University of Economics in Bratislava

Faculty of Business Economics with seat in Košice

ACTA OECONOMICA CASSOVIENSIA

Scientific journal

ISSN 1337-6020 (print)
ISSN 2585-8785 (online)

Vol. XI, 2018
No. 2

The **aim of the journal** is to publish the papers concerned with developing of new knowledge in the field of economic theories and its application in business practice.

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All papers are double peer reviewed. The journal is published twice a year.

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Ministry of Culture reg. Nr.: 3239/09

ISSN 1337-6020 (print) 2585-8785 (online)

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SURVEY AND RESEARCH STUDIES

WHY DO OIL-EXPORTING COUNTRIES REMAIN UNPREPARED TO NEGATIVE OIL PRICE SHOCKS? APPLICATION OF SCENARIO ANALYSIS APPROACH

Erjan AKHMEDOV

Abstract
This article addresses the vulnerability of oil-exporting countries (OECs) to negative oil price shocks. Applying the scenario analysis approach it answers why the OECs remain unprepared to such shocks even though the economic literature has been calling to reduce the dependence of their economies on oil price fluctuations for many years. Nowadays, it is widely accepted that commodity-based economic models and policies make countries vulnerable to commodity price fluctuations and result in weaker growth in the longer term. This article demonstrates that sustainable development only can be the real solution for decreasing the dependence of these countries to oil export revenues.

Key words:
Oil price shock, Kazakhstan, scenario analysis, oil-exporting countries, sustainable development

JEL classification
D81, E32, Q56

Introduction

The recent plunge[1] in the price of crude oil of 2014-2016 once again jeopardized the economic stability of oil-exporting countries forcing them to look for ways out of this situation and prevent economic downturns in the future. The author makes an attempt to look at the situation in OECs in a structured way having the Republic of Kazakhstan as the main example.

Even though the periods of negative oil price shocks have been affecting the economies of OECs for several decades, these countries still remain unprepared to their influence and this is demonstrated in Table 1 below well.

[1] Words "plunge" and "negative oil shock" are used interchangeably throughout this document.

Table 1. GDPs of major oil-exporting countries before and after last two oil-price plunges, current US$

No	Country	GDP in 2008	GDP in 2009	% of change	GDP in 2014	GDP in 2016	% of change
1.	Saudi Arabia	519.8	429.1	-17.4%	756.6	644.9	-14.8%
2.	Iraq	131.6	111.7	-15.1%	234.6	171.5	-26.9%
3.	United Arab Emirates	315.5	253.5	-19.7%	403.1	357	-11.4%
4.	Canada	1549	1371	-11.5%	1799	1536	-14.6%
5.	Nigeria	208.1	169.5	-18.5%	568.5	404.7	-28.8%
6.	Kuwait	147.4	105.9	-28.2%	162.6	110.9	-31.8%
7.	Angola	84.2	75.5	-10.3%	126.7	95.3	-24.8%
8.	Kazakhstan	133.4	115.3	-13.6%	221.4	137.3	-38.0%
9.	Norway	462.5	386.6	-16.4%	499.3	371.1	-25.7%
10.	Mexico	1110	900	-18.9%	1314	1077	-18.0%

Source: Own construction based on World Bank data[2]

The oil prices (Brent) decreased from 2008 to 2009 by 36.6% and from 2014 to 2016 by 55.8%. Years 2008 and 2009, 2014 and 2016 were selected as the years of beginning and end of the oil price plunges. Data on oil prices were taken from the BP Statistical Review of World Energy 2018. Russia, which is the second largest oil exporter, was excluded from consideration. It's GDP decreased by more than 44% from 2014 to 2016, but a substantial portion of this decrease should be attributed to the effect of the Western sanctions. As in Russia, a good portion of the exceptionally high Kazakhstan's GDP decrease of 38% should be attributed to the spillover effect of Russia's economic crisis, including indirect effect of anti-Russian sanctions.

The main question of this article is why the OECs remain unprepared to oil price plunges even though the economic literature has been calling to reduce the dependence of OECs' economies on oil price fluctuations for many years. Using the scenario analysis approach, which allows to look at potential situation developments, the author demonstrates that the main reason is that the governments of oil-exporting countries do not see the real need in adaptation to low oil prices and prefer to wait until periods of low oil prices come to an end. Actually the real way for an oil-exporting country to reduce the dependence on oil revenues is to develop the country as if there is no these revenues. It is shown below why this development path is not followed.

[2] https://data.worldbank.org/indicator/NY.GDP.MKTP.CD

Literature overview

A question may arise why only these two negative oil price shocks were considered. Only the last two ones were considered because the previous oil plunges have been already extensively covered in the scientific literature. For instance, Vandyck et al (2018) made "a retrospective analysis based on data of the past 25 years", which "sheds light on the vulnerability of oil-producing regions to the oil price volatility." Also Hamilton (2015) wrote the paper, which "explores similarities and differences between the run-up of oil prices in 2007–08 and earlier oil price shocks, looking at what caused the price increase and what effects it had on the economy." There are many other authors who carried out similar researches including Jiménez-Rodríguez & Sánchez (2004), Luk (2017), Mathew (2000), etc.

Considering the dependence on oil export proceeds, we should pay attention to the very interesting observation made by Karl (2004) "the consequences of oil-led development tend to be negative, including slower than expected growth, barriers to economic diversification, poor social welfare indicators, and high levels of poverty, inequality, and unemployment. Furthermore, countries dependent on oil as their major resource for development are characterized by corruption and exceptionally poor governance, a culture of rent seeking, often devastating economic, health, and environmental consequences at the local level, and high incidences of conflict and war."

Venables (2016) confirms this mentioning that "Developing economies have found it hard to use natural resource wealth to improve their economic performance. Utilizing resource endowments is a multistage economic and political problem that requires private investment to discover and extract the resource, fiscal regimes to capture revenue, judicious spending and investment decisions, and policies to manage volatility and mitigate adverse impacts on the rest of the economy. Experience is mixed, with some successes (such as Botswana and Malaysia) and more failures."

As rightly mentioned by Kose and Baimaganbetov (2015) "…higher oil prices have adverse effects on economic performance of oil-exporting countries. Because they change the structure of the economy in favor of the non-traded sectors and against the traded manufacturing and agriculture sectors. In addition, higher oil revenues during an oil boom will lead to an appreciation of the local currency and increasing imports of intermediate and consumer goods. The heavy reliance of oil-exporting developing economies on imports will in turn harm domestic industries as they cannot compete with imported goods when oil prices are high and cannot sustain their production levels when oil prices and imports decline." This is why it is so important to perform a thorough analysis of possible situation developments and to take the right strategic decision, which will minimize the Kazakhstan's and other OECs' dependence on oil exports proceeds.

Studying what have been done in this area by other authors, we see that there is a substantial number of examples confirming that in spite of numerous appeals, efforts to decrease the dependence on oil proceeds in different countries usually fail.

For example, the famous writer and politician Pietri (1936) appealed for diversifying the Venezuelan economy using oil revenues in his famous article "To Sow the Oil" published back in 1936. Unfortunately, nothing has been done so far in terms of diversification of the Venezuelan economy and now the country is facing one of the harshest crisis in its history.

Hvidt (2013) noted that "over the last five decades, the GCC[3] states have taken a number of important steps on the route to diversifying their economies away from dependence on oil and gas… Data shows, however, that the countries remain in a position where the oil sector continues to dominate the economy, and that few of the industries and services established would survive in a post-oil era... Viewed in this manner, the diversification strategy has largely failed."

This opinion is shared widely. Adelaja (2016) mentioned that "For more than a decade, Russia has been attempting to diversify, innovate and modernize its economy, but its efforts thus far have failed to come to fruition."

"Nigeria's over dependency on oil has contributed to the poor management of human capital/resources which has led to the migration of many talented citizens of the country to other countries in search of better life. Furthermore, the data show that the neglect of agriculture has, in addition, led to the constant depreciation in GDP of the country" advised Uzonwanne (2015).

Bhaskaran (2007) admitted that "Brunei Darussalam has explicitly stated economic diversification as a major policy objective at least since the Third National Development Plan (covering 1975-1979) although references to the need for economic diversification go back as far as the Second National Development Plan (1962-1966). As part of the planning and conceptualization process for the various efforts at diversification, many studies have been commissioned, all of which have been well formulated with specific projects and recommendations. Yet… these efforts do not seem to have produced the desired results…"

Kazakhstan has been facing the same problems. As mentioned by Adillov (2016) "The ultimate goal of the first phase of the program (State Program for Accelerated Industrial-Innovative Development of Kazakhstan for 2010 – 2014) is to ensure diversification of the economy, the increase in budget revenues, supplying the domestic market with quality domestic products... Unfortunately, we must admit that for five years, none of these problems have been solved." The amount spent on the program exceeded US$28.5 billion.

[3] GCC - Gulf Cooperation Council. Its member states are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

Methodology

Scenario analysis approach used in this article is designed to allow improved decision-making by allowing more complete consideration of outcomes and their implications. This is an important tool used extensively to make projections for the future. It is critical to point out that scenarios make no claim to make precise predictions. Scenarios in this sense depict only possible futures. Considering different scenarios, it is imperative to take into account their ultimate goal – to ensure better preparedness to the future minimizing negative consequences of the chosen scenario.

The Pugh matrix technique (also called the grid analysis or decision matrix) is built upon weighing different factors, which affect the situation. It is used to evaluate and choose between several alternatives and applied for making a choice in the situations where many factors must be taken into account. For the purpose of this article, this matrix is applied to understand which oil price scenario is eventually better for the Kazakh economy. It is also significant that this matrix allows for a simple sensitivity analysis of potential consequences to be performed.

The scenario analysis exercise was conducted by the team of several experts. The team included two oil industry professionals, two Kazakh government employees and one economic consultant. Based on their experience, they helped to formulate scenarios and to assign their probabilities, to compile potential outcomes for each scenario, the lists of consequences and to assign points to each consequence under each scenario.

Initially seven experts were approached, but two of them declined to comment. The author of this article intentionally abstained from being a part of this team.

This work started with the compilation of the Initial Pugh matrix (Table 3 below) and assigning points to each consequence. Then the Initial matrix was converted into other matrixes shown below.

As already mentioned above, the real way for an oil-exporting country to reduce the dependence on oil revenues is to develop the country as if there is no these revenues. This point can look controversial, but the author would like to draw your attention to the fact that one of the main objectives of sovereign wealth funds is to sterilize foreign currency inflows. For this reason, the scenario which brings the smallest oil export revenues will have better chances to reduce the dependence on these revenues. Otherwise, OEC governments cannot resist the temptation to use these revenues.

Results and discussion

Scenarios under consideration

Upon consultations, the team of experts agreed to consider the following three scenarios:

Scenario 1 or low-price scenario. Under this scenario the oil prices range is within US$20 to US$50 per barrel for the next 5 years. The situation with oil prices lower than US$20 per barrel does not look realistic though oil prices can cross this line occasionally.

Scenario 2 or medium-price scenario. Oil prices are in the range from US$50 to US$80 a barrel.

Scenario 3 or high-price scenario. Oil prices grow higher than US$80 per barrel.

Please note that oil price can from time to time exceed the limits given above. This does not mean that there is a need to consider another scenario immediately. Considering another scenario should be undertaken only in certain cases when the oil price will stay in another price range for a considerable period of time. Per the opinion of the team members, the phrase "considerable period" in this context should mean at least 3-month period.

Assignment of probabilities to each scenario

Assigning probabilities to these scenarios is difficult as the situation on the oil market is always very uncertain and dynamic. This exercise was carried out by the experts mentioned in the Methodology chapter. Each of them received a request to assign probabilities per the form given in Table 2 below. Scenario 2 was chosen as the most probable scenario.

Table 2. Scenarios probabilities for 2018-2021

Scenario	Probability, %
Scenario 1 or low-price scenario (US$20 to US$50 per barrel)	20
Scenario 2 or medium-price scenario (US$50 to US$80 per barrel)	60
Scenario 3 or high-price scenario (higher than US$80 per barrel)	20

Source: Own construction

Potential outcomes for each scenario

The team of experts agreed about the following potential outcomes:

Scenario 1: In the short run, major economic and social indicators of the country continue to deteriorate. This scenario will result in lower economic activity and government revenues, higher inflation and unemployment, lower population incomes and, as a consequence, the absence of fundamental factors for expanding aggregate demand, decreasing investments, etc. The main risks in this scenario are potential economic crisis aggravated by growing social discontent. The government will have to put a lot of efforts into improving the situation with

weak chances for success. However, the medium- and especially long-term outlook are much more promising preparing the country to the life without oil revenues. This is the situation when economic difficulties of today make the country better prepared for future changes and allow to avoid even worse consequences.

Scenario 2: The economic situation in the country improves slowly. Certain increase in government revenues will be offset by earlier depletion of financial and other reserves happened after the beginning of the oil price plunge. In the short run, the main risk of this scenario is a potential decrease of oil price, which can derail all government's efforts to improve the socio-economic situation in the country. At the same time, this scenario can provide a gradual transition to the non-oil economy without serious deterioration of the population's living standards. The difficult part of this scenario is that it tempts the government to continue the previous economic policy, which already proved its ineffectiveness.

Scenario 3: A lot in this scenario is depending on the price range. Obviously the economic situation will be different at the oil price of US$80 per barrel and US$100 per barrel. However, in general the economy will be improving with the speed depending on the oil price. In case of substantial increase, the Kazakh economy can even return to the pre-crisis situation, which was fairly favorable. The main risks of this scenario are (i) a potential decrease of oil price in the short-term and (ii) the country remains unprepared to future oil plunges and potential end of oil era. Even though at a first glance high oil prices bring the economic prosperity, the fact is that they just postpone important government reforms aimed at eliminating the dependence on oil proceeds.

Pugh matrix

The team members decided to start the exercise with just economic consequences, then to assign them differential weights and to finish with the traditional three pillars of sustainability, namely economic viability, environmental protection and social sustainability. All the consequences are divided into short-, medium- and long-term because this approach helps to better understand the situation and its potential developments. Short-term in this context means for the period up to 5 years, medium-term means the period from 5 to 15 years and long-term means the period exceeding 15 years. The points were assigned upon reaching consensus between the team members. The bigger a point - the better, the more desired is the consequence of a scenario. The initial matrix is presented in Table 3 below.

Table 3. Initial Pugh matrix

			Scenario 1 (low-price)		Scenario 2 (medium-price)		Scenario 3 (high-price)	
Consequences	Weight	Max Possible Points	Points	Weighted Points	Points	Weighted Points	Points	Weighted Points
Short-term	1	5	1	1	3	3	5	5
Medium-term	1	5	2	2	3	3	4	4
Long-term	1	5	4	4	3	3	2	2
Total		15		7		9		11

Source: Own construction

Explanations to the points assigned:

Expectedly low oil prices negatively affect the country's short-term economic outlook and vice versa. This is why points 1, 3 and 5 were assigned to the consequences of low-, medium- and high-price scenarios respectively. With regard to the long-term outlook, the consensus was that even though the low oil prices will help to reduce the dependence on oil revenues, promote the development of non-oil sectors and result in a better overall performance, there is a certain pessimism over the country's ability to adapt to the low oil price environment, which resulted in assigning 4 points to the low oil price scenario as opposed to 5 points of short-term considerations of high price scenario. Similarly, the high prices cannot be considered in a negative way only as they are a very substantial source of government revenues. This was reflected in assigning 2 points. Henceforward, the medium-term outlook occupied an in-between position.

Summary: Expectedly, the application of this straight-forward approach resulted in assigning the bigger overall score to the high-price scenario. In this case, the government does not see any reason for adapting the country for future changes because the potential advantages of the high-price scenario substantially exceed the ones of medium- and low-price scenarios. This result serves a good illustration to why the oil-exporting countries keep staying unprepared to oil price plunges. The governments of these countries do not see a reason for changing their economic policies. As often happens in OECs, their governments give priority to short-term economic considerations over medium- and long-term economic as well as social and environmental ones.

The situation changes if we prioritize the consequences assigning bigger weights to medium and long term ones (2 and 3 respectively). However, even in this case, advantages of the high oil price scenario outweigh its disadvantages, though the differences between total scores of different scenarios reduce.

Table 4. Pugh matrix with differentiated weights

			Scenario 1 (low price)		Scenario 2 (medium price)		Scenario 3 (high price)	
Consequences	Weight	Max Possible Points	Points	Weighted Points	Points	Weighted Points	Points	Weighted Points
Short-term	1	5	1	1	3	3	5	5
Medium-term	2	10	2	4	3	6	4	8
Long-term	3	15	4	12	3	9	2	6
Total		30		17		18		19

Source: Own construction

Finally, we consider the expanded matrix, which includes not only economic, but also environmental and social consequences assigning bigger weights to medium and long term ones. Only in this case, the low-price scenario receives higher scores.

Table 5. Expanded Pugh matrix with differentiated weights

			Scenario 1 (low price)		Scenario 2 (medium price)		Scenario 3 (high price)	
Consequences	Weight	Max Possible Points	Points	Weighted Points	Points	Weighted Points	Points	Weighted Points
Short-term economic	1	5	1	1	3	3	5	5
Medium-term economic	2	10	2	4	3	6	4	8
Long-term economic	3	15	4	12	3	9	2	6
Short-term environmental	1	5	1	1	2	2	3	3
Medium-term environmental	2	10	3	6	2	4	2	4
Long-term environmental	3	15	4	12	2	6	1	3
Short-term social	1	5	1	1	2	2	3	3
Medium-term social	2	10	2	4	2	4	2	4
Long-term social	3	15	4	12	2	6	1	3
Total		**90**		**53**		**42**		**39**

Source: Own construction

Conclusion

The results received through this scenario analysis exercise answer the main question of this article: the OECs remain unprepared to negative oil price shocks because they do not choose the way, which can reduce the dependence on oil revenues. This way is the development as if there is no oil revenues for the country. And they do not choose this way because the straight-forward approach shows that advantages of medium-price and high-price scenarios are bigger. The matrixes above clearly demonstrate why having the complete understanding that reliance on oil export revenues is not sustainable, the OECs remain unprepared to negative oil price shocks. Only in the case when we consider not only economic, but also social and environmental consequences assigning bigger weights to medium-term and long-term consequences we have the situation when the advantages of low-price scenario outweigh the advantages of other scenarios.

Actually the ultimate goal for any country is to ensure its long-term, sustainable, well-balanced development minimizing potential negative consequences. The results above show that the OECs' governments should adopt the low oil price scenario as the main one in their development programs because it better serves the main development goal of these countries. Yes, the medium price scenario has the larger probability and it is obvious that the results received do not mean that there is a need to loose opportunities provided by the periods of high oil prices. The optimal and well-proven solution is the accumulation of oil revenues in sovereign wealth funds while creating an enabling environment for SME development, FDIs and pursuing very strict financial policy, which rules out any attempt to use oil revenues for financing of current government expenses or mismanagement of these revenues.

It is important to emphasize that the oil era will not last forever. This is why it is of utmost importance to be fully committed to sustainability as the main development priority of OECs assigning greater importance to medium and long term consequences. Failing this will result in unpreparedness to future crises, not necessarily caused by oil price plunges.

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SPATIAL CHARACTERISTICS OF INNOVATION IN THE EUROPEAN UNION

Julianna CSUGÁNY – Tamás TÁNCZOS

Abstract
Technological progress is the driving force of economic growth. This statement is widely accepted by economists while surrounded by a number of unanswered questions. How technological progress can generate economic growth and how is this measured? What are the most important country-specific factors that promote technological progress, i. e. the economic growth? Technological progress is a complex phenomenon, it is hard to measure directly, so typically innovation statistics is used to evaluate countries' performance. This study tries to highlight spatial characteristics of innovation, which countries are performing well and why in the field of creativity and innovation. Summary Innovation Index is one of the indicators which tries to capture several aspects of innovation. It can be used to compare the innovation performance of European countries. We focus on those factors in which the biggest difference between country groups, i.e. innovation leaders and followers.

Keywords:
economic growth, technological progress, innovation, Summary Innovation Index, innovation leaders, innovation followers, human resources

Introduction

According to the traditional approach of technological progress, it can be represented by a linear model of three consecutive process (Hall, 2005). The first step is invention which is followed by innovation. However, the economic impact of improvements can only be effective if they spread in economy. Innovation and innovation process should be differentiated because innovation is the first practical application of new ideas, while innovation process includes invention, innovation and economic impact too (Kovács, 2004). Institutions appears in all stages due to the properties of technology, ie. excludability and non-rivalry. Institutional factors affect innovation-related decisions, and the behaviour of economic actors, including their relationships. In addition, institutions can also influence the temporal and spatial characteristics of adoption of new technologies.

Based on Comin and Hobijn (2004, 2010) calculations, at least a quarter of income inequalities can be explained by technological gap resulted differences in adoption of new technologies. This process is associated with the convergence in the main determinants of technology adoption like openness, human capital or the type of regime across the sample of countries (Comin – Hobijn, 2004:81). According to Fagerberg (1987), technological gap depends on how can an economy to mobilize its resources social, institutional and economic restructuring required by innovation. According to Krugman (1979), innovation created by new ideas realize in developed countries because in these countries knowledge, skills and material resources are together available surrounded by an appropriate

institutional environment. Barro and Sala-i-Martin (1997) argue that imitation is cheaper than invention of new technologies in less developed countries.

Jerzmanowski (2007) pointed out that technological differences can be explained by inefficiency and inappropriateness of technologies. In efficiency view, there may be barriers to the adoption of technology due to institutional or cultural differences. As a result, the efficiency of inputs varies across countries so new technology cannot be used as efficient as possible in all economies. The main assumption of this theoretical approach is that factor endowments determine the possibilities of innovation. These models focus on the role of institutions.

The appropriate technology theory highlights that rich countries invent technologies that are compatible with their own factor mix, but these technologies do not work well with the very different factor mix of poor countries.

In this paper we try to highlight spatial characteristics of innovation in the European Union, which countries are performing well and why in the field of creativity and innovation. Summary Innovation Index (SII) can be used to compare the innovation performance of European countries. We focus on those factors in which the biggest difference between country groups, i.e. innovation leaders and followers.

1 The innovation performance of European countries

The innovation statistics is based on the linear model of technological progress (Szunyogh 2010). The first step is invention which is followed by first practical application and finally diffusion. Invention is typically the result of R&D activity, so innovation can be measured by indicators of research and development. Nowadays, complex indicators are used to measure innovation which include institutional factors in addition to R&D indices.

To measure innovation performance in European countries, Summary Innovation Index is used. The European Innovation Scoreboard (EIS) provides a comparative analysis of innovation performance in EU Member States and other European countries, altogether 36 countries in 2017. It assesses relative strengths and weaknesses of national innovation systems and helps countries to identify areas that they need to develop. Until 2016, SII approached innovation from three sides, as innovation drivers or enablers, firm activities and outputs. There were 8 dimensions and 25 variables to describe the countries' innovation performance (Hollanders – Es-Sadki – Kanerva, 2016). In 2017 a refined analytical framework was presented, now the database contains more indicators (27) than the previous one, and these variables are classified into four main groups – framework conditions, investment, innovation activities and impacts – instead of the former three one (Hollanders – Es-Sadki, 2017). Framework conditions include human resources, attractive research systems and innovation-friendly environment. Finance and support, and firm investment are involved in Investments. The pillar of innovation activities includes innovators (SMEs), linkages and intellectual

assets, while impacts can be divided into two parts, such as employment impacts and sales impacts. In sum, the new measurement is better, because more fields can be measured, so the composite indicator, SII includes variables from special fields related to innovation, such as venture capital, SME's innovation performance, PCT patents and trademarks and it can be measure the employment and sales impact too. However, all variables of SII try to measure the factors of innovation in a quantitative way. SII is constructed from 2008, so the performance of European countries can comparable in time-series way and we can compare the changes and the actual value with a level and trend analysis (see Figure 1).

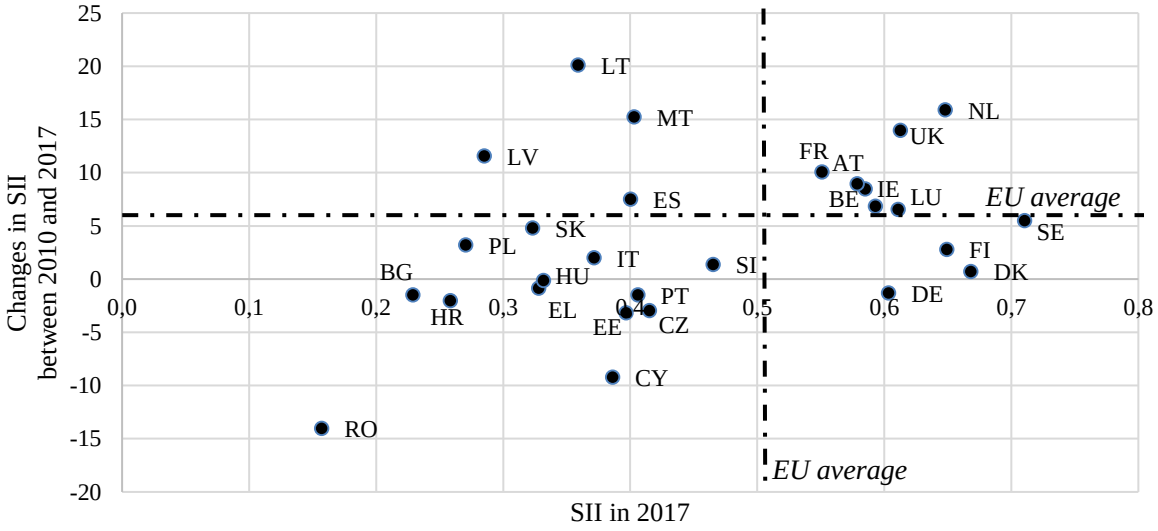

Figure 1 The innovation performance measured by SII and its changes between 2010 and 2017

Source: EIS (2018)

Figure 1 shows that United Kingdom, Netherlands, Belgium, France, Austria, Belgium and Ireland are above average in both variables which means that these countries improved their innovation performance between 2010 and 2017, as a result of this they are mostly innovation leaders. Finland, Sweden, Denmark and Germany are above average in current value terms, but changes in SII are below the average. It is not so surprising, because Sweden have been the most innovative country in Europe for years, followed by Denmark and Finland. These countries' innovation performance is the most effective in Europe. In 2017, Germany was in strong innovators' group, but this country had been innovation leaders earlier. If a country is above average in changes in SII, it reflects that it can catch-up to leaders so Malta, Lithuania, Latvia and Spain converged to innovation leader group. In other countries, both SII and its change is below the EU average, so their innovation performance did not improve in recent years. In some countries, e.g. Germany (-1,3%), Cyprus (-9,2%), Hungary (-0,1%) the SII decreased in 2017 relative to 2010, which means that the innovation performance was worse in 2017 than in 2010. The biggest decline is seen in the modest innovator, Romania

(-14%), while Bulgaria's innovation performance was also worse (-1,5%) so these countries diverge to other countries in the field of innovation.

2 The main measurable factors of innovation

Based on SII, countries are classified into four innovation performance groups: innovation leaders, strong innovators, moderate innovators and modest innovators. According to EIS (2018) EU member states can be grouped as follows (the order fits for innovation performance):

- *Innovation leaders:* Sweden, Denmark, Finland, Netherlands, United Kingdom, Luxembourg
- *Strong Innovators:* Germany, Belgium, Ireland, Austria, France, Slovenia
- *Moderate Innovators:* Czech Republic, Portugal, Malta, Spain, Estonia, Cyprus, Italy, Lithuania, Hungary, Greece, Slovakia, Latvia, Poland, Croatia
- *Modest Innovators:* Bulgaria, Romania

The innovation performance of these groups is comparable in different areas of SII, see in Figure 2. In a detailed analysis, innovation leaders and strong innovators can be merged, so-called these countries are innovation-based economies, while moderate and modest innovators can be considered innovation followers, in other words, imitation-based economies.

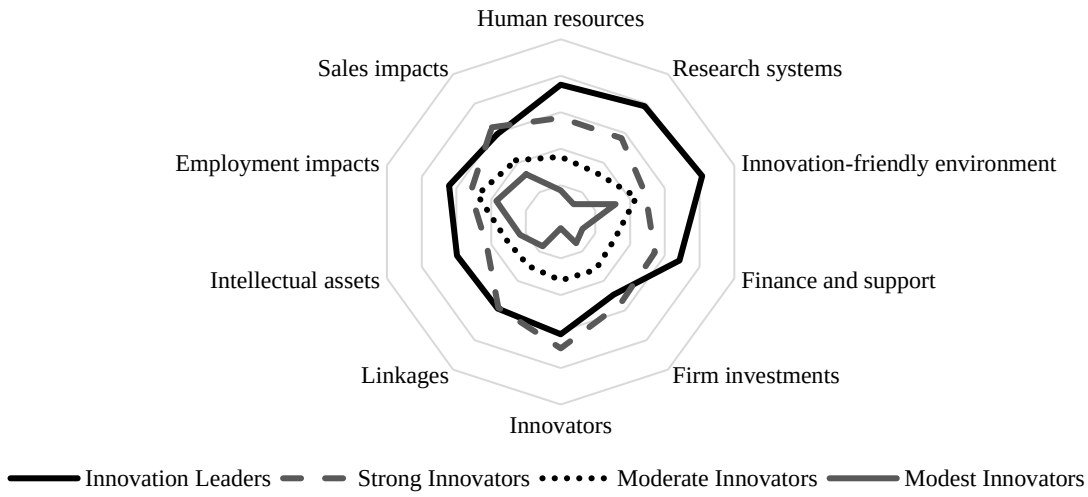

Figure 2 The innovation performance of European countries by groups (2017)

Source: EIS (2018)

Figure 2 shows that innovation leaders are dominated in almost each areas, but strong innovators are better in the field of innovators which includes SMEs innovations (product or process innovations, marketing and organisational innovations and innovating in-house) and in sales impact. Strong innovators are close to innovation leaders in linkages and firm investment, which means that there is no significant difference in cooperation skills and financial possibilities related to the innovation between these groups. The largest gap between

innovation leaders and followers is in the above four areas. In other areas, i.e. human resources, research systems, innovation-friendly environment, finance and support, intellectual assets and employment impacts there are tendentious differences between innovation performance groups. Strong innovators and moderate innovators are the closest in innovation-friendly environment and employment impacts, which means that there is no significant disparities in broadband penetration and opportunity-driven entrepreneurship and in employment in knowledge-intensive activities and fast-growing firms innovative sectors. Based on Figure 2, we can conclude that innovation followers have to develop human resources and research systems in order to improve their innovation performance.

One of the key conditions for realising technological progress as a driving force for economic growth is the financing of the R&D activity to create new knowledge. Research related to the corporate sector is really geared towards product and technology development, that is, the creation of Schumpeterian new combinations, which is the main driver of development. Finance and support component of SII includes R&D expenditure in the public sector and venture capital investments, while firm investments consist of business R&D expenditure and non-R&D innovation expenditure, as well as enterprises providing ICT training. Based on OECD statistics the differences in financing possibilities are visible between performance groups. One of the best performing country, Sweden spends more than 3% of GDP on R&D, two-thirds of this related to business sector. In contrast, research expenditures of the least performing countries is less than 1% of GDP. R&D expenditures can be classified by sectors, GERD is gross domestic expenditure on R&D, BERD is business enterprises expenditure on R&D and HERD is Higher Education expenditure on R&D. Figure 3 shows sectoral R&D expenditures by EIS innovation performance groups in 2016, but this database does not contain sectoral data's of modest innovator countries (Romania, Bulgaria), as well as Cyprus, Lithuania, Malta and Croatia.

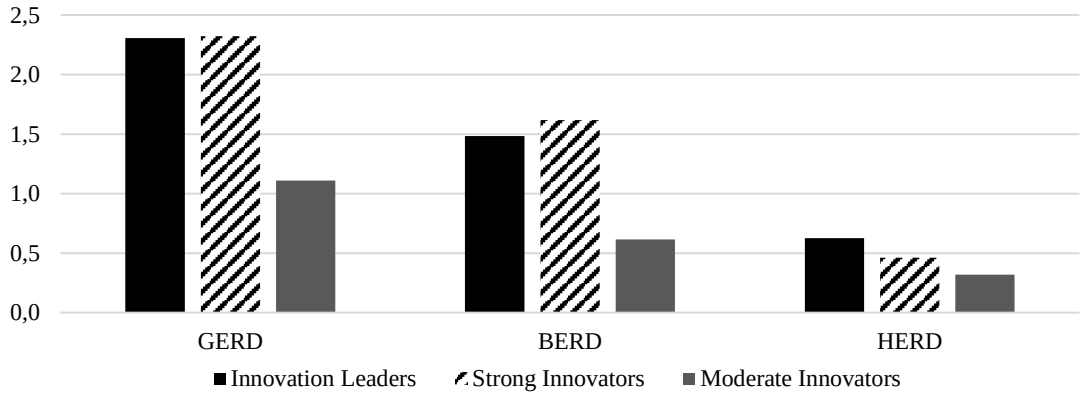

Figure 3 Sectoral R&D expenditures by EIS innovation performance groups (2016)

Source: own calculations based on OECD (2018)

Figure 3 shows that there is no significant difference between innovation leaders and strong innovators in GERD, while moderate innovators spend half on this on average. BERD is less than 2% of GDP in innovation leaders, while in moderate innovators it is just over half of one percent. It is interesting that in strong innovators GERD and BERD is higher than innovation leaders, which means that firms spent more money on R&D&I than in innovation leader countries. Based on Török (2006) calculations, BERD is positively correlated with economic development, so it is assumed that if the expenditure is higher, a country will be more competitive. HERD is about third of total expenditure in each groups, and there is tendentious differences between them in this ratio. R&D expenditures may serve different purposes. The aim of corporate researches is development of new products and technologies, while higher education research is mostly publication-oriented. Based on Figure 3, we can conclude that in innovation leader countries firms are more active in innovation activities which can be the driving force of their technological progress.

The other field is intellectual assets where there are significant differences between groups. Intellectual assets include PCT patent, trademark and design applications. The Patent Cooperation Treaty (PCT) assists applicants in seeking patent protection internationally for their inventions (WIPO, 2017). There are some countries in the world who are active in patenting, such as United States, Germany, Japan and Scandinavian states. According to Halpern and Muraközy (2010), patenting and innovation activity are positive correlated, so firms using patents are a higher proportion of introduced innovations.

Conclusion

This paper tries to highlight the critical points of innovation, where are the biggest difference between innovation leaders and followers in the European Union. Technological progress is the driving force of economic growth, so countries have to improve their innovation performance especially in the critical fields if they want to catch-up. We used Summary Innovation Index to differentiate and characterize the innovation leaders, strong, moderate and modest innovators. The largest gap between innovation leaders and followers is innovators, sales impact, linkages and firm investment. In other areas, i.e. human resources, research systems, innovation-friendly environment, finance and support, intellectual assets and employment impacts there are tendentious differences between innovation performance groups. If innovation followers want to catch up with leaders, raising R&D expenditures and encourage firms' innovative activities are needed. Strong innovators and moderate innovators are the closest in innovation-friendly environment and employment impacts. We can conclude that innovation followers have to develop human resources and research systems in order to improve their innovation performance.

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ACHIEVING SUSTAINABLE TOURISM IN A GLOBALIZED WORLD

Martin HUDEC

Abstract
Tourism has developed in significance on a worldwide scale for quite a while and appears to have infiltrated into all the remote parts of the world. For its potential, it is progressively being talked about as an instrument of monetary advancement and one of the conceivable answers for the issue of neediness. The aim of our research paper is to critically assess the capability of sustainable tourism as a really compelling tool for the advancement and exhibit of economic advantages. In its outcomes, the article tries to deepen the financial as well as the socio-social effect of tourism, managing the topic of its effect on the environment.

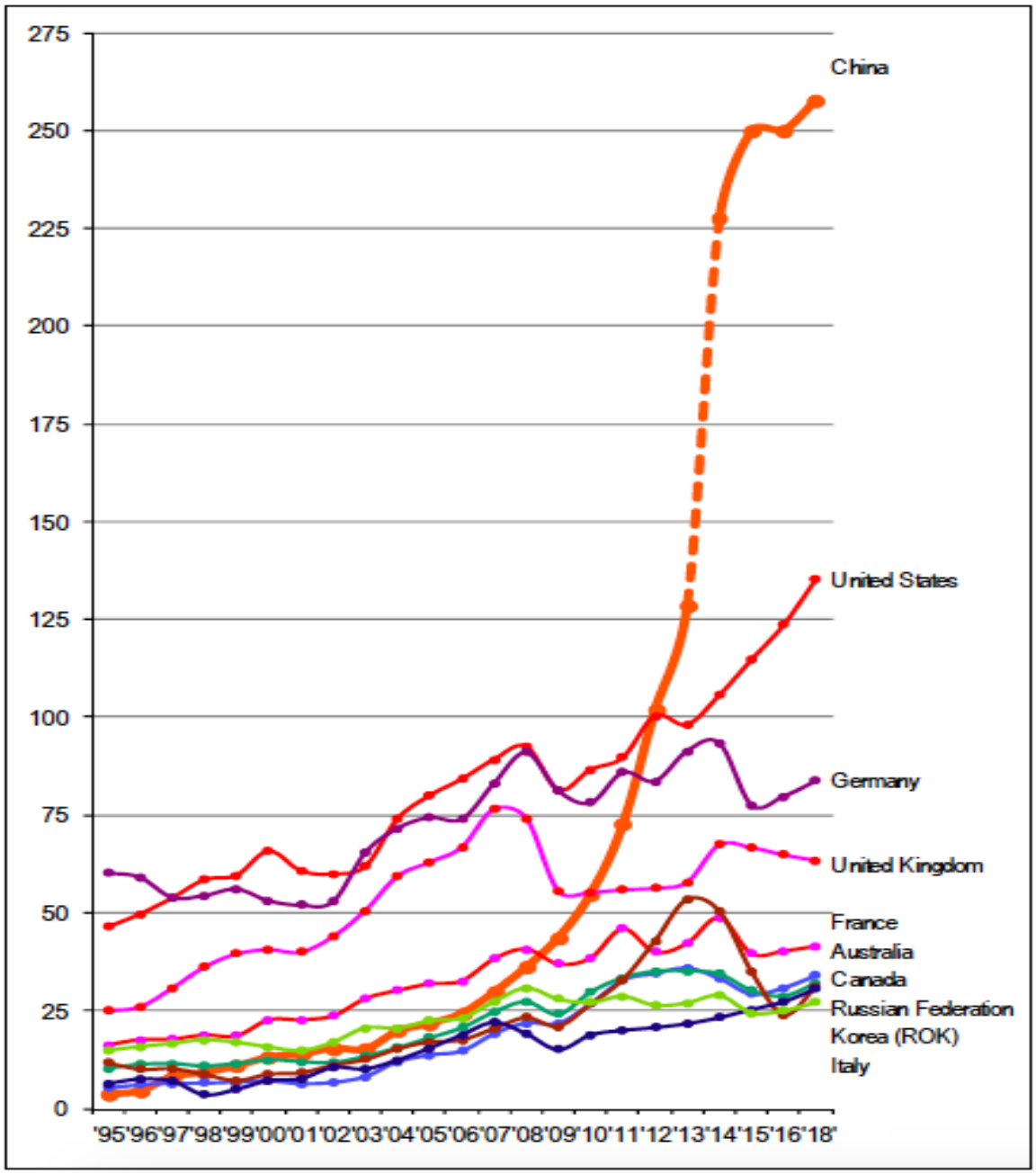
Keywords:
Growth Long-term Sustainable Development, Socio-Economic Growth, Sustainable Tourism

Introduction

Tourism, as we understand it in today's modern mass sense, has developed into a global phenomenon over the past couple of decades, while today's world can be hardly imagined without traveling. Tourism is, to a greater or lesser extent, affecting every person's life and there are very few places in the world that tourists have not yet been discovered. This development cannot be separated from other phenomena and processes that fundamentally influence and in essence determine the form of today's world. Moreover, there are many different views on tourism. Some are demand-driven and others focus on the supply side, others emphasize more economic approach or geographic dimension. According to the World Tourism Organization (UNWTO) demand-driven view (introduced due to the need for statistical measurement), tourism is an activity of a person traveling temporarily to a place outside, for a shorter period than is prescribed (for international tourism, this period is one year, for domestic tourism six months). Additionally, the main purpose of this activity is other than performing gainful employment in the place visited – the gainful activity is not based on permanent or temporary employment in the place visited.

However, in order to understand the complexity of tourism, a much wider context has to be considered. Tourism is not just a phenomenon or an economic tool. Social and anthropological studies that place the focus on its socio-cultural dimension in the form of exploring the relationship between residents and visitors (the process of confronting different cultures and its impact on the whole of human society), should also play an important role in defining it. These facts are often overlooked, although they are of no lesser importance. It is therefore important that tourism is not only presented using economic indicators, but also to look for broader links, connections, causes and impacts. Therefore, it is important to interpret statistical data and put it in a wider context. In the late 2018, solid outbound tourism request from both conventional and developing markets.

For all intents and purposes all source markets detailed higher tourism spending in 2018, reflecting proceeded solid interest for global tourism over every single world district. Both rising and propelled economies fueled development; driven by the United States, which spent US$12 billion more on movement abroad. China spent US$8 billion more, merging its authority as the greatest high-roller on the planet. The Russian Federation spent US$7 billion progressively and Brazil US$5 billion increasingly, both bouncing back from weaker spending in earlier years. Solid tourism consumption reflects upgraded availability, expanded visa help and a worldwide monetary rise.



Scheme 1 World and regions: Outbound Tourism International Tourism Expenditure (US$ billion)

Source: https://www.e-unwto.org/doi/pdf/10.18111/wtobarometereng.2018.16.4.1

Moreover, worldwide traveler entries grew 6% in the initial a half year of 2018 contrasted with a similar period a year ago, mirroring a continuation of the solid aftereffects of 2017 (+7%). Every single world area appreciated powerful development, fueled by solid interest from real source showcases and upheld by a rise in the worldwide economy. Europe and Asia and the Pacific drove development in January-June 2018, with landings expanding 7% in the two locales. The Middle East and Africa additionally recorded sound outcomes with 5% and 4% development separately, while the Americas saw a 3% expansion this half year time frame. Starter information on global tourism receipts affirm the positive pattern found in universal visitor entries, with especially solid outcomes in Asian and European goals. On the interest side, France, the United Kingdom, the Russian Federation, India, the Republic of Korea and the United States drove outbound spending from their particular districts. Against a solid first semester, development prospects for the rest of 2018 stay positive generally, however relatively more moderate, as indicated by the most recent UNWTO statistical data.

All main (tracked) 25 source markets announced higher spending on global tourism in the most recent year. China united its initiative as the greatest high-roller in movement abroad in 2017 with US$ 258 billion in use (+5% in local currency). The other three BRIC economies all considerably expanded use in 2017. The Russian Federation (+13%) bounced back following a couple of long periods of decays, to achieve US$ 31 billion, climbing three spots to reappear the best ten at number 8. Brazil (+20%) likewise recouped emphatically and climbed eight spots to number 16 with US$ 19 billion in use. India proceeded with its ascent with 9% development in spending to US$ 18 billion and climbed four places in the positioning to seventeenth (Scheme 1). Rising economies assume a key job in tourism advancement and we are exceptionally satisfied to see the bounce back of the Russian Federation and Brazil, and the progressing ascent of India, as these key rising outbound markets add to development and market expansion in numerous goals (World Tourism Organization, 2018b).

1 Accessing the Latest Status and Importance of Modern Tourism

First of all, tourism is a business and phenomenon representing the need of modern man, a means of knowledge and self-realization as a part of consumption, economic activity, and opportunities for entrepreneurial activity. Second of all, it is a space for creating new jobs, a factor for territorial development, a tool for poverty eradication, the cause and consequence of globalization, and a deepening global interdependence. In addition, it can (and should) help preserve cultural heritage and traditions, contribute to peace and global stability and act as an instrument of understanding among nations. On the other hand, tourism has not only positive connotations, but it often brings a number of negatives – depending on its specific form. In particular, mass tourism is associated with a number of side effects that negatively affect the lives of local people, harm the environment, erode cultural differences, and exclude local communities from the possibility of

economically benefiting from tourism. In exceptional cases tourism can become a means of spreading infectious epidemic or the realization of terrorist attacks (Stables, 2017).

On the other hand, when we look at the outbound tourism demand from both traditional and emerging markets, we can see that the advanced economies likewise performed heartily in 2017, driven by the United States (+9%), the world's second biggest outbound market. US explorers spent US$ 12 billion more on universal tourism to US$ 135 billion. Consumption from Germany (third biggest market) and the United Kingdom (fourth) both expanded 3%, and from France (fifth) 1%. Australia (sixth) detailed 7% development and Canada (seventh) a 9% expansion. Finishing the best ten are the Republic of Korea (ninth) where consumption developed by 9% and Italy (tenth) where it expanded by 6%. Past the main ten, tourism spending additionally developed remarkably in Sweden (+14%) and Spain (+12%). These solid outcomes in outbound tourism are predictable with the 7% expansion in worldwide traveler entries in 2017. Interest for movement was especially high in Europe, where entries expanded 8% a year ago.

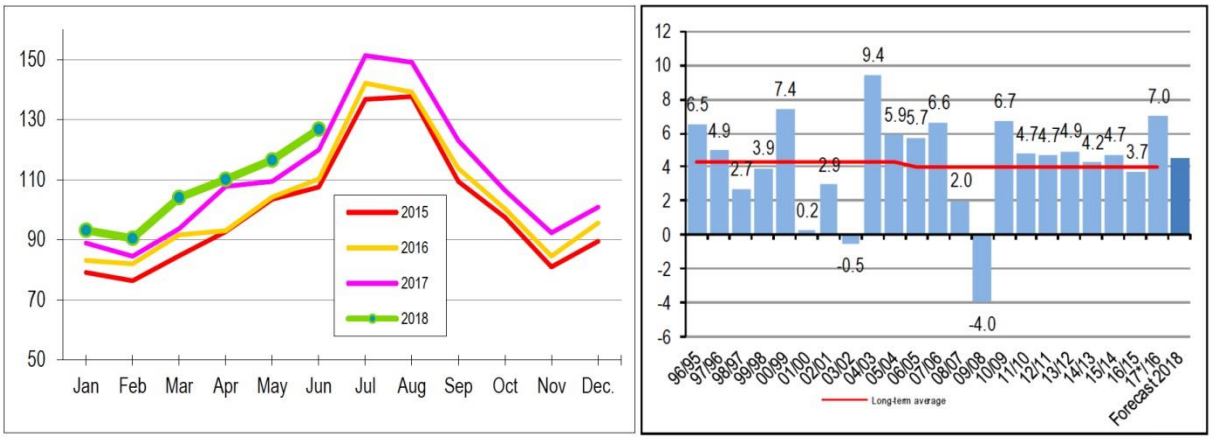
Furthermore, international tourism stays solid in the initial four months of 2018. Global traveler landings grew 6% in January-April 2018 contrasted with a similar period a year ago. Results mirror a continuation of the solid pattern seen in 2017 (+7%) thus far surpass UNWTO's estimate of 4% to 5% for the year 2018. Growth in the initial four months of 2018 was driven by Asia and the Pacific (+8%) and Europe (+7%), while Africa (+6%), the Middle East (+4%) and the Americas (+3%) additionally recorded sound outcomes. Trust in worldwide tourism stays solid as indicated by the most recent UNWTO Panel of Tourism Experts review. The Panel's viewpoint for the current May-August period is one the most idealistic in 10 years, driven by the especially energetic slant in Africa, the Middle East and Europe. Specialists' assessment of tourism execution in the initial four months of 2018 was likewise powerful, in accordance with the solid outcomes recorded in numerous goals around the globe. Worldwide tourism receipts grew 5% out of 2017 (Table 1). Worldwide tourism receipts expanded 5% of every 2017 in genuine terms (nearby monetary standards at steady costs) to achieve US$ 1,332 billion all around, some US$ 94 billion more than in 2016. Results are reliable with the strong pattern in universal vacationer entries, which grew 7% out of 2017. The Middle East drove development in tourism receipts with a 13% expansion in 2017, trailed by Africa and Europe which both recorded 8% development. Receipts grew 3% in Asia and the Pacific and 1% in the Americas. Europe recorded the most elevated development in outright terms, with an expansion of US$ 50 billion to achieve US$ 512 billion, or 38% of the world's worldwide tourism receipts.

Table 1 Comparison of International Tourist Arrivals

International Tourist Arrivals	2017	early 2018	mid 2018
World	+7.0%	+6.2%	+6.1%
Europe	+8.4%	+6.8%	+6.8%
Asia and the Pacific	+5.6%	+7.8%	+7.4%
Americas	+4.8%	+3.0%	+3.3%
Africa	+8.6%	+5.6%	+4.0%
Middle East	+4.6%	+4.5%	+4.6%

Source: Author's processing based on UNWTO World Tourism Barometer data

Likewise, global landings grew 6% in the principal half of 2018 the international traveler entries (medium-term guests) expanded 6% in January-June 2018 contrasted with a similar period a year ago, as per accessible information. This speaks to a continuation of the solid consequences of 2017 (+7%) and surpasses the rate of 4% or higher development recorded each year since 2010. Development to date likewise surpasses UNWTO's estimate of 4% to 5% for the year 2018, as detailed in the October release of the UNWTO World Tourism Barometer. All districts delighted in an expansion in worldwide entries, driven by Asia and the Pacific and Europe (both +7%) while the Middle East (+5%), Africa (+4%) and the Americas (+3%) all appreciated sound outcomes also. An aggregate of 138 nations have so far detailed information on universal traveler landings for at least three months of 2018 (out of 220). Of these, 80% revealed an expansion in landings while 20% posted a reduction. UNWTO gauges that goals worldwide got 641 million global traveler entries among January and June 2018, 37 million more than in a similar time of 2017 (Scheme 2). The main portion of the year typically represents around 45% of aggregate yearly worldwide landings, with the second half longer by three days and including the Northern Hemisphere high season a long time of July and August (World Tourism Organization, 2018a).



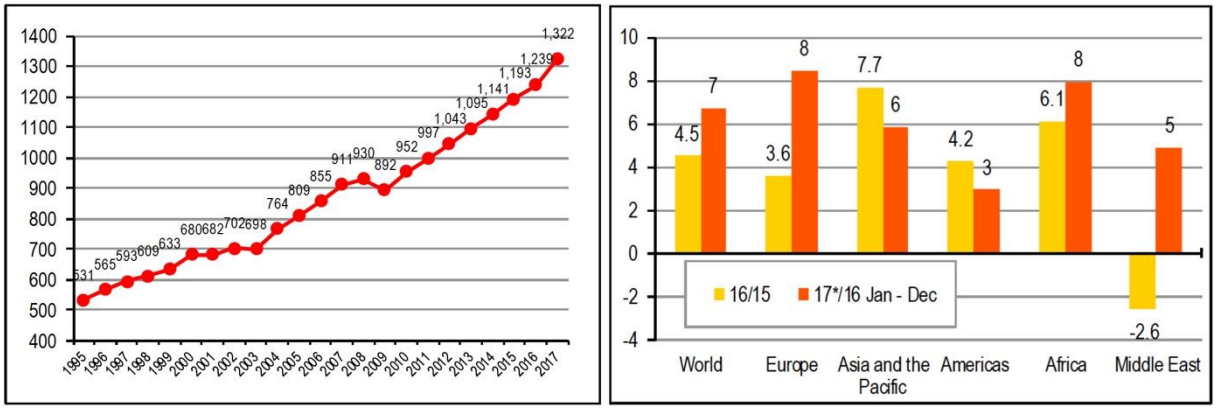
Scheme 2 International Tourist Arrivals by month / World

Source: https://www.e-unwto.org/doi/pdf/10.18111/wtobarometereng.2018.16.4.1

2 International Tourist Arrivals by (Sub)region

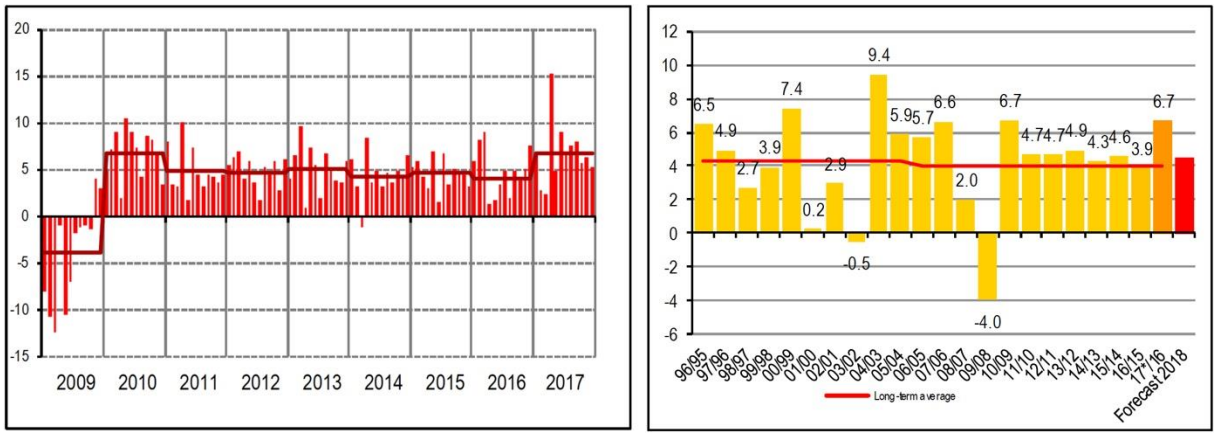
One of the main economic indicators is the share of tourism in the world GDP. According to the 2017 international tourism UNWTO results and mid-2018 results, global tourist landings developed by a noteworthy 7% of every 2017 to achieve an aggregate of 1,322 million (scheme 3). This solid force is required to proceed in 2018 at a rate of 4%-5%. In light of information (reported by destinations around the globe), it is assessed that universal tourist landings (overnight guests) overall expanded 7% of every 2017. This is well over the maintained and predictable pattern of 4% or higher development since 2010 and speaks to the most grounded outcomes in seven years.

Driven by Mediterranean goals, Europe recorded exceptional outcomes for such a huge and rather develop district, with 8% more worldwide entries than in 2016. Africa merged its 2016 bounce back with 8% expansion. Asia and the Pacific recorded 6% development, the Middle East 5% and the Americas 3%. 2017 was described by managed development in numerous goals and a firm recuperation in those that endured diminishes in earlier years. Results were somewhat molded by the worldwide financial rise and the vigorous outbound request from numerous conventional and developing source markets, especially a bounce back in tourism spending from Brazil and the Russian Federation following a couple of years of decreases.



Scheme 3 International Tourist Arrivals (in million) and (% change)

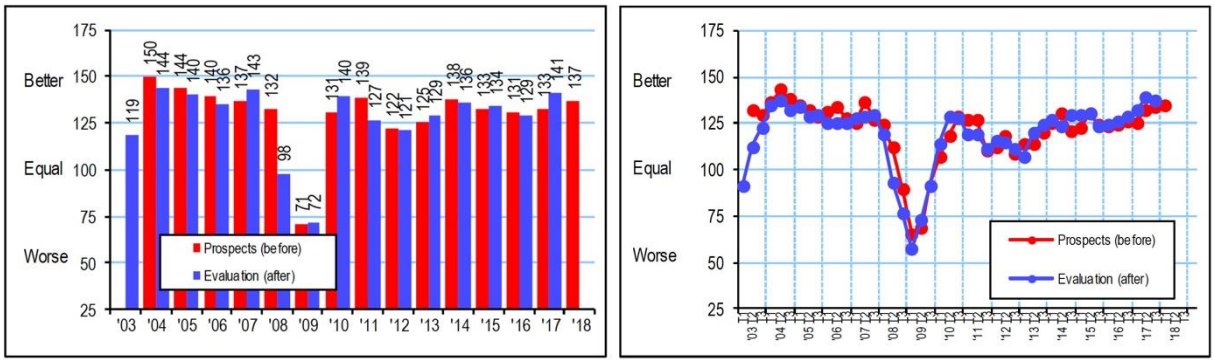
Source: https://www.e-unwto.org/doi/pdf/10.18111/wtobarometereng.2018.16.1.1



Scheme 4 International Tourist Arrivals (in million), monthly evolution (% change) and forecast

Source: https://www.e-unwto.org/doi/pdf/10.18111/wtobarometereng.2018.16.1.1

Moreover, International travel keeps on developing unequivocally, uniting the tourism part as a key driver in financial improvement. As the third fare part on the planet, tourism is basic for work creation and the thriving of groups far and wide. Worldwide tourist entries in Europe achieved 671 million in 2017, a wonderful 8% expansion following a similarly weaker 2016. Development was driven by the remarkable outcomes in Southern and Mediterranean Europe (+13%). Western Europe (+7%), Northern Europe and Central and Eastern Europe (both +5%) additionally recorded powerful development. Asia and the Pacific (+6%) recorded 324 million universal tourist entries in 2017. Entries in South Asia grew 10%, in South-East Asia 8% and in Oceania 7%. Entries to North-East Asia expanded by 3%. The Americas (+3%) invited 207 million global tourist entries in 2017, with most goals getting a charge out of positive outcomes. South America (+7%) drove development, trailed by Central America and the Caribbean (both +4%), with the last hinting at clear recuperation in the consequence of storms Irma and Maria. In North America (+2%), hearty outcomes in Mexico and Canada appeared differently in relation to a lessening in the United States, the locale's biggest goal. In view of accessible information for Africa, development in 2017 is assessed at 8%. The locale united its 2016 bounce back and achieved record 62 million global entries. North Africa delighted in a solid recuperation with entries developing by 13%, while in Sub-Saharan Africa landings expanded by 5%. The Middle East (+5%) got 58 million universal tourist entries in 2017 with maintained development in a few goals and a solid recuperation in others.



Scheme 5 Panel of Tourism Prospects and Evaluation

Source: https://www.e-unwto.org/doi/pdf/10.18111/wtobarometereng.2018.16.1.1

The current solid development is relied upon to proceed in 2018 (scheme 4), however at a more manageable pace following eight years of enduring development following the 2009 monetary emergency. In view of current patterns, financial prospects and the viewpoint by the UNWTO Panel of Experts (scheme 5), UNWTO ventures universal tourist landings worldwide to develop at a rate of 4%-5% out of 2018. This is to some degree over the 3.8% normal increment anticipated for the period 2010-2020 (long-term estimate). Europe and the Americas are both anticipated that would develop by 3.5%-4.5%, Asia and the Pacific by 5%-6%, Africa by 5%-7% and the Middle East by 4%-6%.

Table 2 Outlook for International Tourist Arrivals

	International tourist arrivals received (million)					Average a year (%)					Share (%)	
	Actual data			Projections		Actual data		Projections				
	1980	1995	2010	2020	2030	1980-'95	'95-2010	2010-'30, of which			2010	2030
									2010-'20	2020-'30		
World	**277**	**528**	**940**	**1,360**	**1,809**	**4.4**	**3.9**	**3.3**	**3.8**	**2.9**	**100**	**100**
to advanced economies	194	334	498	643	772	3.7	2.7	2.2	2.6	1.8	53	43
to emerging economies	83	193	442	717	1,037	5.8	5.7	4.4	4.9	3.8	47	57

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	average	2018
	real, change										a year	
	full year									Jan.-Dec.	2005-2017	between
World	**2.0%**	**-4.0%**	**6.7%**	**4.7%**	**4.7%**	**4.9%**	**4.3%**	**4.6%**	**3.9%**	**6.7%**	**4.0%**	**+4% and +5%**
Europe	0.4%	-5.3%	3.0%	6.4%	3.8%	5.1%	2.0%	4.7%	2.4%	8.4%	2.9%	+3.5% and +4.5%
Asia and the Pacific	1.4%	-1.4%	13.4%	6.5%	7.3%	6.8%	6.0%	5.4%	7.7%	5.8%	6.4%	+5% and +6%
Americas	2.7%	-4.9%	6.7%	3.6%	4.4%	3.6%	8.5%	5.9%	3.7%	2.9%	3.8%	+3.5% and +4.5%
Africa	2.9%	4.5%	9.3%	-0.7%	4.6%	4.5%	0.9%	-3.1%	7.6%	7.9%	4.7%	+5% and +7%
Middle East	20.0%	-5.4%	14.6%	-9.3%	2.6%	-1.5%	9.9%	2.0%	-2.4%	4.9%	4.7%	+4% and +6%

Source: https://www.e-unwto.org/doi/pdf/10.18111/9789284419029

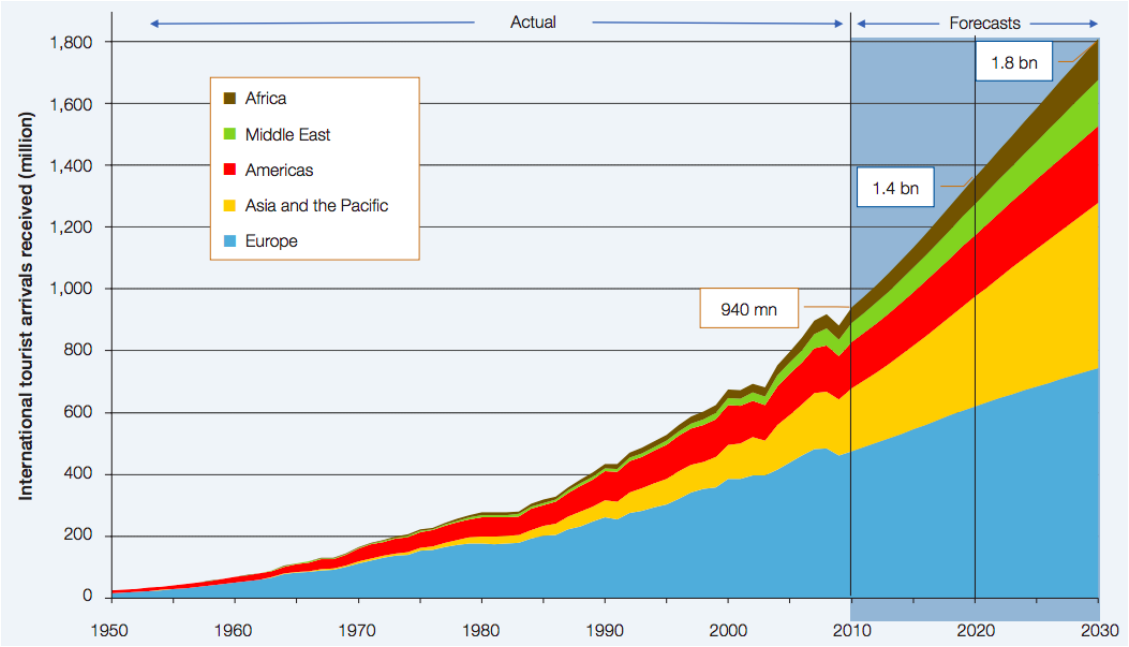
Tourism is also a major employer. The nature of tourism services results in a relatively high demand for labor. According to the International Labour Organization, tourism directly and indirectly accounts for 8% of total employment. Women account for 60-70% of the employed in this sector and about 50% are under 25 years of age. This contributes to the higher employment of those who belong to disadvantaged groups in the labor market. All these and many other indicators present the importance and growing importance of the tourism industry

for the world and national economies. According to the market share, the dominant position has the Europe region, which has the highest number of arriving tourists as well as the biggest sales achieved. It is not only the most receiving region, but also the most transmitting region. However, according to UNWTO estimates (table 2), Europe's relative share of global tourism will decline in favor of developing regions. According to predictions, it will be the fastest growing region in Asia and the Pacific (World Tourism Organization, 2018b).

3 Globalization and Sustainability of Modern Tourism

In general, globalization can be characterized as a process towards the whole of human society, affecting almost every area of its everyday life. It consists in creating links between the different parts of the world and their constant deepening. The essence is the exchange of information, goods and capital that are easily moved. That is why globalization is closely related to the development of the world economy. In other words, it is also possible to say that globalization is the process that causes events, decisions and activities at a certain place to have a significant impact on society as a whole and on individuals in very distant places.

The process of globalization penetrates almost all areas of human life. The most visible area where it manifests itself is the socio-economic plane. We can also talk about cultural globalization, which leads to the wiping out of cultural differences and the emergence of a unified global culture, while tourism is one of the causes and one of the consequences of this process. Just as commodities, capital and information are easy to move, tourists have easy travel conditions. Globalization is spreading through new telecommunication and transport technologies, which are also a vital and indispensable prerequisite for the development of tourism.



Scheme 6 Actual Trend and Forecast 1950-2030 of Tourism

Source: https://www.e-unwto.org/doi/pdf/10.18111/9789284419029

This is a sensitive issue, especially in the developing world and in areas that have not yet been confronted with a new global culture. In the future, it is assumed that the cultural differences of the individual destinations will represent a competitive advantage and play a significant role in the choice of the destination. Another dimension of globalization is its political level, which involves the formation of political unions and the involvement of individual states in international organizations. For tourism, border issues, crossing and visa requirements are particularly important. Current developments aim to facilitate and simplify these issues for the benefit of international tourism participants (scheme 6). The issue of sustainability is closely related to globalization and gradually penetrates almost all areas of human activity; therefore, it is one of the major factors influencing the development of tourism (World Tourism Organization, 2017).

Sustainability or sustainable development is nowadays highly debated topics. The main objective of sustainable development is to balance the ecological, economic and social pillars. It is in third world countries that we often find it very important to put an economic pillar at the expense of the other two. An important milestone in the development of this concept has been done by the United Nations (Conferences on Environment and Development – Earth Summit) (United Nations, 2015). The main principles of sustainable development were formulated and the summit culminated in the adoption of the Agenda 21 document (United Nations, 2014). Other actors in the sustainability debate are global organizations such as the World Bank and the International Monetary Fund.

Sustainable tourism remains a very broadly defined concept. Appropriate indicators can show the progress made by countries, institutions, or individuals, whether they should report their behavior and decision-making to sustainability while at the same time motivating them. Information is absolutely crucial in this process. The acquisition, transformation, transfer and use of a wide variety of information at all levels of decision-making, in the most diverse areas and forms, is a typical feature of contemporary social development and the basis for a successful transition to sustainable development (Blewitt, 2014). Sustainable development indicators are usually arranged in different frameworks, which are of a different nature. It can be a geographic framework where values and information are bound to a particular location. Or, as a framework, they serve the various fields of human activity. For example, there are a set of forestry indicators, indicators for individual industries, agriculture or health.

Moreover, the UN Commission on Sustainable Development issued a list of 130 indicators, which are organized according to a certain logical framework with the pressure-state-response scheme. Key indicators for policy formulation, consider the environmental, economic, social and institutional dimension of sustainable development. Secondary indicators are informative; they identify the problem and describe the current state of environment. The last group consists of the measures to eliminate the dangerous phenomena indicated (Stead, 2013). An

important feature of indicators in general is that they always make sense in broader contexts. Relationships between individual indicators are also important. Therefore, in the context of sustainable development, we need to look at the indicators in a comprehensive way, examine individual relationships and links between them, not to examine them in isolation, but as part of a larger unit (Hawken, 2010).

4 What would a Sustainable World look like?

Sustainable tourism often means different things for different countries and for different people. The decisive role here is played by several important factors. Above all, it depends on cultural and historical traditions. Equally important are the basic natural conditions and values of a society. What is important is also how rich the country is and how this richness is spread out. Rich landscapes tend to increase the importance of the post material values (which do not speak almost to the inhabitants of the poorest countries), since the idea of sustainable development belongs to the category of post material values. Another important factor is the social and political organization of a society.

Modern democratic states differ fundamentally from traditional hierarchical societies. The economic system of the country and the overall economic situation also has a key importance. In particular, the share of the agricultural sector and how it is organized is important in this context. Despite the differences that exist between different cultures and countries, we all understand that the current economic and civilization development is not sustainable in any country and not at all globally.

This increasingly imbalance stems from population growth and economic growth, in connection with growing demand for energy, raw materials and natural resources. For decades, environmental issues have reached the size of global dimensions. The most serious and most alarming evidence of the polluted environment is ozone depletion, the threat of radical climate change. The area of arable land is diminishing, while deserts expand. Increased pollution of the ocean and freshwater sources are decreasing. The reduction of biodiversity - the depletion of plant and animal species - is also terrible.

Economic development over the last decades had so far ecologically devastating consequences and is associated with the growth of environmental burden. One of the options is stopping or at least slowing down economic growth, which should avert disaster in the form of resource depletion and absolute destruction of the environment. However, the world public would never accept such a recommendation, and it is questionable whether this would be possible at all. Moreover, modern concepts of sustainable development do not suggest economic growth, despite the fact that the relationship between economic development and an effective concept of environmental protection is full of contradictions.

According to the United Nations A New Approach to Sustainable Tourism Development, modern sustainable development is one which meets the needs of the present without endangering the ability of future generations to meet their own needs (The Guardian, 2016).

5 Conclusions and Policy Implications

The very notion of sustainable development has a close relationship to human values and does not have a fully objective basis given by independent scientific knowledge. The key idea is that economic development must be aimed at not destroying the basis of natural resources and bearing the quality of the environment. This is the only way to leave the future generations the same living conditions and economic activity as our generation. So, what would a sustainable world look like?

First of all, sustainable world means continual improvement of the standard of living and the well-being of the population concerned within the capacity of the ecosystem concerned, maintaining natural values and their biological diversity for the good of present and future generations. The key expression of this idea is ecosystem capacity. We understand the ecosystem as an interconnected system of environmental compartments and its capacity as ecosystem's capacity to accept a load that does not yet impair its ecological stability. This term is commonly used in biological disciplines and denotes the maximum possible population of a species that can be fed to territory under natural conditions. In this case, however, we are not able to quantify the bearing capacity, as people are not a biological species that would still have the same demands. People have different material needs that vary over time and are different in different countries. However, precise quantification of the size of the carrying capacity is not important. It is important that the natural systems that represent natural resources used by human society are limited; they have only a certain capacity.

Second of all, modern sustainable tourism development needs to be designed to ensure that the viable capacity of natural systems does not exceed, as a development that preserves the present and future generations of the possibility of satisfying their basic living needs while not diminishing the diversity of nature and preserving the natural functions of the ecosystem. This concept is the most realistic in the sense that it places emphasis on satisfying basic living needs.

Therefore, we can see that the nature of sustainable tourism lies in the environmental restructuring of industry. However, if the idea of sustainable tourism is taken seriously, this process must at least temporarily hamper economic growth with relevant impacts on the social sphere. In a simplified way, this rather emphasizes the requirement of harmonizing environmental interests while partially suppressing the satisfaction of human needs. The common idea of most modern sustainable tourism development concept is the word need. However, the needs of all the inhabitants of the planet are diametrically different - the needs of the inhabitants of the rich northern world are the precursor to the populations of

the poor global south. In any case, critical voices act as a catalyst for the process of securing future existence for us and our offspring.

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E-GOVERNMENT IN PRACTICE OF ENTREPRENEUR

Oľga KMEŤOVÁ – Magdaléna FREŇÁKOVÁ

Abstract
For the economic development of countries around the world it is necessary to innovate in a number of areas. There is no doubt that the driving force of economic development in the 21st century is, and will be, electronization, digitalization and everything connected with it. Nowadays, when technology enables integration at a global level, it is essential to have good legislation in the field of administration as well. Consideration must also be given to issues such as the protection of privacy and the security of electronic signatures. For the above reasons, investments in technology in the area of education and legislation are necessary.

Key words:
e-Government, digitalization, electronization, public administration, e-Government Act, Central Government Portal, electronic mailboxes

Introduction

It should be noted at the beginning that the issue of electronization of the society is quite extensive. By introducing the Internet, humankind has opened a door of unlimited possibilities, innovation and progress. Informatization and electronization can be considered as the current global trends. Changes brought about by the increasing importance of information and information and communication technologies are reflected not only in the private but also in the public sector.

Building an e-Government in the Slovak Republic has been a very up-to-date topic in recent years. Mandatory activation of electronic mailboxes has affected more than 300000 entities. Therefore the aim of this contribution is to demonstrate the impact of e-Government on the business environment, whether positive or negative, based primarily on the definition of its essential features and characteristics.

1 E-Vláda in Slovak does not sound as good as e-Government

Via a strict translation into the Slovak language the term e-Government can be defined as the electronic performance of the Government or the performance of the Government by electronic means. In fact, its size and content significance is considerably wider. Its purpose is to provide all private entities with greater convenience in making contacts with the state and other public entities by speeding up and simplifying the communication with them, to streamline the internal processes of public authorities and to lead to greater transparency in their activities vis-à-vis the public.

According to Žárska et al. (2016) e-Government is within the European Union, in a broader sense, defined as the deployment of information and communication technologies in public administration coupled with organizational

changes and new capabilities to improve public services and democratic processes, thereby facilitating the creation and implementation of state policy.

Digital public services reduce the bureaucratic burden for citizens and businesses by making their interaction with public authorities more efficient, faster, more practical, transparent and inexpensive. Moreover, the use of digital technologies can provide additional economic and social benefits for society as a whole.

2 The e-Government Act

The Supreme Legislative Body of the Slovak Republic, which is the National Council of the Slovak Republic, approved on September 4, 2013 Act No. 305/2013 Coll. on the Electronic Form of Governance Conducted by Public Authorities and on amendments and supplements to other acts (Act on e-Government) (hereinafter the "e-Government Act").

The e-Government Act acquired a legal commitment on November 1, 2013, which was only two months after its adoption at the Parliament. According to Halásová and Gregušová (2014) already in the drafting of the bill on electronic public administration, the main objective of the legal regulation has been to create a legal environment for the implementation of public authorities by electronic means, to simplify, speed up, streamline and unify the communication processes, while eliminating the excessive fragmentation of legislation in the already existing legislation in the area of the provision of electronic services by public authorities towards citizens and public authorities.

The intention of adopting the e-Government Act was to remove bureaucracy for the benefit of citizens and entrepreneurs by replacing the original documentary way of exercising public authority with an electronic alternative.

The specificity of the e-Government Act is that it has been amended 17 times since its declaration in the Collection of Laws of the Slovak Republic. One of several reasons for the multiple amendments was the unwillingness of citizens and entrepreneurs to accede to the obligation to set up an electronic mailbox. Another reason is that the law in question regulates a relatively lively and dynamically developing social sphere.

According to Gabriž (2013) a considerable benefit of adopting the act can be seen from the point of view of stakeholders in the interconnection of basic public administration registers and use of data sharing and therefore it would no longer be necessary to submit in paper form those documents which the competent public administration and public authorities can obtain themselves from public registers and, where appropriate, from other information systems managed by other public authorities.

2.1 A brief analysis of the e-Government Act

As it is already used within the legislative environment, the e-Government Act defines, in its introductory provisions (namely § 1, § 2 and § 3 with its sections and letters), its subject matter, its scope and defines the basic and most commonly used terms.

In simple terms, the e-Government Act regulates the performance, conditions and way of exercising public authority electronically through information systems, electronic submissions, electronic public documents, electronic mailboxes and delivery through them, identification and authentication of persons, authorization, guaranteed conversion, and finally reference books.

The e-Government Act has effectively defined its scope by means of a positive and negative definition referred to in § 2 (Act No. 305/2013 Coll.). It specified a positive definition by means of the verb "applicable", while via its antonym it subsequently determined a negative definition.

Terms necessary for the purposes of the Act may be subdivided into the basic ones, which are found in § 3 (Act No. 305/2013 Coll.) and the secondary ones, which are systematically contained in other individual provisions. The basic terms necessary for the purpose of the e-Government Act are communication, administration, document, official document, form, mailbox and filing (all with attribute "electronic") as well as person identifier, authorization and authentication. The secondary terms necessary for the purposes of the Act may include terms such as the access point, the Central Government Portal, the integrated service station or the electronic mailbox.

2.2 The Central Government Portal and the electronic mailboxes

Of all the basic and secondary terms necessary for the purposes of the e-Government Act, it is necessary to define the Central Government Portal and the electronic mailboxes (the e-mailboxes) as they are the two most important elements of the E-system.

The Central Government Portal in accordance with the § 5 section (2) of the e-Government Act (Act No. 305/2013 Coll.) is defined as a public information system designed to provide service and information to the public through the common internet access point. The portal is managed by regulations of Act No. 275/2006 Coll. on Public Administration Information Systems and by the Act No. 305/2013 Coll. on e-Government (NASES, 2018a).

A key position in this legal framework has the Central Government Portal. Through this portal, it is possible to conduct electronic communications centrally via the Internet with any public authority. The Central Government Portal is located at domain https://www.slovensko.sk/ (PC REVUE, 2013).

Simplified, we can label the e-mailbox as an electronic or virtual equivalent of an ordinary postal mailbox. Its primary function is to send and deliver requests,

or submissions and attachments electronically, while preserving the same effects as in the case of paper form.

Establishment of electronic mailboxes is governed by the Act No. 305/2013 Coll. on e-Government. Under this Act it is an electronic storage intended for storing electronic messages and notifications. Electronic mailboxes are located at the Central Government Portal and are established by the Government Office of the Slovak Republic in accordance with the § 11 section (1) of the e-Government Act (Act No. 305/2013 Coll.) for:

- public authorities (bodies),
- legal entities and registered branches of legal entities,
- natural persons (citizens of the Slovak Republic),
- natural persons who are carrying out business activity (entrepreneurs).

The Government Office of the Slovak Republic has identified these advantages of using the electronic mailboxes (NASES, 2018a):

- *accessibility* – the submission can be sent from home or office via any device that has Internet access, is equipped with the appropriate software and the person has a citizen ID with a chip and a personal security code,
- *time saving* – the submissions can be sent at any time of the day, without waiting for advice or limitation of office hours,
- *financial savings* – the electronic submission is charged at half the rate of the administrative or judicial fee compared to the same submission made in paper form,
- *awareness* – citizen and entrepreneur are informed about sending and delivering of individual submissions through notification reports,
- *security* – communication via electronic mailboxes works on similar principles as electronic banking. Serving within this module is guaranteed by law.

3 E-Government from the entrepreneur's point of view

The topic of digitalization and electronization in the business environment was received very hard. The idea of introducing this form of communication and the exercise of administrative activity in public affairs would literally be called "fear of an unknown" from the entrepreneur's point of view. Based on the assumption that the vast majority of entrepreneurs were born at a time when there was no computer science taught at secondary schools, it is not surprising.

After acquiring a laptop, a citizen card containing an electronic chip with recorded certificates, and after installing the individual applications and components needed for proper functioning, initial experiences have also emerged amongst the entrepreneurs. Most often, entrepreneurs met with the system falling, its slowness, or not delivering some documents. In other cases, this involved receiving messages that contained illegibly scanned documents, documents signed by an unauthorized person, or documents not signed at all. Up to now, the

biggest problem of the Slovak e-Government is the vulnerability of electronic identification cards, which consisted of theft of identity.

The following Table 1 shows the number of activated e-mailboxes for delivery by physical entities (natural persons) and legal entities during the monitored period January 2016 to January 2018 on a monthly basis.

Table 1 Number of activated e-mailboxes for delivery

Period	Physical entities (natural persons)	Legal entities
January 2016	326	58
February 2016	605	91
March 2016	420	68
April 2016	358	73
May 2016	333	96
June 2016	277	74
July 2016	397	291
August 2016	849	2173
September 2016	479	1390
October 2016	1486	3653
November 2016	2891	9547
December 2016	2531	6569
January 2017	2584	5992
February 2017	2177	4122
March 2017	2322	3807
April 2017	1972	3484
May 2017	2146	4995
June 2017	4021	12635
July 2017	9894	207826
August 2017	3631	2029
September 2017	4046	1413
October 2017	3365	1784
November 2017	1419	464
December 2017	1862	2621
January 2018	2774	1381
Total for the period	53165	276636

Source: own processing according to NASES (2018b) available at: <https://data.gov.sk/dataset/upvs-schranky-aktivovane>.

Figure 1 focuses on the development of the number of activated electronic mailboxes for the delivery of physical entities (natural persons). It is important to note that physical entities (natural persons) do not have an obligation to have an activated e-mailbox. Their activation is currently taking place at a voluntary basis, but some physical entities in the position of notaries, executors, lawyers or bankruptcy trustees have an activated e-mailbox because due to the Act No. 757/2004 Coll. on Courts and on amendments and supplements to certain acts.

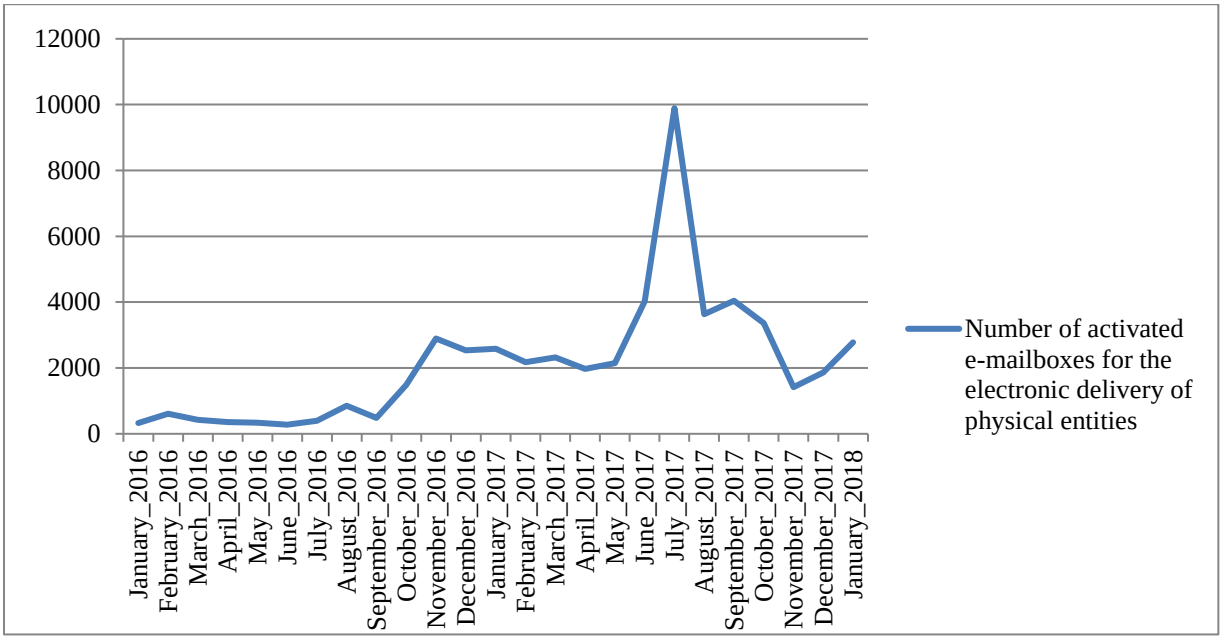

Figure 1 Development of the number of activated e-mailboxes for the delivery of physical entities (natural persons)

Source: own processing according to NASES (2018b) available at: <https://data.gov.sk/dataset/upvs-schranky-aktivovane>.

During the monitored period, the graph curve reached the highest point for July 2017 in the number of 9894 activated electronic mailboxes of natural persons, which was probably linked to the mandatory activation of electronic mailboxes of legal entities. In the following reporting period, the curve had only a declining trend with a stronger output in September 2017 in the number of 4046 activated electronic mailboxes of natural persons.

It should be noted that the number of established electronic mailboxes in case of physical entities is inevitably associated with the fact of reaching the age of 18. If this was not the case, then the values of Figure 1 would be several times higher.

Figure 2 characterizes the development of the number of activated electronic mailboxes for the delivery of legal entities. The observed curve also reached a record increase in July 2017. From a statistical point of view, it is possible to talk about the expected increase, as its movement was mostly influenced by the legal obligation to activate electronic mailboxes by legal entities. In July 2017, the number of activated e-mailboxes for the electronic delivery of legal entities reached an incredible 207826 electronic mailboxes.

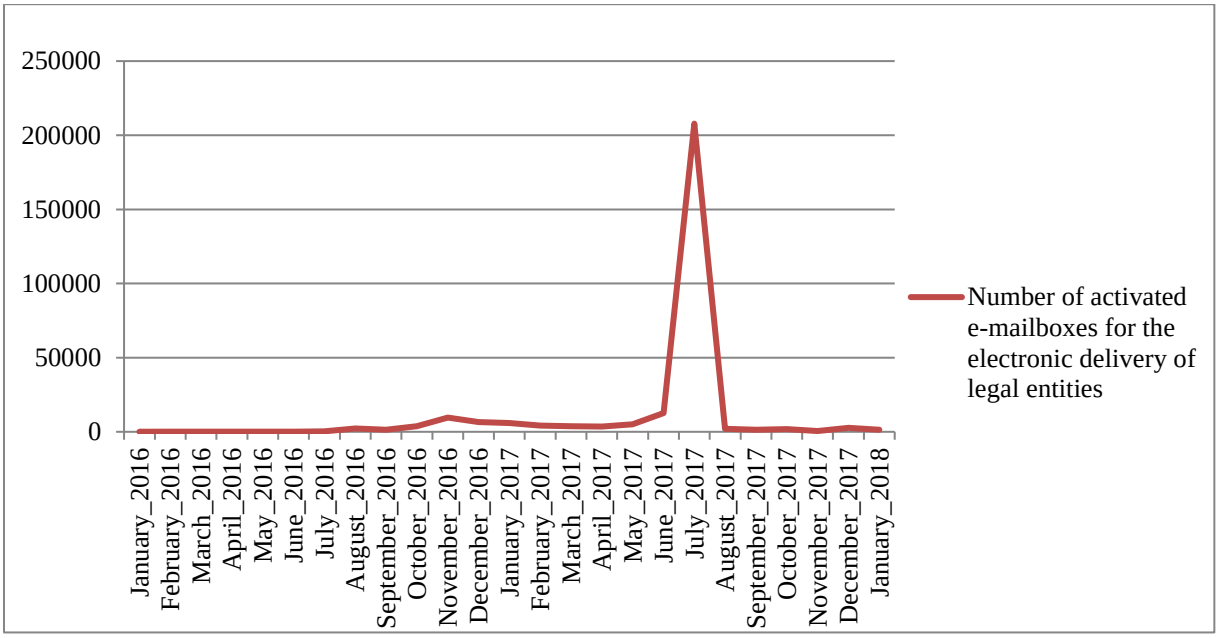

Figure 2 Development of the number of activated e-mailboxes for the delivery of legal entities

Source: own processing according to NASES (2018b) available at: <https://data.gov.sk/dataset/upvs-schranky-aktivovane>.

In addition to the peak in July 2017, during the monitored period the highest values were reached in November 2016 (9547 activated e-mailboxes of legal entities) and June 2017 (12635 activated e-mailboxes of legal entities). On the contrary, the lowest reached value before the peak in July 2017 was 58 electronic mailboxes activated in January 2016 and after that point in November 2017 in the number of 464 activated electronic mailboxes for the delivery of legal entities.

Conclusion

Informatization and electronization are currently the up-to-date directions of global action. They increasingly penetrate into all spheres of life, and thus become an integral part of it every day.

The modern society in which we live requires the technical innovations associated with the introduction of information and communication technologies and the continuous improvement of processes through their use. Informatization of the public contributes substantially to the increasing effectiveness of the knowledge of society.

Informatization of the public administration can reduce the administrative burden and the financial costs of the state. The benefit of such a modernization of public administration will also be the sharing of information between the various public authorities, what will allow citizens to release away from submitting the same documents to the different public institutions. The biggest challenges to the future include sufficient security of electronic signatures, electronic forms conforming to the law and the full functionality of the electronic mailboxes.

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COMMITMENT OF EMPLOYEES IN HEVES COUNTY: THE INFLUENCE OF THE SIZE OF THE BUSINESS AND THE TYPE OF THE TOWN OR VILLAGE

Anita KOZAK

Abstract
The goal of the present paper is to reveal how much the employees of the businesses operating in Heves County are committed to their workplaces and also whether their loyalty can be correlated to the size of the business and the type of the town or village where the particular business is seated. We have used some of the results from an empirical survey (KJMA database, N=198) carried out at the Eszterhazy Karoly University of Applied Sciences, Eger. Our results suggest that the commitment of the employees working in Heves County can be regarded to be quite good. Beside our examinations, we also pointed out that the employees of large companies and small businesses are much more committed to their workplaces than those of the micro and medium-sized businesses. Furthermore, the employees of the businesses operating in the county capital and the other towns are more committed to their workplaces than the employees working for village businesses.

Keywords:
human management, employee commitment, organizational commitment, Heves county, labor market

Introduction

The subject of the commitment to the workplace has been dealt with by the researchers of the discipline for decades. This prominent attention has appeared so that the costs of the higher than desired level of fluctuation and the losses due to the temporary losses of working time could be prevented. Also this special attention has been due to the effect of the workplace commitment on the success of completing the work.

The definition of commitment approaches the issue from the aspect of the worker's activity and behavior. According to Porter et al. (1974) and Martin (2001), the manifestation of one's commitment is an act which is carried out by the employees to achieve the goals of the organization without receiving instructions or requests from the management. According to Brooks – Wallace (2006), a committed employee wishes to make extra efforts for the benefit of the organization (quoted by Krajcsák, 2014). Beside all these, Veres – Malzeniczky (2006) emphasize the organizational advantages of the employees' commitment. The authors state that the committed employees are more productive, thus, they can increase the efficiency of the organization and the expenses related to the human resources management can be reduced this way. The above mentioned goals and the beneficial effects may motivate the employers to take steps in order to increase the employees' commitment to their workplace. One of the most famous model dealing with the employees' commitment is the three-dimensional

model created by Allen – Meyer (1990). According to their theory, there are three types of bonding in the background of the employees' commitment*:*

1. *Affective commitment*: the individual is emotionally bound to the organization or to their immediate colleagues, they identify themselves with the goals and values of the organization, thus, they are bound to the organization because they, so to speak, want to be bound.
2. *Continuance commitment*: the individual is bound to the organization because for some reason this course of action is the most worthy for them. This continuous commitment presumes that if there were a more payable alternative for the employees, they would quit the organization. Thus, the individual is bound to the workplace because it is worth it.
3. *Normative commitment*: the individual considers it to be their moral obligation to remain the member of the organization. The motivation for this might be the fact that the organization invested in the employee. However, the employee's previous experience or their culture might also be determining. The individual is bound to the organization because they feel obliged to do so.

During our survey, we asked the respondents questions related to the three types of commitment. Our goal was to find out how committed the employees of the businesses operating in Heves County to their workplaces and whether there is a correlation between the employees' loyalty, the size of the business and the type of the town or village where the business is operating.

Before we started our survey, we had made the following assumptions:

H_1 The continuance commitment is the highest among the respondents. In Heves County, the labor market situation is much worse from the employees' viewpoint than the national average. That is why we assume that the majority of the employees are bound to their workplaces due to the lack of job opportunities.

H_2 There is a correlation between the commitment to the workplace, the size of the business and the type of the town or village. We assumed that the employees of large companies and the employees of businesses operating in the county capital and other towns are more committed than the average.

1 The subject and method of the examination

Our primary research was carried out among companies which are operating in Heves County and have made job-creating investments in the past five years. We contacted the companies based on their availability. We were careful to include companies operating in different industries and employees of companies operating in villages, towns and the county capital in our sample. We requested the companies included in our sample to fill out a questionnaire in the third quarter of 2016. When compiling the questionnaire, we took the previous studies dealing with the various fields of the topic into account (Allen – Meyer, 1990). The recording of data was performed personally and online.

Following the questionnaire survey, we recorded and evaluated the obtained data in the SPSS 14.0 statistical program. Our research is quite extensive, it is based on 189 individual examinations. During the evaluation, several kinds of statistical methods were applied. We used the methods of the descriptive statistic to describe the sample and to characterize the major variables. That is, we calculated arithmetic means and frequency. Furthermore, we performed non-parametric analysis for the further examinations. The results of the statistical tests were regarded significant at the value of $p<0,05$.

59% of the respondents are men and 41% of them are women. Regarding their age, most of them (57%) are between 21 and 36, about a quarter of them (27%) are between 37 and 51. The employees under 21 (11%) and those over 52 (5%) were included in our sample in a smaller proportion. Regarding the employees' level of education, nearly three quarters of the respondents (74%) have a high school degree and the rest of them (26%) have a university or college degree. The responses show that half of the respondents (50%) work for firms operating in towns, 41% of them work for firms in the county and 9% of them work for firms in villages. The majority of the respondents (100 people) work for large companies, 36 people work for medium-sized companies, 40 people (21%) work for small businesses and finally, 13 people included in our sample work for micro businesses.

2 The results of our examinations

The goal of our commitment examinations was to reveal how committed the respondents to their workplaces. Furthermore, we wanted to find out whether there is a correlation between the estimation of the commitment, the size of the company and the type of the town or village. In case of the examined companies, the employees' commitment to their workplaces can be regarded to be good. It is especially favorable that the aspects related to the affective commitment ("I consider myself a member of the family here, I can say only good things about the company, I would gladly work here in the future.") received a higher than the average score. This means that the goals set by the managers are most likely accepted by many employees and the workplace atmosphere is probably quite good (Figure 1).

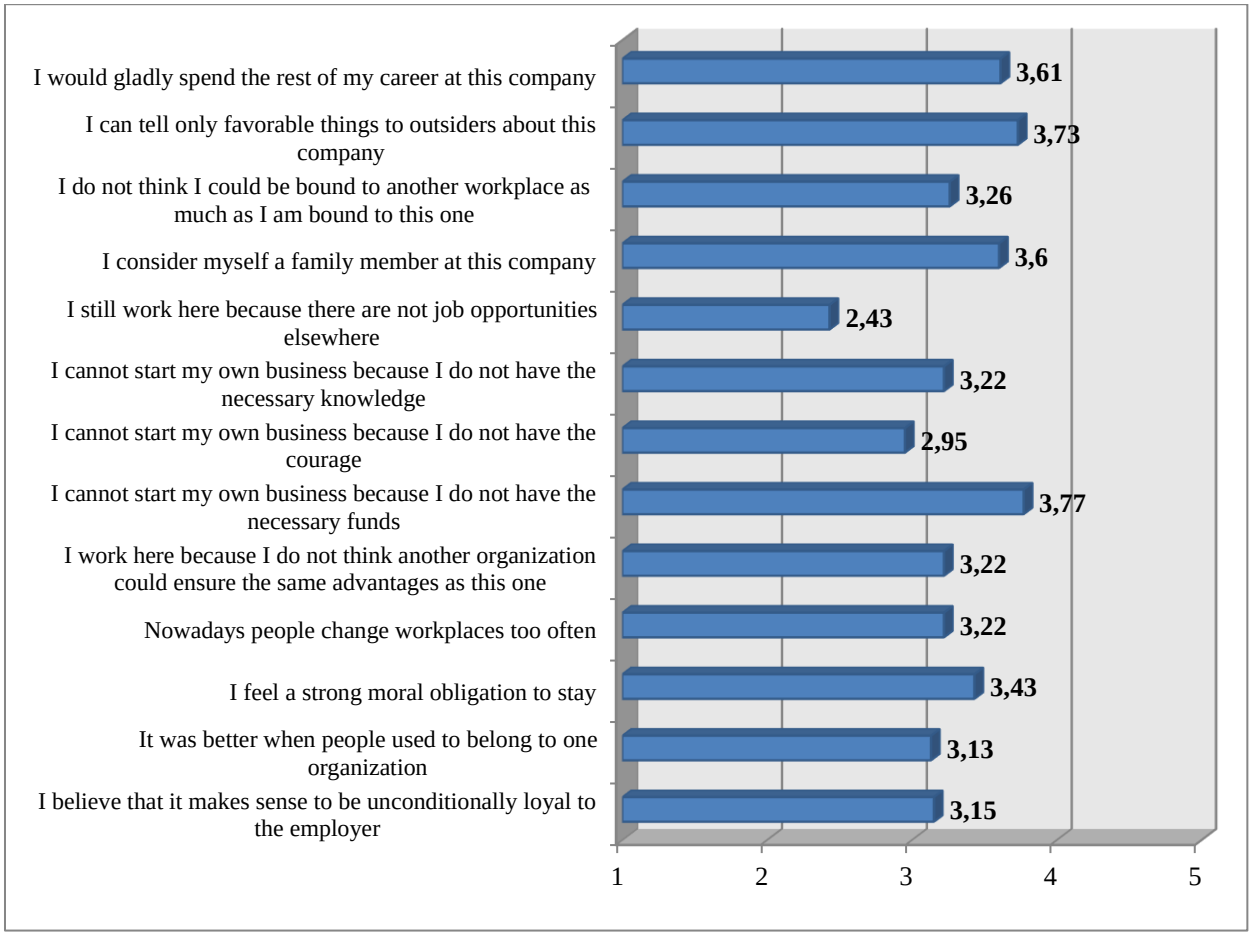

Figure 1: The estimation of the commitment to the workplace

Source: the author's own research, 2016

From the five questions related to the continuance commitment (I work here because I do not think another organization could ensure the same advantages as this one, I cannot start my own business because I do not have the necessary funds, I cannot start my own business because I do not have the courage, I cannot start my own business because I do not have the necessary knowledge and I still work here because there are not job opportunities elsewhere), the inability to start one's own business due to the lack of funds received an outstanding average score. However, in the light of the relatively high scores of the affective commitment, this rather suggests the lack of the respondents' opportunities rather than the continuance commitment. This is also supported by the lowest average score (2.43, I still work here because there are not job opportunities elsewhere).

Thus, our results did not confirm our preliminary assumptions, that is, the employees of the businesses in Heves County are mostly bound to their workplaces due to the lack of other job opportunities.

Figure 2 shows the commitment to the workplace based on the size of the businesses.

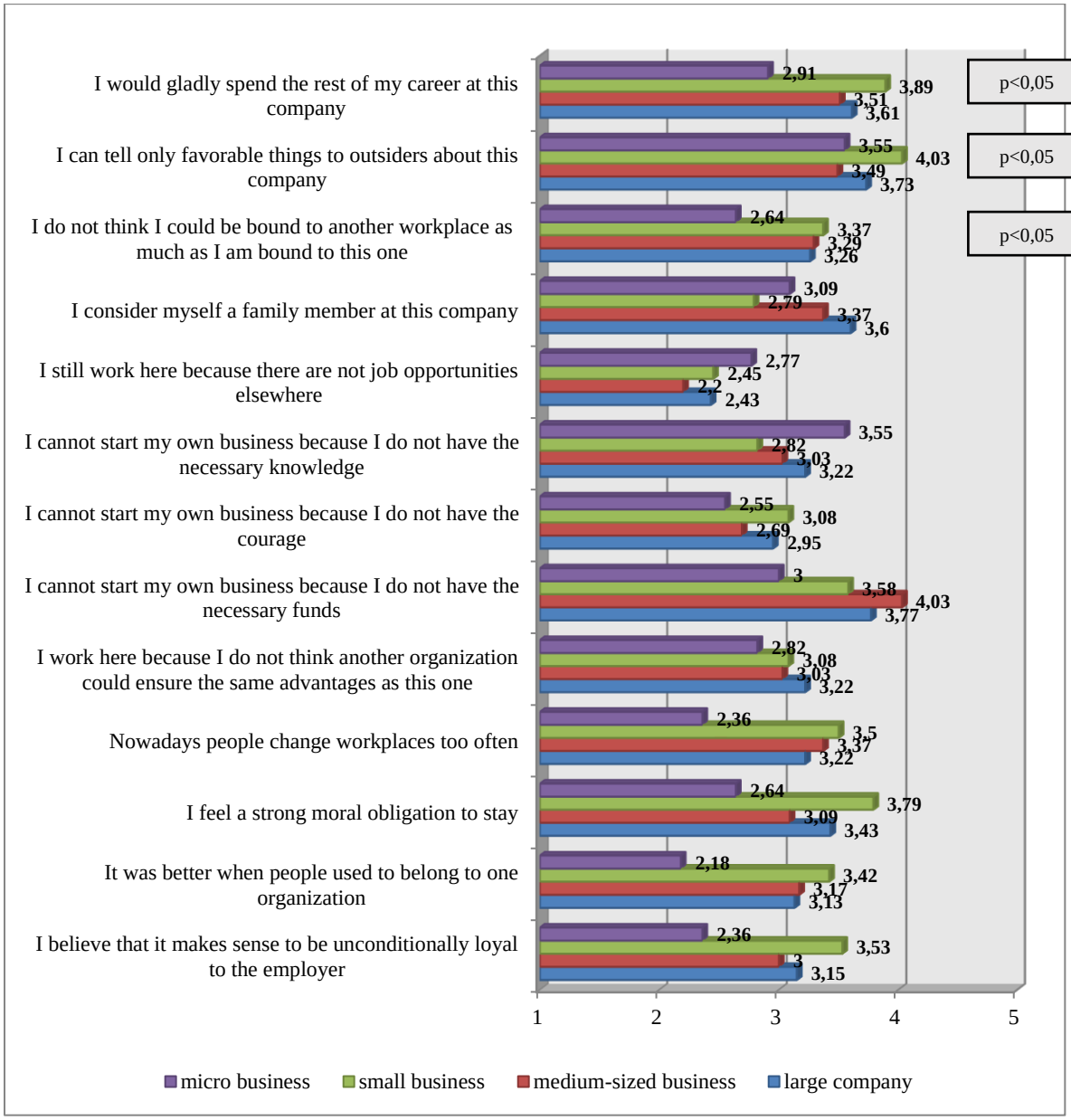

Figure 2: The estimation of the commitment to the workplace based on the size of the company

Source: the author's own research, 2016

As the data of the above figure show, the least committed employees are those of the micro businesses, whereas the most committed ones are the employees of the small businesses and large companies. It was also the employees of the micro businesses who reached the highest average score (2.77) by saying that they work for their company just because there are no job opportunities elsewhere. The employees of small businesses are those who feel the most (3.79) that they are treated as family members. They can only say favorable things about the company when talking to outsiders (4.03) and they are the ones who would most gladly spend the rest of their careers at their current workplace (3.89). These data show very strong affective bonding and commitment. It was also the employees of the

small businesses who proved their normative commitment to be the strongest one. These employees gave much higher scores to all three related questions (I believe that it makes sense to be unconditionally loyal to the employer, It was better when people used to belong to one organization and I feel a strong moral obligation to stay).

The Kruskal-Wallis test showed significant differences in case of the business type-related questions (I believe that it makes sense to be unconditionally loyal to the employer, It was better when people used to belong to one organization and I feel a strong moral obligation to stay). It can be read from Figure 2 that the employees of the micro businesses are the least loyal, whereas the employees of the small businesses and large companies are the most loyal. Thus, the basic assumption of our examination was only partly confirmed.

Figure 3 shows the estimation of commitment according to the location of the businesses.

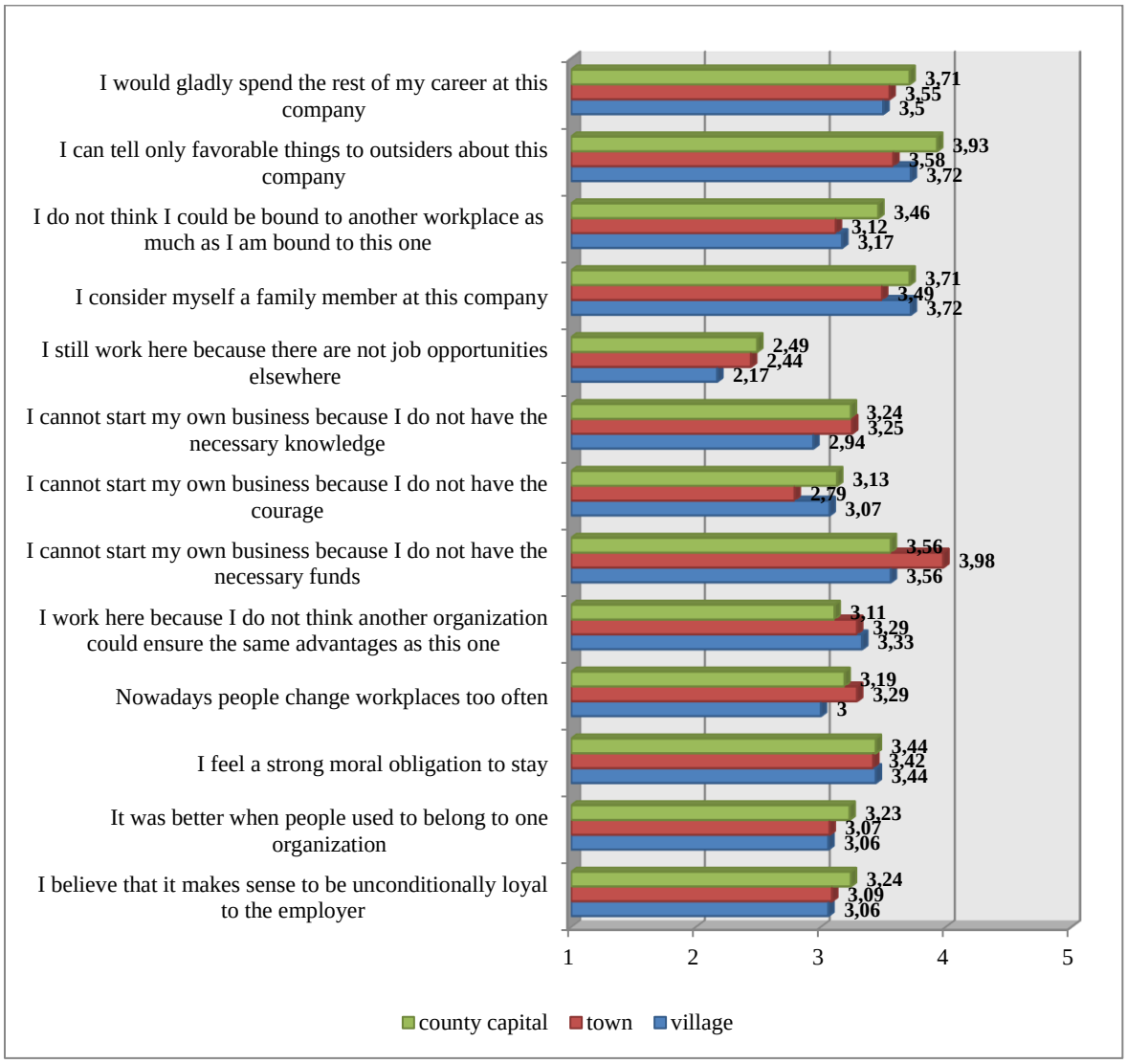

Figure 3: Commitment to the workplace based on the location of the business

Source: the author's own research, 2016 (n=189)

The employees included in our research from the county capital proved their commitment at a higher than the average level regarding almost all the aspects. This might be so because the large companies represented a greater proportion in our sample, due to the characteristics of the town. However, a significant portion of the employees working for small businesses, who consider themselves committed, was not included in our sample.

The Kruskal-Wallis test did not show significant differences in case of business location factor. In 6 out of the 13 variables related to the employees' commitment, the average scores given by the employees of village businesses are the lowest. This is merely indicative and does not confirm the basic assumption of our examination.

Conclusion

This paper has attempted to find out how committed the employees of the companies operating in Heves County consider themselves to their workplaces. We also attempted to find out the reasons of the employees' loyalty and whether there is a correlation between the employees' loyalty, the size of the company and the type of the town or village. When compiling the present paper, we used some of the results of a 2016 questionnaire survey conducted at the Faculty of Economics and Social Sciences of the Eszterhazy Karoly University of Applied Sciences.

The questionnaire contained questions related to the respondents' commitment to their workplaces for all three commitment types (affective, continuance and normative). The altogether favorable picture is somewhat degraded. The results from the organization type-based examination shows that the employees are the least committed, whereas the business location-based examination shows that the village employees are the least committed.

Acknowledgements

The research was supported by the Together for the Workplaces of the Future Foundation.

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FINANCIAL ANALYSIS OF KOSIT, JSC

Zuzana KUDLOVÁ

Abstract
The aim of the paper is to evaluate the development of the financial situation in KOSIT, JSC, to anticipate its future development through selected methods of financial analysis, and to propose appropriate measures on the basis of the results achieved to ensure the desired future development of the financial situation in the company.

Keywords:
financial analysis, horizontal analysis, vertical analysis, liquidity, activity, profitability, indebtedness

Introduction

An enterprise needs assets under which the entity's assets are inherently defined.

Over the past twenty years, significant changes have in the business environment of the Slovak Republic been done. After transition from the centrally planned economy to the market economy, where privatization of state-owned enterprises and creation number of new business entities started, this business environment is constantly evolving. The first impetus for the change was to set up a new legislative framework where among other things, legal forms of business were defined. A new open market space was created, that was gradually filled with new products and various services.

Over time, the market could also be characterized by its specific requirements based on national customs, traditions and tastes. The purchasing power of the population has grown and at the same time the demands for quantity and quality of products and services have increased. The customer has ceased to be a consumer of everything available.

All companies have their own information systems formed by systems that at the same time fulfill an important function in the business activity and in assessment of the facts necessary for company running. For this reason, it is now necessary to prepare a more detailed analysis of company economic functioning. The basic systems that provide control, information flow and records can include accounting that has the most important position in each company. We indicate accounting as one of the basic active financial management tools of the company. Enterprise's financial analysis is important in accounting that represents past, present-day and, above all, prediction of the enterprise's future. Its goal is to understand the financial health of the business, as well as to identify the problem areas that may lead to bankruptcy in the future. Financial analysis provides assets data, financial and retirement situation of the company.

The information sources we have used to implement the financial analysis of the selected company are annual reports that are publicly available and from

which we will use the financial statements, i.e. the profit and loss account, the balance sheet, the cash flow statement. In the analysis, we based ourselves on the real data of the financial statements of KOSIT, JSC for the period 2013 and 2016.

1 Indicators of KOSIT, JSC

KOSIT, JSC is a company that operates on the market since 2001 in connection with the project of the city. Košice in 2000 published an international tender for sale of an incinerator to an economic entity which would establish Košice with a company for disposal of waste and mainly for collection of municipal waste, and winter and summer communications maintenance. It operates also at an incineration plant for energy re-evaluation of waste, and is one of two incinerators of this type in the Slovak Republic. Integrated Waste Management System, that KOSIT, JSC applies, solves the waste management hierarchy, protects the air and other environmental compartments.

Table 1 Profit / loss for the accounting period in ths. EUR

	2014	2015	2016
Operating profit	2289	1873	1526
Financial result from financial operations	-929	-795	-560
Economic result for the accounting period	1360	1078	966
Income tax	294	374	0
- due	228	74	114
- postponed	66	300	-114
Profit / loss for the period (profit)	1066	704	966

Source: own processing

Since the beginning of 2015 until the second half of 2016, the company's management was affected by the failure of the combustion line; there was a reduction in the company's significant source of income, as it is seen in the above table.

We have processed the long - term tangible assets of this company on the basis of the Baštincová. (BAŠTINCOVÁ, 2009)

At the same time, the financial result from financial operations was significantly higher in 2016 than in 2015 due to the decrease in the investment loan commitment to the incinerator modernization project, which reduced the cost of interest and due to the fall in the interest rate.

Figure 2 illustrates the evolution of the asset structure, i.e. it summarizes the asset information, where we can see the evolution of long-term and short-term assets in individual years.

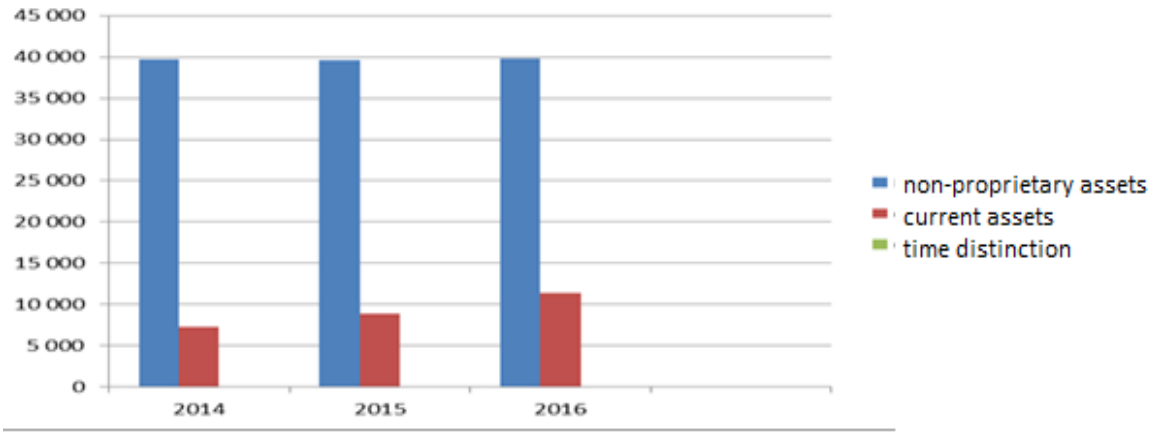

Figure 2 Development of property structure - Company assets in ths. EUR in years 2014-2016

Source: own processing

As it can be seen in the chart above, it is more advantageous for a company to invest in assets that is in long-term assets because it is more likely to achieve higher returns. It is also important to ensure the liquidity of the company, because short-term assets are also needed.

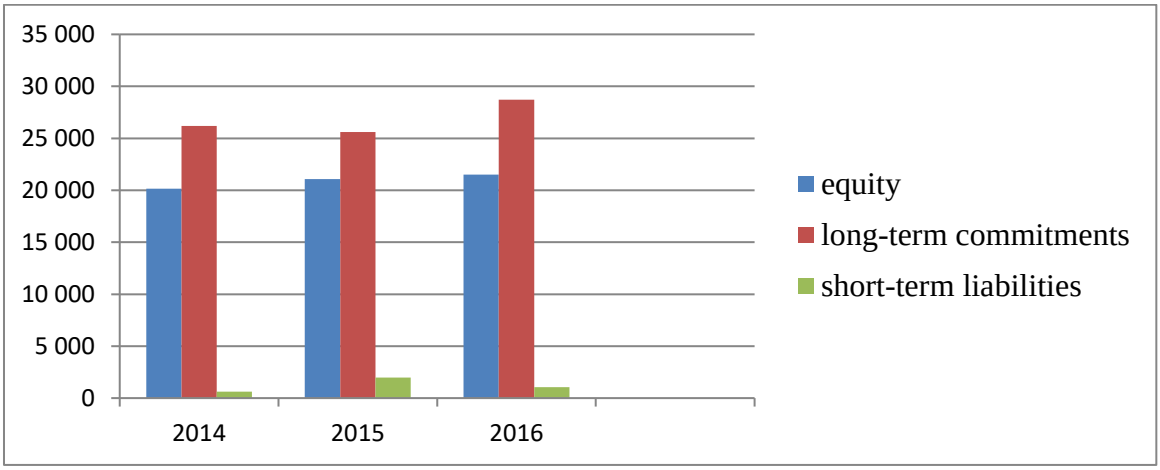

Figure 3 Development of property structure - Company's liabilities in ths. EUR 2014-2016

Source: own processing

From the above figure, liabilities are the highest in 2016 due to an increase in liabilities compared to the previous year 2015 when their level show us a lower decrease in short- and long-term liabilities. Equity has almost the same value in both years 2015 and 2016 compared to 2014, despite to the fact that the current accounts are higher in 2014 than in 2015 and 2016, with statutory reserve funds increasing in 2016 compared to 2015 and 2014.

In the next part, we calculated the financial indicators. (RUČKOVÁ, 2010)

Table 2 Debt indicators

Debt indicators	2016	2015	2014	2013	2012
debt/EBITDA	3,35	3,04	2,97	4,62	2,95
net debt /EBITDA	2,47	2,70	2,56	4,12	2,63
responsibilities /EBITDA	4,93	4,20	4,00	7,27	4,18
Total indebtedness	58,1%	56,7%	57,1%	61,3%	47,3%
Share of debt to total assets	38,0%	38,1%	41,4%	38,0%	31,7%
Degree of self-financing	41,9%	43,3%	42,9%	38,7%	52,7%
Share of debt to equity	90,6%	87,9%	96,4%	98,1%	60,1%
Long-term indebtedness	3,6%	3,3%	2,2%	3,0%	2,9%
Short-term debt	12,1%	9,1%	9,9%	16,0%	6,3%
Financial leverage	2,38	2,31	2,33	2,58	1,90
Credit Load	38,0%	38,1%	41,4%	38,0%	31,7%
Business insolvency	1,12	0,66	0,88	2,16	0,32
Total insolvency	1,07	0,68	1,09	1,73	0,52
Interest coverage	2,77	2,50	2,63	3,14	7,39
Cover of debt service	3,67	2,28	5,17	3,51	4,34

Source: own processing

Debt ratios monitor the company's financial resources. Financial stability of an enterprise depends on the share of own and foreign resources. With a low share of own funds, the firm is unstable and on the other hand the firm with a high share is stable and independent.

Table 3 Liquidity indicators

Liquidity indicators	2016	2015	2014	2013	2012
1st degree liquidity	0,48	0,25	0,35	0,19	0,45
2nd degree liquidity	1,03	1,05	0,91	0,62	2,05
Third Grade Liquidity	1,07	1,09	0,95	0,65	2,17
Financial accounts / assets	9,9%	4,3%	5,7%	4,2%	3,4%

Source: own processing

One important part of the company's short-term assessment is the financing of operating costs and, in the long run, the fulfillment of long-term goals. The company evaluates the indicators monthly and, if necessary, continuously. ()

Table 4 Profitability indicators

Profitability indicators	2016	2015	2014	2013	2012
Return on equity	4,5%	3,3%	5,3%	4,8%	5,4%
Return on assets	1,9%	1,4%	2,3%	1,9%	2,9%
Return on assets (EBIT)	2,9%	3,7%	4,7%	3,9%	4,6%
Return on total capital (EBIT)	3,7%	4,5%	5,5%	5,1%	5,5%
Return on long-term capital (EBIT)	3,4%	4,3%	5,3%	4,8%	5,0%
Return on invested capital	2,4%	1,8%	2,7%	2,4%	3,4%

Source: own processing

Rent ability indicators, also called profitability indicators, express the profitability of corporate efforts.

Table 5 Indicators of activity

Indicators of activity	2016	2015	2014	2013	2012
Turnover time of assets	1 060,21	1 135,38	1 058,24	1 184,49	852,31
Turnover of assets	0,34	0,32	0,34	0,31	0,43
Stock inventory	28,41	20,55	20,12	21,07	20,96
Inventory turnover time	12,85	17,76	18,15	17,32	17,41
Turnover of non-personal property	0,44	0,39	0,41	0,36	0,51
Turnover of current assets	1,56	1,75	2,24	2,19	2,60
Turnover time of receivables	119,44	151,38	95,94	109,59	103,19
Time of collection of short-term receivables	119,44	151,38	95,94	109,59	103,19
Time of collection of receivables from business	80,78	115,14	93,26	77,95	100,36
Repayment period	150,36	196,64	201,60	376,69	101,47
Repayment time for revenue obligations	127,97	102,84	104,46	189,24	53,82
Repayment term of trade payables	106,18	146,30	158,05	334,89	61,01

Source: own processing

Activity pointers contain two components, namely turn times and turn-by-turn factors. It is better for business operators to minimize turnaround time and maximize turnaround due to higher yields.

Table 5 Bonus and bankruptcy models

	2016	2015	2014	2013	2012
Altman's Z score	0,82	0,86	0,87	0,69	1,20
INDEX 05	0,62	0,66	0,68	0,62	1,06
Quick test	8,00	9,00	8,00	9,00	9,00
Binkert model	0,86	0,78	0,74	1,25	1,64
index of creditworthiness	0,91	1,02	1,19	1,01	1,35
Taffler model	0,21	0,24	0,26	0,20	0,46

Source: own processing

I placed bonitos and bankruptcy models on prognostic methods of the company's financial situation. The aim of these methods is to recognize the root causes of enterprise instability in a timely manner.

From the results of the analysis we can assume that KOSIT, JSC has a good position on the market, a strong capital base and experienced top management, that should guarantee its continuous growth and development in the future as a prosperous company in Slovakia in the field of waste treatment.

1.1 Recommendations for the business

By examining and analyzing the financial statements of KOSIT, JSC. for the period 2012-2016, we have come to the conclusion that the primary priority objective for the future is to set the company's financial goals, which are decisive both in the short and the long term, are the basis for the criteria for the decision making of different alternatives and for evaluating the overall efficiency business. Nowadays, as a basic business goal and thus financial, the maximization of the market value of the company is generally considered. In addition to the company's main, long-term financial objective, there are some partial, short-term financial targets. These include, in particular, the ongoing provision of the company's ability to pay. The company's ability to pay reflects its willingness to cover its liabilities of a given amount at a given time. Maintaining the ability to pay is an important part of the company's financial management that is a basic condition for a company to operate in a market economy and is a sign of sound corporate finance for creditors, banks, suppliers and shareholders. For the area of suggestions and recommendations of improving the financial situation of KOSIT, JSC we used data included in our company's 2016 financial statements. 2016 was the last year of our company, so we made proposals and measures for this year. Selected are made from the financial statements for 2016, as at 31.12. We have selected the following:

- Revenue of economic activity together 28 174 461 EUR
- Short-term receivables 5 947 765 EUR
- Adjustments to receivables 172 493 EUR
- Short-term liabilities (excluding current bank loans) 6 187 566 EUR
- Total liabilities 28 721 750 EUR
- Current bank loans 4 295 307 EUR
- Long-term bank loans 15 183 799 EUR

From the above data, KOSIT, JSC in 2016, earnings from economic activity amounted to EUR 28 174 461, of which there are receivables at 31 December 2016 amounting to EUR 5 947 765, representing 21.11%. Short-term liabilities amounting to EUR 6,187,566 are 21.96%, and therefore short-term liabilities exceed EUR 239,801 in absolute terms. However, this is because we are abstracted from the total commitments of EUR 28 721 750 and thus exceed the total amount of revenues achieved in 2016.

From the analysis of the above selected indicators of KOSIT, JSC we have come to the conclusion that in the future it would be appropriate to give the company increased attention and review:

- the collection time of short-term receivables, which averages 115.91 days during the period of 2012-2016, that is approximately 4 months at which the company waits for the settlement of its receivables. For an optimum debt collection period in general, an interval of 14 to 30 days can be

considered. The higher the indicator, the sooner the company may get into a bad financial situation, which may also cause insolvency.

We believe that the introduction and tracking of our proposed debt management and recovery system will be beneficial for the company. At the same time, we are convinced that our proposals are conducive to a significant improvement in the company's financial performance and to a reduction in bank loans that the Company has in the amount of EUR 4 295 307 in the form of short-term loans as at 31 December 2016 and EUR 15 183 799 forms of long-term bank loans.

By examining the company's financial statements based on the analysis we resume that it would be appropriate to carry out the following measures to streamline the economic and financial situation of the company, that represent our recommendations:

- to increase production efficiency by stricter compliance with consumption standards or by looking at the possibility of purchasing cheaper inputs,
- to reduce stock levels to the necessary height,
- to reduce the cost of material and energy consumption,
- to reduce the cost of external services,
- to analyze the payment terms of accepted and sent contracts and orders
- to the analysis of cash flows should be based on experience from previous years and expected sales of the company,
- to revaluation of obsolete long-term assets and unused assets (machines).

Considering that at KOSIT, JSC the average receivable collection time is about 116 days, we assume that this time will be one of the serious problems that need to be addressed in the future. The 116 days indicated means the average time during which the company finances generally free of charge, its customers. Despite the fact that in the indicator of the collection time of short-term trade receivables the situation is more favorable in the society, it reaches an average of 93.5 days (approximately 3 months) for the period 2012-2016, even this time can be considered unfavorable. We therefore propose:

- So that the company can improve its internal debt management processes by which it would be possible to shorten the collection time that in the company it indicates about 3 months and release the funds in the receivables. We take the view that the high turnover time of receivables is largely due to insufficient internal processes that the company may have under its own control and thus prevent the financing of its customers to a much greater extent than is necessary without the reduction having a negative impact on customer relations. We therefore propose that KOSIT, JSC should introduce the following measures and indicators for the management of receivables into its control system, namely:
  - to efficiency indicators of collection of receivables and their continuous evaluation,

- to track the age structure of receivables,
- to track the average time elapsing between the delivery and the invoice,
- to introduce a system of debtor reminders, 5 days after maturity and charging reminders,
- to monitor problematic and irrecoverable - doubtful debts as the company as at 31 December 2016 has created provisions for bad debts amounting to EUR 172 493,
- to define the persons in the financial department who will be responsible for the regular assessment of claims, customer reminders and settlement of receivables overdue,
- to reassess the maturity of individual receivables with subscribers and include sanctions for late payments in framework contracts and to use them,
- to introduce sanctioning of customers for overdue payments made after maturity.

Conclusion

From the results of the financial analysis, we can say that the company is in a phase of growth and we can label it as a well-run business. The first step of the financial analysis was the horizontal and vertical analysis of the company's assets and capital, where we can assess the dynamics of the company's development positively, as the company's assets grew in the period under review. The bulk of non-current assets consist of long-term tangible assets. As the result of the management as a source of cash-generating surpluses and cash flows from ordinary and extraordinary activities is an important subject of the analysis, we can say that the company has achieved a positive result in all analyzed periods.

The finding and evaluating the financial situation of KOSIT, JSC was the main goal of this work. To achieve this financial analysis has been used, that is currently considered to be one of the most widely used method of obtaining important information on overall management and financial health of an enterprise. To describe a complex situation of an enterprise, various specific models are used to examine the situation of the company not only within it but also to examine its situation in relation to the sector and the environment in which the company operates.

From the resulting analysis we can say that even if the company has certain reserves, it is perspective and has much strength that increase its competitiveness, because it uses modern technologies on the one hand, but also thanks to years of know-how, belongs among the leading companies.

By analyzing the balance sheet we can say that during the period under review, the assets of the company change, of course, with its values that increased every year, respectively fall, affected by various external factors, including not just the economic crisis, demand but also internal factors related to line repair and re-

launch of the line. Despite good business results, it is always necessary to monitor the company's financial situation, to analyze the risks and opportunities in the area, and work on eliminating the weaknesses and improving or strengthen the business.

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SELECTED INDICATORS OF USING E-GOVERNMENT IN THE SLOVAK REPUBLIC

Roman LACKO – František HURNÝ

Abstract
Confidence in the security of e-government work is controversial in several countries. These problems are caused by system building errors. We found that there was a significant increase in the cost of managing e-government systems in Slovakia, with the number of repellent attacks and system failures stabilizing. Most failures had originated in poor capacity planning, and thus errors were made before the mass implementation of e-government services. There is also a relatively high amount of errors due to the failure of external suppliers. The solution can be, for example, transnational cooperation with government-level specialists, but also at the private sphere.

Keywords:
e-government, trust, Slovakia, public administration, users

Introduction

In recent years, several web portals on citizens governance have been introduced in Slovakia for online communication with public authorities purposes. Together with their introduction, the security of these portals and the citizens data were also addressed. The issue of security of data and trust in these means of communication is not only a matter in Slovakia but also abroad.

According to Parent et al., (2005) the trust of citizens in governments has eroded. Their contribution tests the extent to which online initiatives have succeeded in increasing trust and external political efficacy in voters. They conducted a survey which shows that using the Internet to communicate with the government had a significantly positive impact on trust and external political efficacy. Interestingly, though the quality of the interaction was important, it was secondary to internal political efficacy in determining trust levels, and not significant in determining levels of external political efficacy. There is also some connections with e-commerce trust (Mäntymäki, 2008). Author declare that trust has been acknowledged to be an important determinant of e-commerce acceptance and because of this, understanding the nature and importance of trust is important in promoting e-government adoption. His contribution reviews the trust discussion in B2C e-commerce and government-to-individuals (G2IS) e-government. The main findings of the study are divided in three main areas. First, both domains trust largely conceptualize as multidimensional construct. Second, in the e-government field, trust is often also empirically investigated as more than only one variable. Third, in the e-government literature, two main discourses related to trust were identified, trust in government in general, and trust in technology aspects of e-government. Akkaya et al., (2011) claims that, user acceptance plays a pivotal role in success of all IS projects. Online transactions

with public administrations are plagued with concerns of data protection and privacy resulting in reluctance to use of e-government. Although trust is confirmed to be an effective instrument for dealing with the many of transactions, the majority of trust studies have been conducted in the context of e-commerce. According to them, only few studies had focused on the role of trust influencing willingness of citizens to use e-government services. Based on a nationwide survey in Germany, their study contributes to prior literature by delivering the empirically-validated components of trust influencing the adoption of e-government in Germany. If the citizens perceive public authorities as "data collectors" and hence they do not trust them, the adoption of e-government will remain a significant problem. Their research explains and predicts the process of e-government adoption by citizens in Germany. The suggested research model includes two empirically validated components of trust – trust in government, trust in technology – and six sub-components influencing use of online public services. Integration of new constructs based on previous literature could support obtaining a more complete picture on the aspect of trust. Lee et al., (2011) tried to answer the question why are some businesses more willing to adopt e-Government applications to perform transactions with the government than others. The authors argue that the willingness of a business to adopt e-Government depends on the perceived quality of government services through traditional brick and mortar service channels, and the level of trust businesses place in the internet technology itself. Hypotheses are constructed with regard to the role of perceived quality of offline services on the business user's willingness to adopt e-Government services. Using data obtained from a local district government in Korea, the analysis revealed that the willingness to adopt e-Government increased when the business users perceived high quality service provision in offline service channels. Trust in the internet technology itself did not have any significant impact on their willingness. Weerakkody et al., (2013) aimed to examine the role of intermediaries in facilitating e-government adoption and diffusion using a survey based empirical study in Saudi Arabia. An extended UTAUT model is used as the theoretical basis utilizing trust in the Internet and Intermediaries. The results of this study show that there are significant relationships among the factors that influence intention to use e-government, namely, performance expectancy, effort expectancy, and trust of intermediary. In addition, the findings show that there is a significant relationship between facilitating conditions and usage behaviour proving that intermediaries can positively influence the adoption of e-government services. Tountopoulos et al., (2014) claims that the next generation of e-government will be based on Future Internet applications, which can be dynamically composed of complex services, by utilising the big data being made available in heterogeneous online archives and information sources. Such data can be synthesised as the outcome of a plethora of atomic services, which process and collaboratively handle digital information to facilitate the current business needs of the Public Administration. However, the providers of public services face the

problem of maintaining security and preserving data security, when integrating this data into changing composite service environments. Gracia and Casaló Ariño, (2015) argue that citizen trust in the public administration has been reduced worldwide due to recent events such as the economic situation, corruption cases or disclosure of classified information. Their work analysed whether e-government related actions could be strategically employed to increase citizen trust in the public administration. This research confirms that perceived quality of public e-services has a positive effect on trust in the public administration. In turn, public administration communication (i.e., campaigns to promote the benefits and use of e-government) only influence trust in the public administration for citizens with a favourable attitude towards e-government. These results have interesting implications suggesting in which ways public administration should invest their limited resources in order to recover the levels of citizen trust. Anthopoulos et al., (2016) claims that some of the common reasons cited for project failure are design-reality gaps, ineffective project management and unrealistic planning. Research shows that more than half of e-government projects result in total or partial failures with regard to the initially grounded standards, scheduling or budget problems. Their contribution deals with the factors that lead to e-government project failures. It explores the context of project failure and investigates the launch of the U.S. Healthcare.gov website. This case is concerned with a highly public e-government project failure where gaps between political agendas and planning are identified through an examination of media sources and social media data analysis of Twitter discussions. The finding of the analysis indicates that e-government users react against failures, while e-government projects will impact and attract opinion makers' attention that influence audience behaviour. Their research provides classifications of e-government project failure reasons and sources. Alzahrani et al., (2017) argues that although the success adoption of e-government contingent upon citizens' trust and their willingness to use it, little consideration needs to be done to explore the adoption of e-government from citizens' trust perspective. Their study paper provides a critical and systematic review of the current literature on citizens' trust in e-government, with a particular focus on the most critical factors influencing citizens' trust in respect of the adoption of e-government. The extant literature was identified through six electronic databases, from 2000 to 2014. They reveal that several studies have been conducted in the area of trust in e-government (particularly trust in government and trust in the internet) with limited consideration paid to citizen's aspects of trust (such as personality, culture, gender, experience, education level, beliefs and value of systems). Based on the findings of the critical review, a conceptual framework is proposed by developing further the updated DeLone and McLean IS Success Model, which presents the antecedents of trust in e-government adoption. Santa et al., (2018) proves that electronic government systems are becoming an essential strategic tool in the delivery of e-Government-to-Business services (e-G2B). Based on a sample of e-G2B service users from

Saudi Arabia, their findings suggest that the effects of trust on user satisfaction are mediated by e-G2B system effectiveness measures (e.g., System Quality, Service Quality, and Information Quality) and by operational effectiveness. They find also that operational effectiveness and information quality are the most important drivers of user satisfaction. In contrast to previous research, their results show a negative relationship between trust in online services and service quality and suggest that this finding may have important implications for theory and practice. Moreover, Mahmoodi and Nojedeh, (2016) researched E-government as one of the sub-category of information technology. It has allowed the governments to present the information and services efficiently in low period of time and costs through using modern information technology. The effectiveness of e-government establishment in government organizations has been investigated. The data was analysed by means of Likert Scale and the mean of views. According to the results of questionnaire, applying the tools of e-government improves users' satisfaction. Moreover, e-government establishment reduces the time of doing things, increases the effectiveness, improves after sales services with lower cost, improves services information, introduces new services, increases the degree of confidence in investigating the requests and services, increases the speed of cash payments, facilitates services receive, establishes communications with users and improves the quality of services.

1 Methodology

Aim of this article is to assess development of several factors that may help to build trust in eGovernment services. This article deals with several factors connected with management of e-government services in the Slovak republic. Firstly, we need to focus on the administration of the website, with the main responsibility held by the National Agency for Network and Electronic Services.

The National Agency for Network and Electronic Services (hereinafter referred to as „NASES") was established on 1th January 2009 as a contributory organization of the Government office of the Slovak Republic in order to fulfill professional tasks in the field of Informatization of Society, management and operation of electronic communications networks and services for other government bodies, legal entities and natural persons, who requires information and data from information systems, databases and public administration registers. Activities of NASES support development of e-Government services in Slovakia. This activity leads to improving the effectiveness of the public administration performance and simplifying interaction between citizens and authorities, as well as supporting the information knowledge base of the society, public sphere, business community and the general public (National Agency for Network and Electronic Services, 2016).

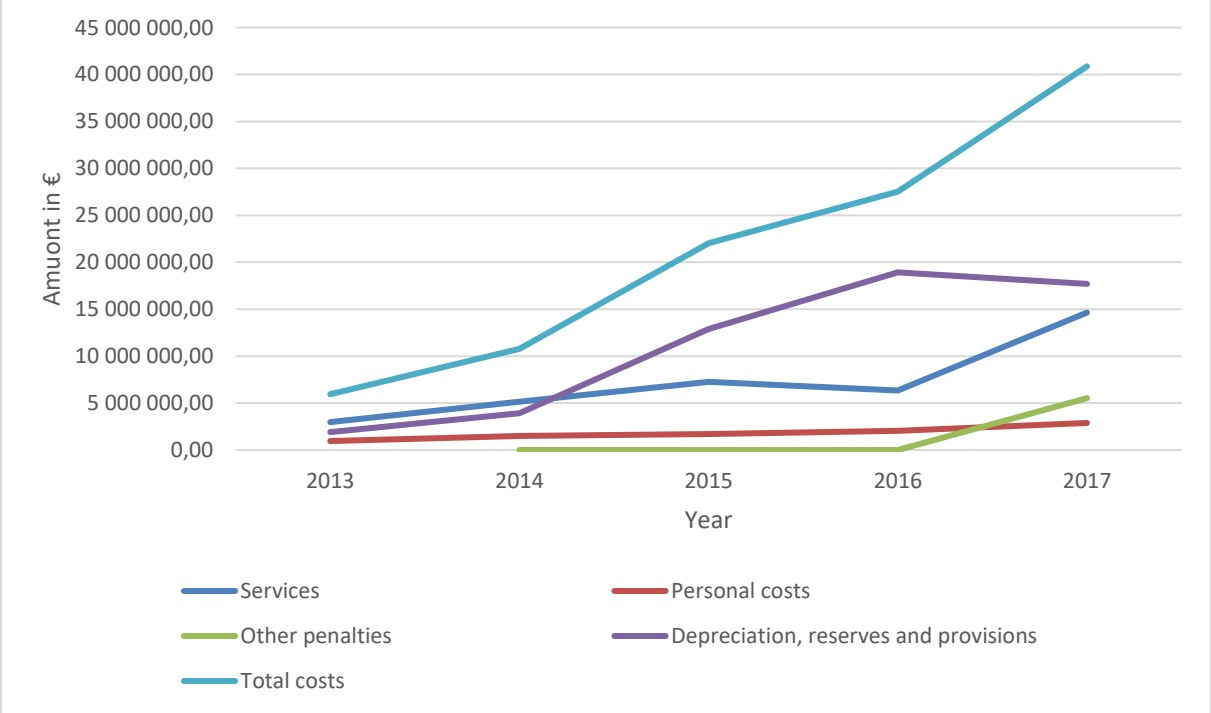
The key tasks of NASES are:

- organizing, operating and development of GOVNET network
- operating sTESTA network at Slovak Republic
- operating and development of Central Governmental Portal (www.slovensko.sk)
- operating and development of Information system for registration and payment of administrative and court fees
- operating and development of Central customer service of Slovak Republic
- administration, operating and development of national cyber security systems (National Agency for Network and Electronic Services, 2016)

We have collected data from the portal data.gov.sk (National Agency for Network and Electronic Services, 2018) and from the financial statements of the NASES collected from database Finstat (Finstat, 2018). The results of our analysis are presented in the next chapter. Time periods differs because of accessibility of data.

2 Results

At the beginning of this section, we report NASES costs indicate the efficiency of the funds needed to manage eGovernment services. The following graph 1 describes the evolution of selected cost items for the period 2013 to 2017.

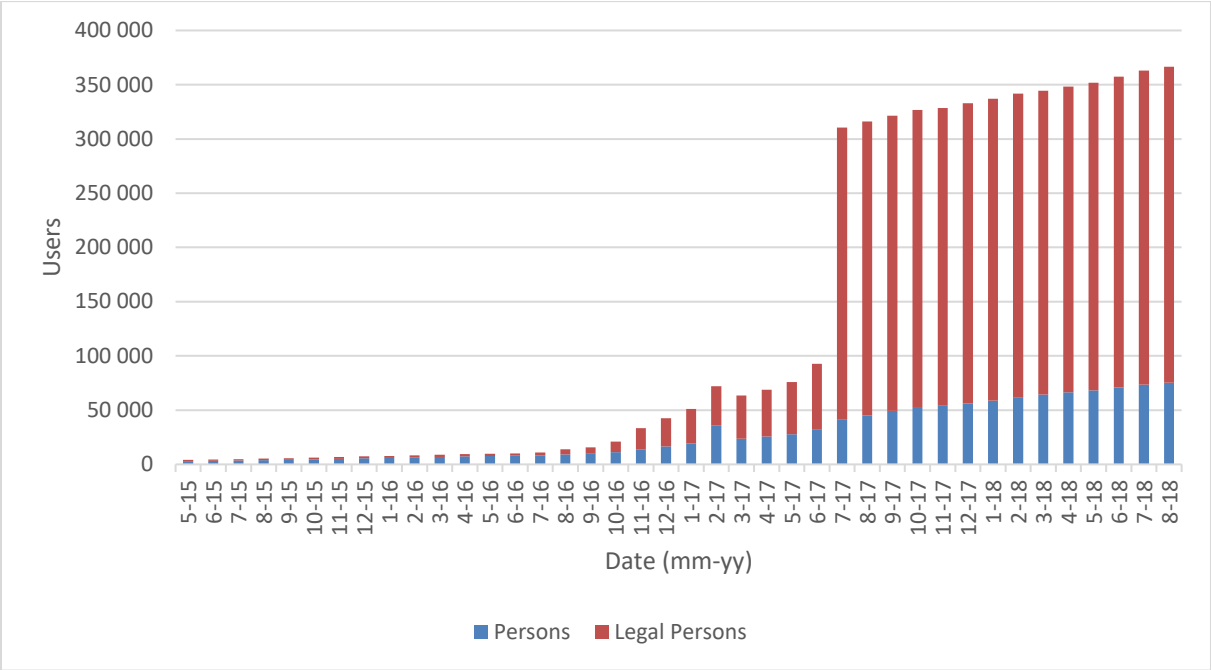


Graph 1 Development of selected cost indicators

Source: own processing according to financial statements of NASES (Finstat, 2018)

In the last years, NASES costs have increased significantly, mainly due to the increase in the number of users. A relatively large share of the increase also had

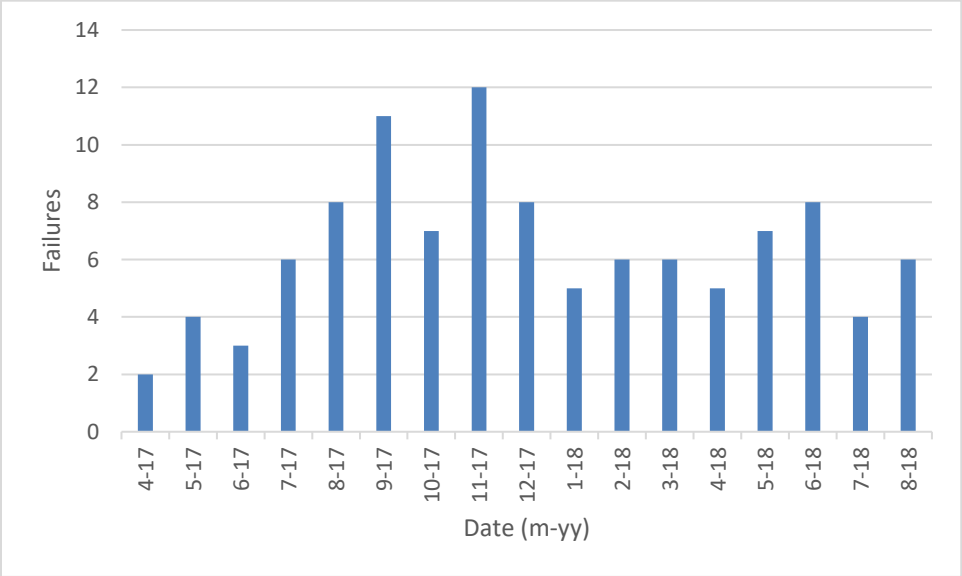
fines in 2017 and service costs. The cost of this organization is over 40 million in the last year. € The following chart describes the number of users.



Graph 2 Number of users

Source: own processing according to National Agency for Network and Electronic Services, (2018)

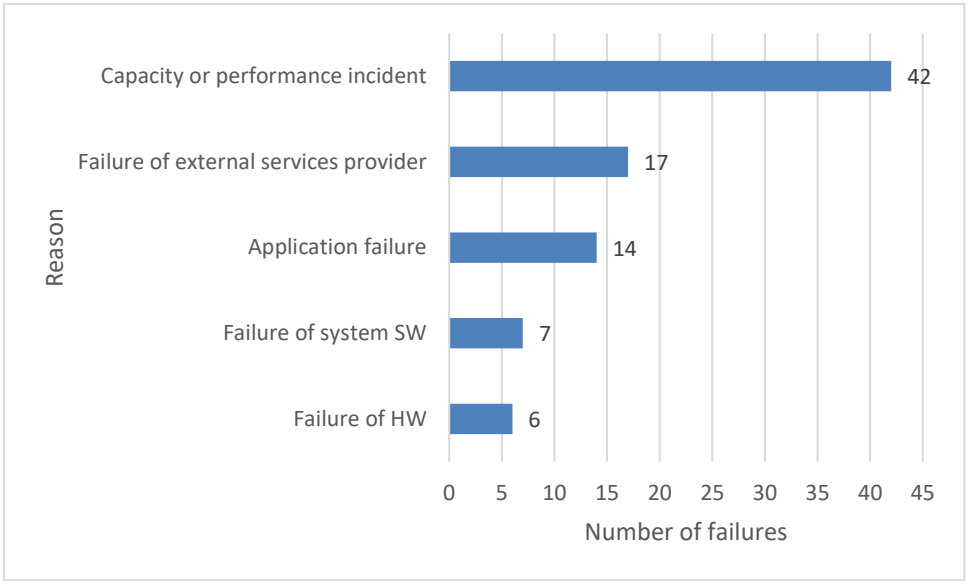
A significant increase was recorded in 2017, which also entailed increased costs. The vast majority are legal entities, as they have an obligation to use electronic communication to communicate with government institutions. The following chart shows the number of failures that caused access to malfunction.



Graph 3 Number of failures

Source: own processing according National Agency for Network and Electronic Services, (2018)

The highest number of failures occurred shortly after the extreme increase of registered users but stabilized in the following period. However, it should be noted that this was just a short-term outage. The following graph shows the reasons and causes of system failure.



Graph 4 Reason of failure

Source: own processing according to National Agency for Network and Electronic Services, (2018)

Most failures have originated in capacities and performance incidents. It should be noted that this reason is due to the insufficient preparation of the systems. A relatively high number of failures has been caused by the failure of external providers, and there is room for reconsideration of cooperation with these service providers.

3 Conclusion

People's awareness of the security of the systems needed to manage eGovernment is relatively low and therefore people are afraid of the security of their data. E-government awareness-raising and trust-building activities in Slovakia were relatively weak. That is why the media have often reported on security issues. NASES, however, says in its annual reports that the effectiveness of attacking is almost 100%, with the number of attacks being counted in thousands per year. Every system is vulnerable, but if you are constantly working on eliminating security risks, it is possible to prevent the possible removal of sensitive data. The role of NASES should be to build the confidence in e-government and more focus on PR. It can not be assumed that costs will be lower in the coming period, but their allocation to building trust is essential. There is a growing awareness in Slovakia that security of sensitive data is more threatened than in other countries, but it can be argued from a literature survey that this uncertainty occurs almost all over the world and results from the imperfections of the systems the creator of which is human. The solution could be the

implementation of modern systems of artificial intelligence and cooperation with multinational companies dealing with global data security issues. From above mentioned statements we can conclude that the aim of this article was successfully met.

Acknowledgement

The article is written with supports of projects "VEGA 1/0839/17: Electronic services of building trust in e-government" and "I-18-107-00: Data Science: use of machine learning methods to analyze and predict business data"

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CLUSTER ANALYSIS AS A TOOL FOR EVALUATION OF FACULTIES IN SLOVAKIA

Jozef LUKÁČ – Slavomíra STAŠKOVÁ – Marek MEHEŠ

Abstract
The aim of this paper is to determine, on the basis of cluster analysis, the faculty groups of universities in Slovakia with similar characteristics. The method that was selected for the agglomeration process was the Ward method, while the Euclidean distance was used to determine the degree of similarity of the objects under investigation. Among the internal users such evaluation include the universities themselves that track the status of their faculty in competing with other faculties. Another group of internal users for the evaluation of faculties are the students, graduates, even the academic community. The cluster analysis will be applied to data that has been detected by the ARRA assessment.

Keywords:
cluster analysis, faculties, ARRA, indicators of education,

Introduction

ARRA has already ranked 11 electives of the faculties of Slovak universities, which are based on publicly available and verifiable data on the education and research of individual faculties in 2014. The basic sources for the ARRA ranking are the statistics of the University of Education (MŠVVaŠ), the international databases of scientific works of the Web of Science and the data from other state institutions (the Center for Scientific and Technological Information, the Institute of Information and Forecasting of Education, CVTI / UIPŠ) . In the case of selected humanities and social sciences faculties, the data is again extended to publications not included in internationally used databases, which are obtained from domestic library databases (such as CREPČ / CREUČ). (ARRA, 2015)

1 Model and Data

In our research, we focused on the 27 faculties of higher education in Slovakia, which ARRA has been included in the ECONOMY group (all economically oriented faculties are included here) and the OTHER COMMUNITY (these include the faculty of social sciences focusing on public administration, international relations, economic sciences and other related economic sectors). We will analyze these 27 faculties of higher education using the criteria - education.

The data that we will use in our research as mentioned above is the data that ARRA used in its assessment in its University Faculty of Science in 2015. We have modified these data to be suitable for use for analysis in the statistical program R -Studio and have the following form. The following table shows the values of indicators VZ1 to VZ9 for individual faculties. VZ1 to VZ9 mean the order of the individual pointers in the following table.

Tab. 1 Indicators of education

1. The share of unemployed graduates in all graduates (average 2012-2014) VZ1
2. Share of study of daily students posted abroad VZ2
3. Share of foreign students in study VZ3
4. The number of enrolled students in the number adopted in 2014 VZ4
5. The ratio of the number of students enrolled to the plan in 2014 VZ5
6. The share of professors and associate professors in all teachers VZ5
7. The share of teachers with PhD. to all teachers VZ6
8. Number of students per teacher VZ7
9. Number of students per professor or docent VZ8

Source: own processing according to ARRA 2015

The statistical analysis was performed using the programming language R, which is suitable for the creation of statistical models and data analysis and is also suitable for graphing and graphic analysis of data. From the ARRA assessment, we chose the indicators representing the science and research category for the analyzed 27 faculties. For each category, we have selected the pointers as variables and these variables are listed in the following table.

Tab. 2 Data for individual faculties in the category of education in %

	VZ1	VZ2	VZ3	VZ4	VZ5	VZ6	VZ7	VZ8	VZ9
FM UK	1,6	14,7	3,9	0,65	1,2	44	85	43,6	100
FM PU	8,1	0,5	1,4	0,51	4	28	97	31,7	112
FEP PEVS	2,6	6,7	2,4	0,59	1,5	68	93	25,8	38
FPEDAS ZU	2	1,9	2,9	0,85	1,4	42	97	21,4	51,4
FEM SPU	3,6	2,7	1,1	0,66	2	28	82	21,2	74,6
EF UMB	3,9	2,2	3	0,63	1,7	36	95	20,8	57,8
EF TUKE	4,7	8,1	3,7	0,64	2,3	29	100	20,5	63,9
EF UJS	12,6	3,8	1	0,77	0,9	24	73	20,1	82,8
PHF EU	10,4	3,7	0,5	0,58	1,5	22	92	19,5	66,3
OF EU	2,4	6,3	0,9	0,86	2	32	96	18,6	57,5
FHI EU	2,1	5,3	0,8	0,9	1,6	36	96	17,1	47,5
NHF EU	1,1	3,9	0,7	0,94	1,8	38	100	16,5	43,1
FPM EU	2,9	5,7	0,6	0,88	2,1	27	97	15,4	57,1
VS PM	7,4	5,5	2,3	0,75	0,2	46	71	15,6	60,1
FVPaVS VSD	9	0	2,4	0,81	0,29	62	92	38,5	65,625
FSEV UK	4,5	5,9	6,9	0,43	1,8	66	100	36,4	55,5
FSS VSD	11,9	2,2	0	0,48	0,3	39	97	29	81,2
FSEV TUAD	4,6	2,4	0,7	0,63	0,5	21	94	27,1	123,9
FVS UPJS	11,2	1,5	0,3	0,77	1,4	36	100	26,8	75,1
FMK UCM	3,6	1,8	0,6	0,74	1,5	32	90	26,4	81,2
FMEV EU	1,2	14	3,2	0,94	1,8	33	100	23,7	71,1
FESRR SPU	3,8	3,3	1,9	0,63	1,4	35	97	23	65,4
FPV UMB	4	10,4	3,5	0,58	3	44	97	21,9	49,4
FBI ZU	3,5	2,6	0,5	0,77	1,2	42	100	20,8	49,2
FSS UKF	7,6	1,4	0,4	0,48	1,9	39	95	14,7	37,6
SEVS	7,3	0	10,7	0,58	0,1	29	68	10,9	37,1
FAJ EU	0	6,5	0	0,89	1,5	13	60	3,7	27,6

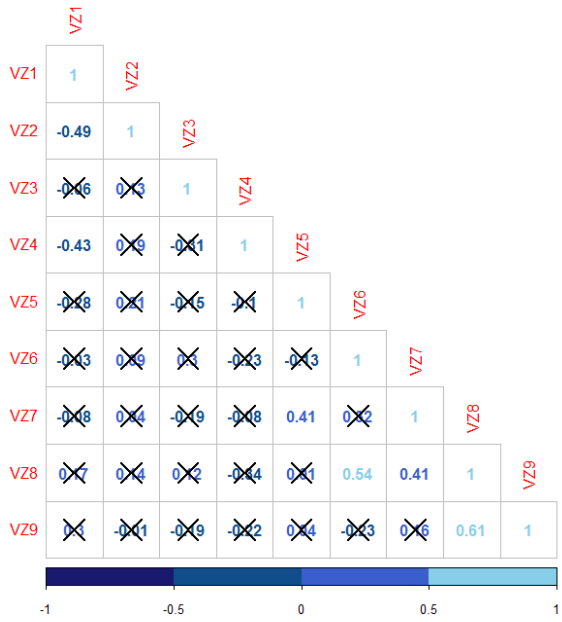
Source: own processing according to ARRA 2015

The next step that needs to be done before the clustering itself is to examine dependencies between individual variables. This step can be described as a necessary precondition for the use of cluster analysis.

2 Cluster Analysis

By performing the correlation of the input variables at the significance level of 5% (alpha = 0.05), we observe the dependence between the variables. From the results of the correlation matrix, we can determine the relationship between the variables. However, the problem may be a high degree of dependence between variables, which can affect the classification results.

At the beginning of the analysis, it is necessary to verify the relationship between the input variables, in our case the science and research indicators. Two correlation matrices of education and science and research indicators are output. The following correlation matrix represents the relation of input variables of science and research, where relations between the variables are shown in the following correlation matrix. From the results of the correlation matrix we can again determine the dependence between the variables, in this case for the science and research indicators. We can notice that for some variables, this dependence is higher and some variables are lower.



Pic. 1 Statistical significance of correlations

Source: own processing according to R- Studio

It is clear from the figure that for the VZ3, VZ4, VZ5, VZ6 variables, all coefficients are statistically insignificant. However, in the case of variables of other variables, some of their correlations are statistically significant. It is assumed that a cluster formation problem may arise in cluster analysis. Deletion of the problem of the correlation of variables can be achieved by the main component method, in which the input pointers are transformed into new variables. These new variables, called main components, are already mutually independent. The dependencies between the variables analyzed by us are found in the following section.

For the purpose of identifying the number of significant components, we calculated the variability of the components on the total variability of the data from which we calculated the components, and based on the 70% rule and the screeplot visualization, we determined the number of major components. The first component explains the most and the last least overall variability of the original data. In both cases, we chose a given number of major components, because the increments that explain the variability of the original data are already low.

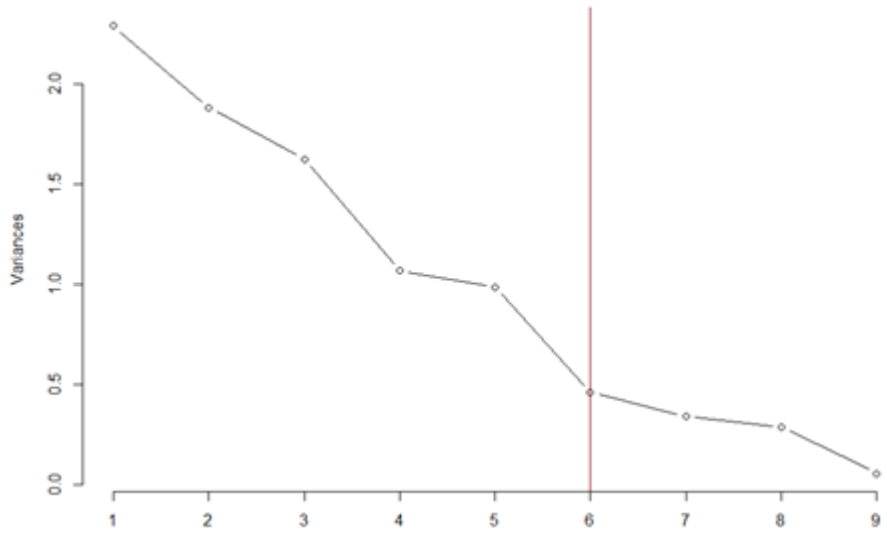
In tab. 3 we can observe a break in the fourth component, which however explains the 76.37% variability of the overall data dissipation. It is also possible to manage this number of components when we select 6 components. The six selected components can analyze the variability of the original data more (76.37% < 92,43%).

Tab. 3 Selected component statistics

Indicator	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9
Standard deviation	1,514255	1,372375	1,275508	1,034631	0,9924697	0,6784826	0,5829996	0,5343458	0,2355633
Proportion of scattering	0,254770	0,209270	0,180770	0,118940	0,1094400	0,0511500	0,0377700	0,0317300	0,0061700
Cumulative	**0,254770**	**0,464040**	**0,644810**	**0,763750**	**0,8732000**	**0,9243400**	**0,9621100**	**0,9938300**	**1,0000000**

Source: own processing according to R- Studio

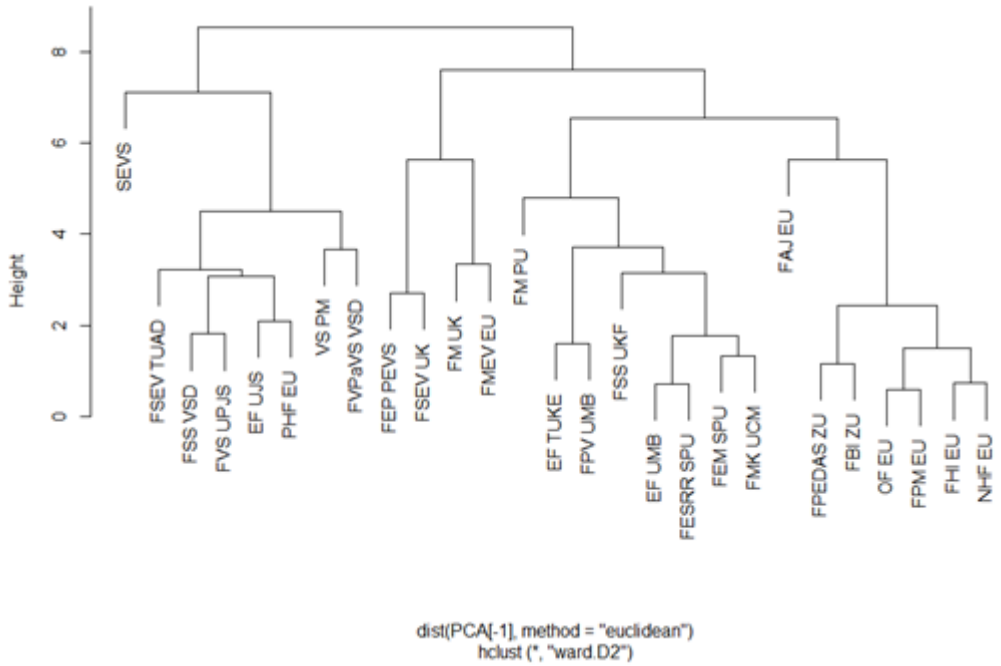
To meet the rule that says that the number of major components should account for at least 70% of the total scatter of data, we have identified 6 major components for the education indicators that explain the 92,43 % variance of the original data. Subsequently, our selection of the main components was confirmed by the graphical representation of the variability in the following screeplot of the main components.



Pic. 2 Screeplot of the main components

Source: own processing according to R- Studio

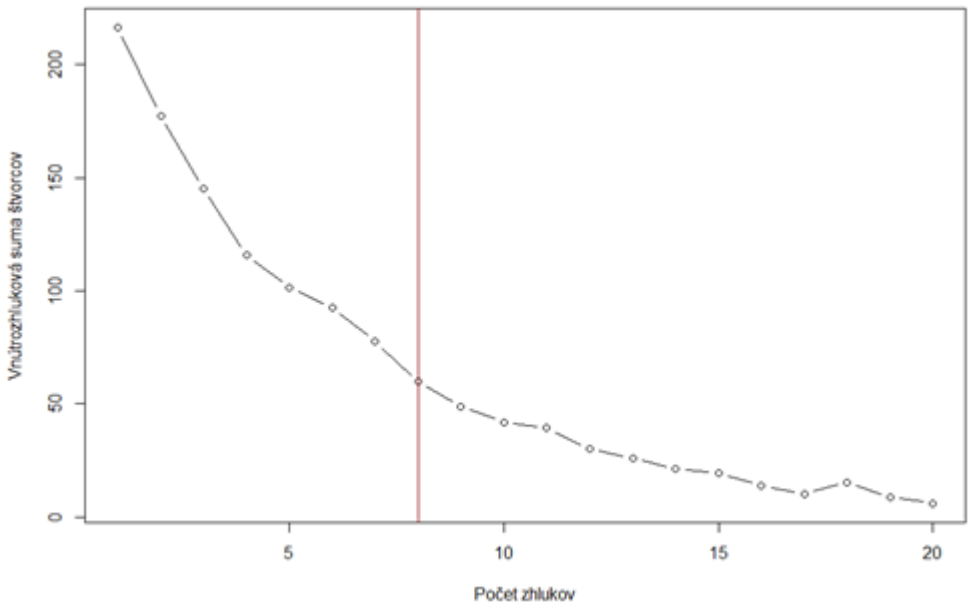
The next part is the outcome and the actual aggregation of selected faculties. Hierarchical trees are compiled in the statistical program R on the basis of the selected major components described in the previous section and determined their number for aggregation. The results are as follows:



Pic. 3 Hierarchical tree with individual faculties

Source: own processing according to R- Studio

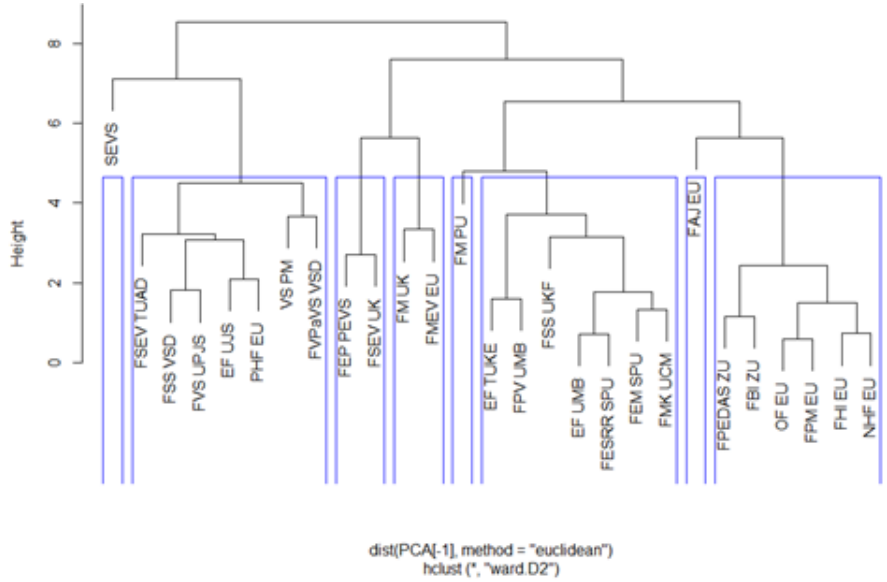
Using the screeplot of the number of clusters, we determined by heuristic method that the number of clusters created by us in the science category will be 8.



Pic. 4 Screeplot - number of clusters

Source: own processing according to R- Studio

The following table shows the number of bundles and the number of faculties assigned to them in the aggregates.



Pic. 5 Hierachical tree with marked clusters

Source: own processing according to R- Studio

In the hierarchical tree there are selected faculties and newly created clusters, where the clusters are also marked. Each faculty is labeled with its abbreviation, and we can see that 8 clusters have been created that are heterogeneously but faculties within their cluster homogeneously. This means that the faculties in one cluster have similar characteristics in terms of educational indicators and at the same time have different characteristics of indicators with faculties in other agglomerations.

Tab. 4 Cluster centroids

	Group.1	VZ1	VZ2	VZ3	VZ4	VZ5	VZ6	VZ7	VZ8	VZ9
1	1	1.400000	14.350000	3.550000	0.7950000	1.5000000	38.50000	92.50000	33.65000	85.55000
2	2	8.100000	0.500000	1.400000	0.5100000	4.0000000	28.00000	97.00000	31.70000	112.00000
3	3	3.550000	6.300000	4.650000	0.5100000	1.6500000	67.00000	96.50000	31.10000	46.75000
4	4	2.333333	4.283333	1.066667	0.8666667	1.6833333	36.16667	97.66667	18.30000	50.96667
5	5	4.457143	4.271429	2.028571	0.6228571	1.9714286	34.71429	93.71429	21.21429	61.41429
6	6	9.585714	2.728571	1.028571	0.6842857	0.7271429	35.71429	88.42857	25.22857	79.28929
7	7	7.300000	0.000000	10.700000	0.5800000	0.1000000	29.00000	68.00000	10.90000	37.10000
8	8	0.000000	6.500000	0.000000	0.8900000	1.5000000	13.00000	60.00000	3.70000	27.60000

Source: own processing according to R- Studio

In the table above we can see centroids for the various clusters, which are described in more detail in the following chapter. In the table below, on the contrary, we find medians for individual clusters. The use of medians is due to the fact that in the previous table - the average is the possibility of influencing the average by the extreme value for individual faculties. For a median, this threat is eliminated as it is the value that divides the sequence according to the size of the sorted results into two equal halves.

Tab. 5 Cluster medias

	Group.1	VZ1	VZ2	VZ3	VZ4	VZ5	VZ6	VZ7	VZ8	VZ9
1	1	1.40	14.35	3.55	0.795	1.50	38.5	92.5	33.65	85.55
2	2	8.10	0.50	1.40	0.510	4.00	28.0	97.0	31.70	112.00
3	3	3.55	6.30	4.65	0.510	1.65	67.0	96.5	31.10	46.75
4	4	2.25	4.60	0.75	0.870	1.70	37.0	97.0	17.85	50.30
5	5	3.90	2.70	1.90	0.630	1.90	35.0	95.0	21.20	63.90
6	6	10.40	2.40	0.70	0.750	0.50	36.0	92.0	26.80	75.10
7	7	7.30	0.00	10.70	0.580	0.10	29.0	68.0	10.90	37.10
8	8	0.00	6.50	0.00	0.890	1.50	13.0	60.0	3.70	27.60

Source: own processing according to R- Studio

3 Summary of the Results

The clusters of faculties, which are similar to those of faculties in other agglomerations, have been created in the form of clustering of faculties, based on educational indicators. In this chapter, we will focus on the accumulation of faculties, through the description of individual clusters. We will monitor the representation of faculties in clusters, their average values. 8 clusters have been created in education indicators. In the following section, individual clusters sorted by the number of faculties in the cluster will be described by means of centroid - averages of the original variables for each of the clusters.

1. First cluster:

Fakulta sociálno–ekonomických vzťahov Trenčianskej univerzity Alexandra Dubčeka,
Fakulta sociálnych štúdií Vysokej školy Danubius,
Fakulta verejnej správy Univerzity Pavla Jozefa Šafárika,
Ekonomická fakulta Univerzity J. Selyeho,
Podnikovohospodárska fakulta Ekonomickej univerzity v Bratislave so sídlom v Košiciach,
Vysoká škola medzinárodného podnikania ISM Slovakia,
Fakulta verejnej správy a verejnej politiky Vysokej školy Danubius.

In our cluster analysis, the Faculty of Business Economics with seat in Košice is in the first cluster. The average results for the first cluster are as follows: The share of unemployed graduates in all graduates (average 2012-2014) is 1,4; Share of study of daily students posted abroad is 14,35;Share of foreign students in study is 3,55; The number of enrolled students in the number adopted in 2014 is 0,795; The ratio of the number of students enrolled to the plan in 2014 is 1,5; The share of professors and associate professors in all teachers is 38,5; The share of teachers with PhD. to all teachers is 92,5; Number of students per teacher is 33,65; Number of students per professor or docent is 85,55. These values are the average values for all faculties that are in the first cluster. Other data on other clusters are found in the median and centroid table.

2. Second cluster:

Ekonomická fakulta Technickej univerzity v Košiciach,
Fakulta politických a medzinárodných vzťahov Univerzity Mateja Bella,
Fakulta stredoeurópskych štúdií Univerzity Konštantína filozofa,
Ekonomická fakulta Univerzity Mateja Bella,

Fakulta európskych štúdií a regionálneho rozvoja Slovenskej poľnohospodárskej univerzity,
Fakulta ekonómie a manažmentu Slovenskej poľnohospodárskej univerzity,
Fakulta masmediálnej komunikácie Univerzity sv. Cyrila a Metóda.

3. Third cluster:
Fakulta prevádzky, ekonomiky dopravy a spojov Žilinskej univerzity,
Fakulta bezpečnostného inžinierstva Žilinskej univerzity,
Obchodná fakulta Ekonomickej univerzity,
Fakulta podnikového manažmentu Ekonomickej univerzity,
Fakulta hospodárskej informatiky Ekonomickej univerzity,
Národohospodárska fakulta Ekonomickej univerzity.

4. Fourth cluster:
Fakulta ekonómie a podnikania Paneurópskej vysokej školy,
Fakulta sociálnych a ekonomických vied Univerzity Komenského.

5. Fifth cluster:
Fakulta manažmentu Univerzity Komenského,
Fakulta medzinárodných vzťahov Ekonomickej univerzity.

6. Sixth cluster:
Fakulta aplikovaných jazykov Ekonomickej univerzity.

7. Seventh cluster:
Fakulta manažmentu Prešovskej univerzity.

8. Eight cluster:
Stredoeurópska vysoká škola v Skalici.

Conclusion

In this analysis, we have determined indicators for the selected Slovak faculties of higher education, on the basis of which we have used the method of aggregation. We have used distance measurement using the Euclidean distance. We have chosen the Ward method for the clustered method. (Stankovičová et al. 2007) We have created clusters of faculties that are drawn in a hierarchical tree (denrogram), that has sorted us faculties based on selected indicators of education. Consequently, we have heuristically determined the number of clusters. Faculties were thus organized into clusters that have similar properties and differ from faculty properties in other agglomerations. Before we proceeded to aggregation, we examined the relationships between the variables. Subsequently, we discussed the results of our analysis and described individual clumps.

Acknowledgements

Tento príspevok je čiastkovým výstupom Projektu mladých vedeckých pracovníkov a doktorandov, číslo I-18-110-00, 2018: Finančná gramotnosť žiakov základných a stredných škôl v kontexte PISA 2018, PISA 2015 a OECD.

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EUROPEAN SOCIETY AS A LEGAL FORM OF BUSINESS FROM THE VIEW OF VALUE ADDED TAX

Eva MANOVÁ – Katarína ČULKOVÁ – Jana SIMONIDESOVÁ – Adriana CSIKÓSOVÁ

Abstract
The European society - Societas Europaea (SE) in the European Union as a new form of business facilitates the use of the transfer of business within the European Union Member States, which can help entrepreneurs in reducing the tax burden in the country in which they operate. Value added tax presents in most countries one of the most important revenue of state budget and significant cost of business. In the frame of EU there is still running taxes harmonization. Due to the providing of common market in EU, which would be based on free moving of goods, services, persons and capital, there is necessary harmonization of indirect taxes, including value added tax. Also in Slovakia legislation is closely connected with EU legislation, the aim of the contribution is to search development of value added tax in chosen EU countries. Analysis of the tax rate development had been done by considering, which EU country is proper for placing of European Society from the view of tax optimization. Results of the analysis had been compared from the view of tax rate for legal entity and volume of the taxes in Slovakia and other EU countries, where we searched, which EU country is proper for placing of European society from the view of tax optimization. The main results of the contributions show to the gradual strengthening of the tax position, while Slovakia belongs among the countries with the largest gap in the choice of value added tax in the European Union. One of the effective possibilities how to reduce tax burden is new legal form of business, the European Society.

Key Words:
European Society, value added tax, tax optimizing, efficiency, European member states.

Introduction

The European society - Societas Europaea (SE) in the European Union is a new legal form of business. This form of business facilitates the use of the transfer of business within the European Union Member States, which can help entrepreneurs in reducing the tax burden in the country in which they operate. The general purpose of introducing the tax is revenue of the state budget of the country in whose territory the pursuit of economic activity.

Value added tax (VAT), is currently the world universal basic type of indirect taxes. In most countries it presents one of the most important revenue of the state budget (public finances). In present time it is established in approximately 140 countries around the world. Consumption is taxing now by VAT. Value added tax burdens most of the products and services due to the trend of development in tax revenues, collected from this tax.

Optimal tax system is based on the principle of efficiency and righteousness. But these principles are in mutual contradictory. Principle of efficiency result from the effort to obtain sufficient financial funds, while principle of righteousness gives emphasize to the tax burden of taxpayer and his social

position, which could influence volume of chosen financial funds. Such contradictory is one of the reasons why optimal tax system does not exist. Optimal tax system could rise by compromise solution from contradictory principles and demands.

In the frame of EU there is still running taxes harmonization. Due to the providing of common market in EU, which would be based on free moving of goods, services, persons and capital, there is necessary harmonization of indirect taxes, including value added tax. In the frame of VAT we can say optimizing is processed, but there are still remaining significant differences in applying of tax rates among individual EU countries. According present EU rules standard VAT rate cannot be lower than 15% and member states can use one or two decreased rates, but not lower than 5%.

Tax policy in member states plays important task during influencing of business environment and during increasing of economy competitiveness. Harmonization in tax area is serious economic and political question. It means process that is rather complicated and also rather controversial, but at the same time it is considered as important reflection of state autonomy from the historical view. Obviously member states consider harmonization as interference to their national sovereignty, which they want to have. Therefore taxes harmonization is demanded area, viewed very sensible during negotiations in EU. At the same time we know certain harmonization, either in tax base or in the way of tax collection, is very necessary, since variety of systems gives space for imposition and creation of various schemes that enable to circumvent tax liability and avoid paying taxes.

Slovak legislation for the value added tax amendment is closely linked to European legislation. This means that the legislation adopted by the Council of the European Union must be reflected in the legislation of the Slovak Republic, which is related to the process of harmonization of tax collection and taxation conditions in all Member States. This is a very complex process, not only on indirect, but especially in direct taxes. The process itself has been going on for decades and still cannot be regarded as complete. Contribution is focused on the area of value added tax in the context of European society as a form of business.

1 Literature review

Value added tax (VAT) has become an important source of government tools in past decades, but little empirical work has been carried out on their macroeconomic impacts.

To solve this problem, Ufier (2004) modeled the VAT adoption decision for 192 countries, finding that VAT adoption is associated with an increase in growth and investment as well as lower inflation and government spending as a share of GDP. The value added tax is a general neutral single indirect tax which is to be paid divided into fractions in all the stages of the business cycle, in order to be tolerated by the final consumer.

On the other hand one of the key features of a value-added tax is the threshold level of turnover at which firms are obliged to register for the tax. Despite its importance, however, the question of the appropriate level at which to set this threshold has received little analytical attention. In this context Keen and Mintz (2004) develop a simple rule characterizing the optimal in terms of a trade-off between tax revenues and collection costs, considering the implications for the optimal threshold of the production inefficiencies implied by the differential treatment of those above and below the threshold. Kosonen (2015) studied the impact of value added taxes (VAT) on prices and quantities of labor intensive services, utilizing a VAT reform targeted at a specific service sector, which creates a natural experiment set up. Results of his study point to the important heterogeneity in the results according to firm size.

The tax system had been studied through example of two French reforms by Carbonnier (2007) with aim to provide visual evidence of tax shifting. These reforms entail steep decreases of the VAT rate. Since the early 1990s, introduction of the VAT has had a positive impact on resources mobilization in developing countries. It has also been a vehicle to implement major tax administration reforms Bodin (2012). Governments throughout the EU and OECD countries rely on revenues raised on capital income. Albeit several arguments can be made for keeping these taxes, in their widespread form they hinder capital accumulation and significantly lower potential growth due to their savings and investment distorting nature. At the same time, the actual economic impact of tax types is largely influenced by their structure. An elegant method, which is also simple in its concept, for eliminating the economic distortions of profit taxes is cash-flow taxation which moves income taxes closer to the more growth-friendly value-added taxes Nobilis and Svraka (2015).

According Bird and Zolt (2005) inequality has increased in recent years in both developed and developing countries. Tax experts, like others, have focused on how taxes may reduce this growing inequality of income and wealth. In developed countries, the income tax, and especially the personal income tax, has long been viewed as the primary instrument for redistributing income. It presents evidence that there is still necessary to make some reforming in tax system with aim to implement more progressive fiscal systems. Design and development of tax policies had been considered in study also by Bird and Zolt (2008) in emerging countries, given the complex economic and political environments they face. They discussed the broad political economy context within which tax policy and development issues must be designed and implemented.

Different countries have different rate of value added tax. For example in Romania the value added tax as an indirect tax appeared in 1993 along with the transition to the market economy, replacing the turnover tax, used between 1989 and 1993, and the single tax, used before 1989 Costuleanu, et.al (2013). At present, there are three VAT rates in Romania: the standard rate, which is applied to the tax basis for the taxable transactions that are not tax-free or for the

transactions which are not liable to reduced rates. Impact of VAT upon the economic activity had been studied in Romania by Muresan et.al (2014), which developed a new mathematical model, offering dynamic and efficient possibilities for observing the modifications caused by the temporary reduction of taxes. Their model describes also a scheme regarding the developments of economic growth. Based on this scheme, are revealed the different arrangements in which a present economic activity influences a future one. According to the proposed model, it is highlighted that the national income increases as a response to the aggregated demand.

In various countries there is strong evidence that production firms can effectively evade value-added taxes (VATs) by exporting through intermediary trading firms, especially when selling differentiated products Liu, et.al (2016). Indirect exporting can save export compared to direct exporting even if no intentional price under-reporting occurs, and even more when domestic purchasing price paid by a trading firm to a production firm is under-reported purposely. In Bosnia and Herzegovina Lazović-Pita and Štambuk (2015) made research, based on tax policy opinion survey data among tax experts with aim to investigate the consequences of the different institutional environments that exist between the two entities of the country. The most interesting results suggest the maintenance of the current value added tax (VAT) and corporate income tax (CIT) rates. However, differences exist in the respondents' perceptions about the introduction of reduced VAT rates, the regressivity of the VAT, and giving priority to the equity principle over the efficiency principle in taxation.

Despite the heterogeneity among countries, the tax burden has increased in Latin America almost all cases, and the tax structure has, on average, become more concentrated mainly in Value Added Tax and the Income Tax. As the goals of tax policy expand beyond the merely fiscal in recent years, it is becoming increasingly important to establish new guidelines for tax reform in the countries of the region Gómez and Morán (2016). Moreover in China there was established in 1994 project with aim to have value added tax statistics, monitoring and administrating VAT collection Xing and Whalley (2014). The data suggests that internal trade in China has grown quickly but with seasonal fluctuations. Although the interprovincial trade in China is smaller than the interstate trade in United States and the intra-European Union trade, the high growth rate of the interprovincial trade suggests that economic connections among the provinces are strengthening. The effect of value added tax had been further studied from the view of SMEs in Nigeria Eragbhe and Omove (2014). Results show VAT not appears to be significant going by their ratios and this suggests that SME attributes do not impact significantly on VAT in Nigeria. In the United States Diamond and Zodrow (2013) determined the efficiency, growth, and equity properties of alternative tax reforms, reporting the results of simulations of a model that examines the economic and distributional effects of the enactment in the United States of a temporary value-added tax used to reduce the level of the national debt.

The results suggest that such a reform is generally moderately progressive and needed to be further followed up.

While VAT performance is still below the potential in many countries, enhancing tax administration reforms is critically needed to improve the productivity of this tax and to further modernize the tax system Bodin (2012). Mentioned studies suggest that more empirical studies are needed in this area, necessitating also significant additional information. Such information can be provided also by financial statement, which started to have a importance when the economic crisis happened and many legal entities went bankrupt Lakis (2014).

2 Methodology

In this paper we review the theoretical literature on taxation and analyzed development of the value added tax. Analyze had been done through development of value added tax rate during 2013-2015 with comparison of the rate for legal entity and volume of the taxes in Slovakia and other EU countries during 2010-2014, where we searched, which EU country is proper for placing of European society from the view of tax optimization. Tax optimization means using of all means, what actual law of taxes enables to use as a process, when "tax expenses" is given to the accounting, mainly cost for achieving, providing and maintaining of incomes. Optimization means decreasing of costs, allowed by law, connected with business and able to be verified. Through tax optimization there is possible to have most proper legal program for covering of minimal volume of tax levy. Optimization must be done according principles of righteousness, proportionality, simplicity, economical effectiveness and exactness.

Tax harmonization could be achieved by two different ways:

1. Explicit tax harmonization – in case when countries agree with determination of minimal or maximal tax rate or if they decide tax at the equal rate. For example European Union demands member states establish VAT at least 15%. Under this direct form of tax harmonization taxpayers would not be able to make profit from better tax policy in other countries and government would be isolated from market discipline. This is not applicable in case of maximal tax rate determination that does not limit by its characteristics tax competition.
2. Implicit harmonization – in case, when government gives taxes on incomes of its inhabitants. This policy of "whole world taxation" demand governments would collect financial information from not resident investors and exchange such information with tax organs of foreign governments. This system of "information exchange" leads to "dead end", since work and capital generally flow from countries with high taxes to countries with low taxes. Neither during such indirect form of tax harmonization, as in case of direct one, described above, taxpayer cannot have profit from better tax policy in other countries and governments are isolated from market discipline.

Changes in the applied basic rates of value added tax in Member States lead to ever smaller differences. This fact also leads to easing barriers to the application of the principle of taxation in the Member State of destination countries. At the development of rates of value added tax it can be also noted that the rate of value added tax tend to gradual increasing. It is mainly due to the following:

- Value added tax is stable income of state budget of any country,
- Economic and financial crisis forces governments of the individual countries to the stabilization of income part of state budget and to the covering of expense part of state budget. State budget is closely linked to the budget of the municipality and its efficient management on the income site can ease the pressure on the state subsidies funding Jenčová, et.al (2013).

The amount paid by the undertaking through value added tax for the year is not small, which negatively affects every business activity in particular, mainly businesses operating in more Member States simultaneously.

According the analysis we searched, which are tax favorable countries from the view of value added tax and which are significantly most inappropriate seats for placing of European Society. Results of analysis solved for proposal of the solutions elaborated for working out the challenges related to the tax, with consequent discussing the main tax development.

3 Results of VAT comparing in EU member states

Value-added tax gradually strengthened its position since its introducing among the other taxes levied on a global and worldwide scale. There is a relationship between financial development and economic growth and VAT development Urbsiene and Sendriy (2014). Member states in EU loss through tax evasion annually more than 1 billion EUR. Any member state in EU can provide 100% of tax collection from VAT. In countries, similar with Slovakia, success of VAT collection is around 50%. Not only Slovakia, but also other EU states fight to configure the system by the way there would not be high losses during tax collection, since every EU member state solve the problems by tax collection.

Slovakia belongs among the countries with the largest gap in the choice of value-added tax (VAT) in the European Union (EU). Gap in the collection of VAT presents the difference between the theoretical tax liability under the VAT Law and the collected VAT. This indicator allows measuring the effectiveness of tax collection as well as tax losses. These losses are causing the breakdown of the revenue side of the state budget and may have different causes - tax evasion, tax avoidance, bankruptcy and incorrect calculation of tax liability. The difference between the theoretical tax liability under the Law and the collected VAT in Slovakia amounted in 2013 at level 34.9%. It results from the recent study of the European Commission. Table 1 illustrates VAT rates in the individual countries in EU during analyzed periods 2013-2015.

Table 1 VAT Rates Development in EU Member States

EU member state	Basic rate of VAT in % during analyzed period			Decreased rate of VAT in % during analyzed period			Lowest rate of VAT in % during analyzed period		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
Belgium	21	21	21	12	12	12	6	6	6
Bulgaria	20	20	20	9	9	9	-	-	-
Czech Republic	21	21	21	15	15	15	-		10
Denmark	25	25	25	-	-	-	-	-	-
Estonia	20	20	20	9	9	9	-	-	-
Finland	24	24	24	14	14	14	10	10	10
France	19,6	20	20	7	10	10	5,5	5,5	5,5 / 2,1
Croatia		25	25		13	13		5	5
Ireland	23	23	23	13,5	13,5	13,5	9	9	9 / 4,8
Italy	21	22	22	10	10	10	-	-	4
Cyprus	18	19	19	8	9	9	5	5	5
Lithuania	21	21	21	9	9	9	5	5	5
Latvia	21	21	21	12	12	12	-	-	-
Luxemburg	15	15	17	12	12	14	6	6	8 / 3
Hungary	27	27	27	18	18	18	5	5	5
Malta	18	18	18	7	7	7	5	5	5
Germany	19	19	19	7	7	7	-	-	-
Netherlands	21	21	21	6	6	6	-	-	-
Poland	23	23	23	8	8	8	5	5	5
Portugal	23	23	23	13	13	13	6	6	6
Austria	20	20	20	10	10	10	-	-	-
Romania	24	24	24	9	9	9	5	5	5
Greece	23	23	23	13	13	13	6,5	6,5	6,5
Slovakia	20	20	20	10	10	10	-	-	-
Slovenia	20	22	22	8,5	9,5	9,5	-	-	-
Spain	21	21	21	10	10	10	-	-	4
Sweden	25	25	25	12	12	12	6	6	6
Great Britain	20	20	20	5	5	5	0		

Source: European Commission, Taxation and Customs Union, VAT Rates Applied in the Member States of the European Union 2013, 2014, 2015

Level of VAT rates in the EU member states during 2013-2015 ranged from 15% in countries such as Luxembourg to 27% such as Hungary. While in most countries there is reduced rate of tax, setting to medicines, medical supplies, food supplies and needs for children or books, in Luxembourg there is reduced to 14% tax on advertising.

Following Figure 1 illustrates volume of basic VAT rates in the individual EU countries during analyzed period 2013 – 2015.

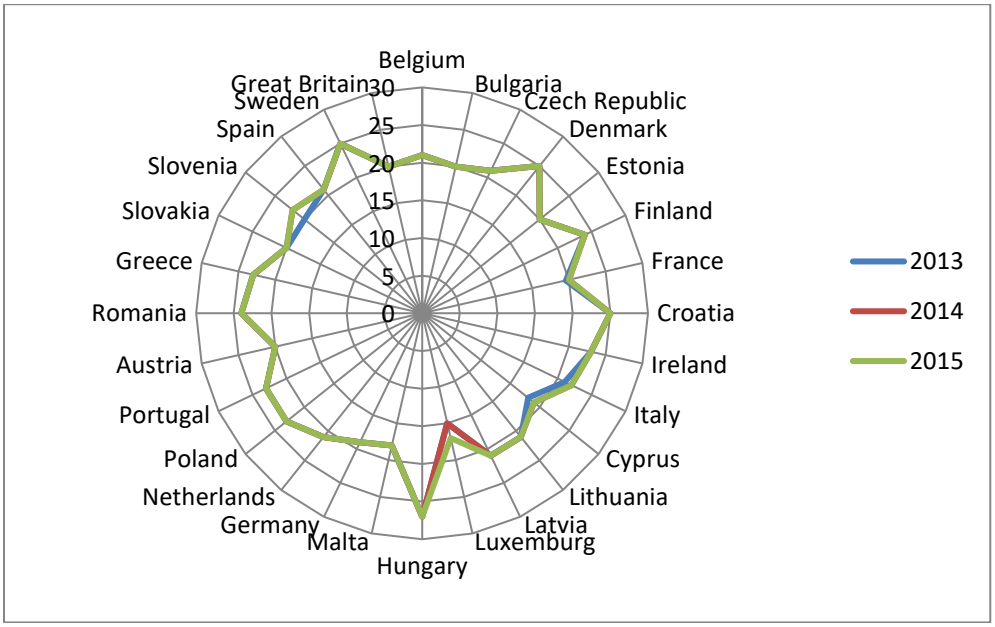

Figure 1 Basic VAT Rates during 2013-2015

Source: own processing according Table 1

Lowest VAT is in Switzerland – 8%, highest rate is in Hungary – 27%. Denmark does not have any decreased VAT rate, only standard rate – 25%. In addition to the standard VAT rates in the practice there are applied also reduced rates. The following graph at Figure 2 shows the amount of reduced VAT rates across the individual EU countries over the analyzed period 2013-2015.

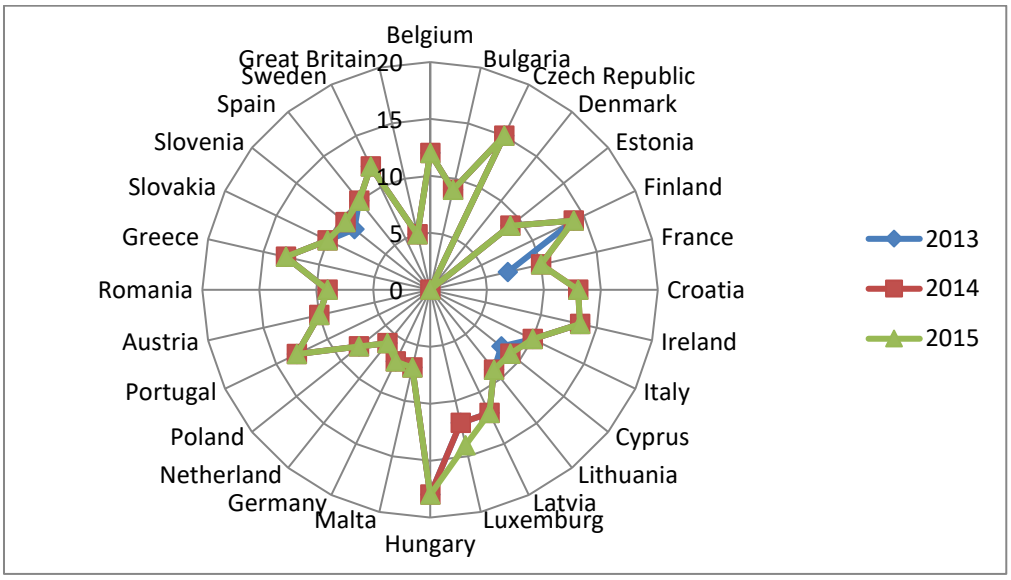

Figure 2 Decreased VAT Rates

Source: own processing

Countries with lowest VAT rate are Great Britain, Netherland, Germany, and Malta. Some members states are applying also second decreased rate (see Figure 3).

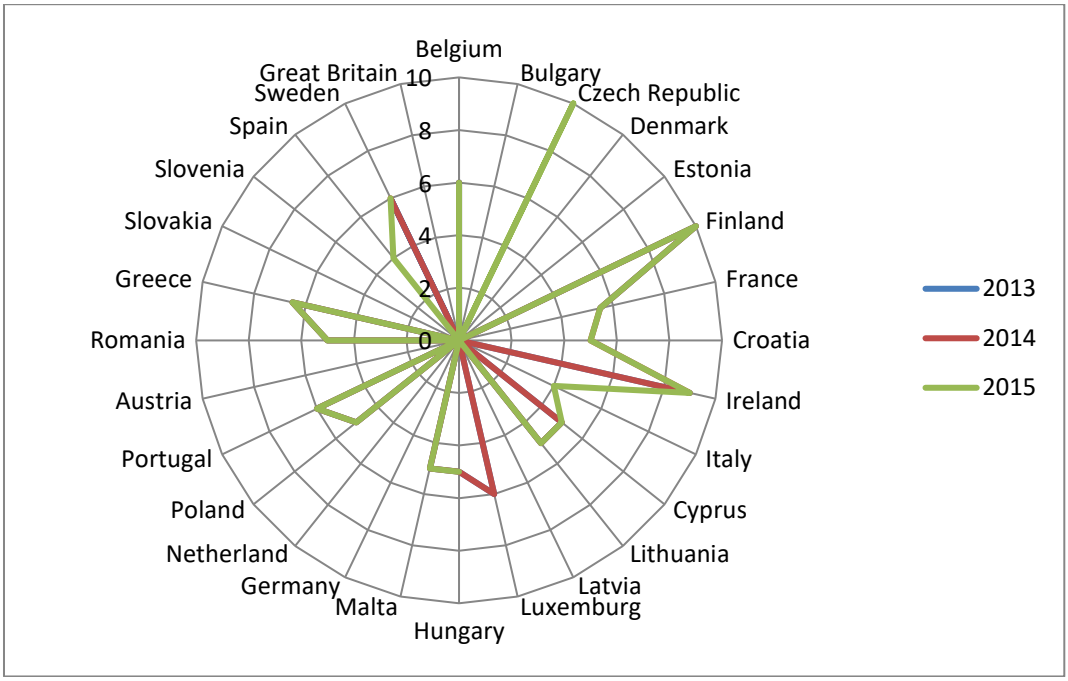

Figure 3 Lowest VAT Rates in EU Member States

Source: own processing

Amount of VAT in the Member States will be shown on the simplified case. For this analysis, we assume that the company has an invoice for € 10,000, each year during the period analyzed. Of this amount we will calculate the amount of value added tax for the period, we made the sum of these amounts and we find out which country would pay highest VAT and on the other hand where the least tax will be paid. Finally, we compare the amount of VAT in Slovakia and other countries and we state a difference in the paid amount of tax.

Table 2 shows the amount of VAT paid during the reporting years in the basic rate in case with seat in the given country. The amount of individual values for the reference years was calculated according VAT rate in the individual Member States of the European Union and it has been calculated from the amount of € 10,000. Table 2 shows how total sum, paid in the member states during all three years of the working in the area.

This amount varies within the limits from € 4,700 to € 8,100. Mentioned € 4,700 we would have paid during the period in Luxembourg, which is also the lowest figure in the EU Member States. The second most preferred place in terms of VAT would be Malta with the sum of € 5,400. Most paid tax - € 8,100 would be paid by the company in Hungary and slightly less in Denmark and Sweden.

Table 2 Level of Value Added Tax

Country	2013	2014	2015	Sum
Belgium	2100	2100	2100	6 300
Bulgaria	2000	2000	2000	6 000
Czech Republic	2100	2100	2100	6 300
Denmark	2500	2500	2500	7 500

Estonia	2000	2000	2000	6 000
Finland	2400	2400	2400	7 200
France	1960	2000	2000	5 960
Croatia	-	2500	2500	-
Ireland	2300	2300	2300	6 900
Italy	2100	2200	2200	6 500
Cyprus	1800	1900	1900	5 600
Lithuania	2100	2100	2100	6 300
Latvia	2100	2100	2100	6 300
Luxemburg	1500	1500	1700	4 700
Hungary	2700	2700	2700	8 100
Malta	1800	1800	1800	5 400
Germany	1900	1900	1900	5 700
Netherland	2100	2100	2100	6 300
Poland	2300	2300	2300	6 900
Portugal	2300	2300	2300	6 900
Austria	2000	2000	2000	6 000
Romania	2400	2400	2400	7 200
Greece	2300	2300	2300	6 900
Slovakia	2000	2000	2000	6 000
Slovenia	2000	2200	2200	6 400
Spain	2100	2100	2100	6 300
Sweden	2500	2500	2500	7 500
Great Britain	2000	2000	2000	6 000

Source: European Commission, Taxation and Customs Union, VAT Rates Applied in the Member States of the European Union 2013, 2014, 2015

Level of calculated sum of paid VAT during analyzed period is illustrated in the following Figure 4.

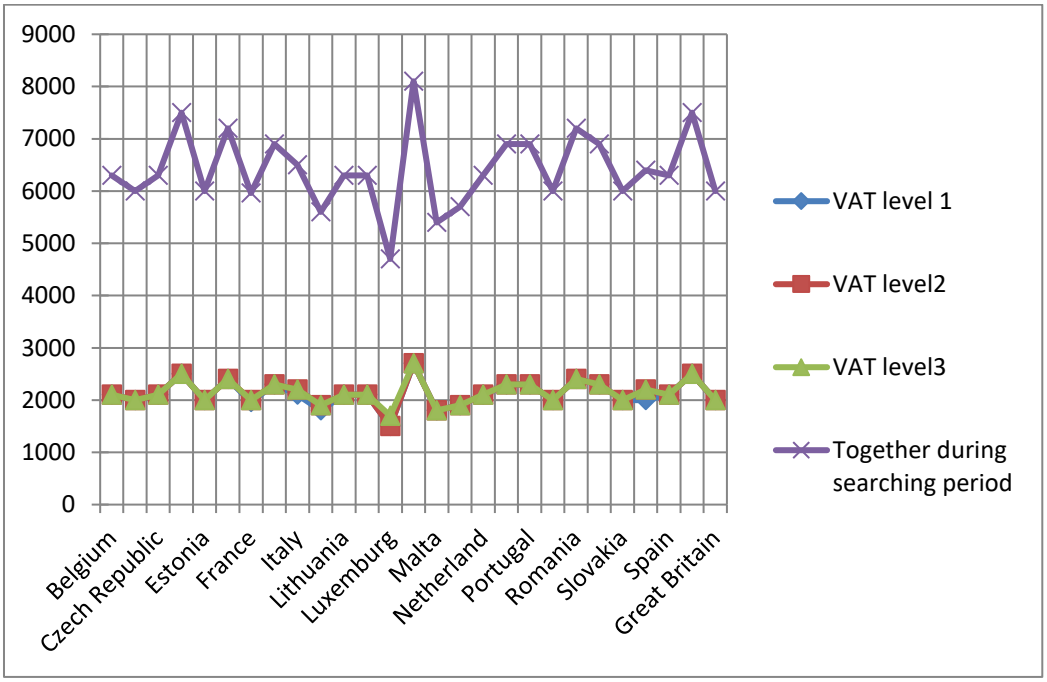

Figure 4 Sum of VAT Paid During Analyzed Period

Source: own processing

Differences in sum, which businessmen would pay in Slovakia in comparing with other EU member states, are illustrated by table 3. As shown in the table for the analyzed period entrepreneur can save at VAT € 1,300, but on the other hand to pay a € 2,100 more. Mentioned € 1,300 compared with the SR could be saved in Luxembourg. About € 2,100 more would be paid in Hungary. The tax-efficient countries in terms of VAT include Cyprus and Malta. The settlements significantly unsuitable for the location of the European Society include except Hungary also Sweden, Romania, Finland, Denmark. There is lack of transparency and unequivocal indirect taxes (VAT and excise tax) as well as taxes on business activity (CIT, PIT due to too high and less competitive compared to taxes in e.g. Cyprus, Estonia, Ireland, Lithuania Dziadkiewicz and Całus (2011). A strict control over corruption and an increase in the government effectiveness could significantly enhance legal business making (Andries, et.al, 2014). Results of study by Lopez-Rodriquez (2015) show the regional disparities of incomes have been reinforced over the time across regions.

Table 3 Differences in VAT

Country	Level of VAT during 2013-2015	Difference in comparing with Slovakia
Slovakia	6 000	
Belgium	6 300	+ 300
Bulgaria	6 000	0
Czech Republic	6 300	+ 300
Denmark	7 500	+ 1 500
Estonia	6 000	0
Finland	7 200	+1 200
France	5 960	- 40
Croatia		
Ireland	6 900	+900
Italy	6 500	+500
Cyprus	5 600	-400
Lithuania	6 300	+300
Latvia	6 300	+300
Luxemburg	4 700	-1300
Hungary	8 100	+2100
Malta	5 400	-600
Germany	5 700	-300
Netherland	6 300	+300
Poland	6 900	+900
Portugal	6 900	+900
Austria	6 000	0
Romania	7 200	+1200
Greece	6 900	+900
Slovenia	6 400	+400
Spain	6 300	+300
Sweden	7 500	+1500
Great Britain	6 000	0

Source: own processing

4 Discussion

Various aspects of the synergy effects, the new tendencies of the processes of creating knowledge based society and the knowledge economy, as well as institutional interaction and the processes of internationalization of scientific and technological progress are described in the article. The main idea is that the creation and development processes of the knowledge based society and knowledge economy may be attributed to the category of synergy effects oriented processes, therefore, all general phenomena and characteristics of synergy effects oriented processes in general, are absolutely typical for the creation and development of the knowledge based society and knowledge economy Melnikas (2011). One of the factors in synergy are measures to support entrepreneurs for financial savings in taxes include legally the business in the form of a European Society - Societas Europea (SE) in the frame of European Union. Law about The European Society brings into Slovak legislation this form of internal organization of the business companies, known mainly from France and Italy.

The European Society is considered to be so-called transnational European equivalent of a joint stock company that is recorded in the commercial register in the state of its seat. The minimum amount of equity is € 120,000.

The position of the European company is established by the law of the State, where it has its seat. In the Slovak Republic it is regulated by Law no. 562/2004 Coll. of the European Society, coming into effect on 9th September 2004. It presents a monistic (single-stage) organizational structure that knows only one correct managing authority exercising control and supervisory functions. Such form of business is different from the presently applied forms of business in some respects.

Difference is mainly that the subject may choose the country of seat of its European Society companies in any country of the EU Member States. European society must contain the amendment “SE".

The basic advantage compared to the common national form of business is the possibility to move the seat of the European Society in the frame of whole EU without liquidation of the company Bolfíková, et.al (2012). Changing the seat means abandoning the domestic legislation.

European businessmen choose this form of business except of possibility of tax optimization also due to other advantages, such as possibility to choose most proper tax system in the frame of EU. European Society as a legal form of business can present new orientation of some businessmen for their future development of the business. European Society has also to enable mainly free movement of the capital in the frame of whole EU and to unify legal norms of business companies.

Mainly such form of business can help businessmen to decrease tax burden in case of disadvantageous bad political and economic conditions in the country, in which they act. This legal form of business enables to move seat of the company

in the frame of EU member states. European Society rises in the state, where it has its seat Dvořák (2005).

During process of seat movement there is necessary to process according certain rules. It can be described by following process:

- Elaboration of suggestion for seat movement through control or administrative organ,
- Elaboration of report through control or administrative organ for shareholders and stakeholders,
- Publication of suggestion and report,
- Approval of this suggestion by General Assembly,
- Edition of confirmation in the state of former seat,
- Recording to the business register in the state of new seat and removing from the register in the state of former seat Hodál et al (2005).

Recording of new society and erasure of former one is published in member states and in Official Journal of European Societies Kožiak (2009).

Project of European Society, as well as other transnational societies is according opinion of various authors profitable for European economy. This type of transnational business society is proper for big companies that make business in number of various companies.

VAT is only one general indirect tax in all EU member states. It is characterized as induplicate multiphase indirect reversing tax, which characteristic is taxation of value added. Through VAT harmonization there could be provided most righteous conditions for taxation of transactions for taxpayers and on the other hand there could be minimal tax evasion.

Conclusions

The value added tax is a general tax, paid in order to be tolerated by the final consumer. In most countries it presents one of the most important revenue of state budget and significant cost of business. Since Slovak and EU legislation is closely connected, there is necessity to search development of value added tax in chosen EU countries with aim to find, which EU country is proper for placing of European Society from the view of tax optimization. Value-added tax gradually strengthened its position since its introducing among the other taxes levied on a global and worldwide scale. Slovakia belongs among the countries with the largest gap in the choice of value added tax in the European Union. The indicator of the tax allows measuring the effectiveness of tax collection as well as tax losses. These losses are causing the breakdown of the revenue side of the state budget and may have different causes - tax evasion, tax avoidance, bankruptcy and incorrect calculation of tax liability. One of the effective possibilities how to reduce tax burden is new legal form of business, the European Society. This form of business facilitates the use of the transfer of business within the European

Union Member States, which can help entrepreneurs in reducing the tax burden in the country in which they operate.

Acknowledgments

Contribution is partial result of project solving VEGA No 1/0310/16 „Identification of factors determining bankruptcy of companies in condition of chosen industrial branches".

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THE COMPLEXITY AND MANAGEMENT OF THE INFORMATION TECHNOLOGY SERVICES

Alexander PETROV – Vanda LIESKOVSKÁ

Abstract
The article discusses some issues related to increasing the complexity of using and managing information technology. It is concluded that using IT service management this complexity can be reduced and better managed.

Keywords:
information technology (IT), complexity system, service, IT service management (ITSM)

Introduction

Modern information technologies are becoming the main driving force of all spheres of society and fully transform the way of management and functioning of all organizations, as well as the way of interaction between them and their clients. By increasing the scope and level of automation of all activities and processes in organizations, the dependence of business, citizens and society as a whole on IT is constantly increasing.

There is a growing direct interdependence between organizations' ability to use information technologies and their ability to implement corporate strategies and achieve their corporate goals. Often, what the organization would like to do depends on what its systems will permit it to do (Laudon, 2013, pp. 11-12).

IT from the so-called "third platform" (a term introduced by IDC) - cloud computing, mobility, Big data, Artificial Intelligence, social networks, not only provide organizations with broad opportunities to deploy new business models that transform their way of functioning and management, but also require them to make such a transformation. The organizations that fail to transform their business and deploy new business models based on the use of modern IT are threatened not only by customer loss and revenue cuts, but even by an extinction from the market.

Increasing business dependence on fast-growing IT places the organizations facing different challenges such as:

- the need to transform both business and IT management so as increasing their efficiency and effectiveness;
- rapid response to rapidly changing customer requirements and market conditions;
- solving problems related to overcoming the complexity of IT systems and the various gaps arising from the high dynamics of IT development and the business itself.

It is paradoxical that the solution of the problems arising from the increasing dependence of the business on IT can only be achieved through the wider adoption

and use of the new information technologies, i.e. with an even greater increase the busineses dependence on IT. The key to understanding this contradiction is the complexity and the key of resolving it is to how organizations manage IT.

1 The development of IT, the fight against complexity and the overcoming of gaps.

The development of information technology is accompanied by increasing their complexity.

There is no universal definition of complexity. In MERRIAM-WEBSTER dictionary the following definition of complexity can be found: the quality or state of being complex ; the quality or condition of being difficult to understand or of lacking simplicity.

Complexity can be determined in different ways (Hanseth et al., 2007):

- - as the "sum" of number of elements and connections between them;
- - as dependent on a system's number of different types of components, its number of types of links and its speed to change;

Another point of view of complexity is that it is more natural to talk about complex behavior than complex systems (Nicolis G., Prigogine I., 1990, p.2). From this point of view, complexity is seen as the ability to switch between different types of behavior when changing external conditions (Nicolis G., Prigogine I., 1990, p.252).

Without pretending to be exhaustive, Figure 1 shows various aspects of which one system can be viewed with respect to its complexity.

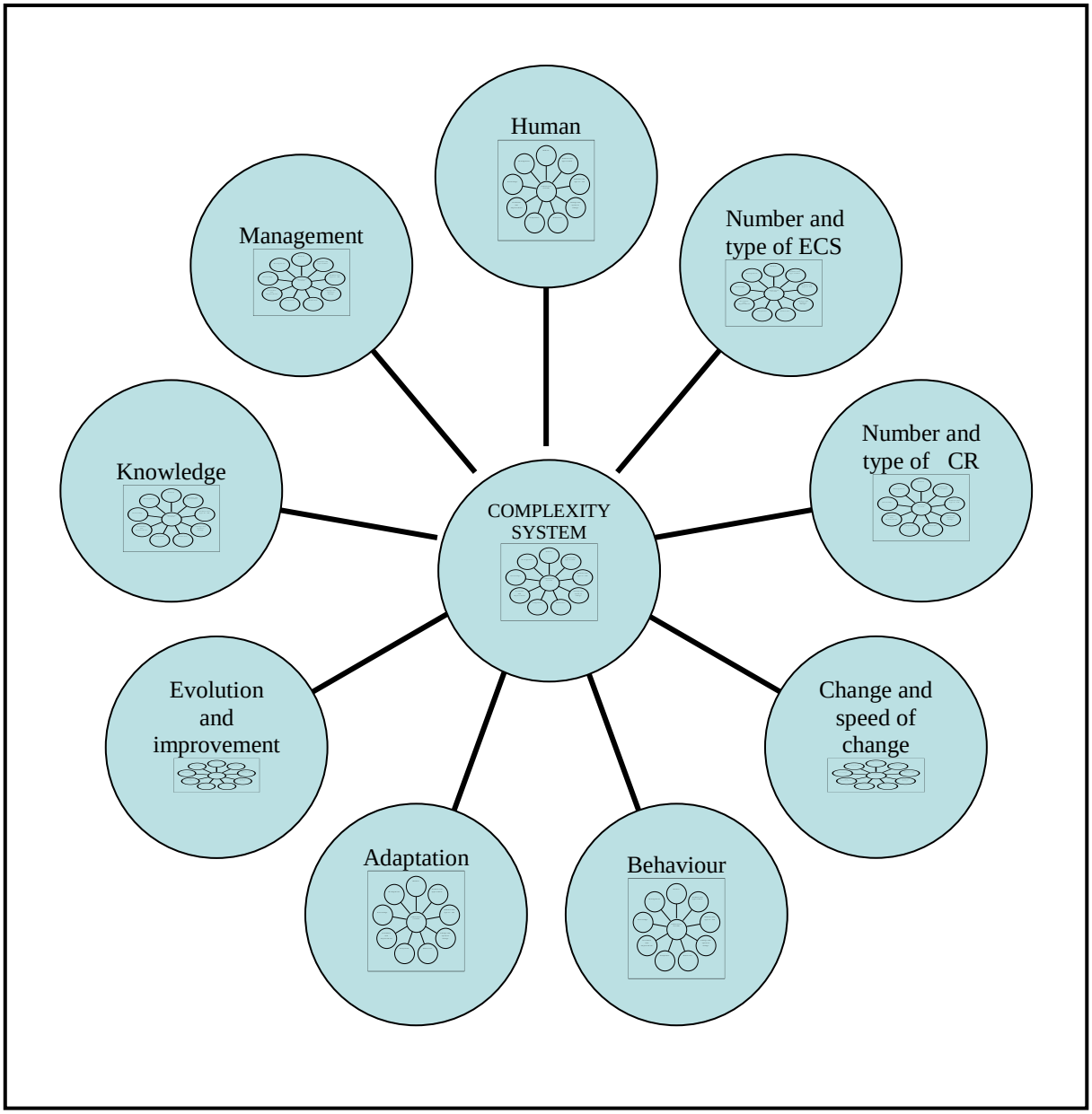

Figure 1. The flower of complexity. Different dimensions of the complexity.

Source: own created figure

The figure shows different dimensions in which the complexity of a system can be defined and determined. In each dimension, there may be different characteristics and properties with respect to which complexity can be determined and measured. For example, the system is complex when it has the following properties: a large number of elements, components and subsystems (ECS) of different types, associated with a large number of connections and relationships (CR) of different types; system changes made at high speed; the presence of complex, unpredictable behavior; capabilities for adaptation, evolution and improvement; components and characteristics difficult to understand and requiring a great deal of knowledge and expertise for their construction, maintanance and management; system is difficult to manage and has capabilities

for self-management, self-development and self-improvement . The presence of human as an element of the system itself makes this system complex.

The figure clearly illustrates the recursive nature of complexity. For each of the dimensions, characteristics and properties of complexity, the entire system of its dimensions and properties can be applied. Then, for each combination obtained, the same can be done, and so on. For example, the system may have components that are sophisticated systems with complex interconnections that is changed, complicated behavior, complex management that required a rapidly changing knowledge and extensive experience and so on.

The same property of the system can turn it into a system with a high level of complexity as well as in a system of lower complexity. For example, a system with a large number of elements may be a system of high complexity if its elements have a complicated unpredictable behavior, but it may be with a lower level of complexity if the same elements have predictable behavior. For this reason, in order to determine the complexity of the system, it is necessary to take into account all dimensions and all specific properties of the complex system.

With regard to the management of the complex system, it is necessary to consider both the different management functions (forecasting, planning, organization, coordination, operational implementation, verification, monitoring, reporting, analysis, control, etc.) and the place of the system in the overall control scheme (controlling system or controlled system).

For example, if we look at the organization's information and communication infrastructure as a management system, it can be a complex system consisting of extremely complex information systems, hardware components and technologies, but thanks to automation it can be convenient to manage and not to requires a complex human control system. Thus the complexity of the entire system is reduced and distributed among its various subsystems.

Some of the important factors behind the growth of IT complexity are following (Hanseth et al., 2007):

- growth of computing power that enabled to run and develop more complex software;
- development of communication technologies (including Internet) that enabled integration the complex pieces of software across computers;
- increased integration between IT components and the organizations and practices using the technology.

We believe that integration is not only a source of complexity, but also a way of reducing and managing it. On the one hand, the integration between the systems (technical and organizational) increases the number of interconnections between them but, on the other hand, enables these different systems to interact with each other, operate as a whole and be managed as a whole.

Consequently, it can be concluded that increasing the scope and complexity of information technology and information systems that automate business

processes increases the complexity of organizational systems as well as their management. This complexity is conditioned not only by the large number of their elements, the number of interconnections and the number of types of interrelationships between them (people, technical devices, software products, modules and services, operational and management processes, activities, functions, tasks, etc.). In functioning and development these systems it is necessary to simultaneously take into account and satisfy the interests of a wide range of participants in these IT based business processes (governators, suppliers , partners, manufacturers, customers, clients and users). Human participation as an element of information, management and operations systems, also helps to increase this complexity. Both the individual and the human teams have the ability to self-organize, self-manage and change their behavior depending on the conditions. Therefore, human participation as an element of information and organizational systems converts these systems into systems with complex behavior, i.e. in complex systems.

In order to overcome the complexity of individual information and business systems as a result of the development and use of IT, different approaches are used. They are based on the decomposition of complex systems into simpler parts and their integration, respectively; abstraction and modeling; unification and standardization; rationalization and optimization; specialization, collaboration and cooperation; automation and automatization trough which perform utilization of the latest information technology acquisitions. These approaches allow the complexity to be reduced, transformed, distributed between the systems and ultimately managed. For example, the decomposition of the production and management processes of individual activities and functions and the formation of separate specialized functional units overcome the complexity of operational and management processes, but give rise to the need for integration and cooperation between individual functional systems (organizational or information). Specialization overcomes the problems associated with the need to master a wide range of narrowly specialized knowledge impossible to master by one person, but also necessitates cooperatives between the bearers of this specialized knowledge.

The discrepancy between the speed of IT development and business information technologies and systems, as well as the limited opportunities for continuous investment in the necessary dimensions for acquiring, implementing, modernizing and absorbing IT systems from business leads to uneven development of the individual information and business systems.

Because of this uneven development, the use of these approaches to managing their complexity raises a new complexity, consisting in the need to provide different kinds of gaps (huge discrepancies and expanses) that arise between systems, sub-systems, elements, processes and functions.

In the Table 1, there are examples of such gaps and the ways for their overcoming.

Table 1. Famous and not so famous gaps and ways to overcome them

Gap	Way to overcome the gap
Among the different functional units, concentrated in the performa nce of their functions and tasks	Implementation of a process approach to business and IT management by creating processes covering the boundaries of functional subdivisions. Project management - management of large scale changes as projects involving teams from different divisions.
Between the IT division and the business (the remaining functional subdivisions), manifested in various forms such as: - Inconsistency of business and IT goals; - the detachment of IT from business problems; - poor knowledge of IT of real business needs; - poor knowledge of business of IT issues and needs; - poor knowledge of the business of the possibilities of information technologies; - the lack of a common language for communication between business and IT (business does not understand the language of IT, but IT does not understand the language of business) and others.	Implementation of IT service management (ITSM) - managing the creation, delivery, use and maintenance of quality IT services that meet the needs of the business. - Alignment between IT and business – ITSM, SOA. - Creating an IT strategy based on business strategy. Balancing the goals of Business and IT. - Orientation of IT to providing services that meet the needs of customers. -Knowledge management. - Increasing overall computer literacy. - Promoting the opportunities and achievements of modern IT. - Using the terms of ITSM as a common language for communication between IT and business,
Between the Governance and Management authorities, in case that management does not directly participate in the preparation of the strategies, policies and procedures imposed by the Governance authority. One form of manifestation is the discrepancy between strategies, policies and procedures and their implementation.	A holistic approach to governance and management in which the implementation of the general management functions of the different levels of management (strategic, tactical and operational) is seen as one whole. Recursive management approach. Participation of the managers at different levels of government in the development of strategies, policies and procedures.
Among the silos created by the individual large and complex information systems (ERP, CRM, SCM, HR, etc.)	Integration of information systems through: -Dedicated program interfaces; -Web services; -Data Warehouse; - Service Oriented Architecture (SOA)
Between the different stages of the creation of information systems - design, creation, testing, deployment, maintenance and development, if they are implemented by individual contractors.	The DevOps direction in the use of information technology aimed at overcoming the gap between Development and Operations. A holistic approach to lifecycle management of the information system that treats it as a whole process.
Between Business Management and Information Technology Management.	Use of the adopted by business methods to improve management (system approach, process approach, project management, total quality management, service-oriented approach, risk management, Kanban, etc.) in IT management. Example 1. The implementation of IT service management, based on the use of a process- and service -oriented approachs that considered the processes of the diferent stages of the the IT service life cycle. Example 2. The Kanban methodology used for "just in time" manufacturing process, is used also as a framework to implement agile software development.

Source: Own created table.

Consequently, the transformation that emerges from new information technologies in business and the overcoming of problems related to the full

dependence of business on IT requires transformation in IT management, that is, radical and profound change in it through the use of such models and management approaches that match the dynamics, complexity and opportunities of IT and business development.

2 Improve the management of IT . IT service management (ITSM) as a way for managing complexity.

Improving the management of the IT is related to the improvement of the models for its management.

The evolution of IT management models follows the evolution of models based on various business management approaches. The following key business management approaches can be distinguished, depending on the focus of management review and improvement: functional approach, resource approach, project approach, quality management approach, process- oriented approach, service- oriented approach.

Service-oriented approach is based on the orientation of the business to deliver services to increase the usefulness of the products produced, to better meet customer needs, attract new customers, improve market positions, agility and so on. Undoubtedly a service-oriented approach cannot be considered as a new approach, but the application of knowledge, experience and technology from its use in IT (web-services, Service Oriented Architecture (SOA), etc.) in business is new. Reorganization of business processes based on business services, service-oriented infrastructure development, and service-oriented business architecture provide opportunities for transforming organizations into Service-Oriented Enterprises (SOE) (Khoshafian S., 2007).

It is important to note that these business management approaches are not contradictory to one another and are not mutually exclusive, but on the contrary they can exist simultaneously in the same organization, complementing each other by providing flexible and effective management of the organization.

These business management enhancement approaches are also applicable to improving IT management, whether it is an IT branch of an organization, or a stand-alone organization that produces IT products and provides IT services.

It is widely accepted that one of the most effective approaches to improving management of IT is its service delivery orientation, the deployment of a service management system, and the transformation of the IT division from an IT resource provider technologies to an IT service provider and IT service integrator.

The basis for such transformation is provided by the theory and practice of IT Service Management (ITSM).

The main source of knowledge for ITSM and the most widely accepted approach to IT service management in the world is the IT Infrastructure Library (ITIL® is a registered trademark of AXELOS Limited). Since its inception in the

1980s until now ITIL has remained the most famous ITSM framework in the world (The Official Introduction to the ITIL Service Lifecycle, 2007, p. 3).

There are many other different frameworks (COBIT, FitSM, IT4IT, SIAM, etc.) and standards such as ISO / IEC 20000 IT Service Management series, which describe different approaches and methodologies for ITSM. A great challenge and still unresolved task is to integrate them into a common framework that provides a common ITSM model.

ITIL v3 defines "IT Service Management" as „The implementation and management of quality IT services that meets the needs of the business. IT Service Management is performed by the IT service providers through an appropriate mix of people, process and information technology" (ITIL Service strategy, 2011, p.16). The term "Service Management" is defined as "a set of specialized organizational capabilities for providing value to customers in the form of services ", but it has been clarified that service management is more than just a set of capabilities. It is also a professional practice supported by an extensive body of knowledge, experience and skills (ITIL Service strategy, 2011, p. 15).

It follows that ITSM is the result of a summary of the knowledge and experience of the IT organizations' activities in implementing a service-oriented approach to managing the use of information technology (applications, information, infrastructure, processes).

To ensure a sustainable quality of IT services, ITSM establishes a set of practices or processes centered around the main stages of the service life cycle.

Therefore, ITSM integrates the advantages of the three most modern approaches to improving IT management: service-oriented approach, process-oriented approach and quality management approach.

ITSM is a concept that enables an organization to maximize business value from the use of information technology. ITSM views services as a key means of delivering value to business and focusing on value as one of its core principles. (AXELOS. What is Service management).

In ITSM publications, much attention has been paid to how ITSM delivers value to business. In our view, however, insufficient attention is paid to issues of complexity management as a way of delivering value to business.

ITSM frameworks can in themselves be seen as a means of overcoming the complexity of IT management as they implement the following basic ways to overcome complexity:

- Abstraction. ITSM frames are concepts. They look at high-level IT management, abstaining from the use and management of specific IT in a particular organization.
- Modelling. These frameworks provide IT management models, thus enabling this management to be based on the knowledge derived from the best practices of the best IT Service Providers.

- Unification. The frameworks provide unified IT management models. They provide ways to organize the akctivities and tasks of managing IT in well-defined processes that can be repeatable, rationalized, and optimized.
- Standardization. The most widely used framework for ITSM ITIL is a de facto standard for managing IT services. The ISO / IEC 20001 series of standards are fully based on this framework.
- Decomposition of complex systems into simpler parts.

ITSM frames use this way to address complexity in a variety of directions. The complexity of the service lifecycle is accomplished by breaking it into separate phases around which the service management processes are grouped. By using the abstraction, ITSMs are building a complex multi-layered IT service management model that covers different levels of management (strategic, tactical, operational). The main processes of the ITSM system are decomposed into sub-processes, activities and activities, etc.

- Integration.

As already emphasized, ITSM framework integrates the three best-known approaches to improving IT governance.

The framework itself is based on the integration of people, processes and technologies.

In the description of the service management processes, their interconnections are shown, allowing for a complex system for the IT services configuration.

- The implementation and deployment of ITSM in a specific organization is a complex and lengthy process requiring the use of all ways to overcome complexity including rationalization, optimization, specialization, collaboration, cooperation and automatization.

The practical implementation of ITSM requires the adoption and adaptation of frameworks, the establishment of a complex service management system that is integrated with the existing organization and IT management system in particular. In this integration, rationalization, reengineering and optimization of existing activities and processes need to be carried out in order to realize the advantages provided by the ITSM concept.

In the implementation of ITSM, new functions, roles, responsibilities and the need for new knowledge, skills and abilities are emerging in organizations. Taking advantage of these new knowledge, skills and abilities requires certain staff to be specialized in ITSM. The implementation of ITSM processes makes it impossible to collaborate and co-operate between individual specialists, teams and functional units.

Like any sophisticated system and the ITSM system, it is impossible to function successfully without the use of modern tools and technologies, automating its processes, reducing their complexity, transforming it from the complexity of manual activity of a large number of specialists with appropriate

knowledge and skills into the complexity of automated information systems reducing labor costs, facilitating the work of specialists and increasing the speed, accuracy and quality of the performing of tasks.

There are many other areas where ITSM increases the value of businesses by overcoming the complexity of IT services and IT environments. In our view, however, it is necessary to specifically mention the following three aspects: the service itself, service-oriented architecture (SOA) and change management in ITSM as ways to manage complexity.

The basis of modern ITSM theory is the following definition of service: "service is a means of delivering value to customers by facilitating outcomes customers want to achieve without ownership of specific costs and risks". IT service is defined as „A service provided by an IT service provider. An IT service is made up of combination of information technology, people and processes" (ITIL Service strategy, 2011, p. 13).

It follows from this definition that the IT service itself is a way and an instrument for overcoming the complexity because it reduces the complexity of the client and transforms this complexity into complexity of the provider. From this point of view, the definition of the service can be changed as "… without ownership of specific costs, complexity and risk".

For the realization of this concept, the services have a structure consisting of two main parts - interface and implementation (OASIS, 2006, p.12). A service is accessed by means of a service interface, where the interface comprises the specifics of how to access the underlying capabilities. Service implementation is typically hidden from the service user except for the information and behavior mode that is exposed through the service interface and the information required by service users to determine whether a given service is appropriate for their needs. So, implementation of the service is known only to the service provider, it is hidden by the users together with the complexity of the implementation of the service functions and the problems related to overcoming this complexity.

More and more organizations are looking at Service-Oriented Architecture (SOA) as a way to overcome the complexity of managing their information technologies and solve the problem of the gap between the different silos of the large information systems used. The benefits of SOA for helping organizations can achieve greater adaptability, flexibility, collaboration, cooperation, faster response rates, and changing business environments.

SOA is an architectural style that supports service-orientation. Service-orientation is a way of thinking in terms of services and service-based development and the outcomes of services (Open Group. The SOA source book)

The concept of SOA is based on the breakdown of the complex functions and tasks of individual smaller parts, which are realized through suitably granulated, relatively independent and loose coupling web services. The granulation involves the breaking of the functions and tasks of parts, the differentiation and definition

of services. The loose coupling is provided the independence of the services, hiding their realization and limiting the interdependence and the impact of changes in them on the other services and the whole system. Web services interact automatically with each other by performing their functions and transmitting information to each other through standardized protocols, thus enabling integration between individual information systems using different platforms and languages.

Using SOA can also be seen as a way to transform and distribute complexity. On the one hand, web services overcome the complexity of individual functions and tasks and integrate individual information systems, but on the other hand, this complexity is transformed and concentrated in the complexity of the SOA management system.

One of the most beneficial strands of contributing value from ITSM through complexity management is change management.

Changing with its range, influence, and dynamics is an important aspect of complexity. Change management ensures that all changes in the IT environment are recorded and evaluated, and that authorized changes are prioritized, planned, tested, implemented, documented and reviewed in a controlled manner. Change management is relevant across the whole service lifecycle, applying to all levels and functions of IT service management.

The implementation of IT services involves many resources and processes that need to be managed in such a way that the services are provided with the necessary quality, reliability, security and continuity. Under the conditions of full business dependence on IT, unintended interruptions can lead to severe consequences. Because of that any change in the IT environment, it needs to be carefully evaluated, planned and implemented.

The complexity of modern IT environments is growing so much that managing it through conventional means without the use of specialized ITSM systems becomes impossible. This is especially true for cloud environments that are characterized by a complex and broad range of services (from software, platforms, and infrastructure as a service to everything as a service), with high dynamics, many users, many providers involved in complex chains and interconnection networks.

ITSM solutions provide in the configuration, orchestration, planning and implementation of changes in IT infrastructures.

An intriguing approach to managing complexity and changes is developed by IBM. IBM Self-Managing Autonomic Technology enables build autonomic computing systems. These systems have the ability to manage themselves and dynamically adapt to change in accordance with business policies and objectives, enabling computers to identify and correct problems often before they are noticed by IT personnel. IBM delivers Self-Managing Autonomic Technology solutions to help companies transform their IT infrastructures into more resilient,

responsive, efficient, and secure systems that deliver significant value (Gucer at al., 2009, p. 314).

Therefore, the ITSM frameworks themselves and their successful implementation in practice can be considered as ways and means of overcoming the complexity of IT and the problems arising from this complexity.

Conclusion

The ever-increasing dependence of business on IT and the high complexity of IT pose a number of challenges and problems to organizations. Their solution requires a transformation of management of both IT and business. IT service management provides a model for effective improvement of IT management and provdies a high value to organizations by reducing and managing the complexity of IT environments.

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ANALYSIS OF DETERMINANT OF TRUST BUILDING MECHANISMS FOR E-GOVERNMENT SERVICES

Michal TKÁČ – Juraj TILL

Abstract
Citizens' trust in e-Government service can be determined by various factors. This paper analyses 8 different areas, which can have influence on trust in e-Government services. It focuses on disposition to trust, familiarity, institution-based trust, trust in technology, perceived organizational trustworthiness, privacy concerns, risk perception, perceived usefulness. The research is based on questionnaire study consisting of 39 question from 254 citizens and it is evaluated by datamining technique known as classification tree. According to the classification tree CHAID, most important factors are confidence in technology used by government agencies, trustworthiness of government agencies, familiarity with the e-Government web sites and reputation of government agencies.

Keywords:
trust, citizens, e-Government, trust building, electronic services

Introduction

Trust building mechanisms (TBMs) are in e-commerce known for some time. Trust become an essential tool in decisions making and forming of business relation with unknown partners around the world. Mechanisms like certifications, references, reputation mechanisms, escrow services, discussion forums, on-line dispute resolution mechanisms prove to be very useful in B2B and B2C markets. (Delina et. al, 2007) Their role is to establish certain level of trust so all interested parties feel comfortable to doing business and also reduce the uncertainty that either party will not fulfil expectations of others. These mechanisms can influence intention to purchase and therefore profit of the companies (Oliveira, 2017). The situation is different in public administration. Characteristics like profit, intension to purchase or even competition, do not have significant influence on performance of public administration institutions. Public administration institution have more decentralized management than most of the business, they cannot chose their clients and vice versa and they also must allocate resources and provide services which are in the best interest of public. (Jorgensen and Cable; 2002) That the reason why the motivation, determinants and process of implementation of the trust building mechanisms for public administration differs from TBMs used in e-commerce. This paper tries to identify determinants of trust building mechanisms for public administration, concretely for e-Government services. OECD (1998) defines e-Government as ICT use by public administration. The motivation for this research is based on the results presented in Tkáč (2018). In mentioned article correlation between level of adopted e-Government and the trust of citizens in public administration in European countries was confirmed. According to study increase trust in e-Government lead to increase trust of citizens in public administration institutions. Therefore this article focuses on factors, which can

influence trust of citizens in e-Government services. According to Howard, (2001) and Lau (2001) e-government implementation process can have four phases: First phase consists from posting information on the official government websites. Second phase require two way communication (mail, posts, requests) between citizens and government. Third phase covering executions of all transaction electronically (online). Last phase known as integration required that "all government services provided from different departments and agencies are integrated together and accessed through single website called e-government portal." (Alsaghier et. al, 2011)

Methodology

The aim of this research is to determine important factors which influence trust of citizens in e-government service. Based on previous work conducted in this field by Alsaghier et. al (2011) and Colesca (2009), we created questionnaire consisting of 39 questions divided into 8 areas. Each of them represents different domain that could have influence on level of citizens' trust in e-government services. The names of the domains are: disposition to trust (DT), familiarity (F), institution-based trust (IBT), trust in technology (TT), perceived organizational trustworthiness (POT), and privacy concerns (PC), risk perception (RP), perceived usefulness (PU). Every category is represented by various number of statements. In every question of this study citizens were ask to express level of their agreement/disagreement with every statement in 7-level Likert scale (7. Very strongly agree, 6. Strongly agree, 5. Agree, 4. Neither Agree nor Disagree, 3. Disagree, 2. Strongly disagree, 1. Very strongly disagree). The overview of the statements is presented in Table 1. The sample consists of 254 citizens of Košice (second biggest city of Slovakia). In order to fulfil objective of the paper, the datamining technique known as classification tree was used to analyse data. Classification trees helps identify main factors which influence output variable describing level of trust in e-government services. For the purpose of this research the level of agreement with the statement T4: "I trust e-government services" was consider as a measure of level of citizens' trust. Based on the type of output variable CHAID algorithm was used for classification.

Table 1 Overview of the questions used in the study

ID	*Questions*	*S**
	Disposition to trust (DT)	
DT1	In general, people really do care about the well-being of others.	1
DT2	The typical person is sincerely concerned about the problems of others.	1
DT3	Most of the time, people care enough to try to be helpful, rather than just looking out for themselves.	1
DT4	In general, most folks keep their promises.	1
DT5	I think people generally try to back up their words with their actions.	1
DT6	Most people are honest in their dealings with others.	1
DT7	A large majority of professional people are competent in their area of expertise.	1
DT8	I usually trust people until they give me a reason not to trust them.	1
DT9	I generally give people the benefit of the doubt when I first meet them.	1
DT10	My typical approach is to trust new acquaintances until they prove I should not trust them.	1

	Familiarity (F)	
F1	I am familiar with looking for government Services on the Internet.	1
F2	I am familiar with conducting Online translation with government on the Internet.	1
F3	I am familiar with the e-Government web sites.	1
F4	I am familiar with communicating with government agencies and departments through	1
	Institution Based Trust (IBT)	
IBT1	I feel good about how things go when I do purchasing or other activities on the internet	1
IBT2	I am comfortable making purchases on the Internet.	1
IBT3	I feel that most Internet vendors would act in a customers' best interest.	1
IBT4	If a customer required help, most Internet vendors would do their best to help.	1
IBT5	Most Internet vendors are interested in customer well-being, not just their own well-being.	1
IBT6	I am comfortable relying on Internet vendors to meet their obligations.	1
IBT7	In general, most Internet vendors are competent at serving their customers.	1
IBT8	I feel that most Internet vendors are good at what they do.	1
IBT9	The Internet has enough safeguards to make me feel comfortable using it to transact personal business.	1
IBT10	I feel assured that legal and technological structures adequately protect me from problems on the Internet.	1
IBT11	I feel confident that encryption and other technological advances on the Internet make it safe for me to do business there.	1
IBT12	In general, the Internet is now a robust and safe environment in which to transact business	1
IBT13	I always feel confident that I can rely on Internet vendors to do their part when I interact with them.	1
	Trust in Technology (TT)	
TT1	I believe the technologies supporting the system are reliable all the time.	2
TT2	I believe the technologies supporting the system are secure all the time.	2
TT3	Overall, I have confidence in the technology used by government agencies to operate the e-government services.	2
	Perceived organizational trustworthiness (POT)	
POT1	I think I can trust government agencies.	2
POT2	I trust government agencies keep my best interests in mind.	2
POT3	In my opinion, government agencies are trustworthy.	2
POT4	The trust in a governmental agency increase once with its reputation.	2
	Privacy concerns (PC)	
PC1	My personal information given to a governmental website may be shared with other government agents to whom I do not want to provide the information.	2
PC2	The governmental websites may allow another party access to my personal information without my consent.	2
PC3	My personal information may be used in an unintended way by the governmental agency.	2
PC4	Someone can snatch my personal information while I'm s ending the information to a governmental website.	2
PC5	Hackers may be able to intrude governmental websites and steal my personal information stored on the web	2
	Risk perception (RP)	
RP1	I feel vulnerable when I interact with an e-government service.	2
RP2	I believe that there could be negative consequences from using an e-government service.	2
RP3	I feel it is unsafe to interact with an e-government service.	2
RP4	I feel that the risks outweigh the benefits of using an e-government service.	2
RP5	I feel I must be cautious when using an e-government service.	2
RP6	It is risky to interact with an e-government service.	2
	Perceived usefulness (PU)	
PU1	Using e-government services can save my time, compared to dealing with real people for the same service.	2
PU2	Using e-government services can improve the service quality that I will receive, compared to dealing with real people for the same service.	2
PU3	Using e-government services increases the effectiveness in my transactions with the government.	2
	Trust in e-Government (TE)	
TE4	I trust e-government services.	2
*Sources: 1: ALSAGHIER et. al (2011) 2: COLESCA (2009)		

Source: Alsaghier et. al, (2011) and Colesca (2009)

The research results

As was mentioned in methodology, the aim of this paper is to identify factors which influence citizens' trust in e-government service. As can be seen from Figure 1, the predicted value 3.740 of NODE 0, shows that citizens tend to disagree or they are undecided whether they agree or not with statement "I trust in e-government services". However, going down the tree presented in the Figure 1, the citizens' trust in e-government services is strongly influenced by their confidence in the technology used by government agencies to operate the e-government services. NODE 1 till NODE 3 represents respondents which do not have confidence in technology used by government agencies. These respondents also do not tend to trust in e-government services. Situation is different on the other side of the tree (NODE 4 till NODE 6). The respondents which have confidence in technology used by government agencies also tend to trust in e-government services. The more the respondents agree with the statement TT3, the more they tend to trust in e-government service. Respondents that disagree, strongly disagree, or very strongly disagree (interval from 1 to 3) with statement "I have confidence in the technology used by government agencies to operate the e-government services", also disagree, and strongly disagree with the statement "I trust e-government services" and vice versa.

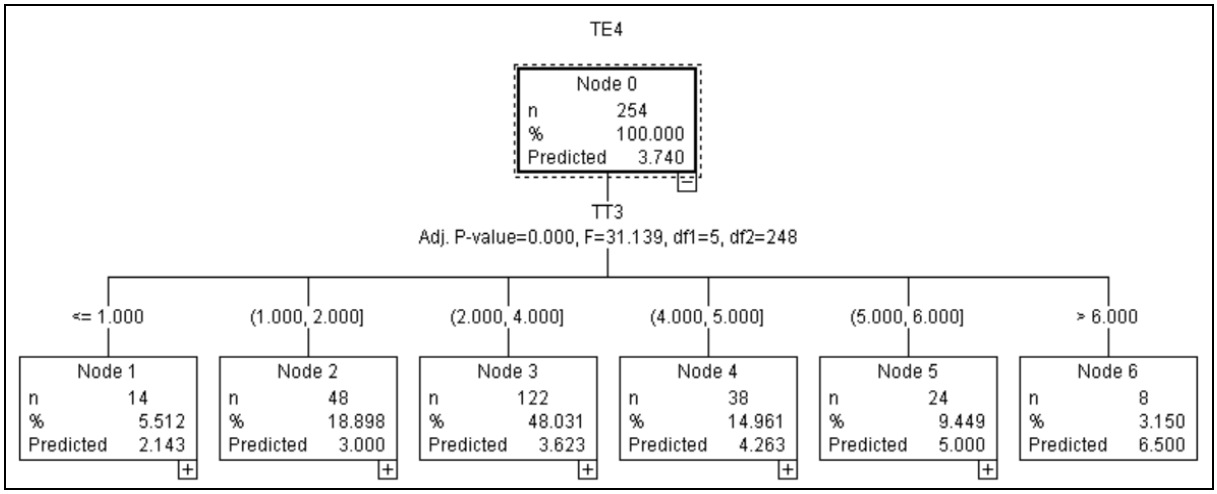

Figure 1 Overview of the distribution of root node of classification tree

Source: author

The sub-branches of the tree presented in Figure 1 are presented in Figure 2, Figure 3 and Figure 4. Figure 2 shows detailed distribution of NODE 3. It is portraying other factors which influence trust of citizens in e-services. Distribution of sub-branches of NODE 3 shows that trust of respondents who are not influenced by confidence in technology (do not agree or disagree with statement TT3) is changing based on their opinion on trustworthiness of government agencies. Respondents which do not support the claim that "Government agencies are trustworthy" or are undecided regarding that matter (NODE 12 and NODE 13) do not tend to trust in e-government services as well.

On the other hand NODE 14 represents respondents which support mentioned claim. Their trust in e-services is influenced by the level of their familiarity with these services. Respondents which support the claim "I am familiar with the e-Government web sites" also tend to trust in e-government services.

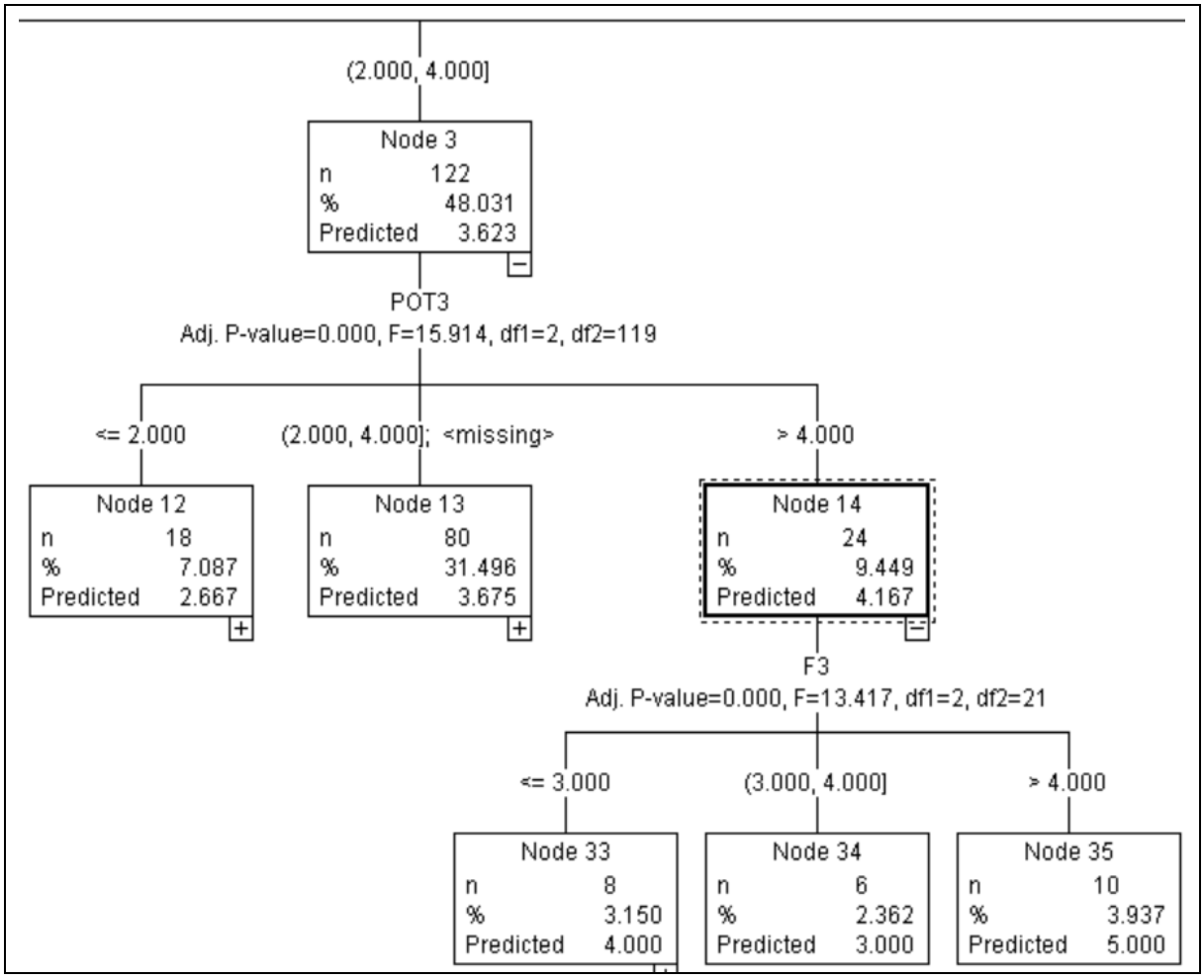

Figure 2 Overview of the distribution of sub-branches of node 3 of classification tree

Source: author

Figure 3 shows detailed distribution of Node 4. The sub-branches of Node 4 shows that trust of respondents who have confidence in technology (agree with statement TT3) is changing based on their opinion toward the risk of interaction with an e-government services. NODE 18 shows that respondents which support the claim that "It is risky to interact with an e-government service" do not trust in e-government services. The respondents which do not support previously mentioned claim (NODE 15 and NODE 16) tend to trust in e-government services or are undecided in that matter.

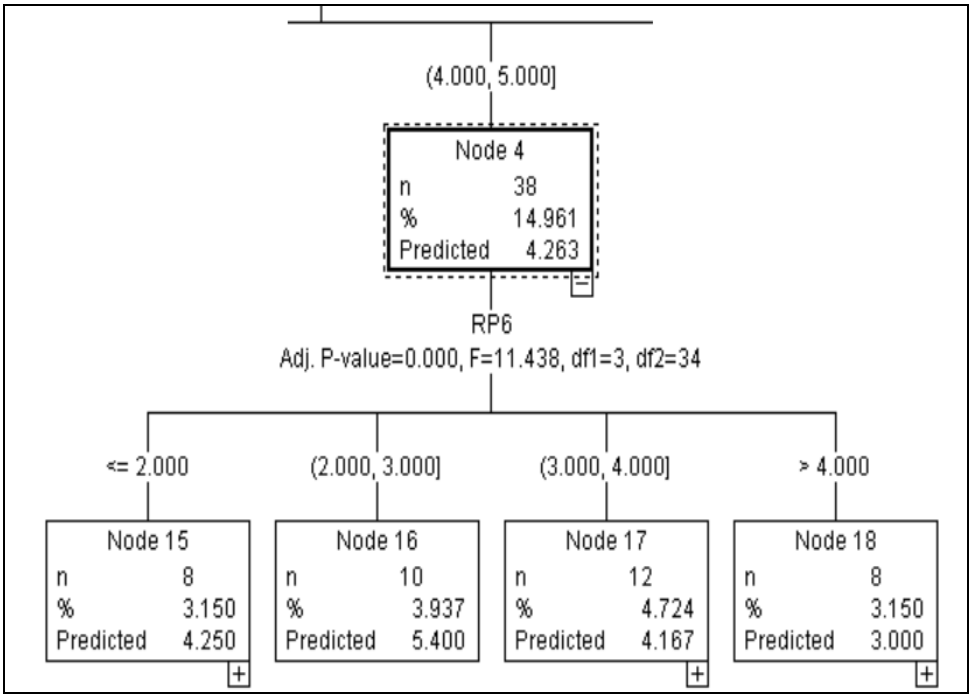

Figure 3 Overview of the distribution of sub-branches of node 4 of classification tree

Source: author

Figure 4 shows detailed distribution of Node 5. The sub-branches of Node 5 shows that respondents who have big confidence in technology (strongly agree with statement TT3) and support the claim "The trust in a governmental agency increase once with its reputation" also tend to trust in e-government services.

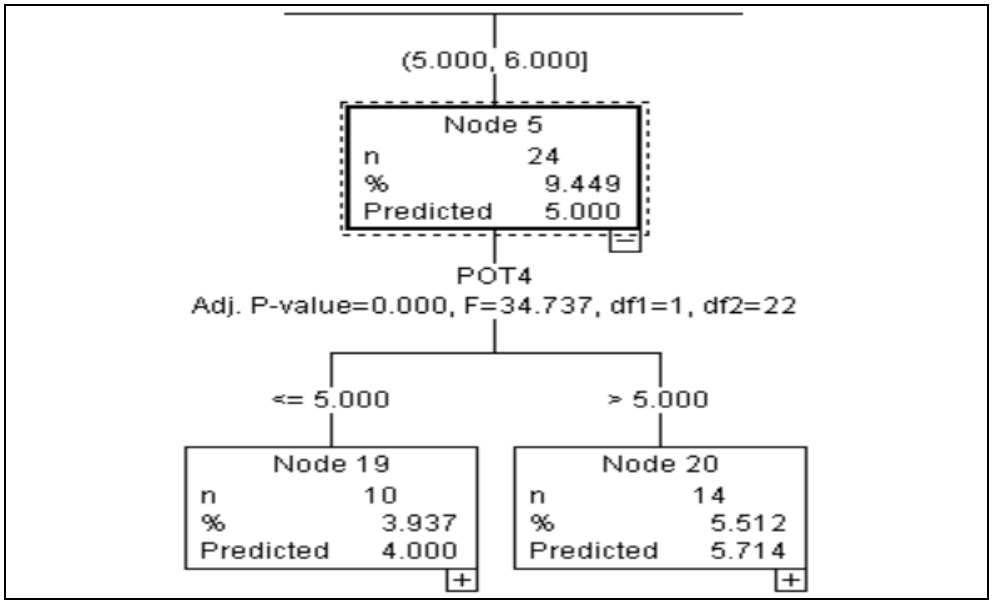

Figure 4 Overview of the distribution of sub-branches of node 5 of classification tree

Source: author

Conclusion

This paper tried to determine factors which influence trust of citizens in e-government services. There are several aspect of citizens' trust, which should be considered. Therefore we decided to base our methodology on 8 areas which represents various aspect of citizens' trust in e-government services. These 8 areas were defined by 38 questions representing factors and one question representing measured variable. First analysis of measured variable showed that on average citizens are undecided or they tend to disagree with the statement "I trust in e-government services". This lead to conclusion that in term of Kosice, citizens in general do not trust in e-government services or they have not opinion regarding their trust in e-government services. The datamining technique known as classification tree was used to identify factors which can improve the mentioned trust. One of such factor seems to be citizens' confidence in technology used by government agencies. Tree showed that citizens who have confidence in technology tend to have trust in e-government services. On the other hand citizens with lack of confidence do not seem to trust in e-government services. Other factor which influence this type of trust is trustworthiness of government agencies. Citizens which do not consider agencies as trustworthy, also do not tend to trust e-government services. On the other hand, for citizens that consider government agencies as trustworthy, familiarity with the e-government web sites can represent the factor which positively influence their trust in e-government services. People who are familiar with e-government websites tend to trust more to e-government services. Detailed analysis of the tree also showed that although citizens with confidence in technology used by government agencies tend to have trust in e-government service, there are some additional factors which can improve their trust even more. One of them is reputation. Citizens which value governmental agencies by their reputation also seem to have bigger trust in e-governmental services. On the other hand, results also showed that fear from risky interaction with an e-government service, could have negative influence on trust of citizens in e-government services.

Acknowledgment

This work was supported by Scientific Grant Agency VEGA of Slovak Republic within the grant No.1/0839/17 "Trust building electronic services in public administration."

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Instructions for authors:

TITLE OF THE PAPER IN ENGLISH (TIMES NEW ROMAN, 16 pt, CAPITAL BOLD)

TITLE OF THE PAPER IN SLOVAK (TIMES NEW ROMAN, VEĽKOSŤ 14 pt, CAPITAL BOLD)

Name SURNAME (Times new roman, italic, 14 pt)

Abstract (Times new roman, 12 pt, bold)
Abstract in English – max. 10 lines. (Times new roman, 12 pt).

Keywords: 5 – 8 key words in English

Introduction (Times new roman, 14 pt, bold)

The editors of the journal welcome empirically (experimentally) founded studies, survey studies, contributions to "Discussion" (personal views and attitudes on controversial issues in economics as science, as a professional hpractice, etc.). Integrative studies documented by relevant data from central and east European regions and member countries of European Union are specially welcomed. Naturally, all contributions should be original. The publishing of the article is free of charge.

The editors accept only contributions written in English (grammatically correct). The manuscript should be no longer than 15 pages, single-space typed, basic text using font Times New Roman 14 pt. Illustrations, i.e. tables, diagrams, black & white pictures; text should mention their placement, numbering and titling. With all figures borrowed from other authors, the authors' names should be listed in figure legends. Please use the following format of the paper in MS Word. Page size A4 (21 cm x 29,7 cm), single spacing, all margins at 2,5 cm.

Table 1 Title of the table (Times new roman, 12 pt)

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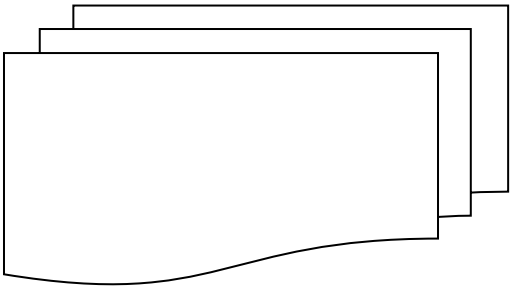

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ACTA OECONOMICA CASSOVIENSIA

ISSN 1337-6020 (print)
ISSN 2585-8785 (online)