in Germany in 2012. Energy Democracy means ensuring that everyone has access to enough energy. However, the energy must be produced in a way that it neither harms nor endangers the environmental or people. Concretely, this means leaving fossil fuels in the ground, socializing and democratizing the means of production and changing our attitude towards energy consumption.

Energy democracy means that community residents are innovators, planners, and decision-makers on how to use and create energy that is local and renewable. By making our energy solutions more democratic, we can make places environmentally healthier, reduce mounting energy costs so that families can take better care of their needs, and help stem the tide of climate change.

In 2014, this concept was promoted by the city of Boulogne-Billancourt in France. For its participation in the Bloomberg mayors challenge, the city presented an innovative vision of Energy democracy based on the reduction of the use of fossil fuels and a system of incentives to encourage citizens in reducing their energy consumption.

A study on Energy Democracy from 2014 concluded that there is a "universe of a thousand alternatives" across Western Europe that still emerges and expands. However the reshaping of the EU energy- and climate policy scheduled for the end of 2015 threatens to slow down or even stop this development. So far, energy-democracy has been a successful concept of grass roots movements to combine a protest against fossil fuels with a positive alternative agenda.

We all have a vote in the political democracy but not of all of us chose to use it. It's the same with energy. We all are energy users. For those who want to use their vote, they should be allowed and capable and able to do so. We should have structures and mechanisms that allow them to express their position, for example, like the Citizens' Energy Forum. But citizens need themselves to be proactive. On the other side, utilities as well as policy makers have to be receptive and therefore we need to have structured interaction with consumers. This can happen through stakeholder groups, consumer groups, or it could be local development groups. These dialogues have to be an intrinsic part of the way we do business.

Companies active in the energy market will be successful if they can deliver services to their customers. Understanding the consumer needs and demands in order to be able to deliver what the consumer wants is one big area. The second area is – not just in the energy sector – the impact of ICT. ICT and energy are very close – in terms of infrastructure and system. The ICT industry is very clued in to services. It's not a surprise therefore that you see ICT companies becoming active in the energy space.

5. Opportunities in various sectors

The citizens and local stakeholders can be encouraged to consume locally and be more resource efficient via local renewables using, eco-innovation, improvement of energy efficiency in local buildings, sustainable mobility and recycling.

Eco-innovation

With regard to environmental and economic challenges, eco-innovation has the potential to become a cornerstone of sustainable urban development. New technological solutions to promote the competitiveness of businesses and local areas, driving growth based on efficiency and specific skills and knowledge. Environmental innovation is the creation of adaptation of goods and services, either through procedural modifications, or practices – in the latter case, it is known as systemic innovation. The economic benefits are mainly related to greater efficiency in the use of energy and raw materials, and therefore lower production costs. Lower costs are reflected in prices, which improves buying power among consumers and the competitiveness of local businesses. Other less tangible impacts are related to the brand image of the region, which is often associated with attracting external investment, new partnerships, new customers and greater loyalty amongst existing customers.

Energy performance of buildings

The improvement of energy efficiency in buildings is a priority for urban planning policy with a view to reducing energy consumption and greenhouse gas emissions. Furthermore, improving energy efficiency is associated with good levels of cost-effectiveness. Ambitious actions to improve the energy performance of buildings provide opportunities in terms of direct and indirect employment, as the sector is labor-intensive and there are a large number of SMEs working in this area local installation companies and their suppliers. Public investment in the implementation of renovation projects has a leverage effect on private investment. Jobs directly linked to investments in energy efficiency can be classified according to the main tasks entail, as follows:

- the manufacture of equipment and material;
- the organization of the action plan in order to plan and monitor the distribution of equipment to consumers (including training needs);
- technical audits and expertise prior to the installation of equipment;
- installation of equipment in the consumer's premises (insulation, double glazing, heating systems etc.);
- use, management and maintenance of equipment once installed in the consumer's premises;
- jobs linked to financial bodies mobilized according to the financial tools developed to support the different measures

It is important to note that the majority of jobs are local (except the manufacture of equipment which remains marginal in terms of the jobs expected to be created).

In addition, the immediate impact observed of a reduction in energy consumption on the energy bill boosts the purchasing power of users and allows them to redirect their spending, leading to additional consumption in other sectors, which generates jobs.

Renewable energy

The main economic argument in favour of renewable energy is based on the fact that it mainly relates to local energy production. This means that there is greater self-governance of the territory (or even an energy independence) and therefore protection against significant price fluctuations in external markets, which encourages macro-economic stability, an important source of comparative advantages. In addition, this entails redirecting external financial flows to the local economy, safeguarding value within the territory, and creating local jobs instead of supporting jobs linked to energy exporting. More so, over time, the technological progress and economies of scale of producers enable renewable energy costs to be reduced which will then become more competitive in comparison to conventional sources of energy.

Sustainable mobility

The energy efficiency of urban transport and the promotion of green methods of transport are at the heart of the sustainable mobility policy which is a combination of physical planning and the development of intermodality (as opposed to the use of individual cars), along with support for research into alternative fuels and electric cars. This issue is all the more important as the volumes involved in public transport will inevitably increase alongside expanding urbanization. Investing in extending and improving public transport networks is one of the best solutions to reduce the use of cars in a city. This provides the local economy with a direct incentive as the jobs created will be local and non-outsourcable and will replace jobs in other locations as automobile sector products are mainly imported.

Recycling

This is the result of political and economic changes which are the source of future opportunities for the industry:

- ambitious public policies aiming at increasing the percentage of waste recycled: for example, European regulations on waste recovery state a rate of 70% (by weight) for recycling and recovery of construction and demolition waste by 2020;
 - new environmental regulations that have an impact on the costs of landfilling and disposal in favour of the competitiveness of recycling:
- lower prices for materials from recycling than for those of raw and non-renewable materials, whose rarity determines a continuous rise in prices;
 - the development of technologies specific to this industry which enable materials to be obtained that are easier to recover, processes to be optimized and operating costs to be lowered;
 - improved secure access to rare raw materials and hence less exposure to risk;
 - higher labor intensiveness of alternative means of processing than of traditional means (landfill, incineration)

Nevertheless it is important to ensure that the increase in recycled volumes reflects an increase in recovered waste, i.e. that it goes hand in hand with a reduction in incineration or landfill. Recycling does not make sense if it is caused by a growing accumulation of waste. Besides, economic opportunities can be found equally in other sectors than that of the recycling industry. In view of rising prices for raw materials, improving preventative practices and waste management then becomes an instrument of competitiveness for all companies involved in this process.

Industrial ecology

Waste recovery is a key element of industrial ecology, a basic concept in the circular economy. This is a model based on high productivity of resources, efficiency of logistics and transformation of waste into raw materials or energy sources in contrast to a linear economy (extraction > transformation > consumption > waste). Implementation of this model is effectively done at a local level, hence the concept of industrial and territorial ecology. It is a major contribution to sustainable development of an area.

For companies involved in the industrial ecology process, potential economic advantages can be found particularly in the increase of comparative advantages, the sources of which can be summarized as follows:

- the utilization of co-products as raw materials avoid or reduces production costs – a factor all the more important since the prices of resources and disposal of waste are constantly rising;
- additional earnings from the sale of co-products or recyclable materials;
- sharing infrastructure and public services, providers, equipment, vehicles which creates synergies;
- enhancement of companies' image when communicating their ecological commitment.

Furthermore, if companies function as an integrated system, this allows them to benefit from advantages such as proximity, formal and informal exchange of information and knowledge, technology transfer and lower interaction costs. For communities, a commitment to industrial ecology boosts the attractiveness of the area, injects new life into the business climate, protects existing jobs and attracts new businesses interested in the whole array of flows available to create a place where production factors are concentrated, including specialized trades.

6. Conclusion

To have a global picture of the situation, local authorities should be interested in what amount of money is being annually spent on energy, how much is wasted, how much is kept on the territory and how much goes elsewhere. They should also monitor the investments in energy saving measures and their impact on local economy and job creation. Understanding the relationship between the energy transitions and stimulating a territory's economy is essential to changing the perception of the money spent from "inevitable expenses" to an "opportunity" in terms of resources.

The economic impact of the energy transition at local level needs to be highlighted so that more initiatives are implemented by local authorities and stakeholders.

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Failure Mode and Effect Analysis method in Integrated Risk Management

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Abstract

Adoption and subsequent certification of international standards shows that realization of proactive strategy improves organizational and entire business efficiency of the enterprise. Authors introduce concept of integrated risk management, its influence and assessment according to current and newly prepared ISO quality standards, environment standards and security standards as a result of their scientific activities. That includes ISO 31000 Risk management and ISO 16949 Systems of quality management for application of ISO 9001 in automotive enterprises and spare parts producing enterprises. Results of this risk assessments, as they are reflected in production of existing products, was unable to express in several instances. Authors of this contribution set as a main goal to identify the most important risks in integrated management within the project of young researchers Nr. I-15-110-00. These risks resulted from analyzed processes of chosen enterprise. The method used in this research was Failure Mode and Effect Analysis.

Keywords: Integrated Risk Management, Failure Mode and Effect Analysis, system, the register of aspects, influences and risks, automotive industry.

JEL Code: M11, 032, Q56

1. Introduction

We can define the enterprise strength as ability (financial and managerial) of long term existence on a competitive market. The company must focus constantly on the critical areas as production cost management and reduction of losses from enterprise activities. The aim of risk management is to provide complex and systematic attitude to decisions related to different types of risks in the enterprise. Clearly defined process ensures responsibility in decision-making related to risk management and reduction of possibility, that some risks would not be assessed in appropriate way. The process of risk management in large enterprise complex includes the vast amount of particular decisions and compromises applied on several levels within the whole enterprise. Thus is appropriate to create a consistent and responsible approach on all levels of decision-making when related to risks on the basis of HLS structures (Alises et al., 2014).

Knowledge of local market characteristics influences particular decisions quite often in risk management. The enterprise processes must be flexible enough and adapting to these market determinants. The enterprises try to create a specialized function of risk management with use of common set of risk indicators in the whole enterprise. Common set of risk management activities and complex risk reporting creates critical assets – more systematic identification of risk concentration, complex reporting and set of risks aggregation on each side, which covers a range of enterprise activities, where these sets of risks can arise.

2. Importance of integrated risk management

Risk management is a preventive approach to eliminate or to reduce the possible damage with the possibility of identifying, analyzing and responding to potential risks. The role of risk management is to understand the risks, to which the enterprise is exposed to. This role may vary from time, when the analysis is carried out, as follows (Kaebernick, Kara, Sun, 2003):

- If the risk assessment was carried out before concretization and identification of risk - the aim is to prevent the occurrence of this event.
- If the risk assessment was carried out after concretization and identification of risk – the aim is to provide development and continuity of activities of the enterprise.

The advantage of risk management implementation in an enterprise is to ensure economic effectiveness. The management of the enterprise has a duty to signal risks which the enterprise faces. And to reach this requirement the management has to control these risks optimally to prevent the undesirable consequences. It is necessary to create organisational structures suitable for enterprise policy and strategies to ensure the effectiveness of risk management. The enterprise must monitor risks or the categories of risks effectively and in integrated manner (Pilar de la Cruz, 2014).

Integrated approach to risk management is not a linear process and can have an impact on a different risks and checking facilities. These facilities were set as effective by risk reduction and maintenance within acceptable limits and

these may prove beneficial by control of other risks. Risk management is used as in theory so in practice, what means on the one hand there is an increase in number of professionals in this field and on the other hand there is an increase of interest from a side of managers to design effective systems. These systems are designed and implemented to fulfil the objectives (Dumitrascu, Buzatu, Dumitrascu, 2014).

Capture of risk is determining for organization development and growth of performance- as in general, so in particular activities and so in the whole organization. (Bertelli, Loureiro, 2015).

With reference to risk management, COSO (The Committee of Sponsoring Organizations of the Treadway Commission) has introduced the first methodological framework for performance of internal control, uniform policies, rules, procedures and regulations, which were used by different organisations to ensure control, planning and fulfilment of the objectives.

Risk management in an organisation was established as a concept of internal controls, it does not replace these internal controls, because they are part of risk management. Between risk management and internal control was kept strong connection- by corporate conceptions and features (Sahno, Shevtshenko, Karaulova, 2015).

3. Defect and consequence analysis as a basis for identification of environmental, safety and technical risk

In integrated risk management, the enterprise must be seen as a reference to branch of an industry, where the enterprise is active as its part and acts within enterprise policies. Based on the conception of integrated risk management- needs of enterprise development are interdependent. Processes of development are included into components, which are linked to assessment, monitoring and risk control. In integrated risk management is also correlation dependence with all kinds of risk managements for every functional structure of the enterprise. Integrated risk management deals with general categories of risk (personal, financial, environmental, etc.) and with risks connected to various activities and transactions or external risks, which can have an influence on the development of whole enterprise (risks associated with legislative changes). Realisation of integrated risk management concept is more than needed under these conditions. It is because risk management should follow all kinds of risks, which are present in the enterprise and which influence its functional structures (Chun-Yu, Amy H. I., He-Yau, 2015).

This integrated approach (as complex and coherent system) enables effective management of risks, which may influence achievement of objectives. It also contributes to activity improvement and growth performance of the company (Pope, Annandale, Saundersa, 2004).

This research was carried out in a particular facility of an automotive industry. The Life cycle of cable harnesses production divided into 9 phases for needs of integrated risk management:

1. Input and reception of material into production.
2. Transport of material in the warehouse.
3. Movement of products- forklift.
4. Manipulation in the warehouse.
5. Pre- production– cutting the cables.
6. Work- in- progress- contacting, welding, tinning and cutting cables.
7. Work- in- progress- cable stripping.
8. Final production– forming cable harnesses and repairs.
9. Electric control, packing.

The main role of the Failure Mode and Effect Analysis (FMEA) is to recognize all possibilities of failures in each phase of production as soon as possible, define their possible consequences, assess the risks and safely avoid them.

Table 1 shows the categories of criticality, where are set priorities of identified environmental- safety and technical risks.

Operation unit of automotive industry SK NACE code 29320		Register of environmental- safety and technical risks in cable harnesses production - FMEA												Page number 1/3 Revision: 0				
Process, thread	Aspect	Influence		Place	K1			K2			K3			K4			Σ Pd _i	Priorit
		Pe/Po	D/I		S ₁	Pt ₁	Pd ₁	S ₂	Pt ₂	Pd ₂	S ₃	Pt ₃	Pd ₃	S ₄	Pt ₄	Pd ₄		
Pre- production – cable cutting	Waste from cables	Pe	D	Pre- production CC	3	2	6	2	1	2	1	1	1	1	1	1	10	I.
	Damage on copper wires	Pe	D		3	1	3	1	1	1	2	2	4	2	1	2	10	I.
	Oxidation	Pe	D		2	1	2	1	1	1	2	1	2	2	2	4	9	II.
	Contact brush	Pe	D		1	1	1	2	1	2	1	1	1	1	1	1	5	II.
	Packages from foils and plastics	Pe	D		2	1	2	1	1	1	1	1	1	2	2	4	8	II.
Middle production Contacting, welding, tinning, contact cutting	Contact brush	Pe	D	Middle production CC	1	1	1	2	1	2	1	1	1	1	1	1	5	II.
	Packages from foils and plastics	Pe	D		3	1	3	1	1	1	2	2	4	2	2	4	12	I.
	Disconnection of the fuse clips from the enclosure	Pe	D		2	1	2	1	1	1	2	2	4	2	2	4	11	I.
	Mixed municipal waste	Pe	D		3	2	6	1	1	1	2	1	2	1	1	1	10	I.
	Fire	Pe	D		2	1	2	1	1	1	2	1	2	2	2	4	9	II.
	Tin waste	Pe	D		2	2	4	2	1	2	1	1	1	1	1	1	8	II.
	Waste from cables	Pe	D		3	2	6	2	1	2	1	1	1	1	1	1	10	I.
	The pin which blinds hole for mounting white or blue cable falls out	Pe	D		2	1	2	1	1	1	1	1	1	1	1	5	II.	
Middle production Cable stripping	Plastic waste	Pe	D		2	1	2	1	1	1	1	1	1	2	2	4	8	II.
Production of final products, Formation of cable harnesses, repairs	Metal packaging	Pe	D	Final production BMW	2	1	2	1	1	1	1	1	1	1	1	1	5	II.
	Chemicals	Pe	D		3	2	6	1	1	1	1	1	1	1	1	1	9	II.
	Waste from cables	Pe	D		3	1	3	2	1	2	2	1	2	1	1	1	8	II.
	Mixed municipal waste	Pe	D		3	1	3	1	1	1	2	1	2	1	1	1	7	II.
	Visual impairment	Pe	D		2	1	2	1	1	1	2	2	4	2	2	4	11	I.
	Ticket printing (output from additional output control)	Pe	D		3	1	3	1	1	1	2	2	4	2	2	4	12	I.

Source: Own processing.

Legend:**Aspect:** Enviromental- safety and technical risks**Influence – Pe/Po:** Permanent/Potential, **D/I:** Direct/Indirect**S –** Strenght of criterion (1= insignificant, 2= significant, 3= serious)**Pt-** points for the real state (1= state of little significance, 2= significant state, 3= critical state),**Pd:** product (Si*Pt_i)**Priority:** **T=** threat of accidents, **I=** important environmental influence (when Σ of products Pd is more than 10), **II=** other EA and EV (when Σ is less than 9)**K1-** kind of consequence**K2-** possibility of accident**K3-** fees and penalties**K4-** width of aspects consequence on the environment

Each from identified risks has assigned a certain priority according to FMEA method and according to identified values from register of environmental- safety and technical risks. From all identified risks were selected those, that have reached the highest value. These risks reached value higher than 10 points. The current number of possible risks was 97. FMEA is a tool in complex analysis and its results are included in a table. The final step in this analysis is the study of failure criticality, while the most serious cases of failures are selected.

Integrated risk management identifies all risks, which have an influence on running of processes and activities connected to organisational objectives. And this makes possible to review overall consequences and take action on the level of uncertainty and existing natural risk, which influences achievement of stated objectives (Yarmohammadian, Abadi, Tofighi, 2014).

4. Integrated risk management and its evaluation methodology in production of cable harnesses

Determining of components for risk assessment is the main step in integrated process of risk management. Its objectives are (Rybárová, Grisáková, 2010):

- To identify significant risks of prioritisation connected to objectives in the enterprise (FMEA method).
- To asset the capacity of inner managerial system for effective risk management.
- To identify significant risks, which are significantly uncontrollable and to process in a way to reduce level of exposure to these risks.

The risk classification depends on probability of occurrence and significance of consequences. And that means: risk impact is used as a tool of criteria for risk assessment. When it comes to compliance with performance standards, these criteria should include the purpose, where the risk was identified. By the risk rate calculation we have started with the basic formula and comprehensive integrated register of environmental- safety and technical influences and risks. Then we have multiplied these aspects of influences and risks by probability of risk impact, which were gained from the formula:

$$R = f(P, D) \quad (1)$$

$$R = \sum_i^n P_i \times \sum_j^m D_j \quad (2)$$

Where i, j are indexes related to possible ith threat and jth consequence.

$$R = P \times D^S \quad (3)$$

Where S expresses different types of consequences (based on their significance, $S \geq 1$). Combination of these parameters in practice does not have to mean only a mathematic operation of multiplication, since it is so called Cartesian product, it can result in ordered pairs of elements.

All figures have to be numbered. The headings should be placed under the images and aligned to the center. The source should be included under the heading and aligned to the center. Effective risk management includes risk identification on all levels, where is the threat of failure to reach the targets. Also with adoption of special measures to limit problems caused by these risks (Table 2).

Table 1 The determination of risk limits

Impact	Significance/Importance	Risk Limits
- No impact– 1	- Insignificant risk 0 to 10	- low 0 to 30
- Negligible impact– 2	- Acceptable risk 10 to 20	- medium 30 to 60
- Medium impact – 3	- Moderate risk 20 to 30	- high 60 and more
- High impact– 4	- Adverse risk 30 to 60	
- Very high impact – 5	- Unacceptable risk 60 and more	

Source: Own processing.

Risks can be identified and defined only in relation to objectives, which are influenced by their realisation. Environmental - safety and technical risks deriving from particular dangerous situations- analysed processes in automotive production are listed in table 3.

Table 3 Calculation of environmental- safety and technical risks

Place	Operation unit of automotive industry SK NACE code 29320	Aspect	Influence	Assessing the significance of the risk	S/N	Pe/Po	D/I	Need for improvement
Pre- production CC	Pre- production – cable cutting	Waste from cables	Landfilling	20	S	Pe	D	YES
		Damage on copper wires	Error rate of component	34	S	Pe	D	YES
		Oxidation	Air pollution	16	N	Pe	D	NO
		Contact brash	Landfilling	18	N	Pe	D	NO
		Packages from foils and plastics	Landfilling	18	N	Pe	D	NO
Middle production CC	Middle production Contacting, welding, tinning, contact cutting	Contact brash	Landfilling	19	N	Pe	D	NO
		Packages from foils and plastics	Landfilling	20	S	Pe	D	NO
		Disconnection of the fuse clips from the enclosure	Error rate of component	40	S	Pe	D	YES
		Mixed municipal waste	Landfilling	19	N	Pe	D	YES
		Fire	Accidental pollution in case of fire	10	N	Pe	D	YES
		Tin waste	Landfilling	12	N	Pe	D	NO
		Waste from cables	Landfilling	22	S	Pe	D	YES
		The pin which blinds hole for mounting white or blue cable falls out	Equipment damage	19	N	Pe	D	NO
Final production BMW	Production of final products, Formation of cable harnesses, reparations	Plastic waste	Landfilling	16	N	Pe	D	NO
		Metal packaging	Landfilling	19	S	Pe	D	NO
		Chemicals	Environmental pollution - hazardous substances	19	S	Pe	D	NO
		Waste from cables	Landfilling	18	N	Pe	D	NO
		Mixed municipal waste	Landfilling	15	N	Pe	D	NO
		Visual impairment	Occupational health damage	32	S	Pe	D	YES
		Ticket printing (output from additional appliance- output control)	Error rate of component	30	S	Pe	D	YES

Source: Own processing.

Legend:

S – Significant

N – Not significant

Pe/Po: Permanent/Potential

D/I: Direct/Indirect

The most of component defects are caused by human failure or by reduced reliability of the production equipment. This kind of controlled and directional system components demand costly maintenance, repairs and premature decommissioning because of unprofitability or because of low safety operation. Effective prevention to possible threats is fulfilment of legal regulations and standards ISO 9001, OHSAS 18001 or ISO 14001.

Integrated risk management provides unified action of internal control for processing more types of risks or a particular risk, which is located in several functional structures of the enterprise. A direct relationship must exist between components of the integrated risk management and objectives of the enterprise. It is important to define particular steps of integrated risk management. These steps are: identification, analysis and evaluation, risk management, communication, risk monitoring. All in each functional area of the enterprise to prevent formation of negative environmental impacts, work accidents, etc. We can assess risks in terms of technological failures, from aspect of protection and safety at work (injuries of employees), quality of product and environmental aspects.

The most risky environmental aspect, after identification as acceptable risk, is waste from cable harnesses although production tends to correct and minimize this waste according to ISO 14001 norms. The most risky consequences of production are technological aspects and related mishandling, which also threatens the work safety of employees. Unacceptable risk is classified with significance already from 30 points – according to internal guidelines in production of cable harnesses. Despite of this fact we define necessary measures for all potential identified failures and consequences of risk growth as a preventive approach to optimize the integrated management of risks.

Setting measures to prevent risks is a result of all previous steps. The aim of these measures is to eliminate risk by the source of its origin or limitation of risk operation to minimize a threat to the environment and human health. The most effective way of prevention is risk removal e.g. by change in technology and orientation to the best available change in workflow or increase of distance between worker and source of risk or implementation of different organisational measure. It is important to exclude such a condition, when a certain risk is eliminated in one place, but transferred to a different place inside of an enterprise, where it can cause more serious consequences (Vysočanská, Sklenár, Petrik, Kotus, 2009).

5. Conclusion

The use of method FMEA allows to express more exactly and also to study significant connections and relations of environmental, safety and technical aspects, influences and risks. All these aspects, influences and risks were listed according to significance in an integrated register. Process of integrated management was proved by a case study of environmental- safety and technical risks in supply enterprise in automotive industry by FMEA method. Designed methodology enables to identify, to prioritize (according to the significance) and to implement results in a framework of environmental- safety and technical management in the integrated management system. This system is based on international standards and principles of development sustainability.

The production process is one of tasks of management system. This task demands realisation of particular production activity in optimal, most efficient or most productive conditions. The management system exactly shall ensure that production process complies with its intended purpose without undesirable failures or risks. It is possible to suggest necessary measures after classification of individual operations. These measures lead to elimination of most risky potential failures in individual operations of analysed enterprise.

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Development of Social Innovations in SMEs: Case of Moravian-Silesian Region

Jarmila Šebestová, Šárka Čemerková, Zuzana Palová

Abstract

The main goal of this paper is to compare innovation activity of SMEs in relationship to regional development of Moravian-Silesian region. There were used primary research data in comparison with socioeconomic indicators between districts of the region. Many of the trends found were less than positive, although there were some new positive trends that could be identified as a source of sustainability in the area of the connection between the sector of small and medium sized enterprises and the local entrepreneurship environment, supporting innovations. Those innovations are socially important, because they cause positive effect of employment and net migration in districts, where innovation activity is the highest. We found the relationship between motivation to start up and socially oriented innovations in the region.

Keywords: Social innovations, small business, employment, Moravian-Silesian region

JEL Code: O35, L26, J21

1. Introduction

In the most European countries public budgets are cutting their budgets, so local governments responded by restrictions and lower level of support in many areas as education, social services, support in employment of young people. The need of social solutions in case of termination of traditional employees in regions after the economic crisis leads them to support social types of innovations. “*Social innovations are new solutions (products, services, models, markets, processes etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and better use of assets and resources. In other words, social innovations are both good for society and enhance society’s capacity to act.*” (Lauritzen, 2012). The main goal of this paper is compare inter-district disparities within Moravian-Silesian Region, when entrepreneurial motivation primarily effects social innovations and net migration between districts.

2. Disparities within districts and Innovation Activity

Literature indicates that the disparities across the districts are quantified based on development indicators. These are broadly classified as: income of its population; the infrastructure existing in the districts; health, education and employment levels of its population (Gupta, 2014). These indicators are mostly connected with entrepreneurial activity and their innovative spirit which have an influence on local society behaviour. Regional governments are not in an easy position. The competitiveness of regions largely depends on internal learning and innovation capacities in the examined region. In many case studies, firms between 10 to 49 employees are proactive in the process of on-going learning and innovative process. They are still under the pressure from the market to offer unique product or service to survive and to be competitive. They exist qualitative and quantitative barriers to support innovative climate within organization based on owner’s personality, financial sources and others competencies which could cause low innovative activity (Ćwik, 2007).

On the other hand those factors cause significant changes in the labour market. Transnational in the pre-crisis development it declined unemployment rate and subsequent very rapid deterioration in the labor market (Tvrdoň, Tuleja, Verner, 2012), so socially oriented innovations are needed. Unemployment has both cyclical and the structural character. In some regions, there is a long-term shortage of some professions, in others there is a surplus. Another aspect, that prevents the matching of supply and demand, is the lack of mobility and flexibility of the labour force. Also for this reason, economic growth still does not significantly contribute to the improvement of the labour market situation in the affected regions. In some regions, structural changes were much more difficult, especially due to existing economic structure of these regions. The impact of these structural changes has dissimilar intensity in different regions and the regions with a high concentration of heavy industry are the most affected. The process of structural changes also considerably affects the differences in unemployment rates by region NUTS III. Long-term unemployment, which is in the Czech Republic significantly higher than in other EU countries, poses for maintaining the current pace of economic growth, among other aspects, a big problem.

In the Czech economy structural changes, i.e. changes in the sector (branch) structure of the economy, are still ongoing, and the related changes in the professional and qualification structure of the labour force - during the transformation process labour force has been transferred from the primary and secondary sectors to the tertiary, where in the tertiary sector banking and insurance have recorded the steepest increase (Tvrdón, 2015).

3. Main trends in the Moravian-Silesian Region

The Moravian-Silesian Region, as the fourth largest regional economy according to a RIM Plus (2014) generated 10,2% of the national GDP, and reached 97% of the national average of GDP in PPS per the employed, the second highest value in the Czech Republic. Despite the modernisation of many companies, the innovation activities in the business sector are rather below-average. The Moravian-Silesian Region and Usti regions are traditionally considered problematic regions, in the past undergone fairly major structural changes, which took with them a higher unemployment rate and a higher proportion of long-term unemployment, compared with other Czech regions (Adámek, Čemerková et al., 2015).

The unemployment rate in the Moravian-Silesian region is persistently higher than the average. The reason is that the regional economy was based largely on coal mining, metallurgy and heavy engineering. Since the nineties the region has been affected by a structural crisis, which resulted in an increase in the number of job seekers than the national average. However, in the Moravian-Silesian Region the industry still represents a major source of employment. Until 2004, the unemployment rate increased. Labour market performance has significantly improved between 2005 and 2008, but then the significant cyclical impact, in the form of economic crisis, come, which dramatically worsened the situation on the labour market. Between 2010 and 2012, unlike other regions, the structural component of unemployment reduced, which could be a consequence of the economic policy in the form of active employment policy, or the impact of FDI inflows in these regions. This is, undoubtedly a positive phenomenon, however, has very fragile foundations and development in the labour market may fairly rapidly deteriorate, e.g. due to problems in the mining and steel industry. From the perspective of division into districts (see Figure 1) it is clear that all districts have evolved in the unemployment rate, which followed the developments at the regional level, respectively national level. Higher unemployment rates were achieved in Karviná and Bruntál district, where in recent years the highest unemployment rate of all the districts of the Moravian-Silesian Region has seen.

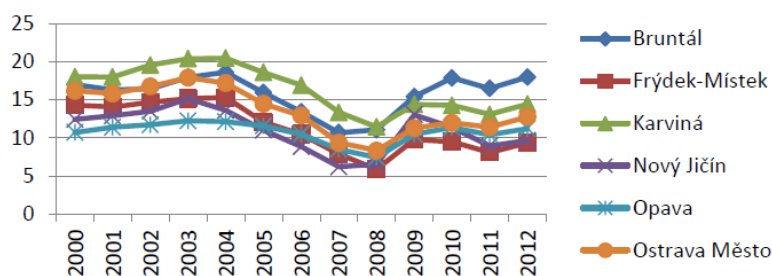


Figure 1. Regional registered unemployment rate, 2000-2012
Source: Czech Statistical Office; own calculations

Trend indicator of the number of applicants per job, except the first years of the reporting period, developed in all districts alike, i.e. there was a significant decrease in the years of high economic growth (2007 and 2008) and the subsequent deterioration, then a short-term improvement and repeated recession. Most job applicants per vacancy were in Karviná and Bruntál.

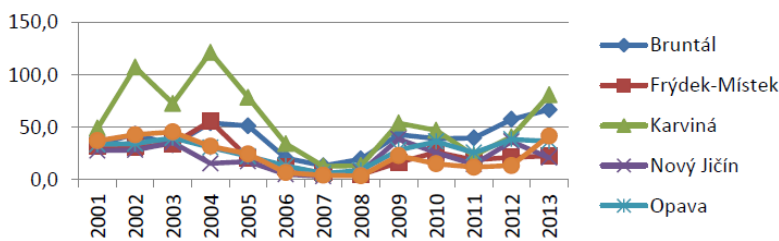


Figure 2. Number of applicants per vacancy (as of 31.12), 2001-2013
Source: Czech Statistical Office; own calculations

Indicator of trends in the number of newly registered businesses and those extinct may provide a partial answer to the unsatisfactory development of the labor market. From Figure 3 it is clear that the number of newly created entities since 2009 has been steadily declining, whereas the number of deaths of actors increasing. This brings tensions in the labor market, where the demand for labor does not produce adequate workforce. This factor with a combination of a poor qualification structure of the workforce illustrates the problems in the functioning of the labor market in the Moravian-Silesian Region.

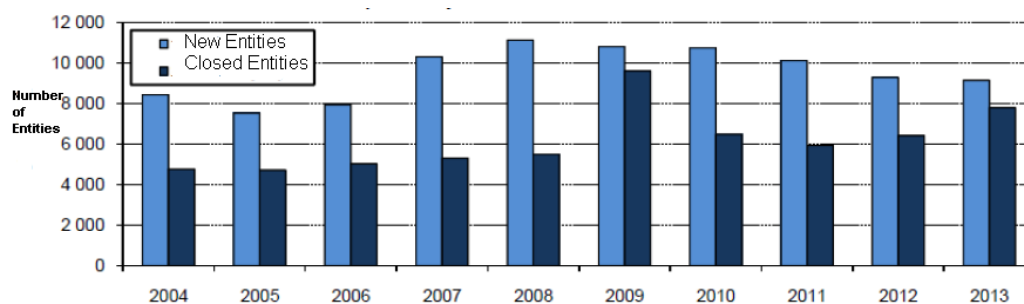


Figure 3. Establishment and termination of enterprises in MSK (as of 31.12), 2004-2013

Source: Czech Statistical Office

If we focus on districts within the Moravian-Silesian region, we could find significant differences in net migration. They can be divided into several levels. Firstly, the largest decrease in population recorded the district of Karvina (up to 3 000 of residents per year), followed by the district Ostrava-město (up to 2 000 Inhabitants per year). In contrast, Frydek-Místek was the only one during the period recorded a growth of population, which is related the attractive mountain environment and the arrival of a large investor. The main driver of population change has been the migration of the population out of region. While inhabitants of districts of Karvina, Bruntál and Ostrava-město were moving out of the district, the district Frydek-Místek and Nový Jičín were districts, where people have moved into the district. It should be noted that a significant factor in the development is a negative natural growth, which was reflected in the period in most districts (Tvrdoň, 2015).

4. Methodology and Data

The questionnaire survey was conducted with owners and managers of small and medium sized businesses (fewer than 250 employees) in the Moravian-Silesian Region, operating between the years of 2009-2013. The companies fulfilled the criteria being designated as small and medium sized companies by their number of employees – fewer than 250, operating a business in the area of the Moravian-Silesian Region and agreeing to a personal visit during autumn 2014. Data obtained from questionnaires is to be analysed through the SPSS statistical packet programme.

The sample size n was calculated by using the formula (Olaru, Dinu, Stoleriu, Șandru and Dincă, 2010):

$$n = \frac{t^2 \cdot p \cdot (1 - p)}{\omega^2} \quad (1)$$

where:

t ...confidence level, corresponding to probability with which the accuracy of the results will be guaranteed, from the statistical tables of the Student distribution;

p ...prevalence, probability or proportion of the sample components that will explore the problem;

ωacceptable margin of error.

The sample size corresponds to recommended minimum value in probability of 0.95. The minimum sample size was computed according equation (1), where t value in $\alpha = 0.05$ is 1.645; p value = 0.1699 is counted as proportion of businesses, which are active in year 2014 in the Moravian-Silesian Region (250,028) to whole number of businesses in the Czech Republic 1,470, 929 (CSO, 2015); $\omega = 0.05$ is acceptable error limit of 5 %. Minimum sample size is 153 respondents.

Within the Moravian-Silesian Region 400 respondents were randomly selected. In total it was received 285 questionnaires, 70 of which had to be for several reasons excluded, for example incompleteness of the data, meaningless answers, contradictory answers etc. Rate of return was 53.8%, which means 215 valid replies (215>153). The total internal reliability was measured using Cronbach's alpha, which had value of 0.845, while partial analyzes internal reliability of data ranged around values 0.79, which satisfies the condition for further data analysis (Nunally, 1978). Results were graded using the Likert scale (1-5 for non-numerical data) so as to be comparable with other sections of the questionnaire. For modeling relationships basic statistical methods were used. Cramer's contingency coefficient V which represents the most appropriate measure of association between two nominal variables was one of the most important.

Scale, introduced by Cohen (1988) for the correlation coefficient, was used for coefficient interpretation. For predictive interpretation the formulation, that can be found in the work of Liebetrau (1989), was also used, where the degree of significance between 0.25 and 0.5 means a factor in the causal linkage and value between 0.7 and 0.9 makes it possible to predict the factor behavior in the next period. Research was conducted in order to determine:

- Identify the type of innovation by sector and by business lifecycle.
- Find the interaction between the sector according to the district and innovation.
- Find connection within entrepreneurship motivation and innovations.

5. Main results and Discussion

The research was conducted throughout the Moravian-Silesian Region, and the representation of individual districts was as follows: Bruntál (2.8%), Frýdek-Místek (18.1%), Karviná (29.8%), Nový Jičín (10.2%), Opava (7.0%) and Ostrava – město (32.1%). Percentage of respondents in each district corresponds to the percentage of economically active enterprises within Moravian-Silesian Region.

In the sample distribution companies according to legal forms was as follows: self-employed, Ltd., joint-stock company, cooperative, non-profit institution, state enterprise and public company (see Table 1). The willingness of entrepreneurs to participate in research played an important role. The owners of a limited liability companies or a joint stock companies were more informative, which may result from the fact that these owners already have their co-workers, so they can dedicate time to survey, without compromising their other daily program.

Table1. Companies according to legal forms

	Bruntál	Frýdek-Místek	Karviná	Nový Jičín	Opava	Ostrava - město	M-S Region (by CSO)
Self-employed	50.00 %	38.50 %	43.70 %	45.50 %	40.00 %	33.30 %	63.02 %
Ltd.	33.30 %	53.80 %	39.10 %	45.50 %	46.60 %	47.80 %	17.73 %
Joint-stock company	16.70 %	7.70 %	14.10 %	4.50 %	6.70 %	15.90 %	1.69 %
Cooperative	0.00 %	0.00 %	1.50 %	0.00 %	0.00 %	0.00 %	1.51 %
Non-profit institution	0.00 %	0.00 %	0.00 %	4.50 %	0.00 %	1.50 %	8.94 %
State enterprise	0.00 %	0.00 %	1.60 %	0.00 %	0.00 %	1.50 %	0.01 %
Public company	0.00 %	0.00 %	0.00 %	0.00 %	6.70 %	0.00 %	missing

Source: Own research

The survey includes companies from those sectors: agriculture (1.86%), industrial production (10.70%), building industry (13.95%), public service (3.256%), business (36.28%) and services (33.95%). If we look at the pattern in terms of number of employees, a group of companies to nine employees is the most represented category. In second place there are small enterprises (10-49 employees), where the actual number of employees is closer to the lower limit of the group. Medium-sized enterprises and enterprises without employees are represented marginally.

5.1. Motivation to Start-up

For sustainable business, it is important to know the primary motivation of entrepreneurs, why they began with business. Then they will be more flexible and more resistant to external influences, which will affect their business activities. Primary motivation is the engine that also leads the entrepreneur to innovate. The motivation factors were divided according to the methodology Global Entrepreneurship Monitor, to push (entrepreneurship by necessity) and pull (entrepreneurship by opportunity) motives to start up business.

It is gratifying to note that the "pull" motives for business are dominated by throughout the Moravian-Silesian Region (72.7%). However, a more detailed analysis shows that at the district level the situation varies. The respondents from the districts of Opava, Nový Jičín and Frýdek-Místek are the most drawn into the business (pull motives), where these motives predominate over the diameter of the Moravian-Silesian Region (Figure 4).

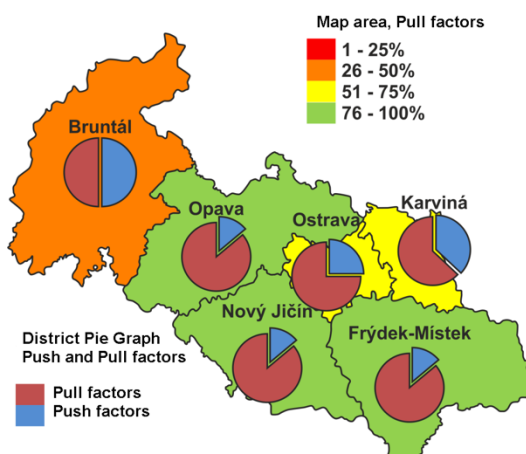


Figure 4. Number of enterprises according to individual districts
Source: Own research, Czech Statistical Office

A more detailed analysis of the major groups of factors is shown in the Table 2, which shows the most common motives of starting of business. In the table predominant push factor (blue) and pull factor (red) are indicated.

Table 2. The predominant reasons to provide the business according to individual districts

	Bruntál	Frydek-Místek	Karviná	Nový Jičín	Opava	Ostrava-město
Be own boss	16.7 %	12.8 %	14.3 %	36.4 %	13.3 %	23.5 %
Bad economic situation	33.3 %	7.7 %	19.0 %	9.1 %	0.0 %	11.8 %
Self-realization	33.3 %	43.6 %	25.4 %	13.6 %	40.0 %	27.9 %
New opportunity	0.0 %	7.7 %	15.9 %	22.7 %	13.3 %	13.2 %
Family tradition	0.0 %	10.3 %	4.8 %	9.1 %	20.0 %	8.8 %
Unemployment	0.0 %	15.4 %	20.6 %	4.5 %	13.3 %	13.2 %

Source: Own research

5.2. Innovation Activity

A total of 94.9% of respondents innovate, they were not able to define the social side of their innovation. Overall 29.8% of the total number of respondents innovate the product, processes and technology is innovated by 25.1% of respondents, 18.8% of respondents implement organizational changes, 16.5% have turned to marketing changes and 9.8% have carried strategic innovations.

It has been founded a strong statistical correlation between the localization of enterprise in the region and innovation (Cramer's $V = 0.524$, sig = 0.063, the level of $\alpha = 0.1$). The inter-district comparison, innovations are the most important indicator for the district Ostrava-Město (Cramer's $V = 0.665$, sig = 0.002, the level of $\alpha = 0.05$) and Frydek-Místek (Cramer's $V = 0.391$, sig = 0.003, the level of $\alpha = 0.05$). More details we can see in the Table 3.

Table 3. Structure of innovations by districts

	Product	Proces and technology	Organizational changes	Marketing	Strategy	Mean (number of innovations per one entity)
Ostrava-město	28.24 %	21.18 %	21.18 %	20.00 %	9.41 %	1.23
Opava	17.65 %	41.18 %	17.65 %	17.65 %	5.88 %	1.13
Nový Jičín	25.00 %	25.00 %	29.17 %	20.83 %	0.00 %	1.09
Karviná	36.84 %	23.68 %	13.16 %	14.47 %	11.84 %	1.18
Frydek-Místek	29.79 %	25.53 %	19.15 %	10.64 %	14.89 %	1.20
Bruntál	16.67 %	50.00 %	16.67 %	16.67 %	0.00 %	1.00

Source: Own research

The results showed us that the most innovations are in product, process and technology and organisational change. According to sector allocation are the most used the innovation in business, services and industrial production. We have found the interaction between the innovation in process and technology in relation to sector, and interaction between the strategy and process and technology in relation to business lifecycle. Finally, there is a connection between innovation activity and socioeconomic indicators as migration. When we compare our findings with socioeconomic data (see chapter 3), social innovation could be founded in district of Frydek-Místek, where the migration rate is highly positive, and in districts of Ostrava-město and Karvina they reduce movement of people. When the innovation activity is low and pull motives are low (Bruntál district), migration and unemployment is growing up (low social impact of innovations).

6. Conclusion

Innovation in services and manufacturing is not seen as a separate activity, represented by different characters, but as a set of activities leading to the creation of new complex solutions. Services (and innovation in services) and entering various stages of the production chain and, together with production activities (and innovations in production) adds value in the specific stage of production. But we recommend those values to motivate innovators to be “social innovators” in this field:

- *Everything they do must make sense* – in any situation it is important to support a collective mindset and pay attention to business survival; we must also interpret the events around the situation.
- *Continuous learning*-dynamic model to prevent errors or failing to provide the business.
- *Thinking about the future* – generating knowledge about processes, opportunities, payers, interactions with social environment.
- *Being active* and dealing with unforeseen events, because is it based on a community of practice – work in the same branch, learn faster, conversation, new introduction.
- *Effective cooperation* in training, competency development.

Finally, it should be emphasized there are limitations of the available data giving evidence of innovation activities in Moravian-Silesian Region. Available data are still tied to the traditional model of innovative activities related mainly to technical innovation in the industry and R & D activities. Characteristics of innovations, way they originate and where their barriers are, however cannot be read in detail of the data, so it is so hard to evaluate most of them as “social innovations“. However, this survey was conducted on regional entities; findings might not be transferable to all types of organizations. Thus, it is recommended that further researches can be conducted on small-scale organizations and, also in different countries for the generalization of findings.

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The Slovak Republic



Efficiency of university hospitals in Slovak Republic

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Abstract

The aim of the paper is to highlight the issue of efficiency measurement in selected health care facilities and propose solutions, which aim to improve the efficiency measurement of health care providers. Outputs of efficiency measurement mainly dependent on the approach used and on the various indicators included into the measurement process. In the presented paper we focus only on the health care facilities operating in Slovakia. In the period we analyzed (from 2009 to 2013), we recorded a slight decrease in the level of efficiency after 2009, but efficiency increase in 2012 and 2013. This situation is probably due to an increase of financial resources in the health sector in 2008, which were reflected at a later period.

Keywords: efficiency, data envelopment analysis, input-oriented model, healthcare
JEL Code: D24, I11, I13

1. Introduction

The health sector is one of the fastest growing areas of the economy in most developed countries. Governments (and taxpayers) are investing money in healthcare, either directly or indirectly and therefore expect high quality services. In fact, the performance of this sector is different and is characterized by particularly long waiting times, inefficiency, low productivity, stressful healthcare professionals and dissatisfaction of patients. The healthcare system consists of a comprehensive set of entities, activities and processes and covers a wide range of participants, where each of them brings different set of needs, priorities and evaluation criteria. Measuring the efficiency provides information about existing practices, values and assumptions and can help to develop a systematic approach for identifying deficiencies and to improve future efficiency. Despite the fact that the healthcare systems of countries differ either in the form of funding or organization, common goal is to improve health of the population of the country. Every health system, however, brings with it various problems and the effort of policy makers on improving the efficiency of individual health care providers. Achieving optimal efficiency is crucial for both private and public hospitals in order to preserve the quality of care and the needs of the various stakeholders. Despite the diversity of public and private sectors, whether in terms of issues or stakeholders, decision makers are aware of the fundamental importance of the hospital management as a business unit that must be operated as efficiently as possible. Hospitals with efficient systems can subsequently ensure quality and avoid unnecessary waste of resources.

2. Measuring the efficiency of healthcare facilities

This chapter outlines the theoretical and empirical outcomes from studies that address efficiency at medical facilities. At the same time we draw attention to one of the main tools used in practice to measure the efficiency, data envelopment analysis (DEA). We are focusing on studies, applications and observations that have been made by different authors in different countries.

According to Farrell (1957), who was also a pioneer in most of the work concerning measurement of efficiency, the efficiency of the company consists of technical and allocative efficiency. According to the framework proposed by Farrell, the efficiency is measured considering all other companies in the industry. Economic efficiency is defined as the ability of the subject to produce the specified amount of output at a minimal cost. Under the technical efficiency he understands the ability of the subject to produce the maximum volume of output with a specified volume of inputs. In case of allocative efficiency, Farrell (1957) states that it is an ability of the entity to choose the optimal combination of factors of production. So if we combine these two efficiencies, we get productivity level and overall economic efficiency. Efficiency by Farrell is shown in the following figure no. 1.

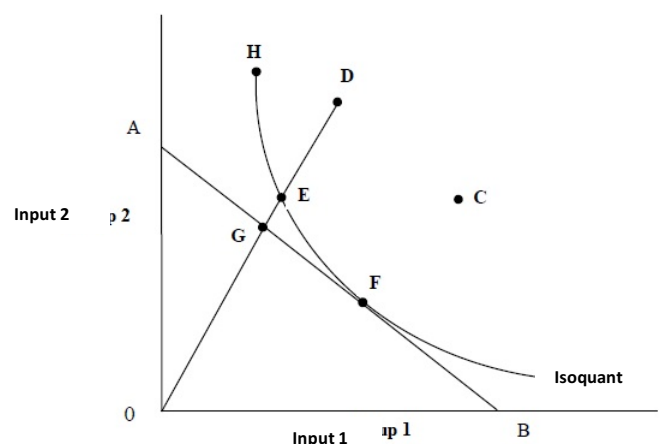


Figure 1 Efficiency according to Farrell
Source: Coelli, 1996

On the figure shown, hospital produces its output as a combination of two inputs. Technical efficiency is shown by Isoquant on the border where points E, F and H are located. Hospital, which operates in points C and D, is technically inefficient. For hospitals in point D technical efficiency is determined by the relationship

$$TE_D = \frac{OE}{OD} \quad (1)$$

This relationship indicates the ratio between the minimum required amount of input and the actual inputs used. The ratio OE / OD represents the percentage by which it would be necessary to reduce all inputs without reducing output. Thus, if the hospital at point D wants to be effective, it must achieve a shift to the point E. The overall technical efficiency has a value between 0 and 1. Figure that we present represents an input-oriented efficiency measure, as it focuses on a variety of input options with a standardized output, which compares in various healthcare facilities.

Many authors in the economic literature devoted their attention and research to the measurement of the hospital efficiency. Greene (2003) estimated the efficiency of the national health system in 191 countries of the world, but he used different methods in the various countries. As already mentioned, one of the first authors who seek different ways to measure the efficiency was Farrell (1957) and the procedures proposed by him began to penetrate into the public sector. One of the important studies in this field is also work of Schuknecht et al. (2003) who measured the effectiveness of governments in European countries. But education and healthcare are a specific part of the public economy. Studies on healthcare can be found today throughout the world, for different types of medical facilities (hospitals or various nursing facilities). The first studies dealing with the efficiency of hospitals emerged in the 80s (Nunamaker, 1983; Sherman, 1984) that determined the efficiency of a sample of American hospitals. However, their main objective was to test the suitability of the selected models, which included the DEA model, in the medical field. Since the 90s the area of measuring the efficiency of hospitals and determining its determinants became significant for economists working in the medical field. In the USA we can mention Zuckerman et al. (1994), Wang et al. (1999), in European environment Wagstaff and Lopez (1996), Parkin and Hollingsworth (1997). Later on we could see the results of the German hospitals (Staat, 2006; Herr, 2011), Austrian hospitals (Hofmarcher et al., 2002), Swiss hospitals (Farsi and Filippini, 2006) and many others. Overview of further studies was summarized in the work of Worthington (2004) and Hollingsworth (2008).

Zere et al. (2006) conducted a study that evaluated 30 public hospitals using the DEA method. Overall the monitored three inputs: the total expenditure, number of beds and number of medical personnel and two outputs: the number of outpatient visits and inpatient days. The results have identified the level of technical efficiency of 62.7% to 74.3%. The authors pointed out that the increase in the level of output requires an increase in demand for health care, which is not controllable by hospital management. Therefore, one of the proposals was to merge hospitals whose location is in close proximity. Vincenzo and Dino (2007) also examined the level of efficiency using the DEA method on the sample of 85 hospitals in Italy. Out of 85 were 65 public and 24 private hospitals. They took into account three outputs: the total number of discharged patients, the number of treatment days, the number of interventions provided by the emergency services. As inputs they have chosen five indicators: number of doctors, nurses and other staff, number of beds, number of admitted patients. Their study pointed out that non-profit private hospitals exhibited the lowest values of inefficiency. They assessed that out of the total sample, 23 public hospitals experienced a decrease in returns to scale, 42 (80% of which were private) showed an increase of returns to scale and 20 of them stayed constant. They concluded that the private for-profit hospitals reached the highest level of efficiency, which was also confirmed by many other authors.

Moreover, the number of studies focused directly on the determinants that cause or affect the efficiency or inefficiency. Pioneers in this field are Zuckerman et al. (1994) who investigated the influence of ownership, location and learning on the cost-effectiveness on a sample of American hospitals. This issue is also addressed by other authors (Rosko, 2001; Folland and Hofler, 2001), who have confirmed by their studies claims that government regulations are inversely associated with inefficiency. Not all authors agree with this statement, for example Vitaliano and Toren (1996), who recorded a significant impact of ownership on inefficiency.

Another determinant that was investigated in the literature is the size of the hospital. In this case, the authors' opinions diverge. Zuckerman et al. (1994) state, that the size measured by the number of beds is significantly and negatively related to inefficiency. This statement was also confirmed by Vitaliano and Toren (1996), who concluded that if the facility has 120 beds it has a positive impact on inefficiency, but if the number of beds is over 300, the effect is negative.

In the text above we presented several studies that addressed the efficiency of hospitals, but there is an absence of studies either directly from Slovakia or the Czech Republic. One of the authors of a similar study in the Czech Republic were Dlouhy et al. (2007), who analysed a sample of 22 hospitals, but their work did not take into account any environmental effects on the efficiency of the monitored facilities. Regarding the efficiency of healthcare in the Slovak Republic, Osterkamp (2004) claims that for every € 1 invested only € 0.62 was used effectively in 2000. This finding is corroborated by low technical efficiency, which has been confirmed by Frisova (2010). According to her study, where she applied DEA models, she concluded that between 2000 and 2006 there was an increase in technical efficiency primarily because of the fact that Slovakia has been able to reduce the level of inputs and simultaneously increase the output level. The decrease of inputs was mainly due to the reduction of the number of nurses and beds, while the number of physicians remained unchanged. By that, technical efficiency rose to the level of 84% at constant returns to scale.

The study on inefficiency in health care, where has been included also Slovakia, was performed by the International Monetary Fund (Grigoli, 2012). They applied DEA method to a sample of 37 countries and in Slovakia they identified significant scope for reducing inefficiency, particularly in resource savings of up to 64%. The OECD confirmed these results by their study (Joumard et al., 2010), which stated that at an unchanged level of expenditure, life expectancy can extend by more than four years. In Slovakia there were also others significant deficiencies recorded, for example in the area of medication and inpatient facilities.

Purbey et al. (2006) proposed a framework that divides the evaluation approaches into three categories, namely efficiency, effectiveness and flexibility. Kohlbacher et al. (2008) presented in their paper effective way of continuous performance measurement within the outpatient treatment in a public hospital of Austria. Performance measurement focused on the time and efficiency of individual processes and did not take into account financial metrics. Nigam et al. (2014) made observations in seven hospitals in Ontario, where the main objective was to increase the efficiency of the hospital. They pointed out that doctors, nurses, administrators, external parties have different perspectives on problems that limit the efficiency and suggested other changes that could improve efficiency. Their research focused on identification of factors that increase efficiency, stressing the importance of subjective understanding of the process in defining what hospitals may change.

2.1. Methods for measuring the efficiency of healthcare facilities

The two most commonly used approaches for measuring the efficiency of hospitals are DEA and SFA. A common feature of both methods is that they measure the efficiency as the relation to the best or efficient frontier. Deviations from this limit, measured as the geometric distance, determine the efficiency of the subject. (Rajitkanok and Rosenman, 2008). The third most used method is OLS. As to the number of units (DMUs - Decision Making Unit), a studies vary. There are a number of studies, which include a sample of hospitals nationwide, as in a Strumanna and Herwartz (2012) study, who investigated 1600 German hospitals. Secondly, we meet with the studies that monitor only a selected sample, as in the case of Tarazona et al. (2010) who examined 22 Spanish hospitals from selected region. Within the literature, however, we have not found paper or research which would determine the exact or the recommended number of units. In principle, this number is tailored to the needs of the country or target region. Monitoring at least two units, however, can ensure the preservation of logic in the process of assessing the efficiency of healthcare facilities.

2.2. Data envelopment analysis

Researchers use a variety of DEA model variants in the process of measuring efficiency. Among the two most common we include CCR model which are proposed by Charnes, Cooper and Rhodes (1978) and BBC model designed by Banker et al. (1989). DEA can be oriented either on inputs or outputs, depending on the purpose of performing DEA. Due to the fact that the hospital has a social responsibility to provide medical treatment and care to the public, assessment of operational efficiency of hospitals should follow especially the input-oriented DEA model, which focuses on minimizing inputs with fixed outputs. Selection of appropriate inputs and outputs has a significant role in the application of DEA model, because the use of various inputs and outputs may result in completely different score for efficiency.

One popular approach is the incorporation of quality indicators into the model as outputs. (Shimshak et al., 2007). This represents a model that was designed by Sherman (2006). The problem with this approach the weight assignment as DEA may assign to some inputs or outputs negligible weights and thereby cause ignorance of qualitative outputs. One way to overcome this problem is the introduction of restrictions in defining the weights. However, there arises the problem of subjectivity, as the restrictions come directly from the person who prepares model.

3. Object of research

This paper evaluates the efficiency of university hospitals in the Slovak Republic. The selected health centers were observed in the period 2009 to 2013 and total sample includes 55 facilities, as we excluded hospitals that did not have complete data or possibly experienced extreme values. We divided them into 3 categories as shown in table 1.

Tab. 2 Object of research

General and specialized hospitals	37
University hospitals	13
“Svet zdravia“ hospitals	5
SPOLU	55

Source: own processing

Therefore it means that from a total of 59 general and specialized hospitals we assessed 37 and in case of university hospitals we have 13 out of a total 14. In terms of Svet zdravia, which is a private company that currently owns overall 12 health facilities we evaluated five of them. These hospitals were included in a separate category, in particular because of the form of ownership and management of these hospitals. We present all the hospitals under the code. University hospitals coded F1 to F13, general hospitals coded V1 to V37 and hospitals administered by the Svet Zdravia organization coded P1 to P5.

Inputs and outputs

Selection of the inputs and outputs is an important step in the overall analysis and evaluation of the efficiency of healthcare facilities. Selection of inputs and outputs was largely based on previous research, whether in domestic or foreign literature. Overall, we have included in the analysis 6 inputs and 3 outputs, as listed in tables 2 and 3.

Tab. 3 Inputs

Input	Label	Explanation
No. of doctors	PLek	Registered number converted to full-time work in professions of doctor and dentist
No. of nurses	PS	Registered number converted to full-time jobs in professions of nurse and midwife
Other stuff	OP	Registered number converted to full-time work - health care workers without professions of doctor, dentist, nurse, midwife
Material costs	MN	Material costs from the income statement - Cost of medicines, medical devices costs, costs of additional assortment in the pharmacy, the cost of blood
No. of beds	PLôž	Number of beds in facility to the date 31.12 of reporting period
Costs per bed	NL	The total cost of income statement / beds

Source: own processing

As you can see above one of the inputs that we included in the list of variables are human resources in the form of the number of doctors, nurses and other staff. We have done so primarily because we consider human resources as a key determinant of success in healthcare facilities. Human resources are the carriers of knowledge, skills and know-how, which is an integral part of healthcare services.

Tab. 4 Outputs

Output	Label	Explanation
No. of treatment days	OD	Total number of days that patients were treated
No. of patients	PP	The number of patients admitted
No. of outpatient visits	AN	Total number of outpatient visits

Source: own processing

4. Results

In this part of the paper we will present the results of the efficiency measurement of selected Slovak hospitals. In the analysis we applied only input oriented models, assuming that the outputs are represented mainly by the need of services and individual objective of healthcare providers should be to minimize inputs. Understanding of efficiency in the DEA models and also in the case of out analysis is based on the assumption that each system has certain inputs and outputs. In this case, the production of output is necessary to make the consumption of a number of inputs. Based on theoretical assumptions, it is clear that the highest degree of efficiency is 1 or 100%. However, it is important to note that the presented analyzes have their limitations, which are reflected primarily in the analyzed data set, which does not ensure comparability of health facilities due to the absence of data about specialization of hospitals, geographical location and other influencing factors which may be explanatory in achieving certain efficiency.

4.1. Intra-group comparison

The results were divided into two main parts. In the first part we analyzed three groups of healthcare facilities separately, comparing them only within the group. The second part presents the results of the whole set of units. Using input oriented CCR model that assumes constant returns to scale, we evaluated 13 university hospitals. Out of all, none of them reached efficiency in the whole observed period. Hospital F2 and F5 achieved inefficiencies during the entire period, and expressed the increasing shift away from efficiency in each year. All results are shown in table 4.

Tab. 5 Values for input oriented CCR model

CCR-INPUT					
DMU	2009	2010	2011	2012	2013
F1	100,00 %	82,82 %	82,17 %	81,15 %	76,39 %
F2	96,17 %	91,23 %	88,24 %	85,57 %	82,50 %
F3	100,00 %	91,09 %	89,80 %	95,78 %	93,85 %
F4	99,48 %	100,00 %	100,00 %	100,00 %	80,59 %
F5	88,41 %	84,62 %	88,51 %	84,73 %	86,69 %
F6	100,00 %	95,60 %	90,80 %	100,00 %	94,77 %
F7	100,00 %	90,88 %	88,01 %	86,16 %	88,81 %
F8	100,00 %	100,00 %	91,78 %	97,36 %	96,52 %
F9	95,02 %	96,46 %	95,00 %	100,00 %	97,12 %
F10	100,00 %	100,00 %	98,54 %	98,78 %	100,00 %
F11	100,00 %	100,00 %	97,06 %	100,00 %	95,25 %
F12	100,00 %	100,00 %	98,99 %	100,00 %	100,00 %
F13	100,00 %	99,79 %	98,13 %	100,00 %	100,00 %

Source: own processing

Based on the CCR model and its results we can say that within university hospitals dominate inefficient DMUs, except in 2009, when the ratio was 9: 4 in terms of efficient units. Their number and the comparison is shown in the following figure.

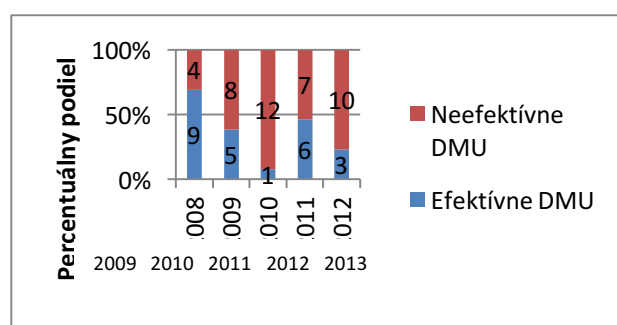


Figure 2 No. of efficient and inefficient DMUs

Source: own processing

4.2. Inter-group comparison

In the next section we applied input oriented CCR model, but unlike in the previous section, we have included in the evaluation of all monitored hospitals. We analyzed data for all units simultaneously to ensure that the overall efficiency is calculated from the complete data set, which includes all monitored facilities during whole period. Therefore we present results for 13 university hospitals.

Tab. 6 Values for input oriented CCR model

CCR-VSTUP					
DMU	2009	2010	2011	2012	2013
F1	84,62 %	81,31 %	80,91 %	79,88 %	74,45 %
F2	83,32 %	81,03 %	78,50 %	80,12 %	80,03 %
F3	92,33 %	89,91 %	88,26 %	93,30 %	92,11 %
F4	95,50 %	100,00 %	100,00 %	100,00 %	77,89 %
F5	76,34 %	76,40 %	78,29 %	74,60 %	76,20 %
F6	96,10 %	91,74 %	89,95 %	93,48 %	93,88 %
F7	85,23 %	85,30 %	84,15 %	83,52 %	87,45 %
F8	100,00 %	100,00 %	91,66 %	95,73 %	94,62 %
F9	92,62 %	95,82 %	93,74 %	100,00 %	96,32 %
F10	91,66 %	95,09 %	94,13 %	97,63 %	98,14 %
F11	100,00 %	100,00 %	96,95 %	100,00 %	93,33 %
F12	100,00 %	100,00 %	98,99 %	100,00 %	100,00 %
F13	100,00 %	97,25 %	95,06 %	99,08 %	98,17 %

Source: own processing

As a result we can say that none of the evaluated university hospitals had shown efficiency throughout the period. Therefore we can mention hospital F12, which recorded a shift away from efficiency only in 2011. The least efficient hospitals in the period were F1 and F5, which ranged in efficiency between 84.62% and 74.45%. The following section provides information reflecting the need for modification of inputs. Due to the large number of units, we mention slacks only for year 2013.

Tab. 7 Slacks based on input oriented CCR, 2013

CCR-INPUT 2013						
DMU	PLek	PS	OP	MN	PLôž	NL
F1	66,9	140,9	0	8 720 033	0	0
F2	56,81	0	0	10 463 107	0	0
F3	244,51	286,02	248,41	10 615 324	0	0
F4	18,46	31,81	0	0	0	8 654,46
F5	134,35	109,57	21,93	0,07	0	0
F6	24,71	107,79	0	2 543 963	0	0
F7	34,28	24,14	21,98	648 121	0	0
F8	80,97	159,08	105,73	6 683 652	0	0
F9	23,08	25,91	11,42	1 296 831	0	0
F10	33,95	0	0	2 308 715	0	0
F11	21,89	0	5,96	541 349,3	0	0
F13	32,43	48,27	4,88	0	0	68 054,65

Source: own processing

As we already mentioned hospital F1 achieves efficiency of 74.45% which is the lowest level among all monitored hospitals. Assuming constant returns to scale and maintaining the level of output, it is necessary in the case of CCR model to improve usability of doctor as model indicated the need for reduction of the original 317,43 to 250,53, the number of nurses from the original 866,69 to 725,79 and material costs lower by 8 720 033 €.

5. Conclusion

Our examination was based on a series of units (DMU), where the efficiency is compared among these units. The problem of this method is that the efficiency is perceived as deterministic and therefore does not expect that there is also the effect of accident, which influence the effective system. DEA method carries out an assessment of individual DMU compared with a whole set of units and for each inefficient unit identifies benchmark, which is characterized by a similar combination of inputs and outputs. In our analysis it means that the unit, which achieved efficiency at 100%, it may not actually be effective at 100%, but out of the data set it has the best combination of inputs and outputs. This is the point where we see the main restrictions of the results and therefore we understood efficiency results only in the context of our analysis using the selected data base, with selected inputs and outputs. Changes in the data set, input and output variables would cause results to vary.

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The impact of changes in household income on the quality of life in V4 countries

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Abstract

Household income is one of the most important factors which influence our quality of life. Except of external factors as environment, government engagement, safety etc., which have an impact on quality of life, the household disposable income has a strong role within our life decisions. Therefore, there arise up a question whether has changes in household income any impact on the quality of life or not. It is obvious that any economic changes have a visible impact on quality of life in the long term however, are these changes visible in the short term? This paper is focused on analysis of household income in V4 countries during period 2005-2013 and its impact on the quality of life of habitants live in these countries.

Keywords: GDP, income, household income, quality of life, V4 countries

JEL Code: D13, O11, O15

1. Introduction

Quality of life is one of the most discussed global issues, which have recently been associated mainly with the increasing problem of demographic aging of the population and their income. The evolution of household income could be explained by rival models. However, these models have very different implications for household behaviours e.g. consumption. In 2015, Ben Etherdige made a test between two models in the UK by using panel data on consumption and wealth. His test showed, that “long-lived income shocks transmit far less one-for-one through to consumption, and particularly so for younger households.” (Etherdige, 2015)

It is obvious that the relationship between consumption and wealth is influenced by amount of income, location and size of the city within the country. Despite the existence of regional disparities, when are visible differences not only in household disposable income but also in quality of life, the households have stuck into a state of uncertainty in securing income. This phenomenon was also examined by Feigenbaum a Li within their study from 2015, in which they examined a household income uncertainty over three decades (Feigenbaum – Li, 2015). With a lack of disposable income in households is associated also a solution of these situation, which in most cases resolved through debt.

In the past, the excessive indebtedness brought a few small or big economic crisis or personal bankruptcy which unfortunately repeated even today. The area of indebtedness was also studied by Scott and Pressman who was focused on how income and debt have changed over decades and what does it mean for future economic growth and our living standards (Scott – Pressman, 2015).

Wages, rents and unemployment are one of the basic factors, which influence the level of quality of life, regardless of the size of the city or country (Pacione, 2012). This issues are explored in the study e.g. of Wrede, who confirmed the negative slope of wage curve for quasi-linear utility. It means that “the wage rate increases and the unemployment rate decreases in response to an increase in the amenity level of the amenity is marginally more beneficial to producers than to consumers.” (Wrede, 2015) It is obvious that there exists a relationship between income and quality of life. This assumption is confirmed by every index which examine the quality of life and include economy as a important part of measures.

In this paper we are focused on impact of household income on quality of life during short-term period 2005-2013 in V4 countries. Most studies examine this relationship within long-term period however, it is interesting to show how is their relationship in a short-term. We analyse this relationship within few steps. First, we examine the development of GDP at national level with regards to economic crisis which influenced behaviour in all countries over the world. Next, we focused on development of the household disposable income within V4 countries during overall period. The results from both analyses show us how significant was changes in income before and after the crisis. Finally, we explore the development of quality of life and impact of household income changes on it. In our examination, we are using one of the most spread index of quality of life – The Human Development Index. All obtained results are concluded in last part of this paper.

2. Research sample

The V4 countries are the most exploring and comparing research sample in conditions of Slovakia. Despite their geographical proximity and common political and economic cooperation, the indicators such as demographic structure,

economic strength or level of quality of life in these countries significantly different. For this reason, we are decided for the purpose of this paper to examine changes in household disposable income and their impact on quality of life within the research sample – V4 countries.

Our survey is conducted in the period 2005-2013, which include one of the most significant factor affected economy of each country – the economic crisis.

To obtain data as disposable income of households, we use the data available at Eurostat database, which is the cornerstone during our whole research.

To examine the quality of life, we use The Human Development Index (HDI), which is on of the indices used in our whole research. Despite the possible doubts about the utility of this index for examination of quality of life, our previous research (Beslerová – Dzuričková, 2014) proved, that index can be used for basic description of the quality of life. For deeper examination of this issue, we recommended to use e.g. OECD Better Life Index, which analyzes each areas of HDI more deeply.

The analysis of development of quality of life in the V4 countries was also part of our previous research (Dzuričková, 2013) and partial results are used as a part of this paper. It should be noted that HDI includes economic index GDP per capita, which is measured at the level of population and not on household level, such as we used of the present paper. Despite this fact, the information about overall quality of life in each country is the same regardless of the unit.

3. Household income development

The analysis of household disposable income is mostly examined especially in the long term, because of the long-term impacts that affect the country's economy in the long run. The examination of development in the short term, such is the period 2005-2013, is not unusual, but the impacts of negative or positive influences are usually less visible than in the long term.

According to the OECD Better Life Index (OECD, 2013), household disposable income could be defined as “the amount of money that a household earns or gains, each year after taxes and transfers.” So this this budget of money represents all available budget which could be spend on goods or services. Usually, household disposable income includes components as income economic activity (wages, salaries, profits), property income (dividends, interests, rents) and social benefits (retirement pensions, unemployment benefits, income support, etc.).

In the first step of our analysis, we focused on exploring the development of GDP in each country during examined period. We present our results within Table 1.

Table 1 GDP per household development in V4 countries 2005-2013

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013
Czech Republic	25 745,40	29 014,70	32 242,60	37 232,60	34 023,80	35 810,90	37 366,80	36 655,60	35 752,30
Hungary	22 624,80	22 680,60	25 032,40	26 333,60	22 826,70	23 948,40	24 510,10	24 068,70	24 577,70
Poland	18 206,00	20 313,10	23 252,00	26 864,90	23 235,90	26 717,60	28 020,70	28 657,50	29 027,20
Slovakia	23 366,20	25 881,80	28 795,10	31 057,10	28 793,20	30 183,90	31 353,30	32 035,70	32 473,60

Source: Own processing according to data from Eurostat

For reasons of clarity, we transferred all data showed in Table 1 into the following Figure 1.

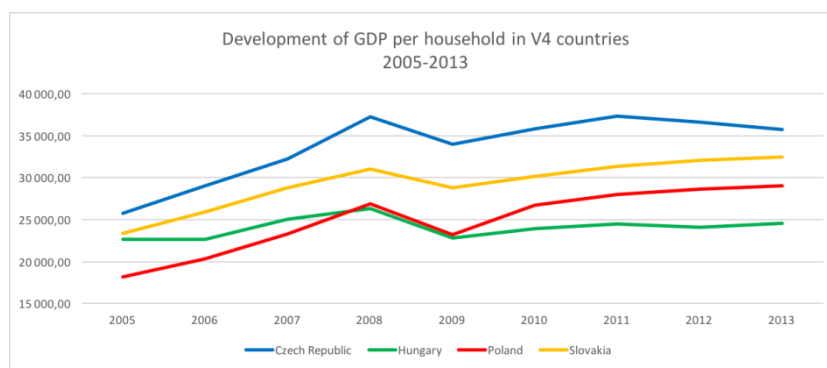


Figure 1 Development of GDP per household in V4 countries 2005-2013

Source: Own processing according to data from Eurostat

Based on Figure 1, it is obvious that until 2008, the GDP in all examined countries had a growing trend. In this period, the fastest growth was captured in Czech Republic and the slowest in Poland. The growth peak was achieved in 2008 when the crisis was fully reflected. During this year, economies in all countries recorded a significant decline. Despite the information about long-term impacts of the crisis, the data from Table 1 show us the evidence that economic growth was re-launched in 2009 in all V4 countries. Figure 1 indicates, that except of Hungary, the growth was significant in

all countries. Despite the expectations of national governments that the economic growth will be slower in a next few years, our data shows that GDP per household was growing after one year after crisis. Although it is well known that the crisis brought especially the increase of unemployment rate, according to the data from Eurostat database, this phenomenon has expressed on total household income. Therefore, there is a place for further examination of the implications of the crisis in the terms of unemployment rate and GDP.

The next step was analysis of household disposable income of each country during the examined period that capture Table 2.

Table 2 Household disposable income in V4 countries 2005-2013

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013
Czech Republic	13 571,30	15 240,30	16 500,60	19 525,40	18 809,80	19 768,10	20 319,00	20 044,50	19 384,70
Hungary	13 122,70	12 847,40	13 832,90	14 212,40	12 641,50	13 055,00	13 773,30	13 625,30	13 707,90
Poland	11 778,20	12 884,30	14 261,40	16 559,90	14 571,50	16 557,60	16 845,20	17 318,20	17 800,70
Slovakia	13 794,50	14 898,40	16 603,60	18 069,40	18 202,20	18 773,60	18 934,80	19 112,20	19 579,60

Source: Own processing according to data from Eurostat

For reasons of clarity, we transferred all data showed in Table 2 into the following Figure 2.

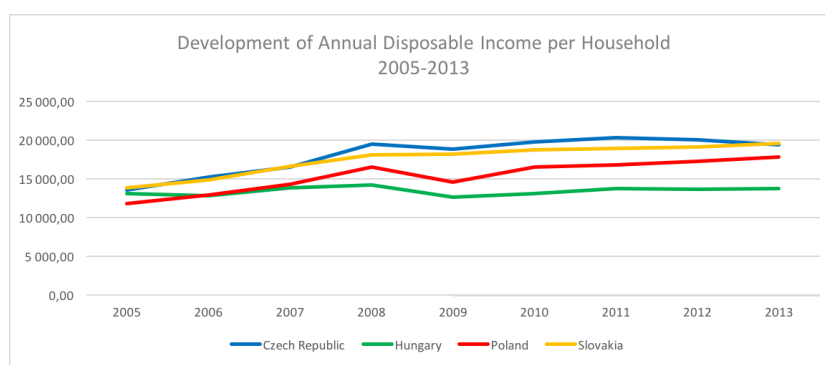


Figure 2 Development of Annual Disposable Income per Household in V4 countries 2005-2013

Source: Own processing according to data from Eurostat

Despite the different geographic size, it is obvious that the disposable income of households in the whole examine period was developed in all countries in the same pace. The lowest household income was observed in Hungary and the highest income was in Czech Republic. The difference between these two countries was especially caused by different economic stability, which could be confirmed by GDP data. The next step of our analysis was examination the health of economy and income before and after economic crisis. In generally, we assumed that after the arrival of crisis or another negative issue which affects the economy, are the strongest consequences a rising unemployment and slowdown resp. decline economy. Due to these effects, it is therefore logical to assume that the overall economic slowdown has also the impact on slow growth of disposable income. Based on the data in Table 2, it is obvious that until 2009, then the effect of the global economic crisis was fully showed, the disposable income of household grew in all V4 countries. The strongest growth is visible in the Czech Republic during whole three years, 2005-2008, it increased about 30%. In 2009, the first negative affects of the crisis were occurred in all V4 countries except Slovakia. Most of the V4 countries accepted saving measures which could help to start-up their economics. Among the all V4 countries, the fastest economic growth was noted in Czech Republic. This phenomenon demonstrates the stability and health of the economy in the long term, before the arrival of economic crisis. On the other hand, the slowest growth was noted in Hungary, which faced to problems with crisis until today. Based on the data in Table 2, it is obvious that except of Hungary, in all other countries was appeared economic growth. The confirmation of this fact could be represent by slow growth of disposable household income.

4. Quality of life development

Questions about quality of life was first explored by the World Health Organization, which defined the quality of life as a life which reflects how people perceive their place in life, in culture and value system where they live and where they make relationships to objectives, standards and interests (ISOQL, 2008). Despite the fact that quality of life reflects various aspects of life of individuals in a society, it may be encountered with research focused especially on human health. However, there still exists other factors which affect the level of human quality of life. One of these factor is a household disposable income which size has a direct impact on decision making of household expenditures. Therefore, there exist a logical assumption that with decline of household income should also decline a quality of life. Due to other factors which affect the overall quality of life this assumption could not be true.

By using the HDI we closer examined the development of quality of life with emphasis on GDP changes in V4 countries within examined period. At the start of our analysis we found that measuring process of HDI was changed during last decade. Until 2010 the data on quality of life was measured every five years however, after 2010 the data was measured on annual basis. Based on this findings, we can't examine the changes in the quality of life in the years 2006-2009, the period closes before and after the crisis. Despite this lack we were unfortunately able to assess changes in the development of quality of life. The results of HDI are presented in Table 3.

Table 3 HDI development in V4 countries 2005-2013

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013
Czech Republic	0,847	N/A	N/A	N/A	N/A	0,863	0,866	0,867	0,868
Hungary	0,802	N/A	N/A	N/A	N/A	0,821	0,823	0,823	0,825
Poland	0,805	N/A	N/A	N/A	N/A	0,829	0,833	0,838	0,840
Slovakia	0,793	N/A	N/A	N/A	N/A	0,827	0,832	0,836	0,839

Source: Own processing according to data from Human Development Database

Despite the absence of the necessary data in 2006-2009, from Table 3 is obvious that in period 2005-2013 the impact of the economic crisis leads to the small improvement in the quality of life in all examined countries. The most significant increase was in Slovakia (+5,80%) and Poland (+4,35%), other countries recorded and average increase: Czech Republic (+ 2,48%) and Hungary (+2,87%).

Although the economic crisis has caused a slowdown in economic growth within V4 countries, the overall impact on the quality of life was not visible. Due to the absence of data it was not possible to analyze changes in quality of life immediately after crisis. However, we could point out that changes in quality of life are a long-term process. Therefore, the short-term fluctuations in the economy don't have a great impact on changes in its level.

5. Conclusion

The aim of this paper was to examine the impact of changes in the amount of disposable income of household at the level of quality of life in the V4 countries in 2005-2013. Despite the fact that the period captures the biggest economic change – an economic crisis, our research has shown that the negative effects of the crisis did not cause a rapid drop in economic and income in each country. This assumption was confirmed by results of HDI, which showed that short-term fluctuations in the economy do not affect the change in the level of quality of life. The results of our survey showed that the short-term economic fluctuations don't affect the quality of life. For modification of its level there are necessary a long-term effects of negative impacts in the various areas of quality of life.

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**MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL
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Affiliation of enterprises funded by venture capital to industry branch in compliance with their technological or knowledge demandingness in conditions of the Slovak Republic

Magdaléna Freňáková

Abstract

The article deals with private equity capital and focuses especially on venture capital in conditions of the Slovak Republic. In this article we understand “venture capital” as venture capital investments, which as an external financial source become a part of equity capital of company with innovative or extraordinary idea and these investments are put into the company in seed, start-up or early development stages. According to affiliation of enterprise to industry branch in compliance with its technological or knowledge demandingness in our research sample assumption that venture capital is related especially to the firms in high-tech sector was not confirmed. On the basis of realized exact test we have confirmed hypothesis and can conclude that venture capital is related more to the enterprises operating in low-tech or medium low-tech sector than to the enterprises operating in high-tech or medium high-tech sector.

Keywords: private equity, venture capital, start-ups, innovation outputs

JEL Code: G24, M13, O34

1. Introduction

Private equity (including venture capital) in all its forms represents an external capital invested by investor or fund (venture capitalist) in company, when invested financial sources became a part of equity capital of the company, into which the investor (fund) came. The investment of private equity capital means for the company not only financial sources but as well non-financial benefits in form of time, effort, experience and contacts of private equity investor.

The article deals with private equity capital and focuses especially on venture capital in conditions of the Slovak Republic. In this article we understand “venture capital” as venture capital investments, which as an external financial source become a part of equity capital of company with innovative or extraordinary idea and these investments are put into the company in seed, start-up or early development stages. The objective of this article was to find out if according to affiliation of enterprise funded by venture capital to industry branch in compliance with its technological or knowledge demandingness in condition of the Slovak Republic, venture capital is related especially to the enterprises operating in high-tech or medium high-tech sector.

2. Venture capital and its characteristics

Venture capital as a form of business finance is suitable especially for young innovative and fast growing small and medium sized enterprises (SMEs), which struggle with insufficient equity capital, managerial experience, possibly they are not able to attract debt financing and thus are not able to finance their growth and launch their innovative thoughts to the market.

Venture capital is primarily a source of funding for start-ups, often technology-oriented small and medium sized enterprises (SMEs), with innovative ideas (Gompers – Lerner, 2001, p. 1), allowing them faster progress. Despite the argument that firms in technology-intensive or knowledge-intensive sectors receiving venture capital much more than firms operating in less technology and knowledge-intensive sectors, we expect that in Slovakia the situation will be reversed in this regard. In the Slovak Republic is in fact a lack of investment opportunities in high-tech sectors and in addition priority financial resources of venture capital in the Slovak Republic are public resources, which in most cases prefer the promotion of employment prior to the innovation.

3. Research sample, hypothesis and results

Our research sample consisted of 61 SMEs. Our objective was to find out if according to affiliation of enterprise funded by venture capital to industry branch in compliance with its technological or knowledge demandingness in condition of the Slovak Republic, venture capital is related especially to the enterprises operating in high-tech or medium high-tech sector. Our assumption is that in condition of the Slovak Republic the situation would be reverse. Therefore we transformed our assumption into scientific hypothesis No. 1.

Scientific hypothesis No. 1 was formulated thus: “In the Slovak Republic venture capital is leading more to SMEs operating in low-tech and medium low-tech sectors than to SMEs operating in high-tech and medium high-tech sectors.”

Verification of scientific hypothesis No. 1 was conducted on the research sample of 61 SMEs. We investigated whether more than 50 % of SMEs funded by venture capital in our research sample operates in low-tech and medium low-tech sectors.

Affiliation of enterprises funded by venture capital to industry branch in compliance with their technological or knowledge demandingness in conditions of the Slovak Republic in our research sample contains Table 1.

Table 1. Affiliation of enterprises funded by venture capital to industry branch in compliance with their technological or knowledge demandingness in conditions of the Slovak Republic

Technological or knowledge demandingness of sectors (industry branch)	Number of enterprises	Percentage
low-tech	19	31,15 %
medium low-tech	27	44,26 %
medium high-tech	13	21,31 %
high-tech	2	3,28 %
Total	61	100,00 %

Source: own calculations.

By comparing the percentages of SMEs in our research sample operating in low-tech and medium low-tech sectors (Table 1) according to affiliation of enterprise to industry branch in compliance with their technological or knowledge demandingness (or intensity), we found out that the share of SMEs funding by venture capital operating in low-tech and medium low-tech sectors was 75.41 %, representing 46 enterprises, which is more than we expected. We expected limit 50 % of SMEs.

If we base on the assumption that our research sample of 61 SMEs represent a higher proportion of all SMEs funded by venture capital in Slovakia, than we could adopt (based on our research sample) scientific hypothesis No. 1, and could state that in the Slovak Republic venture capital is leading more to SMEs operating in low-tech and medium low-tech sectors than to SMEs operating in high-tech and medium high-tech sectors.”

Regarding to fact that we do not know the real number of all SMEs that were/are in Slovakia funded by venture capital, we use the exact test to verify scientific hypothesis No. 1. This scientific hypothesis was reformulated into statistical hypothesis thus: “the percentage of SMEs funded by venture capital in low-tech and medium low-tech sectors is more than 50 % of total SMEs funded by venture capital”. Then we set null and alternative hypothesis.

- Null hypothesis (H_0): “the percentage of SMEs funded by venture capital in low-tech and medium low-tech sectors is $\leq 50\%$ ”,
- Alternative hypothesis (H_1): “the percentage of SMEs funded by venture capital in low-tech and medium low-tech sectors is $> 50\%$ ”.

Verification of hypothesis we realized by calculation probability according to equation (1). The probability that n units (enterprises) from the sample in the selection without repetition have exactly k units (enterprises) monitored characteristic is calculated as follows:

$$P(k; N, m, n) = \frac{\binom{m}{k} \binom{N-m}{n-k}}{\binom{N}{n}}, \quad (1)$$

where $k \in \max < 0; n + m - N >, \dots, \min < m; n > .$

According to our assumption, that the proportion of SMEs funded by venture capital in low-tech and medium low-tech sectors is $\leq 50\%$, we execute the exact test for $m = N/2$, where m represents SMEs with monitored characteristic (in our case in our case SMEs operating in low-tech and medium low-tech sectors), while $m \in N$. Furthermore, we assume that N (final number of SMEs funded by venture capital) will be at least 110 enterprises, and that exactly m enterprises from N SMEs have the monitored characteristic (operating in low-tech and medium low-tech sectors).

Under these assumptions we calculate the probability that exactly k units (in our case, $k = 46$ enterprises) operate in low-tech and medium low-tech sectors in the sample of n enterprises (in our case $n = 61$ enterprises) chosen at random (without repetition) from N SMEs. Calculation was carried out by simulating using Excel for the increasing N ($N \geq 110$) under condition that $m = N/2$. Probability calculated according to equation (1), for the first version, in which $N = 110$ and $m = N/2$, are provided in Table 2.

Table 2. Exact test - Hypergeometric distribution - Hypothesis No. 1
(option 50 : 50), for $N = 110$, $m = N / 2 = 55$

k	n	$\binom{m}{k}$	$\binom{N-m}{n-k}$	$\binom{N}{n}$	Probability $\frac{\binom{m}{k} \binom{N-m}{n-k}}{\binom{N}{n}}$
46	61	$\binom{55}{46} = 6358402050$	$\binom{110-55}{61-46} = 1,18997E+13$	$\binom{110}{61} = 5,14408E+31$	1,47088E-09

Source: own calculations.

According to Table 2, assuming that the SMEs operating in the low-tech or medium low-tech sectors are funded by venture capital in the same way as SMEs operating in high-tech and medium high-tech sectors (industries), what is alternative to 50 : 50, the probability of phenomenon that 46 times out of 61 SMEs in our research sample, was funded by venture capital exactly enterprise operating in low-tech or medium low-tech sectors (if the final set (population) is 110 enterprises, of which 55 currently operate in low-tech and medium low-tech sectors), is very small $P(46; 110, 55, 61) = 1,47088E - 09$. Based on the above, we can reject the null hypothesis that the share of SMEs funded by venture capital in low-tech or medium low-tech industries of all SMEs funded by venture capital is equal to 50 %.

We execute the exact test under assumption that in the final set of SMEs funded by venture capital is 50 % of enterprises operating in low-tech or medium low-tech sectors. But null hypothesis says that the share of SMEs funded by venture capital in low-tech or medium low-tech sectors is ≤ 50 %.

If we execute the exact test under assumption that we will reduce the number of enterprises in the final set of SMEs ($N = 110$), which have monitored characteristic (m), which means that SMEs operating in low-tech and medium low-tech sectors, so $m < N / 2$, in our case $m = 50$, probability calculated according to equation (1) for $m = 50$ would have been even lower $P(46; 110, 50, 61) = 2,38149E - 13$. For this reason, the null hypothesis can be rejected for less than originally projected 50 % of SMEs funded by venture capital operating in low-tech and medium low-tech sectors.

On the basis of realized exact test we have confirmed hypothesis No. 1 and can conclude that in the Slovak Republic venture capital is related more to the enterprises operating in low-tech or medium low-tech sector than to the enterprises operating in high-tech or medium high-tech sector.

4. Conclusion

Seed capital and start-up capital are the most important and the most critical types of venture capital investments. These investments are characterized by high rate of risk, but on the other hand by prerequisite for high returns. Enterprises in these development stages are in a sellers' market, when venture capitalists are not interested in financing because of low returns, high risk and high costs, but entrepreneurs are more receptive to external finances. Therefore, seed and start-up investments still encounter huge problems in finding venture capital. The venture capital market fails and needs to be stimulated. The government support is necessary and equity gap in these development stages is filled by public sources or by financial support programmes administrated by national agencies. High rate of risk is one of the reasons why public sources are involved in seed and start-up financing of SMEs by venture capital.

According to affiliation of enterprise to industry branch in compliance with its technological or knowledge demandingness in our research sample assumption that venture capital is related especially to the firms in high-tech sector was not confirmed. The share of enterprises in high-tech sector was the lowest among all the sectors (low-tech, medium low-tech, medium high-tech and high-tech) – only 3.28 % (2 enterprises) of all 61 enterprises in our research sample. On the basis of realized exact test we have confirmed hypothesis No. 1 and can conclude that venture capital in conditions of the Slovak Republic is related more to the enterprises operating in low-tech or medium low-tech sector than to the enterprises operating in high-tech or medium high-tech sector.

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MARKETING MANAGEMENT, TRADE, FINANCIAL AND SOCIAL ASPECTS OF BUSINESS

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Using of financial control tools in business practice

Janka Grofčíková

Abstract

Financial control tools enable financial managers to formulate goals of verification and inspect the progress and results of the financial activities of the company. The aim of this paper is to define basic financial control tools and to present the results of a survey aimed at identifying the use of financial control tools in enterprises of different sizes with domestic and foreign investment. The survey was conducted using the method of interview with questionnaire form. Selection of respondents was random. The research results indicate a relationship between the size of the company, the share of foreign investment in the share capital and the extent of use of financial control tools in process of financial management.

Keywords: control, financial control, financial control tools

JEL Code: G39, M19, M42

1. Introduction

Control as an integral part of the management process (Krištofik, 2014) and one of the basic management functions (Majtán, 2007, Sedlák, 2009 and others), focuses on monitoring, comparison and consideration of particular activities in the company. It detects the extent to which the company managed to meet defined goals. Despite the fact that there are differences among individual processes and activities in the company that need to be controlled, the basic control process is the same and consists of at least four main partial phases (Majtán, 2007, p. 267): (1) determination of control field, (2) creation of performance standards, (3) measurement of the actual performance, (4) the assessment of performance.

Control process in the company can be focused on financial or physical values. It is necessary to control the quantitative parameters, the economic aspects of the controlled activity and its results, but also the qualitative and temporal aspects of business activity.

Financial control - one of the basic functions of financial management - provides feedback on realized financial activities. It is an integral part of the financial management process. Its task is the continuous assessment of all information about the realization of financial processes, the results of financial operations, about their management and the way of meeting set financial goals and also the preparation of materials before accepting decisions and actions to ensure financial goals.

From the content point of view, financial control aims (1) to study the impact of realized financial activities on the change of company's financial situation compared to the previous period, or compared to the expected, assumed or planned situation; financial control examines the causes affecting the progress of financial processes - so it forms an organic part of economic control, which we refer to as financial analysis, (2) to determine if the financial activity is carried out in accordance with relevant laws, regulations, directives and other relevant rules. In this case, the financial control focuses on compliance with financial discipline, it forms an organic part of administrative and legal control, and we call it financial review or even review of financial management (Háčik, 1993, Beňová, 1996).

When defining the term financial control tools, we consider the structure of financial control to be important as to the content.

Financial managers use a wide range of tools for implementation of financial control in accordance with chosen methods. We perceive the financial control tools as a set of tools that allow the financial manager to implement financial control. They answer following questions: with what to check the status and development of the financial situation in the company and with what to formulate the desired target quantities that will be compared with the actual situation. Financial control tools enable to formulate target control quantities, to determine the actual state and development of financial situation, to quantify and display ascertained anomalies and deviations and their causes and to regulate the course of financial activities in order to eliminate undesirable development of the financial situation of company. We consider following tools to be basic for financial control in the company:

- primary financial indicators in the form of financial outputs and internal accountancy outputs, which inform us about the real state of financial management of the company,
- secondary financial indicators in the form of outputs of financial analysis, financial controlling and financial models (Bod'a, 2014), which take the form of absolute indicators (status, flow, cumulated or differential) and financial ratios,

- financial plans and budgets, strategies and company development prognosis which contain numeric or verbal expressions of planned corporate financial objectives in the form of absolute financial indicators and ratios,
 - medium values of financial sector indicators, information about competition, statistical information about development of economy, stock market news and information, independent reports and prognosis, media news and other external sources of financial information,
 - financial statements and reporting which have standardized or more precisely non-standardized form of arrangement of planned and actual primary and secondary financial indicators,
 - legislative standards - there is a set of tools which have obligatory character for the company,
 - internal directives, which have optional character for the enterprise; there are managing, controlling and accounting directives, regulations and decisions, they can affect financial operations and performance of the company directly or indirectly,
 - contractual documentation, which include commercial contracts, invoices and business policy of the company, credit contracts, employment contracts, issuing conditions of securities, memorandum of association and other,
 - software - accounting and control software, applications and programs for financial and economic analysis, financial control and controlling, spreadsheets, statistical programs, management information systems and others.
- These serve to accelerate, specify and automatize financial control processes.

The basic tools of financial control can be divided into groups according to their common features, the way of use, degree of binding effect, type of financial control or by individual phases of the control process.

The focus of financial control may be concentrated on one or more spheres of the financial activities of the company, at the same time. Selecting of the area of financial control partly predetermines the type of control quantities, which will be compared to ascertained reality. The control variables can be formulated (1) in the form of the required variables in absolute or relative values, (2) in the form of increments respectively losses in comparison with the previous or baseline period, (3) in the form of zero state, (4) in the form of quantities according to the prescribed condition. The most widespread control variables in accordance with the fundamental business objective are profit and net cash flows of the company. Control variables can also be represented by indicators formulated in financial plans, budgets, business strategies and development prognosis. These formulate the desired and planned financial indicators in absolute values. Ratios (financial ratios) are used very frequently, especially indicators of liquidity, profitability and indebtedness or indicators of return on investment (Grofčíková, 2013, Kanderová, 2000, Krištofik, 2009, Lesáková, 2004). Many of these indicators are also important for foreign investors (Orviská, 2014). Control quantities can also be formulated in legislation, contractual documentation or in internal guidelines. They determine the required state, which is desirable to achieve and maintain in company.

Manager gains the information about the real state of controlled field of financial management from the company accounting. According to Article 8 of Accounting Act No. 431/2002 Coll. as subsequently amended, the company is obliged to "keep the accounting correctly, completely, provable, clearly and in a manner which ensures the permanency of accounting records." It follows that corporate accounting should give a true and authentic view of the financial situation of company. Enterprises keep financial accounting obligatorily. It provides a picture of the enterprise as a whole. Companies keep internal (intra-organizational) accounting for the needs of intra-organizational management. The financial statements of company summarize the real state of financial management in absolute form. Outputs of financial analysis and financial controlling give us the relative form of real state. Nowadays, bookkeeping makes easier the use of special accounting software products, which enable manager to quickly find the required information.

When detecting and analyzing the deviations, there is a comparison of the desired control variables with indicators presenting the real financial situation of the company. There is also a quantification, to what extent the identified truth really deviate from the fixed control variables. Detection of deviations size, analysis and detection of causes of their origin, is a priority objective of each control process. Several software tools, such as accounting programs modules, separate mathematical and statistical programs respectively spreadsheets, can be used for simplification and automation of recurring mathematical and statistical procedures (actions). Detection and analysis of deviations also allows the use of selected graphs, reports and statements.

Graphs, reports and software products are also used in the phase of presentation and communication of deviations. They enable to point to substantial deviations and to draw attention to their cause of origin and to address the place of their origin.

The aim of the proposal for correction measures is to ensure that undesirable deviation will not appear in the future. Financial plans, budgets and business strategy are the tools that can be applied at this stage of financial control, their correction may be needed. Also, there may be a need to correct internal corporate directives and for example commercial contracts. Sets and various diagrams enable to create transparent preview of the necessary correction measures.

During financial control there seems to occur the combined use of several tools simultaneously. They complement each other and they allow fulfilling specified objectives. Their separate application may not bring the desired results and effects.

2. Objective and Methodology

The aim of this paper is to present the results of a survey aimed at identifying the use of financial control tools in enterprises of different sizes with domestic and foreign investment.

Survey was conducted by means of interview method using the questionnaire. Questionnaire survey was completed by 227 enterprises located in Slovak Republic. We selected sample of respondents by a simple random choice. The sample consisted of 10.71 % of respondents with a share of foreign capital in the share capital higher than 50 % (foreign

enterprise) and 89.29 % of respondents with a predominance of domestic capital (domestic enterprise). The survey engaged businesses of all size categories by the number of employees. The highest share was created by micro-enterprises (41.96 %). Small businesses got 32.14 % in the sample, medium businesses got 17.41 % and representation of large enterprises was 8.48 %.

We investigated the use of financial control tools in the corporate practice by the share of subjects who used selected tool, in the total business entities (respondents) and also on the basis of the frequency of tools using.

3. Use of financial control tools in the corporate practice

We have identified the use of financial control tools in practice of businesses of all size groups and with various foreign-owned capital. We used the questionnaire survey to get the necessary information. We present the results of the survey focusing on the application of selected facultative tools for financial control: (1) in-house managing, controlling and accounting directives, (2) primary financial indicators in the form of outputs from the financial and internal accounting, (3) financial plans and planning that allow to formulate target values, (4) secondary financial indicators in the form of outputs from the financial analysis and financial controlling presented in the form of internal corporate statements and reports, (5) accounting and controlling software - management records facts about financial management and implement financial control with them.

3.1. Use of internal directives in the financial control

A set of internal managing directives in corporate practice is the methodical basis of financial control. Task of these directives is to define areas of financial control, temporal periodicity of its realization, personal responsibility, methodical sequence of steps (phases) of financial control implementation and also to define a basic set of another tools for financial control.

We studied the use of internal managing, controlling and accounting directives. Internal managing directives were worked out by 92.86 % of all respondents, 95.83 % of foreign enterprises and 92.5 % of domestic enterprises. The medium-sized enterprises have highest share (94.87 %) of the companies that have developed in-house managing directives partly or completely. Small companies have the lowest percentage (90.28 %). From the respondents who have worked out in-house managing directives, only less than a half (46.15 %) have developed in-house controlling system in writing. This share is higher (69.57 %) in enterprises under foreign control. The biggest attention to the control system in the company is dedicated in large enterprises under foreign control (87.5 %), the lowest attention to it is paid in the micro enterprises with a predominance of domestic capital (23.81 %). The most commonly presented components of the internal control system are: internal control (69 % of respondents) and internal audit (36.26 % of respondents). Internal accounting directives were developed by 96.63 % of those businesses that have worked out internal managing directives. The results of survey show that accounting directives in enterprises get much more attention compared with a controlling system.

3.2. Application of accounting information in financial control

Information about ongoing activities in the company - recorded in the corporate accounting - is the essential basis for decision-making, management and control. If the information is sufficiently detailed and precise, management and controlling of activities in company can be more effective. Act No. 431/2002 Coll. states that businesses shall keep financial reporting. Paragraphs 17 and 18 define the content of financial report. Companies can keep internal accounting in accordance with internal accounting rules in the form of analytical records or in separate sectors of accounting class 8 and 9. We have found out that internal accounting is kept by 63.7 % of interviewed respondents. Average share of legal entities controlled by foreign capital, which lead internal accounting, is higher (85.71 %) than the average share of legal entities with a predominance of domestic capital on capital share (82.73 %). Internal accounting is kept in average by 60.76 % of natural persons. 81.94 % of respondents who keep internal accounting, have it in the form of analytical records to synthetic accounts of financial accounting, and only 10.42 % keep internal accounting in separate sectors of accounting class 8 and 9. Respondents also stated other forms of accounting, e.g. accounting kept externally in the form of outsourcing. The highest share (94.74 %) of the total number of respondents in a given size category, which keep internal accounting, is achieved by medium-sized enterprises; the lowest percentage (56.79 %) are achieved by micro enterprises.

Natural persons mainly keep the books in a single-entry bookkeeping system. They watch movement of cash and equivalents in cash book. 25 % of natural persons make an overview of cash flow and 73.68 % of natural persons keep analytical records of cash flow. Analytical records of cash flow is kept by 83.89 % of respondents - legal persons, but only 46.84 % of these respondents also prepares a cash flows overview.

3.3. Implementation of financial plans and financial planning in the financial control

Financial plans and budgets formalize the requirements of enterprise owners and company management. They formulate future desired state into a form of binding document. Their fulfilling consists of many partial activities that need to be regularly monitored and controlled. Included financial plans and financial indicators thus become the desired control variable, which are compared to actual achieved financial indicators.

When doing research of financial plans use and corporate practice planning, we were interested in the type of realized financial planning, frequency of financing plans control, intended absolute indicators and financial ratios.

Financial planning is carried out by 79.02 % of respondents (77 % of domestic enterprises, foreign enterprises - 95.83 %). Share of enterprises which use financial planning grows with the growth of the company size category (63.83 % - micro, small - 88.89 %, 89.74 % - medium, large enterprises - 94.74 %). Short-term financial planning is carried out by 71.19 % of respondents, long-term plans by 33.33 % of respondents, project planning is used by 18.64 % of respondents. 23.73 % of the respondents do not control their financial plans (25.97 % of domestic enterprises, 8.7 % of enterprises under foreign control). The highest share of respondents control their plans on monthly basis (34.15 %) and irregularly as needed (28.05 %). When we compared the frequency of checking in enterprises with various ownership structure, we found out that monthly checkings are carried out by a higher share of foreign enterprises (66.67 %) than domestic enterprises (29.37 %). Higher share of domestic enterprises (30.07 %) irregularly check their plans in comparison with foreign enterprises (14.29 %). From the statistics above we can deduce that there is a higher form of organization of control processes in enterprises under foreign control.

53 % of respondents think, that planning of costs and returns is important, 44 % think of revenue, 42.5 % expenses, profit (28.5 % of respondents), net cash flows (26 % of respondents), liabilities (19.5 % of respondents), long-term assets (12 % of respondents). Substantial changes in the arrangement of importance of items between business of individual size categories and the share of foreign capital on capital have not been recorded. Planning of relative indicators (besides the absolute economic indicators) is also very important for the company. We focused mainly on planning of basic financial indicators which monitor an area of liquidity, profitability, productivity, activity, indebtedness, assets structure, investment and market value of the company. The question was answered by 45.98 % of respondents. The highest share of respondents said that they planned the liquidity ratios (16.63% of all respondents, 17.03 % of domestic and 13.54 % of foreign enterprises, 12.5 % of micro enterprises, 15.44 % of small, 16.67 % of medium and 34.09 % of large enterprises). Activity indicators and productivity are planned by 11.14 % of respondents, 10.76 % of domestic and 14.04 % of foreign enterprises. Assets structure indicators and its sources of coverage are planned by 9.85 % of respondents and indicators of profitability and return by 9.47 % of respondents. More than a fifth of respondents plan the share of (financial) claims and liabilities (26.21 %), the difference of free cash and payables (25.24 %), immediate ability to pay (24.27 %), return on sales (23.30 %) and first-degree liquidity (21.36 %). 25 % of enterprises under foreign control plan a net working capital, operating margin, return on assets, the share of financial assets and (financial) claims, stock turnover period, labor productivity and profitability of the investment. 33.33 % of these enterprises are planning the return on sales and the share of assets and liabilities. More than one fifth of domestic enterprises plan the difference in volume of free money and payables (26.37 %), the share of assets and liabilities (25.27 %) and the return on sales (21.98 %).

3.4. Application of financial analysis indicators and controlling in financial control

Results of financial-economic analysis of enterprise provide important information for checking and evaluation of the state and the financial position of the company to the management of enterprise. They serve as a basis for further decisions on company activity. Comprehensive financial-economic analysis is conducted by 75.58 % of companies, by 95.83 % of foreign and by 73.06 % of domestic enterprises. Share of enterprises which make complex financial and economic analysis of a company, grows with the growth of the company size category. It is made by 57.78 % of micro enterprises, by 84.29 % of small, by 89.47 % of medium and by 100 % of large enterprises. The highest share of respondents (32.32 %) analyzes the financial situation of company with annual frequency, 26.83 % of respondents as needed, 17.68 % per month, 14.02 % every quarter and 9.15 % of respondents half-yearly.

Enterprises can control the financial management comprehensively, with use of all available financial indicators, or partially, with use of selected indicators suitable for checking only selected areas and results from financial management. We studied the use of 70 basic indicators of financial analysis used for financial control. In financial control, most of respondents focus on checking of their solvency by means of selected liquidity indicators (52.9 % of respondents in average), mainly using the indicator of immediate solvency. On average, 46.2 % of respondents control their investment mainly by means of indicator for return on investment. On average, 44.5 % of respondents use indicators to control the structure of assets and sources of funding, particularly the share of current assets on total assets. Indicators of activity and productivity are used by 42.7 % of respondents on average, mainly the share of financial claims and liabilities. Indebtedness ratios are used by 35.7 % of respondents on average, especially the share of trade liabilities on short-term liabilities. On average, 33.4 % of respondents check their profitability, mainly by means of operating margin indicator. The lowest average share of respondents (13.4 %) use indicators of market value in the financial control. We came to conclusion, that the most widely used indicator from this groups is net profit indicator per share.

Five financial indicators which are used in financial control by the highest share of respondents are classified by size category and the assets participation of foreign capital and we summarized them in Table 1. We can see that the most frequently used indicators are return on investment, payback period, the share of claims and liabilities. The highest share of respondents uses them monthly, yearly or rather irregularly.

Table 1. Five indicators used in financial control by the highest share of respondents

Financial indicator	Group of respondents (enterprises)						
	total	FE	DE	micro	small	medium	large
return on investment	80,95%	88,89%	80,23%	76,67%	85,71%	82,61%	76,47%
payback period	77,14%	83,33%	76,74%	66,67%	82,86%	86,96%	70,59%
claims / liabilities	75,66%	83,33%	75,00%	66,67%	83,08%	75,00%	84,21%
immediate solvency	67,72%		68,29%	66,67%	69,23%	72,22%	
free money - payables	61,38%		61,59%	66,67%	61,54%		
first-degree liquidity		70,83%				69,44%	
current assets / total assets		70,83%					
operating margin							73,68%
return on sales							73,68%

Note: The percentage indicates the share of the number of respondents which answered the question; FE = foreign enterprise; DE = domestic enterprise;

Source: Own processing of results from empirical research.

Besides checking the financial situation, it is important for the company to know the development of financial indicators and their structure. This information can be obtained from results of horizontal and vertical analysis of financial statements. Vertical and horizontal analysis in financial control is used by 62.5 % of enterprises under foreign control, 46 % of domestic enterprises, 28.72 % of microenterprises, 55.56 % of small businesses, 69.23 % of medium-sized enterprises and 68.42 % of large enterprises. The highest share, 68.22 % of respondents, focuses on horizontal analysis of profit, 67.29 % of respondents check the development of cost and structure of revenues and expenses, 61.68 % of respondents make vertical analysis of its assets and liabilities, 60.75 % make horizontal analysis of liabilities and 58.88 % of respondents make horizontal analysis of assets.

When checking the financial situation, the enterprise can, besides quantifying the classic ratios, which monitor individual aspects of financial health, also use forecasting models, which concentrate the results of the financial analysis into a single result. Just as individual ratios and absolute financial indicators, these models can be a useful tool to control the financial situation of the company. They can be used in subsequent, continuous and preliminary financial control. Forecasting models in financial control are used by 29 % of domestic enterprises, 29.17 % of enterprises under foreign control, 25.53 % of micro, 25 % of small businesses, 38.46 % of medium-sized and 47.37 % of large enterprises. The highest share of respondents (71.21 %) who use these models, use them to check the current financial situation. 30.30 % of respondents use them also for the control of financial situation of the past period and 25.76 % of respondents use them to check suitability of their financial plans settings.

The most used mathematical and statistical methods are graphical methods (60.42 %) and calculation of averages (39.58 %). Graphical methods are used by 57.26 % of domestic and by 80 % of foreign enterprises. The average values of indicators in financial control are calculated by 38.71 % of domestic and by 45 % of foreign enterprises.

When calculating deviations, enterprises can compare really achieved financial indicators with various quantities. These indicators can be achieved in immediately preceding period, in the same preceding period, in the initial period or indicators planned for controlled period. Except for these, deviations can be added to the results of competitors in the same or another sector, or with medium values of the whole industry. Deviations are detected by all enterprises under foreign control and by 71 % of enterprises with a predominance of domestic capital on share capital. The highest share of respondents compares the actual financial ratios for the current period with results for the immediately preceding period (51.39 %) and the results achieved in the same period of the previous accounting period (44.44 %). 13.89 % of respondents compare the results of its financial management with the results of competitors in the same sector, 12.04 % with financial indicators scheduled for a controlled period.

Explaining the causes of deviations is one of the most important phases of controlling process. Deviations can be examined by their decomposition. The highest share of enterprises (31.58 %) stated that when explaining deviations they use pyramidal decomposition of synthetic financial indicators to analytic.

Visualization of the anomalies can be provided by a variety of graphs. The highest share of respondents (65.06 %) use bar graphs, 39.76 % use Gantt chart which allows you to compare actual and planned financial indicators. 21.69 % of respondents use line charts and Z - diagram, which follows the common, cumulated and sliding totals of items and their differences with the previous period.

3.5. Accounting and control software used in financial control in the corporate practice

Development of information technology makes it possible to rationalize the work in the area of financial control in the company. The globalization accelerates this processes (Lesáková, 2008). Software products which can be used by enterprises, help to identify deviations faster, more accurate and more frequently. They are really helpful in obtaining, processing and storing of information necessary for financial management and financial control.

The highest share of respondents (64.38 %) use accounting software in financial management control, 61.19 % use spreadsheet, 9.59 % use complex management information system (MIS) - (MIS Charlie, SAP, Softip - Jeeves, IS MAX, own programs), 5.02 % use software made according to requirements of the company, 3.65 % use statistical software. Customized software and complex MIS are mainly used by large companies which can afford to invest in such expensive software products. 5.48 % of respondents do not use any of the examined software products for financial control. The reason was they do not need it because of the extent of turnover, they are not very long on the market, owner of the company manages finances alone and their accounting and economic agenda are managed by an external accounting

company. As we can see from the results of research, the most common is the use of accounting software. Name of a particular accounting software was specified by 66.24 % of respondents who answered the question. These respondents use products of 24 software companies. The most widespread products are products of Kros, a. s. used by 32.58 % of respondents, MRP - Company, s. r. o. used by (19.10 %), accounting program Pohoda by Stormware, s. r. o. used by 8.99 % of respondents, products of Softip are used by 7.87 %, QI program by Jeremy, s. r. o. used by 3.37 % and products Helios Spin by Asseco Solutions, a. s., Basic.sk by SofCom, s. r. o. and products Elall, s. r. o. are used by 2.25 % of respondents. We analyzed the functions and applications of the accounting software that can be used for financial control. We focused on those features that we consider to be most important in financial control or rather the product thanks to these features differs from another competing products. The results of the functions analysis show that many of them are not suitable for the implementation of financial control. From the software which will be suitable for financial control, we expect that it will mainly enable (1) keeping records and filtering of accounting information according to user-defined criteria, (2) the creation and printing of reports and statements according to user settings, (3) calculation of the preset financial ratios and the creation and calculation of own absolute indicators and financial ratios, (4) planning of absolute and proportional financial indicators, (5) creation of budgets of costs and benefits, (6) calculation of budgets according to the selected relational variables, (7) the calculation of actual deviations from the plan, (8) representation of the state and development of financial indicators (9) selection of period and the number of periods for calculations and comparison, (10) the implementation of internal directives and their interactive representation, (11) possibility of contract restriction settings and (12) software update in accordance with applicable legislation and internal directives. None of the analyzed software products have got implemented tools for financial control to such an extent.

4. Conclusion

Checking the progress and results of the financial management of the company are one of the key functions of financial management. Range of tools used by financial control manager and the way how they are applied, affect the quality of financial control outputs, which are important basis for financial management and decision making. The results of research we did on a sample of companies of all sizes and both with domestic and foreign ownership interest confirmed our assumptions that companies use particular financial control tools on insufficient level. The use of financial control tools of the company rises with the growth of company size measured by the number of employees. The extent of financial control tools application in enterprises with lower number of employees, is on a lower level than it is in larger companies. Thanks to the research we found the dependence of the total extent of use of financial control tools on the share of foreign capital on the capital. With the growth of the size category of the business entity and the growth of the share of foreign capital on the capital of the company, the share of subjects which use tools for financial control is increasing and there is also increase in the extent of use of financial control instruments. It means that the number of used types and frequency of their application is increasing. Causes of dependencies between the extent of financial control tools application and company size, or the share of foreign capital on the capital, we can see in the following facts: (1) education, experience of entrepreneur, that affect his ability to use financial control tools, (2) the concentration of the business, which affects the difficulty of activities records, which are under financial management and control, (3) the system of organization and management of the company, which is reflected in delegating duties related to financial management and control of the individual job positions, (4) accounting system, which affects the detailed nature of information that are under financial control, (5) property equipment of company with an emphasis on software that allows to automate and accelerate the process of financial management and control and reduces errors caused by human factor, (6) costs of applying the tools of financial control (costs for acquisition of computer and software equipment, personnel costs, costs related to external accounting, costs associated with implemented financial analysis of a company, fines from inspection, fees for advisory services, trainings, etc.).

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Prediction methods – tool of financial management?

Petra Gundová

Abstract

According to literature the aim of prediction methods is to point out in advance the factors which could in future endanger the existence of businesses or could even end in its bankruptcy. In current economic conditions in the academic field and in business practice we more and more frequently encounter question to define the importance of prediction methods in financial management. The importance of the methods is conditioned by correct results of their prediction reliability, which are, especially in current conditions, more than polemic and controversial. The aim of this paper is to present theoretical background of prediction methods and to present prediction reliability of selected methods on a sample of 60 businesses.

Keywords: bankruptcy, financial analysis, financial analysis ex-ante, prediction methods, prediction models
JEL Code: G30, M21

1. Introduction

The first studies focused on the prediction of failure were based on univariate analysis of ratios. These works dealt with a simple analysis of financial indicators, comparing the values of variables of failing and successful businesses (Mičudová, 2013a). The most well-known univariate method is probably study by Beaver published in 1966. He was the first to list indicator-base analysis among bankruptcy prediction techniques. In his work, he compared the indicators of bankruptcy companies one by one to those observed in a carefully selected sample of successful companies. The groups included 79 companies each. He found differences between the financial indicators of companies heading for bankruptcy and those of survivors. He detected symptoms as much as 5 years before actual insolvency, proving that indicator analysis can be a useful instrument in bankruptcy prediction.

Since Beaver, and expanded literature on bankruptcy prediction has emerged, and its impact has spilled into the commercial world, where it has been used in the development of several commercially employed bankruptcy prediction methods. A variety of methods have been developed in the academic literature using techniques, such as multiple discriminant analysis, logic, probit, recursive partitioning, hazard models, and neural networks. A survey of the literature shows that the majority of international failure prediction studies employ multiple discriminant analysis. Multiple discriminant analysis performs well if the variables in the group follow a multivariate normal distribution and each group covariance matrices are equal.

The aim of this article is to present prediction reliability of eight prediction methods on a sample of 60 Slovak businesses. Research question of the article is: Are selected prediction methods useful and credible tool of financial management in current economy. Current economy tends to be characterized as a new, global and knowledge-based economy (Lesáková, 2009). We assume that prediction reliability of all eight prediction methods is supposed to be below 70 % in Slovak companies one year prior to the bankruptcy.

Eight prediction methods are divided to 3 groups. The first group includes Quick Test, the Bonita Index and Altman's Z score, because the results of the questionnaire research in Slovak companies showed that these methods are the most commonly used prediction methods in Slovakia (Lesáková, Gundová, 2014). Most research studies on company bankruptcy and failure predictions are applicable in developed countries. All these countries have longer commercial histories. But Slovak business practice is similar to business practice of Visegrad countries – transitive countries (Poland, Hungary and Czech Republic). In these countries were created updated version of the prediction methods which are applicable in business practice. On this basis, to the second group of prediction methods we decided to select the most famous (in the literature and in the business practice) prediction methods developed in Visegrad countries, i.e. Poznański model (Poland), Model Virag and Hajdu (Hungary) and Index IN05 (Czech Republic). The continuing interests in bankruptcy prediction models are understandable as company collapse does have unpleasant consequences for not only its shareholders but also for their employees and economy of the locality where that company operates. This is a reason why have come a number of competing empirical models with alternative explanatory variables and alternative statistical methodologies for model estimation, i.e. classification models. Classification models consist of logit and probit models, conditional trees and random forests. We decided to apply logit and probit models. Ohlson's logit model uses less restrictive assumptions than those taken by the multiple discriminant analysis approach. Zmijewski adopts a probit approach that is also based on accounting data but uses a different set of independent variables.

2. Theoretical background

Quick Test belongs to the methods of scoring assessment. Methods of scoring assessment change the results of financial ratios to points on the basis of expert point scales. The famous Kralicek's Quick Test consists of four financial ratios, which can be divided into two groups:

1. ratios of financial stability – owner's equity/total assets and total liabilities/cash flow,
2. ratios of financial profitability - cash flow/revenue and return on assets (ROA).

Financial manager must assess each ratio point from one point to five points. Result of Quick test is the sum of points. Minimum number of points (4 points) is characterized for company with good financial future (bankruptcy in the future is not likely), maximum number of points (20) indicates company with financial problems in the future (bankruptcy is likely).

The Bonita Index uses multiple discriminant analysis and it is mainly used in the German speaking countries (Čámská, 2012). Author of Bonita Index selected six independent variables that he thought should be helpful in predicting bankruptcy:

- where x_1 = cash-flow/total liabilities,
 x_2 = total assets/total liabilities,
 x_3 = EBT/total assets,
 x_4 = EBT/revenue,
 x_5 = supplies/total assets,
 x_6 = revenue/total assets.

The Bonita Index formula is:

$$CI = 1.5 * x_1 + 0.08 * x_2 + 10 * x_3 + 5 * x_4 + 0.3 * x_5 + 0.1 * x_6. \quad (1)$$

The best-known version of Altman's score was constructed in 1968. E. I. Altman compared 33 medium-sized American companies (their registered capital amounting to USD 1 - 25 mil.) which ceased to exist with the same number of adequate booming companies. He was the first one to apply multiple discriminant analysis to estimate weights of individual ratios which were included in the model as variables. At first, Altman included 22 financial ratios in his model. He then reduced them only to the five most important (Mičudová, 2013a). By means of his analytical method he got the following formula known as the Altman's bankruptcy predictive model or the Z-Score model, which is used for companies listed at the capital market (Grice, Ingram, 2001):

$$Z = 1.2 * x_1 + 1.4 * x_2 + 3.3 * x_3 + 0.6 * x_4 + 1.0 * x_5, \quad (2)$$

- where x_1 = working capital/total assets,
 x_2 = retained earnings/total assets,
 x_3 = profit before interest and tax/total assets,
 x_4 = market capitalization/book value of debts,
 x_5 = revenue/total assets.

Altman's Z score model shows companies that having a $Z > 2.99$ is considered as a good sign for being successful compared to those which have a $Z < 1.81$. It indicates that they may potentially have serious problems and may not be able to continue. However, for a company which Z score falls between 1.81 and 2.99 (grey zone) it is difficult to determine its status. In fact, the Z score has proven to be 90% accurate in predicting whether a business will fail within one year and 80% accurate in predicting failure within two years (Altman, 1968). For privately held manufacturing firms Altman created formula:

$$Z' = 0.717 * x_1 + 0.847 * x_2 + 3.107 * x_3 + 0.42 * x_4 + 0.998 * x_5. \quad (3)$$

In the financial ratio x_4 we replace the market value of equity with the book value. Healthy company has $Z > 2.6$, unhealthy company has $Z < 1.10$ and grey zone is from 1.10 to 2.60. The Z score formula for non-manufacturing (general use) firms is:

$$Z'' = 6.56 * x_1 + 3.26 * x_2 + 6.72 * x_3 + 1.05 * x_4. \quad (4)$$

Because the financial ratio x_5 is believed to vary significantly from industry to industry, that ratio is left out of the Z score calculation. As a general rule a Z score of 1.10 or lower indicates that bankruptcy is likely, while a score of 2.60 or above indicates that bankruptcy is not likely. A score between the two is the grey zone. We must keep in mind that these are general ranges and not specific to auto dealerships.

Poznański model was created for Polish companies and this model consists of four financial ratios. Formula of Poznański model is (Bombiak, 2010):

$$PM = 3.562 * x_1 + 1.588 * x_2 + 4.288 * x_3 + 6.719 * x_4 - 2.368, \quad (5)$$

- where x_1 = earning/total assets,
 x_2 = (current assets–inventories)/current liabilities,
 x_3 = fixed assets/total assets,
 x_4 = earnings from sales/ revenue from sales.

The resulting value of 0 or lower indicates that bankruptcy is likely, while a positive value can be an indicator that bankruptcy is not likely.

Model Virag and Hajdu is prediction model developed for Hungarian companies in the year 1991. The database serving as the background for the bankruptcy model was provided by the Hungarian Ministry of Finance (77 solvent and 77 insolvent companies). In the first step Virag and Hajdu selected 177 financial ratios and resulting formula contains only four ratios (Fetisovová, Nagy, 2010):

$$MVH = 1.3566 * x_1 + 1.63397 * x_2 + 3.66384 * x_3 + 0.03366 * x_4, \quad (6)$$

where x_1 = currently liquidity (quick ratio),

x_2 = cash-flow/total liabilities,

x_3 = current assets/total assets,

x_4 = cash-flow/total assets.

If company takes value 2.61612 or above that can be an indicator for good financial situation in the future, value 2.61612 or lower indicates that bankruptcy is likely in the future. In Hungary, the legal background for bankruptcy procedures was created only in 1991. Therefore, bankruptcy prediction in Hungary has not got a decades-long tradition. Next bankruptcy models were developed also by Virag and Hajdu based on annual report data for 1990 and 1991, using logistic regression and neural networks.

Index IN05 is one of the most famous Czech corporate predictive models. Mr. and Mrs. Neumaier with their indexes IN (before IN05 they created IN95, IN99 and IN01) have been pioneers in assessing the financial health of Czech firms. This model combines the view of creditor and owner and its main purpose is to detect the impending bankruptcy in good time and to assess the financial health of companies (Mičudová, 2013b). Discriminant formula for Index IN05 is:

$$IN05 = 0.13 * x_1 + 0.04 * x_2 + 3.97 * x_3 + 0.21 * x_4 + 0.09 * x_5, \quad (7)$$

where x_1 = total assets/liabilities,

x_2 = EBIT/interests,

x_3 = EBIT/total assets,

x_4 = returns/total assets,

x_5 = current assets/current liabilities.

Inka and Ivan Neumaier say that company with value 1.6 or above has probability of good financial situation in the future, company with value 0.9 or lower can bankrupt in the future and company with value from 0.9 to 1.6 is in grey zone. Index IN05 and previous index IN01 are identical in terms of indicators. Changes are different in criteria for the evaluation of company's financial situation, where the model IN05 is stricter than the model IN01.

Ohlson raised questions about the multiple discriminant analysis model, particularly regarding the restrictive statistical requirements imposed by the model. To overcome the limitations Ohlson introduced the logistic regression approach to the bankruptcy prediction problem. It is essentially a linear model with a sigmoid function $f(x) = 1/(1+e^{-x})$ at the output. Because the output is in between 0 and 1, the model has a good probabilistic interpretation. Ohlson used the logit model and applied it in US firms to develop an estimate of the probability of failure for each firm. He argued that this method overcomes some of the criticisms of multiple discriminant analysis, which requires an assumption of a normal distribution of predictors, and suffers from the arbitrary nature of identifying non-failed "matching" firms (Wang, Campbell, 2010). Ohlson selected industrial firms from the period 1970 - 1976 that had been traded on a US stock exchange for at least 3 years. He ended up with 105 failed firms and 2000 non failed firms. Ohlson model (O score) formula is:

$$O = -1.32 - 0.407 * x_1 + 6.03 * x_2 - 1.43 * x_3 - 0.0757 * x_4 - 2.37 * x_5 - 1.83 * x_6 + 0.285 * x_7 - 1.72 * x_8 - 0.521 * x_9, \quad (8)$$

where probability of bankruptcy = $e^O / (1 + e^O)$,

x_1 = log (total assets/GNP price-level index),

x_2 = total liabilities/total assets,

x_3 = working capital/total assets,

x_4 = current liabilities/current assets,

x_5 = EAT/total assets,

x_6 = EBITDA/total liabilities,

x_7 = 1 if net income was negative for the last 2 years, 0 otherwise,

x_8 = 1 if total liabilities exceed total assets, 0 otherwise,

$x_9 = (EAT_t - EAT_{t-1}) / (|EAT_t| + |EAT_{t-1}|)$.

As a general rule a O score of 0.50 (50 %) or lower indicates that bankruptcy is not likely, while O score of 0.5% (50 %) or above can be an indicator that bankruptcy is likely.

Zmijewski adopts a probit approach that is also based on accounting data but uses a different set of independent variables. A selected sample of businesses was made of 40 bankrupt businesses and 800 prosperous businesses. Zmijewski model formula is:

$$ZM = -4.336 - 4.513 * x_1 + 5.679 * x_2 + 0.004 * x_3, \quad (9)$$

where probability of bankruptcy = $1 / (1 + e^{-Zm})$,

x_1 = EAT/total assets,

x_2 = total liabilities/total assets,

x_3 = current assets/current liabilities.

Zmijewski model shows companies that have a score of < 0.50 (50 %) and are considered as a good sign for being successful. Companies that have a score of > 0.50 (50 %) had potential serious problems and may not be able to continue.

3. Results and discussion

We decided to verify prediction reliability of eight prediction methods. Interpretation of prediction reliability is very sensitive (delicate) issue, we could say that it is very subjective question. For this reason we can find only occasionally comments on numerical expression of prediction reliability in the literature. According to Vlkolinský (2013) prediction

reliability can be considered a good reliability if accuracy of companies' classification is 70 % or the level of above 70 %. We assume that prediction reliability of all eight prediction methods is supposed to be below 70 % in Slovak companies one year prior to the bankruptcy.

The research sample consisted of 60 Slovak companies (30 bankrupt companies and 30 prosperous companies) from category C – Industry according to classification SK NACE. We decided for industrial business entities for several reasons. Companies in the “Trading or services” are not included as they have different assets and financing requirements compared to companies involved in the category “Industry”. We focused on the industrial business entities because prediction methods were created especially for manufacturing business entities. Bankruptcy analysis of CRIF – Slovak Credit Bureau, Ltd., showed that in the year 2014 was again record in the number of bankruptcy. In bankruptcy were 407 Slovak business entities (in 2013 there were in bankruptcy 394 business entities). In the years 2013 and 2014 the most risky sectors for bankruptcy were Industry, Trade and Construction.

We verified prediction reliability in bankrupt companies one year prior to the bankruptcy. We focused on the years of economic crisis i.e. 2009 - 2010. In prosperous companies we studied accounting statements from the year 2012. We did not work with longer period for opportunity to compare input data. We did not select business entities in research sample by random selection because of availability (unavailability) of data. Business entities, which published financial statement in universal database Cribis, were included in research sample. Problem of bankrupt business entities is very low availability of financial statement (especially in the period prior to the bankruptcy).

All 30 bankrupt business entities had to fulfil three characteristics – negative Economic Value Added, index of payment discipline for bankrupt business entities (CCC, CC, C or D) and “negative incident” – bankruptcy, liquidation, negative equity, commitment to the Social and Health Insurance Company, receivership and restructuring. All 30 prosperous business entities had to fulfil two characteristics – positive Economic Value Added, index of payment discipline for prosperous business entities (AAA, AA or A).

In this case of verification of prediction methods is positive when bankrupt business entities are classified to the group of bankrupt business entities according to prediction methods and prosperous business entities to the group of prosperous business entities. If prediction method classify all 30 bankrupt business entities to the group of bankrupt business entities, prediction reliability of this method is 100 %. If business entity was classified to the group of prosperous business entities, it was error type I (or error Alfa). Next contingency table was the base for calculating prediction reliability, error Alfa and error Beta.

Table1. Classification of business entities

		Current state	
		<i>Bankrupt</i>	<i>Prosperous</i>
Prediction	<i>Bankrupt</i>	true positive (TP)	false positive (FP)
	<i>Prosperous</i>	false negative (FN)	true negative (TN)

Source: Mičudová, 2013c, p. 374

In the next table we present results of classification of 30 bankrupt business entities one year before bankruptcy. We have to emphasize that verification of Quick test, Bonita Index, Altman's Z score and index IN05 did not contain grey zone. We classified business entities into two groups – bankrupt business entities and prosperous business entities.

Table 2. Classification of bankrupt business entities one year prior to the bankruptcy

Prediction method	Bankrupt business entities	Prosperous business entities	Total	Prediction reliability	Error Alfa
Quick Test	13	17	30	43.33 %	56.67 %
Bonita Index	13	17	30	43.33 %	56.67 %
Altman's Z score	15	15	30	50.00 %	50.00 %
Poznański model	11	19	30	36.67 %	63.33 %
Model Virag and Hajdu	17	13	30	56.67 %	43.33 %
Index IN05	19	11	30	63.33 %	36.67 %
Ohlson model	16	14	30	53.33 %	46.67 %
Zmijewski model	16	14	30	53.33 %	46.67 %

Source: Own preparation according to results of prediction methods.

Prediction reliability of selected methods one year prior to the bankruptcy is not high. Accuracy of classification of business entities evaluate negatively. Index IN05 classified 19 business entities (63.33 %) to group of bankrupt business entities. That was the largest number of business entities classified correctly. Index IN05 had prediction reliability 77 % when was developed (in the year 2004). According to Neumaierová and Neumaier (2013) methods (methods based on discriminant analysis) do not have one hundred percent probability of correct classification of analyzed business entities. The worst prediction reliability had Poznański model which classified correctly only 11 business entities (36.67 %). Results of verification confirmed that prediction reliability of selected methods one year before bankruptcy is supposed to be below 70 %.

Table 3. Classification of prosperous business entities in the year 2012

Prediction method	Bankrupt business entities	Prosperous business entities	Total	Prediction reliability	Error Beta
Quick Test	9	21	30	70 %	30 %
Bonita Index	11	19	30	63.33 %	36.67 %
Altman's Z score	16	14	30	46.67 %	53.33 %
Poznański model	2	28	30	93.33 %	6.67 %
Model Virag and Hajdu	8	22	30	73.33 %	26.67 %
Index IN05	15	15	30	50 %	50 %
Ohlson model	5	25	30	83.33 %	16.67 %
Zmijewski model	5	25	30	83.33 %	16.67 %

Source: Own preparation according to results of prediction methods.

In the table 3 we present prediction reliability of eight methods in prosperous business entities in the year 2012. Prediction reliability of selected prediction methods in prosperous business entities was significantly better than prediction reliability in bankrupt business entities. Poznański model in the year 2012 classified correctly 28 business entities (93.33 %). Error Beta was only 6.67 %. Poznański model had the worst prediction reliability in bankrupt companies one year before bankruptcy. It should be emphasized that Index IN05 had the best prediction reliability in bankrupt business entities, but in prosperous business entities classified correctly only 15 companies (50 %).

The financial health and stability is a crucial issue for every company. Nowadays, the topic of bankruptcy prediction is still discussed and solved, because the economic crisis in 2008 – 2010, which global impact was significant, changed the world economy (Kula, Bobek, Čámská, Hájek, 2012). Economic crisis influenced global economy caused extreme problems to almost all economic subjects all around the world (Elexa, Krafská). Current turbulent economic conditions influence the prediction reliability of prediction methods. This fact confirmed results of the research.

4. Conclusion

This article presented results of verification of prediction methods. The research sample was made of 60 Slovak business entities. We used information from secondary data, from accounting statements published in database Cribis. We applied eight selected prediction methods which were divided into three categories (prediction methods most commonly used in business practice, methods from Visegrad countries and classification models). Results of verification confirmed our assumption that prediction reliability of eight prediction methods is supposed to be below 70 % in Slovak companies one year before bankruptcy.

The importance of prediction methods as tool of financial management is conditioned by correct results of their prediction reliability, which are especially in current conditions, more than polemic and controversial. Also from the results of several previous empirical research we can deduce that prediction reliability of methods decreases significantly if methods are applied in another area, another time or another business environment as on which were constructed. In recent years we can see significant economic and legislative changes. These changes have a direct impact on the business entities what is cause of decreasing of prediction reliability of used prediction methods. Because of this academic community comes with new consideration and prediction methods (based on logistic regression, conditional trees, random forest, neural network etc.) for prediction of business financial development.

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The current risks of obligatory value conversion from restructuring proceedings on bankruptcy proceedings

Oľga Kmet'ová

Abstract

The conversion from restructuring proceedings on bankruptcy proceedings and bankruptcy at all is constitutionally relevant determinant of quality of the debtor's fundamental right to the judicial protection as a participant of restructuring proceedings. The aim of the article is refer to the current high risk of the debtor, that he gets into liquidation bankruptcy which will cause his demise, even if he tries (and use his legal option) to restructuring, as the economic and legal rehabilitation. In this connection, based on the experience and expertise we evaluate legislative regulations which in this respect are unsatisfactory for the debtor. We point out the pitfalls and try to outline some directions which could act in the future legislation in this area.

Keywords: Bankruptcy, bankruptcy proceedings, restructuring proceedings, restructuring, debtor, obligate conversion

1. Introduction

The significance of bankruptcy law is growing in the time of economic crisis, when an increased number of economic bankruptcies occur due to decreased consumer demand. The role of the bankruptcy law is to deal with legal consequences of economic failure of entrepreneurs in the market environment.

In assessing the financial health of the enterprise and predicting financial problems enterprises we can use various financial indicators which can be used as input for expert appraisal or for creating various models using multivariate statistical methods, for example (Slivková – Sabolová, 2014).

The set of financial indicators together with the non-financial indicators covering the attitudes of shareholders and management, personnel, relations with customers and suppliers, competitive situation and finance management capabilities might help to identify possible company's crisis before it begins and to prepare the solutions to avoid it (Kurschus – Serapova – Cvililkas, 2015).

Despite the great diversity of approaches and methods for the forecasting of bankruptcy the greatest preference is often given to the quantitative, based on statistical methods (Burganova – Salahieva, 2015).

If there are more producers or providers of certain services operating on the market than the market is able to absorb, it must inevitably result in economic failure known as bankruptcy of some entrepreneurs.

Bankruptcy is a mandatory procedure in the sense that, when firms become insolvent, the state-supplied bankruptcy procedure must be used. Debtors and creditors are not allowed to contract for any alternative dispute-resolution procedure or for any limits on managers' right to file for bankruptcy and to choose between liquidation and reorganization in bankruptcy (White, 2011).

For bankruptcy we consider the situation when the company is not able to reverse their poor financial health and this situation is in accordance with the legislation in force in the country. These technical terms are also used as "business, business failure, failure" (Feranecová – Sabolová, 2015).

The task of the bankruptcy law is to assure legal departure of such unsuccessful entrepreneur from the market using the institute of bankruptcy proceedings. Winding-up bankruptcy usually results in deletion of the debtor subject and its subsequent dissolution.

Restructuring process is another alternative of judicial proceedings, by which modern bankruptcy law enables the debtor to avoid bankruptcy proceedings (winding-up bankruptcy). The significance of this recovery institute is rapidly growing under current economic conditions. The restructuring proceedings protects the debtor from exercise of security rights and from creditors activated by execution proceedings. This procedure is in the end actually in the interest of creditors as it should assure higher level of satisfaction of creditors' claims than is in the case of winding-up bankruptcy. At the same time, the debtor achieves in this proceedings unenforceability of a substantial part of unsatisfied claims on the part of creditors, what will enable the debtor to continue with business activity without debt.

It should be said that bankruptcy law must prefer restructuring proceedings. However, legislation must be economically attractive and legally simple for the debtor and must provide sufficient guarantees for creditors in order to avoid its abuse. The institute of restructuring is in the current legislation strictly formalised and demanding with regard to process. Preferring restructuring process from winding-up bankruptcy is a postulate of bankruptcy law, but at the same time contains mechanisms due to which the restructuring process is mandatory transformed to bankruptcy

proceedings even without default of the debtor. Thus the debtor risks that by filing a motion for the start of restructuring in the case of impending insolvency the restructuring proceedings will be changed to bankruptcy proceedings. The court shall, on the grounds laid down in the law, to decide about stop of restructuring proceedings and about start of bankruptcy proceedings and at the same time shall declare bankruptcy in relation to property of the debtor.

The main aim of our article is to refer to the current high risk of the debtor that he gets into winding-up bankruptcy which will cause his dissolution, even if the debtor attempts (and uses his legal option) restructuring as economic and legal recovery. In this regard we evaluate legislative regulations which in this respect are unsatisfactory for the debtor; we point out the pitfalls and try to outline some directions where the future legislation in this area could go.

2. Court supervision during restructuring process

The competence of courts to decide in bankruptcy and restructuring proceedings is laid down in Art. 142 par. 1 of the Constitution of the Slovak Republic (hereinafter referred to only as the "constitution"). Details concerning the competence of courts and proceedings held at courts also in specified matters is laid down in line with authorisation constitutional standard in the legal regulation (Art. 143 par. 2 of the constitution). Such legal regulation is the Act No. 7/2005 Coll. on bankruptcy and restructuring, amending and supplementing certain laws as amended (hereinafter referred to only as the "act on bankruptcy and restructuring"), which in the third section named "Restructuring" contains also provisions regarding involvement of general courts in the restructuring process, namely in its fifth head in form of court supervision and in the eighth head in form of plan confirmation by the court or plan refusal by the court in cases specified by the law.

Whereas the ruling about the plan confirmation by the court contains also the decision about the end of restructuring process, the consequence of legally valid ruling about the plan refusal is that the court in a single ruling stops the restructuring process of the debtor, starts bankruptcy proceedings against the debtor and declares bankruptcy on debtor's property. It is also due to the seriousness of consequences of plan refusal by the court that the act on bankruptcy and restructuring counts in such case with two-instance proceedings, when it admits the right to file an appeal against the ruling of district court. However, the range of subjects entitled to file an appeal is significantly limited and includes only the subject submitting the plan, and in the case of creditor's motion for allowing restructuring process such subject is pursuant to Section 133 par. 2 of the act on bankruptcy and restructuring also the receiver.

The situation is different if the court during supervision of activities of the debtor, receiver and creditor bodies during the restructuring process finds violation of those obligations or meeting those facts (if applicable) which constitute the grounds for declaring bankruptcy. Despite the seriousness of consequences of court rulings in such cases, the appeal against them is not admissible.

3. Declaration of bankruptcy during restructuring

The competent bankruptcy court (hereinafter referred to as the "court") supervises activity of the debtor, receiver and activity of creditors' committee during the process of restructuring. The court is entitled to request from the receiver explanations or reports about the progress of restructuring process, which the receiver shall submit to the court within stipulated deadline. The aim of such supervision is to assure the performance of activity of supervised subjects so as the restructuring would take place in line with the law and meet its purpose for which it was allowed. In order not to postpone the satisfaction of creditors' claims, the court in cases listed exhaustively in Section 131 par. 2 of the act on bankruptcy and restructuring shall decide about stop of restructuring proceedings and about start of bankruptcy proceedings and about declaration of bankruptcy.

The court shall, without motion and in a single ruling, stop the restructuring proceedings, start bankruptcy proceedings against and declare bankruptcy on debtor's property, if it finds that

- the receiver repeatedly or seriously breached obligations laid down in the act,
- the receiver failed to comply with his obligation to ask the court for declaration of bankruptcy,
- the receiver failed to duly call the meeting of creditors,
- the meeting of creditors did not have quorum or failed to appoint creditors' committee or it resolved on the proposal of creditor entitled to vote that the court shall declare bankruptcy,
- the final proposal of the plan was not submitted by the subject submitting the plan for preliminary approval to the creditors' committee within deadline stipulated by law,
- the creditors' committee failed to approve the submitted proposal of plan within deadline stipulated by law, or refused the submitted proposal of the plan,
- the receiver failed to duly call the meeting which should decide about the plan approval,
- acceptance of the plan was not voted for by the absolute majority of groups or present creditors with absolute majority of all votes counted according the determined amount of their determined claims at the meeting which should decide about the plan approval,
- the subject submitting the plan failed to file a motion to confirm the plan by the court to the court within deadline stipulated by law.

Figure 1 shows the overview of the number of allowed restructuring process and number of declared bankruptcies during restructuring in the Slovak Republic in the period 2010 - 2014 and as of 21 September 2015.

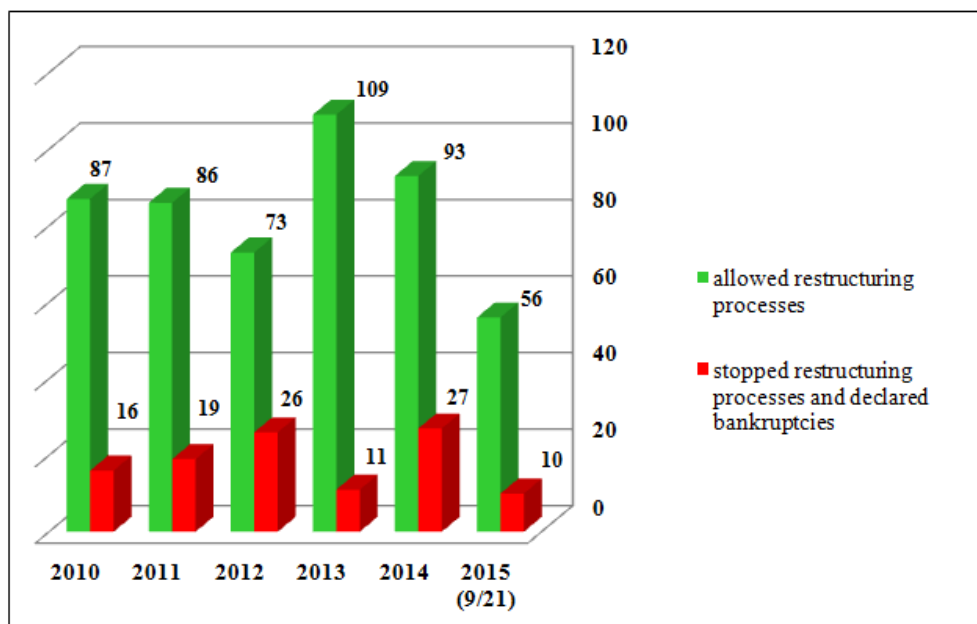


Figure 1.

Source: Prepared by author on the grounds of statistical data about restructuring proceedings at district courts in the Slovak Republic, available at <http://www.justice.gov.sk/stat/statr.htm>

4. Conversion of restructuring proceedings to bankruptcy proceedings due to reasons on the part of the receiver

4.1. Repeated or serious violation of receiver's obligations

Also on the grounds of findings of the Constitutional Court of the Slovak Republic (hereinafter referred to as the "constitutional court") file ref. IV. ÚS 8/2013 of 5 April 2013, file ref. I. ÚS 351/2013 of 2 October 2013, file ref. III. ÚS 218/2014 of 9 December 2014 and file ref. II. ÚS 153/2015 of 29 July 2015, we would like to point, in relation to declaration of bankruptcy during the process of restructuring, to more and more frequent cases when such conversion was a result of violation of receiver's obligations, when the receiver repeatedly or seriously violated obligations imposed by the act on bankruptcy and restructuring.

Limits of what kind of violation of receiver's obligations already constitutes grounds for stopping the restructuring process and declaring bankruptcy are in Section 131 par. 2 letter a) of the act on bankruptcy and restructuring defined only in a very general manner. Taking into account the frequency and diversity of ways of violation receivers' obligations, such general approach creates a significant level of legal uncertainty.

In the matter file ref. IV. ÚS 8/2013 the constitutional court examined the procedure and ruling of general (bankruptcy) court, key errors of which consisted according to complainants (creditors of registered claims as parties to restructuring proceedings) especially of the facts that the court:

a) stated repeated and serious violation of receiver's obligations in preparing the list of claims and its submission to the court within deadline stipulated by law (alleged non-delivery of the list of claims in form stipulated by law);

b) even despite the explicit wording of Section 131 par. 2 of the act on bankruptcy and restructuring justified the conversion of restructuring to bankruptcy with alleged failure to comply with general obligations imposed on the receiver by the Act No. 8/2005 Coll. on receivers, amending and supplementing certain laws as amended (hereinafter referred to as the "act on receivers"), i.e. act other than the act on bankruptcy and restructuring, which governs general administrative obligations of the receiver in operating his office in relation to all bankruptcies and restructuring processes in which he acts as the receiver (failed to be in the office during opening hours, failed to assure due performance of receiver's activities by persons appointed by him, failed to react to phone calls and calls from the court and creditors);

c) proceeded in formalistic manner and did not examine the reasonability and seriousness of errors of which the receiver was claimed to be in fault in relation to substantially negative consequences which the bankruptcy, as compared to restructuring, can cause (such as definitive dissolution of the debtor, lower rate of satisfying creditors, devaluation of shareholders' property).

The constitutional court is authorised and obliged to assess the lack of constitutionality of proceedings and decision making of general courts in matters in which there is no higher or remedy court which would protect the basic right of party to the proceedings at lower instance courts. That was the case also in this examined case.

In the restructuring process of a debtor with hundred-year old tradition, export to more than 20 countries worldwide and new technologies for production of zinc oxide - the business company SlovZink, a.s., a situation occurred in the circumstances of the matter when despite allowing the restructuring process after meeting of legal conditions was determined, after appointing the creditors' committee by the meeting of creditors, the competent district court stopped the restructuring proceedings held against the debtor, started bankruptcy proceedings and declared bankruptcy on the property of the debtor in a single resolution.

The district court based its stop to restructuring and declaration of bankruptcy in the circumstances of the examined case pursuant to Section 131 par. 2 letter a) of the act on bankruptcy and restructuring on its finding that the receiver had repeatedly and seriously violated receiver's obligations imposed by the act on bankruptcy and restructuring, as a result of which it prevented parties to the proceedings to exercise their rights in that proceedings.

According to B. Pospíšil¹, repeated violation of receiver's obligations is especially when the court notifies the receiver that he violated a certain obligation and the receiver, despite such notice, continues to violate such obligation.

A serious violation of receiver's obligations² is such violation of obligation, which due to its intensity significantly obstructs the course of bankruptcy (or restructuring) proceedings, e.g. failure to prepare list of claims, failure to make the file accessible to registered creditors in time when certain important deadlines are running (such as the deadline for rejection of claims), failure to make the office accessible during common opening hours in time when basic registration period is running and so on).

The constitutional court pointed to the fact that the district court in stating repeated and serious violation of receiver's obligations in preparing the list of claims and its submission to the court within the deadline stipulated by law failed to take into account without any justification the fact that *"the receiver personally on 19 July 2012 and via electronic form - email of 20 July 2012, i.e. within stipulated deadline, delivered the completed list of claims to the district court pursuant to the request from the district court. The district court in the end confirmed both in the justification of appealed ruling as well as in the statement to complaint that the receiver did prepared complete list of claims in line with the law... However, the district court did not take into account in its decision making said facts also documented in writing that the receiver did not repeatedly violate legal obligations in relation to keeping the list of claims and did so without any relevant reason"*.

Similarly, the district court deemed legal facts which cause obligate stopping of restructuring proceedings, start of bankruptcy proceedings and declaration of bankruptcy on the property of the debtor, with reference to Section 131 par. 2 letter a) of the act on bankruptcy and restructuring also the serious violation of receiver's obligations pursuant to Section 7 and Section 8 of the act on receivers (the receiver failed to be in the office during opening hours and failed to provide the performance of receiver's activities by persons appointed by him, the receiver did not have registry available to public in his office), due to which facts the receiver did not enable creditors to duly perform and claim their rights (especially to look into receiver's file).

The constitutional court established in this regard that *"the district court formulated this legal conclusion in appealed ruling without reasonable justification"* and on the grounds of above said reached conclusions that *"if general court acting in the matter subsumes violation of general administrative obligations imposed by a certain particular act (in the examined matter this concerns violation of receiver's obligations pursuant to the Act No. 8/2005 Coll. on receivers, amending and supplementing certain laws as amended) under violation of obligations laid down in another act (in the examined matter this concerns also violation of receiver's obligations laid down in the Act No. 7/2005 Coll. on bankruptcy and restructuring, amending and supplementing certain laws as amended) it has to justify it in constitutionally acceptable manner. Otherwise this legal conclusion of the general court must be deemed a manifestation of formalistic approach to interpretation and application of relevant legal regulation, which is arbitrary, or it is a legal conclusion which can be from the constitutional perspective deemed obviously unjustified and not offering fair judicial protection to parties of respective proceedings governed by the law (in the examined matter of the restructuring proceedings)"*.

In relation to interpretation and application of relevant legal regulations the court shall take into account fair balance in provision of protection to claimed rights and justified interests of parties to proceedings. The principle of justice and requirement of material protection of rights are substantial and unavoidable attributes of legal protection (especially judicial) in the concept of material rule of law (finding of constitutional court file ref. III. ÚS 72/2010). This requirement is under the circumstances of the case even more urgent with regard to extreme consequences of conversion of restructuring to bankruptcy for creditors, debtor as well as for the receiver. However, in the opinion of the constitutional court *"the procedure and said ruling of the district court did not meet said attributes"*.

We are of the opinion that the debtor can eliminate the risk of bankruptcy declaration during the process of restructuring due to reasons on the part of the receiver by correct choice of professional receiver with practical experience in that area in which the debtor performs his business activity. The debtor selects the receiver from the list of receivers with office in the district of the bankruptcy court of appeal in which competent bankruptcy court resides. The same applies also in case the creditor orders the receiver to prepare report. The person of the receiver is decisive in the preparation of restructuring report and recommendation of restructuring process, and after restructuring is allowed the receiver is irreplaceable³.

The professional public justifiably expected from the last amendment of the act on bankruptcy and restructuring executed by the Act No. 87/2015 Coll. passed by the National Council of the Slovak Republic on 23 April 2015 the option to exchange the person of receiver and supervising receiver in restructuring process, or appointment of the receiver by creditors in the restructuring process, as well as the requirement for practice of receivers in large restructuring processes (see the impact of media pressure in the case Váhostav). However, the legislator decided that the selection of

¹ Pospíšil, B., 2012. *Zákon o konkurze a reštrukturalizácii. Komentár. [Act on Bankruptcy and Restructuring. Commentary]* Bratislava: Iura Edition. p. 199

² Pospíšil, B., 2012. *Zákon o konkurze a reštrukturalizácii. Komentár. [Act on Bankruptcy and Restructuring. Commentary]* Bratislava: Iura Edition. p. 199

³ Ďurica, M. 2012. *Zákon o konkurze a reštrukturalizácii. Komentár. [Act on Bankruptcy and Restructuring. Commentary]* Bratislava: C.H.Beck. p. 894

receiver by the debtor is all right and it will continue to rely on personal liability and honesty of every single receiver. Result of the legislative process with effect from 29 April 2015 is only the option of the receiver to resign from its office on other grounds, on which the court can withdraw him even without motion. In such case the court shall immediately withdraw the receiver and appoint a new one by random choice; this can be applied also to the supervising receiver. However, it can be doubted whether there will be a will on the part of receivers to resign from the office (see the case of receiver in the restructuring of Váhovstav).

4.2. Non-compliance with obligation to ask the court for declaration of bankruptcy

The basic obligation of the receiver is without regard to whether he prepares and submits restructuring plan monitoring of the financial situation and business situation of the debtor and approval of his legal acts. The debtor does not lose its legal subjectivity or authorisation to dispose of its property by decision allowing the restructuring process. Contrary to the bankruptcy receiver in the case of bankruptcy declaration, who has "power" over the property of the debtor, the restructuring receiver has only monitoring function and unless he is submitting restructuring plan, he only supervises the debtor (Section 129 of the act on bankruptcy and restructuring). If he finds that the financial or business situation of the debtor changed so as it cannot be justifiably assumed that restructuring process will be completed successfully, he shall ask the court to declare bankruptcy⁴.

The receiver performs the supervision of business activity of the debtor, which is basically the economic precondition for restructuring, only by means of approving legal acts of the debtor. However, it should be noted that possible disapproval of debtor's legal acts by the receiver does not result in legal invalidity of such acts, but only in the option to oppose them in case bankruptcy is declared on debtor's property.

4.3. Failure to duly call meeting of creditors by the receiver

Passivity of the receiver resting in the failure to call the first meeting of creditors is another possible reason for obligate conversion of restructuring to bankruptcy proceedings. If the receiver fails to duly call the meeting of creditors, the court in a single ruling stops the restructuring proceedings, starts bankruptcy proceedings and declares bankruptcy on debtor's property. The obligation of the receiver to duly call meeting of creditors does not mean only to call it within deadline stipulated in the Business Journal (within 30 days from the date of allowing the restructuring process), but also to have it held not sooner than on the second day and not later than on the seventh day from the end of period for rejection of claims with simultaneous compliance with procedural conditions (the notice shall include information about place, time and subject of the meeting of creditors). This can result in a situation that despite the fact that creditors meet and the meeting has quorum, procedural shortcomings in calling the meeting of creditors by the receiver can be subject to sanction of conversion to bankruptcy⁵. Both the debtor and creditors are in such case unjustifiably sanctioned for the passivity and lack of professionalism of the receiver, because, as implied by the nature of restructuring, creditors will be satisfied to a smaller degree in bankruptcy than could be expected according to restructuring plan and bankruptcy will at the same time mean the end of business activity of the debtor. In this regard we agree with the opinion of M. Ďurica⁶, according to whom sanction would be justly applied against subject who breaches legal obligation, i.e. against the receiver. There is no reason for the restructuring process to be compromised due to the passivity of the receiver even despite the fact that he is the person who prepared the restructuring report. We also agree with arguments of the said author saying that the act on bankruptcy and restructuring does not distinguish between reasons for not calling the meeting of creditors by the debtor, i.e. whether they are subjective or objective reasons. It is our opinion that the act should, similarly as for the bankruptcy proceedings, stipulate mechanisms for substitute calling of the meeting of

⁴ see the ruling of the District Court Banská Bystrica file ref. 2R/2/2013 of 24 March 2014
ruling of the District Court Banská Bystrica file ref. 1R/7/2014 of 3 October 2014

⁵ The act on bankruptcy and restructuring does not specify in any of its provisions the moment by which proper calling of the meeting of creditors occurs; whether it is the moment when the receiver publishes notice in the Business Journal or moment when such notice was actually published in the Business Journal. In answering this question the restructuring proceedings should be assessed as a whole and provisions governing such proceedings as a whole should be taken into account. There are two meetings of creditors held during restructuring proceedings; the first meeting of creditors is called by the receiver within 30 days from the date the restructuring is allowed (Section 126) and the second meeting of creditors - the approval meeting is called by the receiver within 3 days from delivery of request of the creditors' committee (Section 146). Both legal provisions governing calling of the meeting of creditors are conceived identically, whereas both use the same terminology and formulation; the meeting is called by the receiver by publication of notice in the Business Journal. Interpretation of the provision of Section 126 par. 1 of the act on bankruptcy and restructuring that the notice about calling of the meeting of creditors should be already published in the Business Journal within 30 days from the date of allowing the restructuring process led us to a conclusion that also in case of holding the approval meeting, which the receiver shall call within 3 days from the delivery of request of the creditors' committee, the notice about calling the meeting should also be published in the Business Journal, what is actually not possible with the period of 5 days which the published has for publishing information in the Business Journal. By adhering to such extreme interpretation of Section 126 par. 1 of the act on bankruptcy and restructuring each restructuring would have to be transformed to bankruptcy due to the failure to call the approval meeting duly and timely. The District Court Trnava in the restructuring proceedings held under file ref. 36 R/3/2013 about the motion of the creditor for the stop of the restructuring process due to the violation of the receiver's obligation pursuant to Section 126 par. 1 of the act on bankruptcy and restructuring reached conclusion that it is sufficient in order to duly call the approval meeting of creditors (Section 146) that the receiver had given notice to be published in the Business Journal within deadline stipulated by law and it would be inadmissible for another interpretation to be used for calling the first meeting of creditors (Section 126). The legal conclusion that it is sufficient in order to duly call the meeting of creditors that the receiver gives notice to be published in the Business Journal within deadline stipulated by law is deemed also by the constitutional court to be constitutionally sustainable. Ruling of the Constitutional Court of the Slovak Republic file ref. III. ÚS 414/2014 of 1 July 2014

⁶ Ďurica, M. 2012. Zákon o konkurze a reštrukturalizácii. Commentary. [Act on Bankruptcy and Restructuring. Commentary] Bratislava: C.H.Beck. p. 894

creditors⁷. The assessment whether delayed notice about calling the meeting is or is not proper calling of the meeting should depend on whether the said violation disables in the particular given case success of the restructuring process.

4.4. Failure to duly call the approval meeting by the receiver

The acceptance or refusal of the restructuring plan by concerned parties depends on the result of voting at the approval meeting. The receiver shall call the approval meeting within three days from the delivery of request of the creditors' committee so that the meeting will be held within 30 days from the date of delivery of the said request. The precondition for the request of the creditors' committee to call the approval meeting is the submission of proposal of the restructuring plan by the submitting subject within deadline stipulated by law to the creditors' committee and approval of the restructuring plan by the creditors' committee within deadline stipulated by law. The sanction in form of obligate conversion of restructuring to bankruptcy also in this case affects the debtor and creditors and not the receiver who violated the legal obligation. Similarly as in the case of violation the receiver's obligation to duly call the first meeting of creditors, also in the case of violation of this obligation of the receiver the legislator should have dealt with substitute mechanisms for calling the approval meeting.

4.5. Failure to submit the proposal for plan confirmation to the court

If the court allowed restructuring on the grounds of proposal by the creditor (this is rather exceptional case in practice as the plan is usually submitted by the debtor), the restructuring plan is prepared and submitted for approval process by the restructuring receiver. If the approval meeting approves the plan, the submitting subject shall submit the proposal to the court for approval within 10 days from the end of the approval meeting of creditors. The proposal includes also minutes from the approval meeting and accepted restructuring plan. A sanction for failure to comply with this obligation is the declaration of bankruptcy on the property of the debtor also without a motion.

We believe that in the said case this is obviously illogical and it concerns purely formalistic approach to the restructuring proceedings, when despite the restructuring plan approved by creditors, the whole complicated judicial proceedings is frustrated and debtor is economically destroyed only due to non-compliance with the procedural deadline.

5. Exchange of receiver during restructuring

Contrary to the exchange of receiver during bankruptcy proceedings, the receiver can be exchanged during the restructuring process only on legal grounds. Objective reasons why the receiver cannot perform the office of restructuring receiver include death or dissolution (if it is legal entity) of the receiver, or legal obstacle which prevents the receiver from the performance of office in the particular proceedings pursuant to Section 4 of the act on receivers.

A legal obstacle preventing the receiver to perform his office can be exclusion of the receiver from the performance of receiver's activity, suspension of performance of receiver's activity, or deletion of the receiver from the list of receivers. Such obstacle can be also the fact that the receiver does not have office established in the district of the bankruptcy court of appeal where the competent bankruptcy court holding the restructuring proceedings resides.

The new receiver is not elected by the meeting of creditors, but the court in a single ruling withdraws the present receiver and appoints a new one recommended by the creditors' committee. If legal grounds are met before the meeting of creditors, the receiver is appointed by the court. The court does not have to proceed with random choice in the appointment of the receiver, because such obligation is not imposed on the court by the act on bankruptcy and restructuring. To the contrary, the court should in choosing the receiver in such cases take into account professionalism of the receiver and his experience in the area of restructuring processes, whereas it should always take into account also the fact that the receiver should be a person acceptable both for the debtor and for decisive creditors. At the same time, the court shall expeditiously and as soon as possible decide about the exchange of the receiver, because deadlines stipulated for restructuring are not interrupted for this reason, but continue to run uninterrupted.

It should be however emphasised that the court shall, in its decision making, consider whether with regard to the stage of the restructuring proceedings as well as the role of the receiver in that process, especially in case the receiver is also the subject submitting the plan (if restructuring was allowed on the grounds of proposal by the creditor) there is an assumption that the restructuring process can meet its purpose.

If it is not assumed that the restructuring process will meet its purpose after the receiver is exchanged, the court will in a single ruling stop the restructuring proceedings, decide about the start of bankruptcy proceedings and declare bankruptcy on the property of the debtor.

⁷ The District Court Bratislava I by its ruling file ref. 4 R 1/2013 of 15 May 2013 stopped the restructuring proceedings and declared bankruptcy on the property of business company KAMADA, s.r.o. due to the fact that only two creditors authorised to vote attended the duly called meeting of creditors and therefore the meeting did not have quorum. The court did not take into account the fact that subsequently the meeting again called by the receiver was attended by three creditors, where creditors' committee was duly elected and that no creditor proposed declaration of bankruptcy on the property of the debtor. The constitutional court by finding file ref. III ÚS 218/2014 of 9 December 2014 cancelled the ruling of the district court about the declaration of bankruptcy with legal conclusion "that the requirement of fair balance in the process of provision of legal protection to the debtor on one side and to creditors on the other side is related also to the order to respect already established more considerate approach of restructuring towards the debtor. The district court was obliged in assessing whether the reason pursuant to Section 131 par. 2 letter d) of the act on bankruptcy and restructuring was met to prefer, within limits of relevant legal regulation, preservation of the restructuring process over the winding-up bankruptcy... That means that the preference of preservation of the restructuring proceedings cannot have be in the form of going outside of limits given by the legal regulation. However, as far as the legal regulation gives space for consideration of the court, then the general court should use the interpretation, which preserves the restructuring proceedings over the bankruptcy proceedings."

6. Conversion of restructuring proceedings to bankruptcy proceedings due to reasons on the part of creditors

Restructuring can be allowed only in the interest of creditors, even though the act on bankruptcy and restructuring follows also the interest of the debtor to be relieved of debts and to preserve his economic and legal existence. Restructuring is legally allowed and admissible only if the satisfaction of creditors' claims will be higher than in the bankruptcy after total monetary realisation of debtor's property.

Restructuring is in the end not possible without cooperation and against the will of creditors. Lack of creditors' interest in such solution of insolvency or impending insolvency of the debtor constitutes another reason for the declaration of bankruptcy during the restructuring process. Creditors manifest their passivity by

- not attending the meeting of creditors,
- voting for the declaration of bankruptcy at the meeting of creditors,
- not electing the creditors' committee,
- the fact that the creditors' committee does not approve the submitted proposal of restructuring plan within deadline stipulated by law, or refuse the submitted proposal of the plan,
- the fact that absolute majority or present creditors with absolute majority of all votes counted according to the determined amount of their determined claims did not vote for the acceptance of the plan at the meeting which should decide about the plan approval.

The act on bankruptcy and restructuring requires presence of at least three creditors entitled to vote for the meeting of creditors to have a quorum. The creditor whose claim is determined with regard to both the legal reason and enforceability in time the meeting of creditors is held has the right to vote at the meeting of creditors. Absence of at least three such creditors at the meeting of creditors means ex officio declaration of bankruptcy on the property of the debtor.

The obligate declaration of bankruptcy on the property of the debtor is also a consequence of the fact that three-member or five-member creditors' committee was not elected out of present creditors entitled to vote at the meeting of creditors.

The act on bankruptcy and restructuring has with effect from 1 January 2012 enabled the creditor whose votes represent at least 10 % of all votes of present creditors to submit a proposal that the meeting of creditors should vote about bankruptcy being declared on the property of the debtor by the court. Even though this is undoubtedly a pro-creditor provision, it brings a significant element of uncertainty into the restructuring proceedings by the fact that majority creditors (especially those well-off) will use this legal right to decide about the end of restructuring of the debtor even before the debtor can submit his restructuring plan. If the meeting of creditors resolves so, the receiver shall ask the court for declaration of bankruptcy. With regard to consequences of such voting it is very important to make it properly, what shall be described by the receiver in minutes which will be served to court directly at the meeting of creditors (i.e. handed over to hands of the court clerk present at the meeting of creditors). If the court examines and concludes that conditions for such procedure were met, then the court on the grounds of receiver's motion in a single ruling stops the restructuring proceedings, starts bankruptcy proceedings and declares bankruptcy on debtor's property.

Activity and decision making of the elected creditors' committee can also constitute a risk of declaration of bankruptcy on the debtor's property. Despite the fact that the subject submitting the plan submits the final proposal of the plan within 90-day period from the date the restructuring process was allowed, as stipulated by law (or period prolonged by 60 days) to the creditors' committee for preliminary approval, if the creditors' committee fails to decide about its approval within 15 days from the submission or within 15 days from the submission of plan reworked by the subject submitting the plan according to comments of the creditors' committee, the receiver shall immediately ask the court to declare bankruptcy. The receiver shall do so also in case the creditors' committee refuses the submitted proposal of the plan.

The question then is whether is this approval interim stage justified, when the court in the end orders creditors to approve the restructuring plan at the approval meeting. With reference to the fact that the debtor does not have any option of legal protection from such behaviour of creditors (from the court), we are also of the opinion⁸ that this is "useless formalisation of restructuring proceedings without necessary involvement of the court even though it is a judicial proceedings".

The act on bankruptcy and restructuring lays down relatively complicated procedure and conditions for the approval of the restructuring plan by the meeting of creditors (the approval meeting). If absolute majority or present creditors with absolute majority of all votes counted according to the determined amount of their determined claims did not vote for the acceptance of the plan at the meeting which should decide about the plan approval, then the plan was not accepted by the approval meeting and it is not possible to seek substitution of the consent of the group not agreeing with the plan.

Above mentioned reasons on the part of creditors, which cause obligate stopping of the restructuring proceedings and declaration of bankruptcy on the debtor's property, clearly show that creditors can by their passivity frustrate the process of restructuring even in cases when the debtor is interested in restructuring proceedings and restructuring is economically possible and, for creditors from the perspective of satisfying their claims, also more beneficial than bankruptcy proceedings.

⁸ Ďurica, M. 2012. *Zákon o konkurze a reštrukturalizácii. Komentár. [Act on Bankruptcy and Restructuring. Commentary]* Bratislava: C.H.Beck. p. 896

7. Conclusion

It is indisputable that out of two crucial law-certificated methods for dealing with the insolvency of the debtor pursuant to the act on bankruptcy and restructuring, i.e. bankruptcy and restructuring, it is the restructuring process that is more considerate for the debtor. Our article deals with the issue of obligate conversion of restructuring proceedings to bankruptcy proceedings taking into account differences implied by these two basic methods for solving insolvency of the debtor, but also taking into account the requirement of fair balance between legally protected interests of the debtor and legally protected interests of his creditors.

The last amendment to the act on bankruptcy and restructuring effective from 29 April 2015 has significantly strengthened legal protection of creditors in restructuring proceedings. However, the legal regulation should at the same time improve mechanisms for legal protection of the debtor against possible abusing cases of unjustified conversion of restructuring to winding-up bankruptcy. The debtor should have sufficient procedural tools of legal protection against such procedures. It is clear that also now, after the act on bankruptcy and restructuring was amended in April 2015, if the court decides about the conversion of restructuring to bankruptcy pursuant to Section 131 par. 2 of the act on bankruptcy and restructuring no regular or extraordinary appeal is admissible against such decision of the court. Cases of unjustified conversion of restructuring proceedings to bankruptcy proceedings are thus more and more frequently subject to examination by constitutional court (and in our experience with successful result).

The case of restructuring process of the business company Váhostav showed that conditions for the performance of receiver activity should be redefined. One of the issues currently discussed is that legal regulation now does not require any practice for person performing the office of the receiver. We perceive the problem of absence of any practice rather intensively, because when we realize that any attorney must have 5 years of practice as trainee lawyer, it is at least strange that no practice is required for bankruptcy and restructuring receivers, and so any graduate of a law or economic faculty can become a receiver in a month and then selected by the debtor for a large restructuring case. Personally, we perceive the bankruptcy law as a relatively complicated area of law, which requires extensive legal and economic knowledge, not only in the area of bankruptcy law, but also of criminal and civil law, partially also relatively sound basics of economic nature and in our opinion, any practice in this regard is necessary and the time is ripe for such solution.

In this regard, we are of the opinion that the legal regulation should better specify provisions related to receivers, simplify restructuring proceedings and remove current risks of unjustified conversion of restructuring to bankruptcy proceedings.

We think, that the current legal regulation is not concerned about whether such process can help in actual economic recovery of market subjects and is focused only on whether the rate of satisfaction of creditors is higher than in bankruptcy or not. This is in our opinion not completely decisive criterion for making a decision whether the restructuring process has sense or not.

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The importance of financial reporting in small and medium-sized enterprises

Eva Manová, Zuzana Nižníková

Abstract

Small and medium-sized enterprises represent an integral part of the business environment in each country have in comparison with large businesses low, sometimes no engaging in business in cross-border activity, yet in the structure of enterprises have the highest representation.

SME accounting apply national legal form, their financial statements are not comparable at the transnational level.

Slovak legislation seeks to progressive harmonization of the accounting system SME, for which it was issued a separate standard IFRS. The role of the standard is the unification regulations of accounting, of purpose to achieve comparability of data from financial statements, regardless of the size of the enterprise, or the place of establishment of the financial statements.

The contribution is focused on the differences in financial reporting in connection with the implementation of IFRS for small and medium enterprises. Describes the benefits and disadvantages for small and medium-sized enterprises.

Keywords: SME, IFRS, international accounting, financial reporting, accounting regulation in Slovakia

JEL Code: M41

1. Introduction

The beginning of the new Millennium brought in the field of standardization of financial reporting material changes, which are to ensure small and medium-sized enterprises policies for easier access to the EU market, even outside the borders of the EU. „Important goal of every business activity is mainly profit achievement.“ (Simonidsová, Feranecová, 2015)

International financial reporting standards IAS/IFRS are dealt with the question of the provision of the relevant information about the corporate entity and on the results of his management at the international level, to make it easier to raise the necessary capital and raise him in a highly competitive global environment. Their goal is the unification of legislation in the fields of accounting, in order to achieve comparability of data from financial statements, irrespective of the place of business, or the place of establishment of the financial statements. The accounts also serve as input for assessing the financial health of the enterprise. „In assessing the financial health of the enterprise and predicting financial problems enterprises we can use various financial indicators which can be used as input for expert appraisal or for creating various models using multivariate statistical methods, for example.“ (Slivková, Sabolová, 2014)

2. Small and medium-sized enterprises

Small and medium-sized enterprises form an integral part of the business environment in each country. In the structure of all enterprises, account for the majority of small and medium enterprises. In Europe implements its activity in about 19 million small and medium-sized enterprises, which account for approximately 99.8% of all enterprises in the EU.

For small and medium-sized enterprises is not typical, to be owned by foreign entities. Undertakings of this type therefore mostly represent the local capital, local ownership, and from that point of view are for the economy of the State and unique for the region.

The inclusion of companies in the category of small and medium-sized enterprises, there are different considerations and criteria. In the first place, it is necessary to clarify that the correct classification of businesses in defining the parameters of the individual categories. When we are talking about small, medium and large business.

The main criteria of which shall be determined according to the different categories of undertakings, in particular, include:

- number of employees,
- turnover,
- total assets.

According to the above mentioned factors are broken down into medium-sized, small and micro enterprises.

The representation of small and medium-sized enterprises in the different regions of Slovakia. The regions with the highest representation of the small and medium-sized enterprises, whether in terms of the size of districts is a body corporate, or taking into account the number of business owners. The number of legal persons in other regions of

Slovakia is relatively the same, when it moves from the 9.2% (Nitra region) up to 11.5% (Kosice region). More significant interregional differences in the number of business owners, even when the show with the exception of the Bratislava region (16.3%), ranged from 10.1% (Kosice region) level up to 14.4% of the Zilina region.

According to the above data, small and medium-sized businesses are an important pillar of the Slovak economy.

The new EU directive specifies the criteria for the categories of undertakings, the carrying out of which, at the date on which the financial statements are drawn up, shall not exceed two of the following three criteria:

Table 1. Size criteria for the categories of undertakings

Criterion	Medium- sized enterprises	Small enterprises	Micro enterprises
The overall balance sheet total	20 mil. €	4 mil. €	350 tis. €
Net turnover	40 mil. €	8 mil. €	700 tis. €
Average number of employees	250	50	10

Source: own source

In the case of small enterprises, the directive allows you to increase the overall balance sheet total of no more than 6 million € and net turnover for a maximum of 12 million. €.

The main advantages and disadvantages of small and medium-sized enterprises are shown in table 2.

Table 2. Advantages and disadvantages of SMEs

Enterprise category	Advantages	Disadvantages
SMEs	Adaptability to trends Adaptability to change in demand Close customer interaction	Limited resources Difficulties to develop specific competence for low to medium technology

Source: Stojanova, Suzic, Orcik, (2012)

2. The importance of the IFRS for SMEs

„The rules for the accounting system in the Slovak Republic are in a relatively detailed form formed from r. 1946 States as one of the interested parties, the question is to what extent the current form of enterprise financial reporting system in the Slovak Republic to provide relevant information to the parties, which do not have a similarly privileged status.“ (Tumpach, Manová, Meluchová, 2014)

In the present economic environment characterized by continued structural changes on a global scale. The impact of these changes in the sector of small and medium-sized enterprises recorded the same disadvantages, in spite of the fact that it plays a significant role in the area of job creation, social stability and economic development. Just as a result of global changes in the small and medium-sized enterprises often face the challenge of securing capital and obtaining foreign investor. The acquisition of major investments and promoting businesses related to the provision of detailed information to a foreign market for the investor. How to obtain information at the present time are almost unlimited. Media, internet, etc. provide a variety of information in the field of small and medium-sized enterprises. The most trusted information, with whom the investor works, are the accounting statements. Whereas undertakings accounting apply national legislation, financial statements are not comparable at the transnational level.

Slovak legislation to set out the facts and trying to harmonize the accounting system responds not only in large, important companies, but gradually, this process also concerns small and medium-sized enterprises, for which it was issued a separate IFRS for small and medium-sized enterprises.

Establishment of quantitative criteria for the breakdown of the undertakings within the jurisdiction of the individual countries. IFRS for small and medium-sized enterprises is designed to be called. a typical enterprise, with about 50 employees, with typical transactions, events and conditions, which are characteristic for similar businesses. The problem may be that the IFRS for small and medium-sized enterprises, as they are created, they may not comply with all the businesses for which they are intended.

For example, micro-enterprises are compiled statements financial statements frequently asked for tax purposes and, therefore, the question is whether the compilation of statements under IFRS is rational in that type of business. For the purposes of the compilation of financial statements according to IFRS on the categorization of the undertakings also apply other criteria-the volume of assets, turnover, added value. To utter a clear answer, which is the most appropriate criterion is quite difficult, because each value is relative and subjective criteria in broader contexts. It is therefore necessary, in addition to quantitative criteria also specify quality criteria in relation to the definition of an undertaking.

According to the views of some of the authors¹:

Small and medium-sized enterprises (Small and Medium-Sized Entities/Enterprises, SMEs) are those that do not have publicly traded shares, and in their case, there is no interest on the part of society, State whether the financial statements presented to the shareholders in accordance with the full version of IAS/IFRS.

„Small- and medium-size enterprises (SMEs) often account for up to 90 % of all registered firms in an economy, and even more if the informal sector is included.“(McAdam, et al., 2015)

¹ KRUPOVÁ, L., VAŠEK, L., ČERNÝ, M.: 2005 IAS/IFRS – Principy, Metodologie, Interpretace. VOX, 2005. ISBN 80-86324-44-3 1050 s.

In this case, the companies that do not manage asset broad variety of public and purpose financial statements is universal, which means that these companies have no further obligation to provide detailed information to other entities only information they are legally part of the financial statements.

In establishing the criteria for inclusion enterprise as an SME is noticeable room for policy standards that the national legislation of each country can use. This means that most likely every country in compliance with common quality criteria alone will be able to clarify the inclusion of the group of small and medium-sized enterprises, so the requirements for disclosure of financial statements may not be comparable with companies of public interest. The challenge of the European Union to create a single European market. For the EU single market is a need for a uniform legal standards and standardization of financial reporting for SMEs. SMEs compared to large companies have quite low, sometimes no, engaging in business in the single market, namely the cross-border activity.

The cause of this fact can be particularly²:

- differences in the laws governing business,
- the lack of uniform accounting standards for companies such type,
- inconsistent tax systems,
- limited financial resources,
- weak SME business support in the Single Market,
- cultural and language barriers,
- lack of information.

The desire of small and medium enterprises even in times of difficult economic conditions, the acquisition of foreign capital. Investors will need to navigate in the financial statements, which provide information on assets, liabilities and financial position of the enterprise. For this reason, necessity are uniform approaches to the compilation of financial statements as well as from the international point of view. The result of a uniform approach to the compilation of financial statements from the international point of view it was the approval of the regulation on international accounting standards IAS/IFRS for small and medium-sized enterprises.

In July 2009 the Council of the international accounting standards issued by the International financial reporting standard for small and medium-sized enterprises (International Financial Reporting Standard for Small and Medium-Sized Enterprises). The adoption of IFRS in many jurisdictions introduced significant changes in accounting rules and in the properties of financial statements. (Florou, Kosi, 2013) The standard is designed for businesses with no public accountability, which provide financial statements for external users, which corresponds to more than 99% of businesses in the world. The standard includes 230 pages is adapted to the needs and capabilities of small businesses. It consists of the explanatory memorandum and the implementation of the manual, with the example of the financial statements of small and medium enterprises, with the presentation of the financial statements and a list of the disclosure requirements. The Foundation of the structure of the standard are the areas that are divided into sections. This standard will be reviewed every 3 years and simplified.

The creators of the international financial reporting standards in the process of making international accounting standards for small and medium-sized enterprises based on the assumptions that the standards must:

- featuring a simple, high-quality, comprehensive accounting standards system suitable for small and medium-sized enterprises all over the world,
- to minimize the difficulty in drawing up the financial statements according to the following standards,
- build on the same conceptual framework as IFRS standards,
- to allow an easy transition to full IFRS for larger enterprises, for the case when businesses decide for them,
- be based on the needs of users of financial statements.

The introduction and application of the standard would affect a large part of the business, which has so far charged and reported in accordance with national legislation.

Although the accounting legislation currently does not require mandatory reporting under IFRS for SMEs, some businesses, particularly those which are subsidiaries, in addition to the financial statements in accordance with national legislation, compiled accounts of the accounting under IFRS and maintain business relationships with foreign companies, in particular due, but also because of the competitive advantages.

The accounting information provided by users through the statements of accounts are seen differences arising from differences in the financial statements under the Slovak law legislation and according to the IAS/IFRS. The differences are shown in the following table.

² NERUDOVÁ, D., BOHUŠOVÁ, H.: 2006. Překážky v podnikání SME na jednotném evropském trhu. In: *Evropské finanční systémy 2006. Sborník příspěvků z mezinárodní vědecké konference*. Brno: Masarykova univerzita, ESF, 2006. s. 199-203. ISBN 80-210-4018-1.

Table 3. A comparison of the accounting legislation in the Slovak Republic with IFRS

Adjustment of the accounting Legislation in the Slovak Republic	Adjustment according to IFRS
adjusting the common accounting and financial statements	standards relate only to the financial statements do not include the chart of accounts, put the emphasis on substance rather than form for any accounting under accounts
accounting period calendar/marketing year in the financial statements are presented, the facts that are the subject of accounting	accounting period-52 weeks in the financial statements shall be presented by the financial situation and the transaction unit
legislation – Act No. 431/2002 Coll. on accounting, the measures for accounting units in the Slovak Republic the Slovak Republic – MOF	legislation – framework, IAS 1, IAS 27
components of financial statements: balance sheet, profit and loss account, notes	the balance sheet, a statement of the financial situation, set up or at the end of the period, the result of a comprehensive statement, statement of changes in equity, cash flow statement, notes

Source: Paseková, 2012

As can be seen from the above comparison, the relevance of the information to be reported in the financial statements in accordance with IFRS rules and affects a number of factors — in particular, the diversity of the length of the accounting period, the different components of the financial statements.

The financial statements do not provide all of the information for all the users of the financial statements, the following information is, therefore, necessary to consider in the light of the relevant information from other sources. I don't see the value of equity in the financial statements of the unit, but it does provide information on the basis of which the users of the financial statements the amount of know guess. Financial reporting shows whether the allocated funds are used efficiently and effectively. This information is especially useful for the management of the enterprise.

Users of accounting information of large enterprises have different demands for financial information, such as users of the financial statements of small and medium enterprises, therefore, it was necessary to issue IFRS for small and medium-sized enterprises.

Some users of the financial statements of small and medium enterprises may be interested in the information that are not normally presented in the financial statements. Therefore, small and medium sized businesses can publish to external users, universal accounts. Universal financial statements under IFRS for SMES is intended to provide general information about the financial position, financial performance and useful cash flows of the entity to a wider range of users, these users do not have the ability to get financial statements tailored to their specific needs.

Small and medium-sized enterprises compiled financial statements for use by owners, managers, or for the use of the tax or other authorities.

Important information from external users of financial statements, the tax office. The financial statements of companies operating in Slovakia represents the starting point for the determination of the tax base from income. The tax authorities have the power to require the disclosure of the information that they need to meet the statutory tax obligations for businesses.

The result of the management accounting is transformed into a base found in the income tax in addition to the provisions of the Act on accounting and shall respect the provisions of the law on income tax.

3. Conclusion

Each country applies its own specific tax legislation and the objectives, financial statements are different from the goals of reporting for tax purposes. „ The tax regulations in different countries are undergoing changes in order to increase the competitiveness of the tax increasingly the countries and at the same time to ensure the desired yield. “(Simonidesová, Juhászová, 2013)

The application of IFRS in accounting, fundamentally changing the approach to the assessment of individual economic transactions, the tax aspect is secondary. It is unlikely that the financial statements are prepared in accordance with IFRS for small and medium-sized enterprises will fully comply with all requirements of the tax laws and regulations. Depends on the decision by the State, whether or not it will accept the financial statements drawn up in accordance with this standard for tax purposes.

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Business crisis and ratio indicators

Iveta Sedláková

Abstract

Enterprise is a living organism and, similarly as diseases can be predicted for several months or years before the outbreak, economists try to predict the onset of the crisis in the company already in its latent stage. In the past they used and are still using ratio indexes for such prediction. The aim of the prediction is prevention of the outbreak of the crisis and rescue of the high value which represents a healthy and operating business. However, the diagnosis of the business of high value requires expert knowledge in financial management. The particular article is dealing with the opportunities of prediction models for contemporary business practice.

Keywords: predictive models, business crisis, bankruptcy business

JEL Code: G33

1. Introduction

Enterprise is a lively and original organism, which is extended from its inception via several developmental stages. A well-functioning business entity contributes to the wealth of the region in which it operates. It helps reduce unemployment, inflation and encourage domestic and foreign trade. It creates value to the ambience of the place of operation and often directly supports science and research.

The laws, which it must meet during its existence and learn to overcome them, include many kinds of risks. Their overcoming presents the elimination of possible outbreaks of corporate crises and enables the business performance. Undetected risks in the different life stages of an enterprise may seriously complicate the normal activities of the company. Not infrequently, they can attribute to the involuntary termination of an enterprise in the form of liquidation or bankruptcy.

Many experts from various scientific fields, therefore, for decades tried to find patterns that precede the outbreak of the corporate crisis. Their aim was to create models that predicted the coming of crisis and they enabled management to get time to respond and avert a crisis. The paper deals with several predictive models created in the Czech Republic and Slovakia in its first part. The second part presents a part of the research work dedicated to testing the Czech prediction model for enterprises in the Slovak Republic.

2. Predictive models

Predictive models (Mihok, Vidová, 2006) comprehensively reflect the financial environment in the analyzed company. They are based on the quantification of the state of individual areas such as the stability, profitability, liquidity, activity, position in the capital market. Each area is allocated a certain weight expressed by the coefficient and it determines which part of the economic environment contributes to the overall economic situation of the company.

Most companies put the greatest weight especially on the area of profitability, which most affects the financial soundness of the examined company. The coefficients in each model are based on the long-term and comprehensive analysis of the various domestic and international businesses. Predictive models in terms of the methods used to assess the company's financial situation are based on a method of scoring, the application of methods of mathematical statistics and evaluations under multiple criteria. They are divided into two groups on bankruptcy and creditworthy models.

Bankruptcy models give answer as to what time a company goes bankrupt and are based on real empirical data. According to the authors Bajus and Stašová (2003) creditworthy models answer the question to what extent the company is financially sound or has got financial difficulties. They are based on theoretical and partly pragmatic knowledge.

The impetus for the creation of specific methods of financial analysis, as pointed by Baran (2008), was the effort to recognize early fledgling causes of instability and the effort to prevent the acute stage. These methods are referred to as early-warning systems.

2.1 Predictive models in terms of Slovak enterprises

Historically, the first bankruptcy model created in Slovakia according to Gurčík (2002) was CHRASTINOVÁ index for the evaluation of the Slovak farms. CH-index has the form:

$$CH = 0,37 \frac{VH}{A} + 0,25 \frac{VH}{VYN} + 0,21 \frac{OA}{KrZáv} - 0,1 \frac{KrZáv}{VYN} - 0,07 \frac{CK}{A} \quad (1)$$

where:

A	assets
VH	profit or loss
VYN	revenues
OA	current assets
KrZáv	current liabilities
CK	foreign capital

Index results mean:

CH > 2.5	prosperous business
2.5 > CH > -0.5	grey area
CH < -0.5	bankrupt company

Another creditworthy-ownership model was Gurčík's index which, according to its author Gurčík (2002) is able to differentiate prosperous businesses from non-prosperous businesses. It was created for agricultural enterprises. The thriving businesses incorporated those which in 1998-2000 made a profit, while their profitability was above 8%. Such a level of profitability is considered the threshold at which the owner's paid-in capital retains its fair value. The non-prosperous businesses were those enterprises that reported losses in three consecutive years. The resulting index has the form:

$$G = 3,412 \frac{NZ}{A} + 2,226 \frac{VH}{A} + 3,277 \frac{VH}{VYN} + 3,149 \frac{CF}{A} - 2,063 \frac{ZAS}{VYN} \quad (2)$$

where:

NZ	retained earnings
VH	profit or loss
VZN	revenues
CF	cash flow
ZAS	supplies

Index results mean:

G > 1.8	prosperous business
1.8 > G > -0.6	grey area
G < -0.6	bankrupt company

Another effort to help in forecasting financial development of enterprises was according to Zalai (2000) the Binkert's discriminatory formula for Slovak and German joint stock companies. It was founded in the 1990s and concerned the sample of public limited companies from manufacturing, services and trade.

The German data was from 13 thousand enterprises, of which 1,350 were selected and gradually by random selection were chosen 80 prosperous and 80 non-profitable enterprises. The sample of the Slovak enterprises comprised 2,500 enterprises, of which 1,559 were selected and then the number was reduced to 80 prosperous companies and the same number of non-profitable ones.

Descriptions of financial and economic situation of enterprises was carried out using a set of indicators comprising originally 72 indicators testifying the equity, financial and revenue situation of enterprises. Currently, in both cases, German and the Slovak businesses, there are included eight indicators in description. This number is sufficiently clear. Procedure of linear multivariate discriminatory analysis resulted in discriminatory features reflecting the entire analysis period, three years before the state of insolvency. Each indicator is assigned to the function that is identified by two indexes. Superscript refers to the year in which was received value indicator. Subscript identifies the indicator in the initial set of indicators.

Discriminatory analysis results in a discriminative function containing variables with the best explanatory power and has the form:

$$D = b_0 + b_1 U_1 + \dots + b_n U_n$$

where

b_0 is a constant $b_1 \dots b_n$ are weight indicators, $U_1 \dots U_n$ are indicators.

Discriminative function for Slovak businesses has the form:

$$D_S^{1po3} = 0,180 U_1^1 + 0,147 U_{40}^2 + 0,237 U_{49}^2 + 0,377 U_{63}^2 + 0,514 U_{13}^3 + 0,505 U_{29}^3 + 0,271 U_{30}^3 + 0,207 U_9^2 \quad (3)$$

where

U_{11}	current assets / current liabilities analyzed a total of the 1 st year
U_{40}^2	equity / assets for analysis of the second year
U_{49}^2	profit / revenues for analysis of the 2 nd year
U_{63}^2	income / added value of the analysed 2 nd year
U_{13}^3	current year, total assets / total assets of the previous year minus one for analyzed 3 rd year
U_{29}^3	current year equity / equity of the previous year minus one for analyzed 3 rd year
U_{30}^3	foreign sources of current year / foreign sources of the previous year minus one for analyzed 3 rd year
U_9	profit / equity capital, reserves and long-term external sources (embedded assets) for Analysis of the year 2

According to Úradníček (2013) the equations were not confirmed in practice probably also in view of the fact that they originated on an analysis of a relatively short period of time, in a volatile legislative and economic environment.

2.2 Predictive models in conditions of the Czech companies

In addition to the above models which were created in Slovakia, several Czech financial analysts also contributed to predictive models. According to Sušický (2011), there are known works of Inka and Ivan Neumaier who formed IN-indexes (index of credibility of the Czech company). They created a number of variants over the years, e.g. IN95, IN9, IN 01 and IN 05, depending on the current development of the Czech economy. The first model was IN 95, which was established in 1995 and which was comprised of six ratio indexes. The last one was indicating overdue liabilities/total revenues and was pointing out to insolvency of companies. All the indicators were based on financial statements and not on market values, which was advantageous at the time of little-liquid capital market. Conditions of the Czech economy were better reflected in indicators for individual sectors (OKEČ). Successfulness of forecast of the financial distress was more than 70% which indicates a good explanatory ability. Currently newly introduced system INFRA of the authors Neumaierová and Neumaier (2014) is a tool which allows the combination of indicators of financial control and risk management. It was applied to industrial enterprises in the Czech Republic in the years 2011 and 2012.

Similarly important are three variants of the model of balance analysis by the author Doucha (1995). These variants differ in their complexity and the number of indicators. The simplest model is the model of balance analysis labelled as I, which represents quick reference evaluation of the company, without analysis in the direct sense of word. Afterwards, there was created a variant marked as the model of balance analysis II. It was created by analyzing more than one hundred of the Czech companies. It is possible to use it in enterprises of different orientation. It is based on indicators of causes which affect the financial condition of the company. In order to compile it there are sufficient data contained in the balance sheet. It provides a set of indicators evaluating business in the area of stability, activity, liquidity and profitability.

Each area, uses a system of 3 to 5 coefficients. Overall is the model comprised of 17 partial indicators. The resulting indicator of each area is their weighted average and the overall final indicator represents a weighted average of indicators of individual areas. The individual coefficients as well as the overall indicator are constructed in the way that the rising value signals an improving condition. According to the authors Kočišová and Kubala (2012) a situation may occur in conversion of the balance analyses II indicators that there will be obtained very high values, which will subsequently distort the overall evaluation of the company. Doucha (1996) recommends to limit the maximum values for indicators to value of 3 in such cases. Restrictions should be used only with the indicators of stability and liquidity. Performance values are present in the indicators of profitability and activity which cannot be limited, as such limitation would lead to unjustified distortion of results.

The overall C indicator has the following form:

$$C = \frac{2 \cdot S + 4 \cdot L + A + 5 \cdot P}{12} \quad (4)$$

where:

S	stability
L	liquidity
A	activity
P	profitability

Variable C is expressed by the number which is obtained as a weighted arithmetic average of other variables of the equation. The resulting values then point the following:

$C \geq 1$ quality company

$C \in <0.5$ to 1) average company
 $C < 0.5$ bad company

The last of the models is marked as the balance analysis III and is the most complex variant. It is based on the model of balance II and adds the calculation of cash flow. According to the author Doucha (1995), the optimal situation for its use arises when there are available quarterly statements for at least two consecutive years in the company.

3. Ratio indexes in bankrupting enterprises

Indexes and models are designed in order to predict sufficiently in advance approaching financial problems. For the needs of the business practice there was used the model of balance analysis II, which was created by financial analyst Doucha in the Czech conditions, based on analysis of more than one hundred of the Czech companies. Model of balance analysis II was originally designed for manufacturing companies, which are expected to have certain state of supplies. The resulting coefficient C can be determined according to equation (4).

However, there is a different situation with non-manufacturing businesses (e.g. business companies, engineering, design companies or companies whose profits stemmed from financial operations). Such companies have a minimum volume of fixed assets. Based on the recommendation of Doucha (1996), there is used resulting ratio S_x omitting the partial coefficient S_5 for the area of stability. For this reason is the resulting coefficient C_x designed for the particular type of non-manufacturing companies and it is calculated as follows:

$$C_x = \frac{2 \cdot S_x + 4 \cdot L + A + 5 \cdot P}{12} \quad (5)$$

This model was tested (Sedláková, 2015) on 85 of the Slovak joint stock companies. Concerned companies went bankrupt between 2009 and 2013. There had to be available at least two complete year-end financial statements for each company in the Business Journal of the Ministry of Justice of the Slovak Republic. Model testing was conducted on the statements from the year preceding the bankruptcy. Enterprises were not selected on a basis of specific sectors of activity, but only based on the information of the respective court on declaration of bankruptcy of a given joint stock company. There was assessed to which extent was the management of such companies able to predict the upcoming involuntary end of the enterprise the year preceding the bankruptcy.

From 85 of the assessed companies, 50 were the manufacturing companies and 35 non-manufacturing. The results are displayed in Table 1.

Table 1 :The resulting indicator by companies

		C [%]	C _x [%]
$C \geq 1$	quality companies, a stable situation	16	8
$C \in < 0,5 - 1)$	average companies, a acceptable situation	14	0
$C < 0,5$	bad company, alarming situation	58	46
without the possibility of using the formula		12	46

Source : own processing on the basis of the research

The model informed about the upcoming end of the company in 58% cases of the manufacturing companies and in 46% cases of business companies.

The result of inaccuracy of the financial analysis, which is based on the ratio indexes is not taking into consideration of the possibility of ratio of two negative values, which result is a positive value of the fraction. Severe distortion of the results happens if the particular equations of indexes are mechanically adopted. A given situation may arise in 16% of the manufacturing companies and 8% of the business companies. The resulting value of C was ≥ 1 and despite of that the company went bankrupted within the period of one year. The winding up of the company could have happened also because of other than financial reasons.

If it is not possible to calculate any of the partial indicators: S- stability, L-liquidity-A activity, P-profitability, for example. in a fraction by division it by null, then the resulting coefficient C respectively. C_x has no explanatory power. Such situation occurred in 12% of manufacturing companies and 46% of non-manufacturing companies.

4. Conclusion

Corporate crisis with a number of epicentres in their outbreaks, spread and prevention are the subject-matter of the risk management. Prediction shall be part of the prevention, which represents an estimation of the future development by using the financial indexes. As every business is an original subject, it is not appropriate to make any method described herein an absolute standard which must obeyed by other companies. Testing of the model of balance analysis II which was created in the Czech Republic on Slovak enterprises proved that the prediction models are only subsidiary

form for financial management of the company. They can interact with other techniques on prediction of upcoming changes in the company and thus prevent the unwanted changes such as bankruptcies and liquidations of companies.

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Harmonization of corporate tax income in the Slovak Republic with EU countries in the context of tax cooperation and coordination

Jana Simonidesová, Adela Feranecová

Abstract

The reason for choosing this topic paper is unstinting efforts to enforce tax harmonization EU countries, despite the difficulties that would arise in their implementation. The paper detection level of harmonization of taxes on corporate income tax in the Slovak Republic in comparison with EU countries but also third countries based on a comparison of individual taxes these countries to propose possible solutions in this area.

Keywords: tax, harmonization, tax cooperation, tax coordination

JEL Code: K 34, G 30

1. Introduction

We are currently encountering taxes on every day basis. They are an essential part of our lives, as well as part of the economy of the state. Each country has an established tax system, which regulates the level of direct and indirect tax rates. Adjustment of the individual tax rates is required for the taxation of natural and legal persons, and for goods and services as well. EU Member States have different rates of both direct and indirect taxes.

The result of different tax rates in different countries creates problems associated with avoiding tax payment, or the difference with paying taxes in different countries. Because of this, there is a need for harmonization of taxes in order to avoid these problems.

On the other hand, tax harmonization may not be necessarily useful. Situation might occur, where in the application of tax harmonization, the same country would have to adopt a higher tax rate compared to the original tax rate. This would be influencing entrepreneurs, small businesses, as well as population of given country. It would also have an impact on the economy of the state.

Harmonization of direct taxes has many flat-rate benefits, but also individual economic consequences for some countries. States with low tax burden would lose one of their comparative advantages to increase the attractiveness of business environment. The advantage of direct tax harmonization is particularly the removal of legal and administrative barriers in international investment flows, which would result in increased competition in the economy and would increase living standards of EU citizens (Suhányiová, A. – Korečko, J., 2014).

On the other hand, tax competition may be considered as an instrument of government policy, its concepts, policies and practical approaches in the area of taxation being largely debated in the literature. In addition, the socioeconomic concept of a 'race to the bottom' represents one result of the regulatory competition and fiscal policy of countries. The increasing competition between countries in the area of taxation could be, theoretically, a consequence of tax base mobility (Surugiu, M. – Surugiu, C., 2012).

This topic was chosen because of the unstinting efforts to enforce tax harmonization within EU countries, despite the difficulties that would arise during the implementation. The publication focuses on finding the level of harmonization of the corporate income tax in the Slovak Republic, in comparison with EU countries, as well as third countries based on a comparison of individual taxes in these countries to propose possible solutions in this area.

2. The harmonization of taxes on corporate income tax

The need for harmonization of taxes in the European Union countries arises from the ground to avoid problems, such as differences in taxes in countries, or avoidance of paying taxes due to differing tax burden in the EU. Also tax harmonization can be disadvantageous, if certain country will have to accept a higher rate of taxation compared to one which it originally had. This would affect not only the economy of the state, but mainly business sector and citizens.

It is therefore necessary to determine homogeneity, as well as the heterogeneity of countries in the European Union, and on that basis determine the best options for tax harmonization. It is also important to define countries that have suitable conditions, so the implementation would face as few problems as possible. Therefore, in this part of the article

we will focus on the analysis of tax burden of EU countries, identify the differences and then we will attempt to harmonize collected taxes.

All of the businesses of the European Union countries pay greater or lesser extent of their income to the treasury. The amount of these taxes depends on the tax base of certain undertakings, but also from the amount of the tax burden on corporate income tax. Individual tax burdens in the EU can be observed in Table 1. Based on this table, we can establish that the same level of tax burden is achieved only in some countries. An overview of these countries can be seen in Table 2.

Table 1. Countries associated with duplicative tax burden for the year 2014

19 %	15 %	12,50 %	20 %	25 %	21 %	22 %
Czech Republic	Lithuania	Cyprus	Croatia	Netherlands	United Kingdom	Slovakia
Hungary	Latvia	Ireland	Finland	Austria	Estonia	Sweden
Poland						

Source: Own processing by <http://www.kpmg.com/global/en/services/tax/tax-tools-and-resources/pages/corporate-tax-rates-table.aspx>

Other countries achieved different tax burden on corporate income tax, not only in 2014 but also in recent years. Based on this we can conclude, that such high heterogeneity in the EU means more difficult implementation of the harmonization process on corporate income taxes.

Because of the tax systems diversity, as well as tax elements, we can define which EU countries differ the most in similarities in terms of taxation system, and which are similar. Accordingly, it is necessary to execute statistical analysis that will help us define the country in which the harmonization process would be as simple as possible. We will try to execute this analysis through cluster analysis, and then identify the countries, as well as the implications of the harmonization process within the countries of European Union. We will implement the Cluster analysis through statistical and analytical program STATISTICA in which we use Ward's method. During this analysis, however, we must also define the factors on which we can optimally identify countries which seek to apply the harmonization process. The selected factors include: taxes on corporate income such as % of GDP, overall tax revenue such as % of GDP, capital taxes such as % of GDP and taxes on the use of assets as a % of GDP for 2012. Summary of the data can be seen below in Tab. 2.

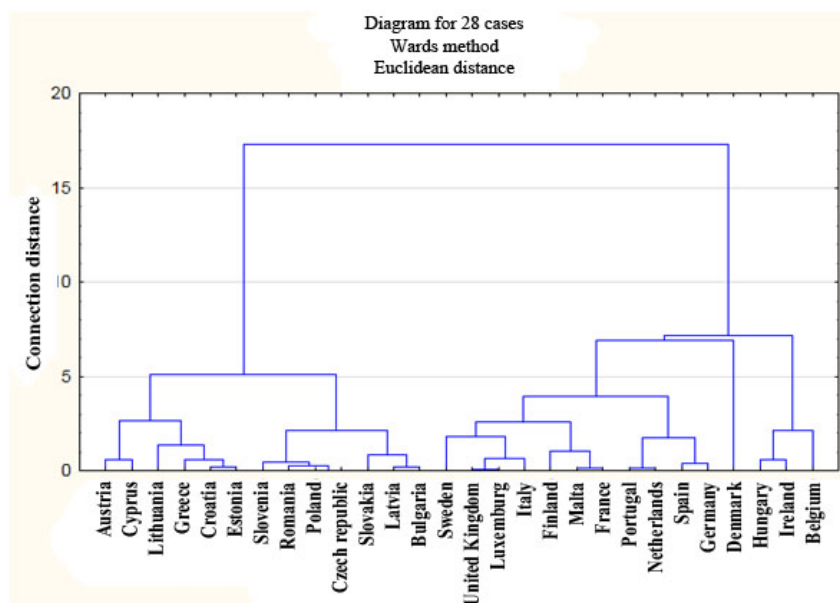
Table 2. Input data for the analysis of corporate income taxes

	Investment tax (% of GDP)	assets Tax (% of GDP)	Corporate Income Tax (% of GDP)	Total revenues (% of GDP)	Tax of (% of GDP)	Capital Tax (% of GDP)
Belgium	0,2		15,9	30,8		0,8
Bulgaria	0,1		4,8	20,6		0,2
Czech republic	0,1		7,1	19,4		0,0
Denmark	0,1		27,5	47,4		0,2
Germany	0,1		11,7	23,6		0,2
Estonia	0,0		6,8	21,0		0,0
Ireland	0,3		12,2	24,3		0,5
Greece	0,0		8,2	23,0		0,1
Spain	0,0		9,9	21,3		0,4
France	0,1		10,7	28,1		0,5
Croatia	0,0		5,7	24,4		0,0
Italy	0,1		14,6	30,4		0,1
Cyprus	0,0		10,4	26,1		0,0
Latvia	0,2		7,3	19,5		0,0
Lithuania	0,0		4,8	16,3		0,0
Luxemburg	0,1		13,9	27,8		0,2
Hungary	0,3		6,7	26,0		0,5
Malta	0,2		13,0	27,5		0,2
Netherlands	0,2		9,8	23,0		0,2
Austria	0,0		12,8	28,3		0,0
Poland	0,1		6,7	20,3		0,0
Portugal	0,2		8,7	23,3		0,2
Romania	0,1		5,8	19,5		0,0
Slovenia	0,1		7,1	22,4		0,0
Slovakia	0,2		5,3	15,4		0,0
Finland	0,2		15,2	31,0		0,3
Sweden	0,2		17,9	36,8		0,0
United Kingdom	0,1		12,5	28,9		0,2

Source: Own processing by <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

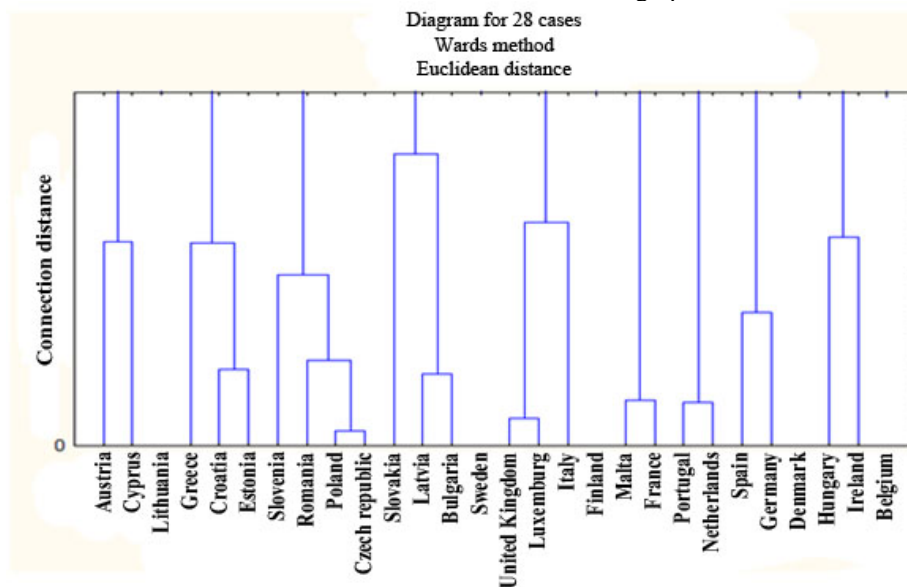
To achieve better comparability of statistical features we conducted standardization of data in the program STATISTICA through principal component analysis. Based on this analysis we obtained data, that allowed us access to the cluster analysis and therefore to achieve more optimal results.

The results of cluster analysis are shown through dendrogram in which we can observe clusters of individual countries, and so consequently clusters created in the previous steps. Next dendrogram shows us the possibilities of harmonization of corporate income taxes between EU countries.



Graph 1. Cluster analysis conducted for the EU corporate income tax
Source: Own processing in STATISTICA program based on input data

Based on this dendrogram we can determine, which countries may proceed to more intensive harmonization of corporate income tax. The most intensive harmonization would occur between countries, where the cluster reaches a distance of less than 1. An overview of these countries can be seen in next graph.



Graph 2. Cluster analysis of the EU countries within the distance of less than 1 made for the corporate income tax
Source: Own processing in STATISTICA program based on input data

Based on this graph, we can determine that the most intensive harmonization could be carried out by 23 EU countries, which can be divided into the following groups:

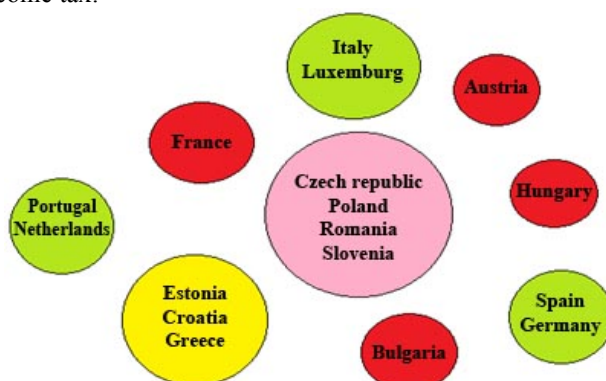
1. **Group - Austria, Cyprus,**
2. **Group - Hungary, Ireland,**
3. **Group - Spain, Germany,**
4. **Group - Portugal, Netherlands,**
5. **Group - France, Malta,**
6. **Group - Italy, Luxembourg, the United Kingdom,**
7. **Group - Bulgaria, Latvia, Slovakia,**
8. **Group - Czech Republic, Poland, Romania, Slovenia,**
9. **Group - Estonia, Croatia, Greece**

Countries that didn't merge within distance of 1 are Lithuania, Sweden, Denmark, Finland and Belgium. These countries have been merged at a distance greater than 1, more specifically:

- Lithuania at a distance of 1,348 with a cluster of countries Greece, Croatia and Estonia,
- Sweden at a distance of 1,811 with a cluster of countries United Kingdom, Luxembourg and Italy.
- Denmark at a distance of 6,93 with a cluster of countries Germany, Spain, Netherlands, Portugal, France, Malta, Finland, Italy, Luxembourg, the United Kingdom and Sweden,
- Finland at a distance of 1,021 with a cluster of countries, Malta and France,
- Belgium at a distance of 2,133 with a cluster of countries, Ireland and Hungary.

For tax harmonization to make sense, we must take into account the application of the concept of enhanced cooperation between States, which by the Treaty of Lisbon require at least nine countries. We also must not forget the earmarking of countries that do not support harmonization of corporate income taxes. These countries include: Slovakia, Great Britain, Ireland, Latvia, Lithuania, Malta and Cyprus. If from the aforementioned number of countries (23), we subtract countries that do not support tax harmonization; we reach total number of 17 countries that are willing to proceed with the harmonization of taxes, respectively. These countries still did not firmly decide, and based on that they can be included in this group.

A sufficient number of countries that meet the criteria of a minimum number of nine countries, for the application of the concept of enhanced cooperation between states and therefore we get a group of countries that may proceed to harmonization of corporate income tax.



Picture 1. Possible group of EU countries acceding to the harmonization of taxes on corporate income tax
Source: Own processing based on STATISTICA program output

Given that Slovakia, as well as the above mentioned countries does not support tax harmonization process between the EU, the European Commission is trying to at least introduce a common consolidated tax base for companies.

A common consolidated corporate tax base in SR (CCCTB)

The proposal to introduce a common consolidated tax base of corporation tax was announced on 16 March 2011 by the European Commission. CCCTB is not obligatory and is only intended for companies of European dimensions. It was introduced due to excessive and double taxation which was associated with heavy administrative work and the high cost of tax regulations for businesses.

It is necessary to mention, that except wide range of advantages, the CCCTB system brings also disadvantages. Fundamental disadvantage is that companies without European activities will not be able to reach this system that will result in discrimination of small and medium sized companies (for which the Home State Taxation System was originally designed). As the second disadvantage, is considered to be the fact, that existence of two taxation systems (national tax and CCCTB) opens the space for speculations, tax arbitrations and tax evasions. It is the reason why it will be necessary to treat the possibility of access and exit from CCCTB system very carefully (Nerudová, D, 2008).

As the main disadvantages can be considered (Nerudová, D., 2007):

1. the existence of two taxation systems opens the area for tax speculations, tax arbitrations, tax evasion and tax fraud,
2. the system discriminates small and medium sized enterprises (SMEs) without European activities.

The taxable amount should be determined for each tax period and should be calculated as the difference between taxable income, exempt income, deductible expenses and other deductible items. Based on this, the companies will pay the tax on corporate income for tax authorities of the EU.

If we focus on companies applying CCCTB operating in Slovakia, they may have different amount of tax liability compared to the old system and the CCCTB. Examples of such differences can be observed in Table 3, in which we have mentioned companies operating in Slovakia and their tax obligations in 2009 and 2010 under the old system of taxation and with the CCCTB system.

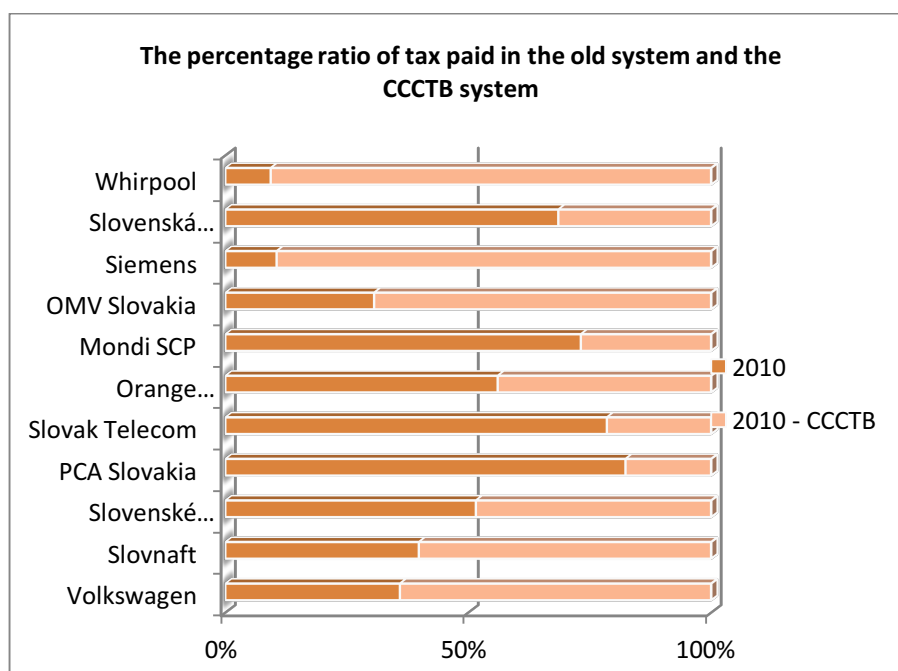
Table 3. Comparison of tax payment in the old system versus the new system (CCCTB)

Company	2009	2010	2009 – CCTB	2010 – CCTB
Volkswagen	14 052 210 €	17 485 510 €	4 440 672 €	31 158 727 €
Slovnaft	- €	11 277 640 €	22 102 635 €	17 029 717 €
Slovenské elektrárne	68 241 160 €	90 163 360 €	101 160 340 €	84 626 774 €
PCA Slovakia	14 069 500 €	12 161 520 €	- €	2 601 466 €
Slovak Telekom	30 366 370 €	28 455 920 €	4977 628 €	7 771 487 €
Orange Slovensko	47 062 430 €	44 246 060 €	10 381 337 €	34 664 128 €
Mondi SCP	8 747 980 €	14 793 590 €	674 946 €	5 418 622 €
OMV Slovakia	1 449 583 €	2 687 559 €	3 927 907 €	6 083 887 €
Siemens	4 207 272 €	479 774 €	3 530 967 €	4 059 283 €
Slovenská sporiteľňa	9 758 780 €	35 745 840 €	13 805 099 €	16 398 648 €
Whirlpool	- €	133 950 €	726 251 €	1 299 178 €
Total	197 955 285 €	257 630 723 €	165 693 834 €	211 111 917 €

Source: Own processing by http://asocfin.sk/wp-content/uploads/2012/10/FM_JESEN_2012_komplet.pdf

After a thorough review of this table we see, that for some of the mentioned companies the CCCTB system of taxation is favorable and for this reason, under the CCCTB system they pay lower tax from the income in comparison to the old system. On the other hand for other companies the tax burden has increased, and therefore it is not profitable for them to apply this system.

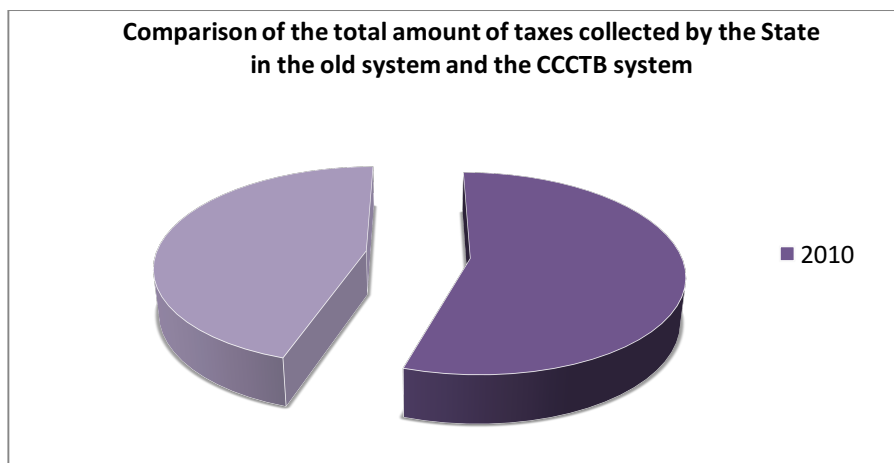
When comparing the tax burden during one year (in our case in 2010), when applying the old taxation system and the CCCTB system, we can see significant differences (Graph 3). The biggest difference would be noted by Whirlpool, which under the old system would pay the tax of 133 950 €, but according to the CCCTB the price would rise to 1 299 178 €. The lowest difference in the corporate income tax payment was recorded by PCA Slovakia, which according to the old system would pay the tax of 12 161 520 €, and by the CCCTB system only 2 601 466 €. In this case it is beneficial for the company PCA Slovakia to apply the CCCTB system of taxation, but for Whirlpool this system of voluntary application is inappropriate.



Graph 3. The percentage ratio of tax paid in the old system and CCCTB system

Source: Own processing by http://asocfin.sk/wp-content/uploads/2012/10/FM_JESEN_2012_komplet.pdf

Based on this this graph we can indicate, that the CCCTB is more preferable for European multinational companies, compared to smaller companies. A specific example is Whirlpool and PCA Slovakia. Whirlpool Slovakia is among the smaller companies with a number of 1000-1999 employees, the PCA Slovakia company, is among the larger companies, with the number of 2000 – 2999 employees.



Graph 4-Comparison of the total amount of taxes collected by the State in old and CCCTB system

Source: Own processing by http://asocfin.sk/wp-content/uploads/2012/10/FM_JESEN_2012_komplet.pdf

When comparing the total amount of the tax liability that will be paid to the state (as is shown in graph 4), there is a higher income to the Treasury under the old taxation system. This is influenced by a large number of multinational companies and a number of smaller companies.

Overall the application of the CCCTB system of taxation has its advantages and disadvantages. An overview of these benefits can be seen in the following table. As this taxation system is so far optional for business, every company can decide whether to apply this system for the taxation of their income or not.

Table 4. Summary of advantages and disadvantages of the CCCTB application for companies and state

	Company	State
Advantages	Balance out the losses in one country with profits of the other country, cost reduction of compliance for companies with cross-border activities	If companies in country make low profits
Disadvantages	Increased tax liability compared to the old system of taxation	If companies in country make profits above average

Source :Own processing by <http://www.mises.cz/clanky/spolocny-konsolidovany-zaklad-dane-z-prijmu-prav-os-b-ikarov-komplex-eu--386.aspx>

3. Conclusion

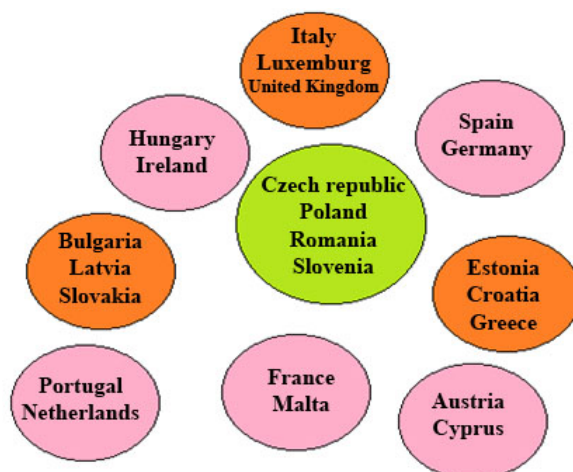
In this publication, we focused on tax harmonization in EU countries that we have carried out through cluster analysis. The result in the Corporate Income Tax is clusters of countries, which has been developed based on predetermined data input. Since we took into account that some countries do not support harmonization of corporate income taxes. On this basis, we created the following eight groups of countries: Italy, Luxemburg – France – Portugal, Netherlands – Estonia, Croatia, Greece – Bulgaria – Spain, Germany – Hungary – Austria. Due to the fact that Slovakia and the United Kingdom, Ireland, Latvia, Lithuania, Malta and Cyprus do not support such harmonization, the European Commission is trying at least to introduce a common consolidated corporate tax base for companies.

Proposals to harmonize taxes in the European Union are not a new phenomenon. While the treaty articles have generated progress in the case of indirect taxation, the harmonization of corporate taxation is driven by the commitment to create a single market (Bettendorf, L.–Devereux, M.P.– van der Horst, A.– Loretz, S.– deMooij, R.A., 2010)

In analyzing the impact of the CCCTB on Slovak companies, we found out that for some companies the use of the CCCTB system is advantageous, and for others it is not. Based on the collected data, we can proclaim, that the CCCTB system is suitable for European multinationals as well as for smaller companies. A particular example is a company PCA Slovakia and Whirpool. Whirpool is among smaller companies with a number of 1000 – 1999 employees and with the use of CCTB system of taxation the company would pay the tax of 1 299 178 €, but with the old system, the company would pay only 133 950 €. The PCA Slovakia company with number of 2000 – 2999 employees with use of the CCCTB system would pay tax of 2 601 466 €, and with the use of the old system to amount of tax would rise to 12 161 520 €.

Situation in Slovakia after the introduction of harmonization

In previous section about the Corporate Income Tax, we have used the cluster analysis realized in STATISTICA program to create possible group of EU countries which could accede to the harmonization of this tax. These groups were however 'cleansed' of countries that opposed the harmonization of corporate income tax proposal. This group also included Slovakia. If we assumed in this model that Slovakia and the other dissenting countries would agree with harmonization of their taxes, we would acquire the groups of countries that can be seen in the picture below.



Picture2 – Clustering model of EU countries in case of corporate income tax

Source: Own processing based on STATISTICA program output

In this case, we will focus on the situation that would have occurred in Slovakia, if there would be a harmonization of corporate income taxes.

With the harmonization of the corporate income tax, the tax would be calculated as the average of taxes in the EU countries, which would represent the tax liability in the amount of 22.39 %. For Slovakia, this would represent minimum increase in tax liability, however based on these grounds, the companies in Slovakia would pay higher taxes from their profits, which would constitute in lower corporate profits. This minimum difference might represent huge changes for some businesses. Firstly as it was already mentioned, this would reduce the profits of the companies that would lead to reduced funds for further business development. In some cases these changes might lead to limitation in number of employees, and then lead to rising unemployment. These situations would arise especially for smaller businesses, which already have existential problems, or they tend to approach them.

From the perspective of state, the harmonization of taxes would represent a significant step for Slovakia in particular on the grounds, that it would increase income to the treasury. This would lead to better repayment of sovereign debts, development of country, and support within the areas that need it significantly.

Essentially for Slovakia it is appropriate for the direct taxes to fall, the tax harmonization might complicate this trend. Harmonization of corporate income tax on the level of 22.39% is inappropriate for Slovakia. A better choice for Slovakia would be to achieve lower taxes and thus attract more investors into the country, to ensure the viability of small businesses and, consequently eliminate unemployment in the country. Harmonization of corporate income tax might be considered not only from stand point of the SR, but also from the stand point of other countries about the limitation of national sovereignty and avoidance of possible tax descent.

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