REGIONAL DECISION-MAKING CRITERIA: STRATEGIC INVESTMENT IN THE CENTRAL EUROPE

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Abstract
The strategic decision-making may be studied as a process which takes into consideration several criteria. Regionalisation of the accessing countries is one of the key conditions represented particularly with regard to so called Chapter 21 and it is the assumption of satisfactory regional administrative capacity for the European regional policy implementing. The Slovak Republic, Czech Republic and Hungary followed the requirements and realised the regionalisation administrative and financial procedures before their accession in 2004. However, there is an important question onhow the real processes of strategic decision making in implementing of the regional policy works at the regional level and what is the basis in a diverse national context. The article is aimed to study the importance of different criteria at the regional level, based on the empirical research done in most of the regional governments in three Central European countries to show their country specific differences.
The most visible national difference in the evaluation of the factors exists in considering the assessment of the impact of investment projects on population. Consequently, the attitude to sources of funding has been analysed, comparing the importance of sources of funding for strategic investments. Although the general view would expect European funds as the most desired source in the Central European regions, the research has shown the combination of different level of national public sources as the most desirable part of the investment budget.

Keywords: regional development, decision making

1. INTRODUCTION

A region in the relation to planning and decision making can be defined as a spatially selected area for the creation and implementation of regional economic, social, structural, or innovation policy

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(Richardson, 1979, Matlovič et al., 2009).The capability of the region to adapt to changed conditions in terms of its structure, functioning, learning and improvement gives a possibility to classify region as an open, organic economic system (Hudec, 2009). Implementation of development strategies can be described as decisive human activities by which regions grow into more advanced economic and social level or conversely, lagging behind regions in comparison. Thebasic nature of regional policy is therefore setting and design of meaningfulmeasures and activities with a conscious strategy to achieve them.In general terms, regional policy considers region as a geographically and administratively defined area treated asthe object of the development and implementation of regional economic, social, structural and innovation policy (Klassen, andVanhove, 1987).The degree of centralisation and decentralisation - the extent to which the regional authority takes the responsibility - explains the regional power in strategic decision making.

The concept of development is in fact uncertain, formed as a mix of different meanings and variables (Malizia andFeser, 1999;Vaughan andBearse, 1981). The public sector explains development mostly as the increase inproduction and employmentthrough infrastructure investments (Zgodavova and Slimak, 2008). In doing so, the existing potential is to be used for raising the standard of living and quality of life of the inhabitants of the region.

2. STRATEGIC INVESTMENTS AT SUB-NATIONAL LEVEL

For the advocates of the multi-level governance approach, the boost to regional funds was an attempt to empower regional actors (Hughes et al., 2007). The massive financial effects and incentives of the EU structural funds and its regional policy have led both the Commission and the Central European (CE) governments to pay specific attention to the settings during the enlargement.The acquis under Chapter 21 formally does not define precisely the regional administrative structures and retains it up to accession countries. But the practical management of the Structural and Cohesion funds has pressed the new member countries to the adaptation to the acquiscommunautaire(Community law) in order to fulfil the requirements for the EU membership. Ithas brought rather rapid regionalisation according the EU model.

The statistical definition of regions is harmonised at Community level (NUTS classification) in order to be able to compare regions and evaluate their progress according to most important statistical variables. The CE countries defined their regional units within their territorial arrangements in a different way. This article considers region as a geographically determined area at the third level of classification of territorial statistical units (i.e. NUTS3), which is a distinct territorial self-governing and administrative unit. At the beginning of the 21st century, thenew regionalisation in the CE countries was activated by

the accession process for new member countries and technically required by the adoption and implementation of the acquis.

Under Hungarian law,region is defined in the Act on Regional development and Regional Planning (Act no. XXI of 1996) as the unit of regional development that serves the planning-statistical purpose and the development purpose, which covers the territory of one or more counties (or the capital) and in the terms of social, economic and environmental administrative boundaries of counties to be managed together.

The Czech Act on Support for Regional Development (Act no. 248/2000 Coll.) defines region as a territorial unit determined by administrative boundaries of regions, districts, municipalities or associations of municipalities whose development is supported in accordance with that Act.

Even in Slovakia the Act on Support for Regional Development(Act no. 503/2001 Coll.)definesregion as a geographically determined area selected for the creation and implementation of regional and structural policy at the second or third level according to the classification of territorial statistical units, i.e. NUTS. The current Act on Support for Regional Development(Act no. 539/2008 Coll.) defines region directly as a territorial unit determined by the classification of Nomenclature of Units for Territorial Statistics.

Generally applicable economic knowledge can be applied also toadministrative territorial units – regions (Novakova, 2013). Each region makes decisions on proportions of its expendituresreserved for the current andcapital expenditures. In a light of the standardized national account statistics, public investment is considered to improvingphysical infrastructure (roads, railways, bridges, water supply, electrical grids, etc.) or to maintaining the existing capital stock (government buildings, public schools, hospitals, machinery equipment, intellectual propertyproducts, etc.) rigorously called “government gross fixed capital formation”.

Once a region (similarly to countries) decides to increase its capital expenditures, the intention is to form the base of operating future economic activities and to maintainregional economy growth. In economic terms, the economic growth depends on the distribution of expenditure between consumption and purchase of capital goods, i.e. investment. Investments can be considered also as offering a certain present value in order to achieve future uncertain values. Economiespreferringcapital expenditures (investments) in the present time, might obtain more resources for funding both current and capital expenditures in the future. Although the relationship or even causality between infrastructure investment and the economic development is not generally accepted (Barro, 1988;Aschauer, 1989; Easterly and Rebelo, 1993), the consensus exists in the case of less developed countries and regions or articulated

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as an important features related to economic performance. In a more detailed view (Devarajan et al., 1996), only current expenditures enhance growth in the case of developing countries. Several authors differentiate between the productive and unproductive public investments. When dealing with the functional areas of government expenditures, there is a positive impact of the expenditures on health, education, transport and communications and infrastructure on productivity (Bose et al., 2005; Adam and Bevan, 2005;Zgodavova et al., 2005).

Given the possibility of choice between different strategic alternatives, investments include in itself a strategic perspective.The objective of most public programs is not simply, not even principally, economic efficiency (Maass, 1966). Thus, standard cost-benefit analysis may be relevant to only a small part of the problem of evaluating public projects and programs.

3. MULTIPLE DECISION-MAKING

The need for comprehensive assessment of the issue of more investment options has led to designing of methods evaluating several possible variants through multiple-criteria decisionmaking. The possibility of more than one criterion makes the problem more difficult as the criteria taken into account often tend to be conflicting. The optimum solution of one-criterial problems is replaced by the set of the efficient – non-dominated solutions for which there exist no other feasible solution better in some criterion without worsening other criterion.The following situations may occur:

- The ideal variant, which achieves the best results in each of the tested criteria;
- Non-dominated variant (Paretooptimal), for which there is no other variant dominated by any criteria. A variant meets the condition of Pareto optimality if any of the criteria cannot be improved without worsening another criterion;
- Dominated variant, for which another variant existsnot worst according to any criterion and better in at least one of them;
- The basic variant, which has all the values of the criteria at the lowest level.

The criteria may be of quantitative (cardinal) or qualitative (ordinal) nature. In the case of both types of variables it must be convertedto the same type of criteria. The choice of solution is based (French, 1988) on the possible implications of the individual variants and is regulated by the criteria of decision derived from the goals to be reached by the solution. The aim is to select the variant that matches best the specified restrictive requirements and the criteria of choice.

4. METHODOLOGY AND RESULTS

The aim of the empirical research is to analyse the importance of decision criteria and funding sources in the strategic investment decision-making of the regional authorities in threeneighbouring CE countries: Slovak Republic, Czech Republic and Hungary. Thesample consists of the public entities at NUTS 3 level. All countries have similar characteristics. In the past they had shared history. They were a part of the former Eastern bloc and are facing similar problems and shortcomings. They became a part of the European Union at the same time.

Within the research, 42NUTS3 regions were approachedin the years 2011-2012, and 27 of them provided us with all information necessary to perform the analysis.

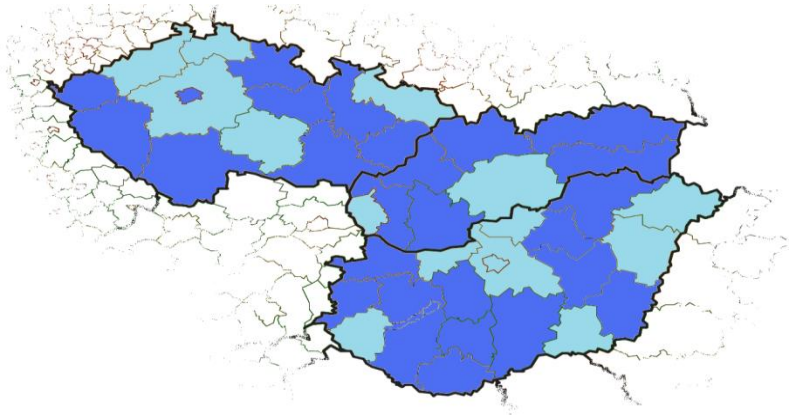


FIGURE 1 THE MAP OF APPROACHED NUTS 3 REGIONS (SOURCE:SELF-ELABORATION)

The NUTS 3 regions participating in the survey are marked by the dark-blue colour. **Error! Reference source not found.**A basic descriptive spatial analysis of the regions is presented in the **Error! Reference source not found.**.

TABLE 1 SHARE OF RESEARCH SAMPLE ON RESEARCH POPULATION (SOURCE: SELF-ELABORATION)

Country	Number of regions	Number of participating regions	% share of the number of participated regions		% share of inhabitants in participated regions		% share of the area of participated regions	
			from all	**within the country**	**from all**	**within the country**	**from all**	**within the country**
SR	8	6	14.3%	75.0%	16.0%	76.5%	17.0%	76.5%
CR	14	9	21.4%	64.3%	24.0%	59.2%	21.3%	59.8%
HU	20	12	28.6%	60.0%	18.3%	47.5%	27.7%	65.7%
Σ	**42**	**27**	**64.3%**		**58.3%**		**66.0%**	

The following two hypotheses anticipate the behaviour of the regional administration:

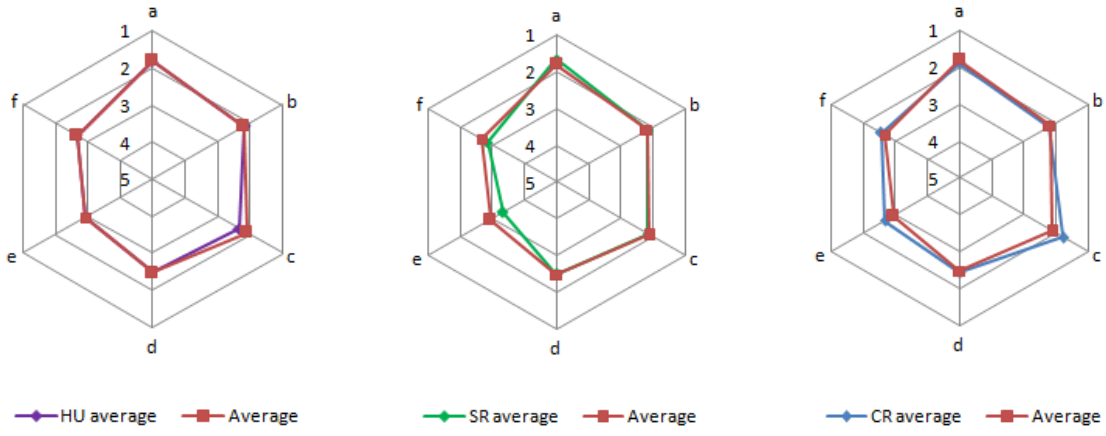
*Hypothesis1:*Self-governments, when choosing an investment variant, are taking into account mainly its financial requirements.

*Hypothesis2:*The European Union funds are the most important source of financing strategic investments.

The respondents were contacted by telephone for delivering the structured interview. The survey was conducted during the period from 12/17/2011 to 02/26/2012. The research was preceded by an analysis of the organisational structures.The heads of organisational units responsible for the implementation of investment decisions as well as organisational units engaged in long-term strategic documents and plans preparation were considered.

The Hypothesis 1: "Self-governments, when choosing an investment variant, are taking into account mainly its financial requirements" deals with selection criteria.

On the basis of the survey, six basic criteria have been identified and taken into account for multiple criteria analysis:realisation costs, revenues from the project realization, public benefits of the project in non-monetary units, environmental impact, duration and risks associated with the project.



a) Realisation costs
b) Revenues from the project realisation
c) Public benefits of the project(in non-monetary units)
d) Environmental impact
e) Duration
f) Risks associated with the project

FIGURE 2 CRITERIA FOR VARIANT SELECTION
Source: Self-elaboration

The graphs in **Error! Reference source not found.** show the evaluation results. The variables evaluated on the scale from 1 to 5 where 1 means most important criterion and the five means least important criterion. The diagram shows the overall average rating for each of the criteria. The criterion

ofPublic benefits of the projectis highly evaluated in the Czech Republic in comparison to the neighbouring countries.

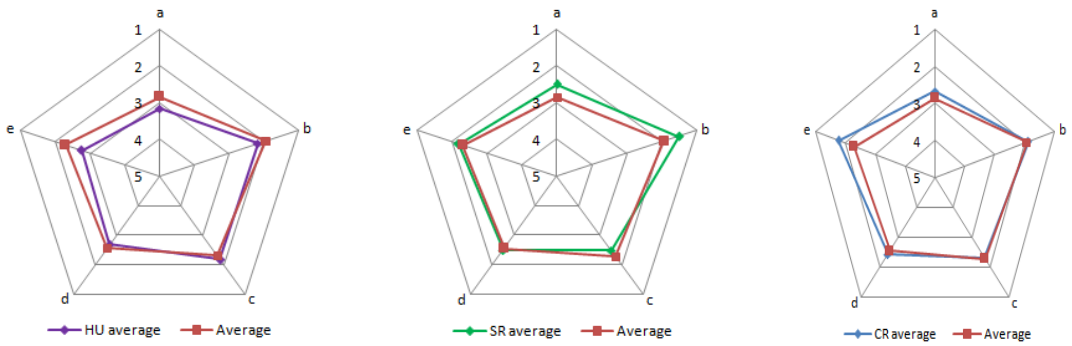
TABLE 2 THE IMPORTANCE OF THE CRITERIA IN THE SELECTION OF VARIANTS (SOURCE: SELF-ELABORATION)

	Realisation costs	Revenues from the project realisation	Public benefits of the project	Environmental impact	Duration	Risks associated with the project
HU average	1.833	2.167	2.333	2.500	2.917	2.667
SR average	1.667	2.167	2.167	2.500	3.333	2.833
CR average	1.889	2.222	1.778	2.444	2.667	2.556
Average	**1.815**	**2.185**	**2.111**	**2.481**	**2.926**	**2.667**
Modus	**1**	**2**	**2**	**3**	**2**	**3**

The self-governments consider the criterion of *Realisation costs*as the most important (

Table 2) with an average value of 1.815 and modus 1. Although the most frequent value of evaluation of the criteria of *Environmental impact* and of *Risks associated with the project*based on the Modus was 3, no oneof them can be considered as the least important criterion based on the average value of evaluation.

The next phase, after the investment project proposal is submitted to a Regional Parliament, is the approval process by MPs. Deciding on the approval of the investment project depends on various factors, taken into account by the representatives of the parliament. On the basis of the survey, the following factors have been identified: political and personal interests of MPs; the state of the self-government budget; the recommendations of the commissions, departments and Council to approve the proposal; the compliance of the proposal with the strategy of the region; and the impact of the investment project on the population.



a) Political and personal interests
b) State of the budget
c) Recommendations of the commissions, departments and Council
d) Compliance of the proposal with the strategic documents of the region
e) Impact on the population

FIGURE 3 CRITERIA FOR APPROVAL

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Source: self elaboration

On the graphic presentation (**Error! Reference source not found.**), it can be seen that the self-government officials consider as a least important factor of the approval of investment project proposal by the MPs the *Political and personal interests*.This is confirmed also by the average rating and the modus of this factor (Table 3). On the other hand, based on the average evaluation, the most important factor is the *State of the budget*. Although the most frequent value of evaluation of the criterion of *Recommendations of the commissions, departments and Council* was 1 – the most important, the average value of this factor is worse than the average of the factor *State of the budget*.

TABLE 3 THE IMPORTANCE OF THE CRITERIA FOR APPROVAL (SOURCE: SELF-ELABORATION)

	Political and personal interests	State of the budget	Recommendations of the commissions, departments and Council	Compliance with the strategic documents of the region	Impact on the population
HU average	3.167	2.167	2.167	2.667	2.750
SR average	2.500	1.500	2.500	2.500	2.167
CR average	2.667	1.889	2.333	2.444	1.778
Average	**2.852**	**1.926**	**2.296**	**2.556**	**2.296**
Modus	**3**	**2**	**1**	**2**	**2**

The biggest difference in the evaluation of factors between the countries occurred in the average values of the factor of *Impact of the investment project on the population*, the difference between the highest and the lowest countries' average value is almost a one point scale. Self-governments in the Czech Republic considered the *Impact on the population* factor as the most important.

The Hypothesis 2:*"The European Union funds are the most important source of financing strategic investments at the present, as well as for the future*" deals with strategic investments.

This part of the analysis is focused on:

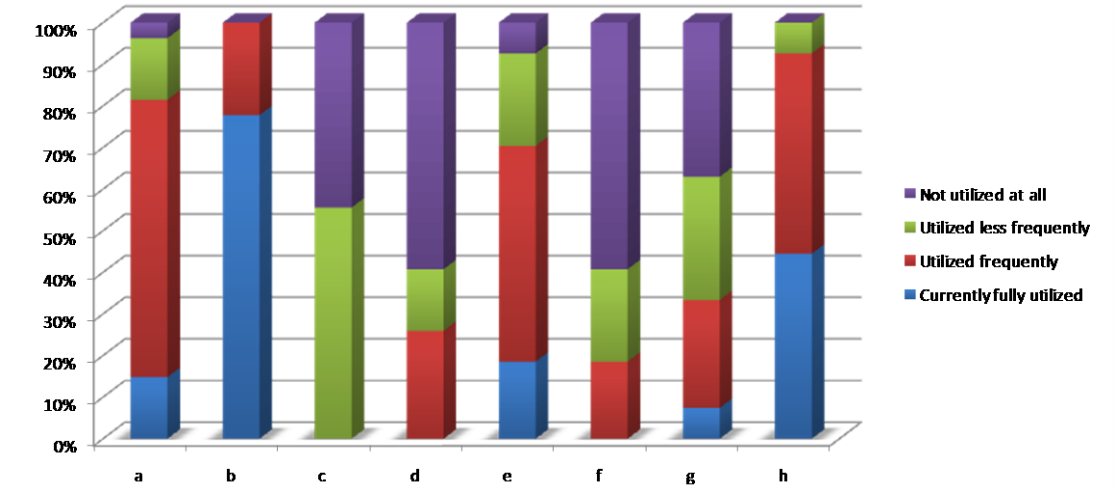
- The current rate of utilization of resources to finance strategic investments
- The importance of sources of funding for strategic investments in the future

The current rate of utilization of resources to finance strategic investments

The extent to which self-governments are currently involved in the use of various sources of funding was investigated by the survey. Self-governments' involvement in the use of various sources of funding shows their preferred method of financing, as well as the availability of various resources. The current rate of utilization of financial resources has a significant impact on the potential use of these resources in the future.

The survey results (**Error! Reference source not found.**) were grouped into four categories of responses. Categories – *Currentlyfully utilized* and*Notutilized at all*– reflectthe marginal attitude of local self-governments to individual funding sources. In the first case it means that the source of funding, while interesting, but the self-governments cannot count with it in the future, as its charging would make problems to the self-government. The second extreme attitude, when the selected resources are not used at all, is characterized by an insurmountable obstacle in the current use of the resource. Obstacles vary in nature, as e.g. the real un-availabilityof resources, but also the lack of interest on the way of funding.

The other two categories reflect the frequency with which are the resources – that are real and don't reach the maximum capacity – currently used to finance strategic investment.



(a) State budget, state funds
(b) Budget of the local self-government
(c) Resources of individual entities and other legal entities
(d) Public-private partnership resources
(e) Loans from the EIB, Development bank and commercial banks
(f) Loans and grants from international organizations
(g) Funds resulting from international grant agreements between the country and other countries
(h) EU funds

FIGURE 4 THE CURRENT UTILIZATION OF RESOURCES TO FUND STRATEGIC INVESTMENTS
Source: self-elaboration

Budgets of the local self-governments are the most used sources of funding. It was marked as fully utilized by 78% of self-governments. This result is supported by the fact that self-government budgets are limited and they are used to perform all tasks in the competence of the self-government. At the same time,in the most ways of financing strategic investment there is required also a certain level of co-financing by the self-government budget.

The second most used sources of funding self-governments' strategic investments are the *European Union Funds*. These are considered as fully utilized – in terms of their capacity – by 44.5% of local self-

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governments. Noneof the self-governments stated that the EU funds are not used at all, and only less than 7.5% of them say that they use EU funds less frequently.

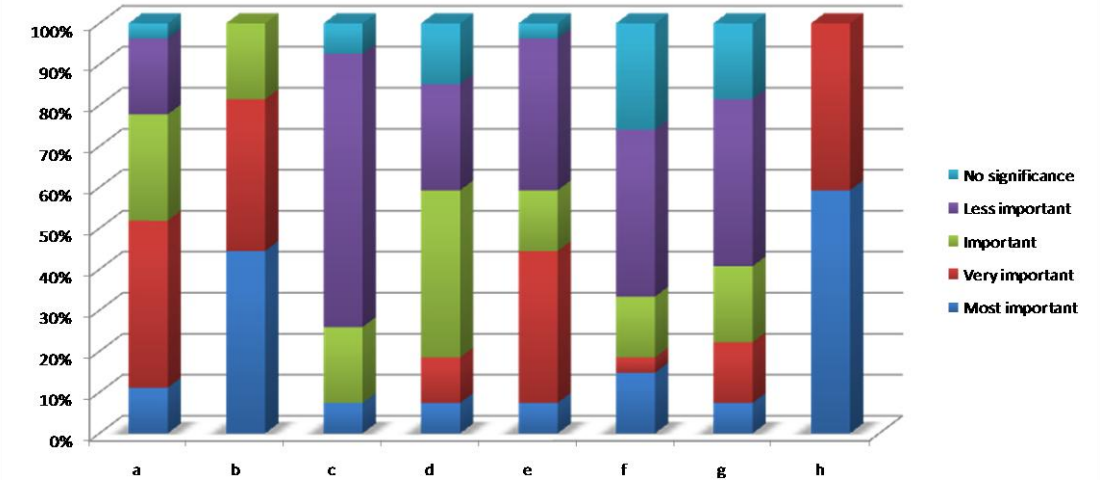
Analysis of the utilization of financial *Resources of individual entities and other legal entities* to finance strategic investments by self-governments showed that none of the self-governments use these funds often and they certainly do not consider those resources to be fully utilized. In this case we can talk also about the financial resources form Business Angels and about the Venture Capital. These forms of financing investment activities are not usual in any of the countries analysed, and in regard to this they are far behind the world's developed market economies. Almost 45% of self-governments said that this source of funding is not used at all.

From the perspective of the current use of *Public-private partnership resources* follows that none of the self-governments consider these possibilities of funding to be fully utilized. Approximately 60% of self-governments don't use the public-private partnership at all and the fourth part used it less frequently.

The importance of sources of funding for strategic investments in the future

There is a difference between the current rate of utilization of resources for funding strategic investment activities of the regions and between the perspective of their utilization in the future.

Looking at the graph (**Error! Reference source not found.**), we can see that the resources of public-private partnerships are at least considered as important by almost 60% of self-government officials. If we compare it with the **Error! Reference source not found.**, approximately the same number of self-governments is not using these resources at all. The results indicatethat the utilization of resources of public-private partnerships to finance investment activities of self-governments tends to increase in the future.



(a) State budget, state funds
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(g) Funds resulting from international grant agreements between the country and other countries
(h) EU funds

FIGURE 5 THE IMPORTANCE OF SOURCES OF FUNDING FOR STRATEGIC INVESTMENTS IN THE FUTURE
Source: self-elaboration

To determine the order and the rate of importance of each of the sources of funding for strategic investments in the future, we need to quantify the individual evaluations. We divided the verbal evaluation of self-government officials into five categories and to each of them we assigned a point score from 0 to 4(Table 4).

TABLE 4

j	Evaluation (h_j)	Point score (p_j)
1	No significance	0
2	Less important	1
3	Important	2
4	Very important	3
5	Most important	4

If the frequency of *j*-th evaluation of the importance of the concrete resource is designated as n_j, then the score (the weight in absolute numbers) of the concrete resource p_i– fromthe perspective of its relevance for other projects – iscalculated as (1):

$$\boldsymbol{p_i} = \sum_{j=1}^{k} \boldsymbol{n_j} \times \boldsymbol{p_j} \qquad (1)$$

p_j – points awarded to the evaluation h_j,
k – number of categories of verbal evaluation

By using the calculated score we can arrange the financial resources from the most important to the least important. The importance of each of the financial resources was expressed through their weights, to calculation of which the following formula was used (2):

$$\boldsymbol{v_i} = \frac{\boldsymbol{p_i}}{\sum_{i=1}^{q} \boldsymbol{p_i}} \qquad (2)$$

v_i – the weight of the importance of the *i*-th source of funding for strategic investments,
q – number of funding sources.

Table 5 reflects the arrangement of financial resources according to their importance for future investment projects, as well as the relative values of their weights.

TABLE 5 THE IMPORTANCE OF SOURCES OF FUNDING FOR STRATEGIC INVESTMENTS IN THE FUTURE

The importance of the source of funding for the future investment projects (*i*)	p_i	v_i
EU funds	97	0.208

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The importance of the source of funding for the future investment projects (*i*)	p_i	v_i
Budget of the local self-government	88	0.189
State budget, state funds	64	0.137
Loans from the EIB, Development bank and commercial banks	56	0.120
Public-private partnership resources	46	0.099
Funds resulting from international grant agreements between the country and other countries	41	0.088
Loans and grants from international organizations	38	0.082
Resources of individual entities and other legal entities	36	0.077

Source: self elaboration

On the basis of the analysis we can see that the self-governments considered being the most important source of funding for strategic investments in the future the *European Union funds*. Then followed the own *Budget of self-governments*. According to the results of the evaluation, the third most important source of funding for the future should be the *State budget and state funds*. After counting of the weights of the first three places we can state, that their common importance (weight of 0.534) is higher than the importance of all other resources of funding together. The self-governments consider being the least important (not only for the current strategic investments, but also for the future investment projects) again the financial *Resources of individual entities and other legal entities*.

5. CONCLUSIONS

In the case of the Hypothesis 1 self-governments, when choosing an investment variant, are taking into account mainly its financial requirements"can be confirmed. By the analysis of the survey results, it was found out that the most important criteria for the suggestion of optimum variant are investment projects' *Realization costs* and the most important criterion for the approval by the regional parliament is the *State of the budget*.

In the case of the Hypothesis 2 the European Union funds are the most important source of financing strategic investments at the present, as well as for the future"its partial confirmation can be stated. The analyzed self-governments currently use their own budgets as a source of funding for strategic investments most frequently. On the other hand, they consider EU funds to be the most important financial resource for the future. This result do not indicates the amount of funds obtained from various sources. The self-governments' budget plays an important role in financing the strategic investments also through EU funds – fromthe point of view of co-financing rate.

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REFERENCES

Adam, C.S. and Bevan, D.L., (2005), Fiscal Deficits And Growth In Developing Countries, *Journal of Public Economic*s, 89, pp. 571-597.

Aschauer, D. A. (1989). Is Public Expenditure Productive? *Journal of Monetary Economics* 23: 177-200.

Barro, R. J. (1988). Government Spending In a Simple Model of Endogenous Growth.*National Bureau of Economic Research Working Paper* No. 2588.

Bose, N., Haque, M.E., Osborne, D., (2007). Public expenditure and economic growth: A Disaggregated Analysis for Developing countries, *The Manchester School*, 75, 5, pp. 533–556.

Devarajan, S., Swaroop, V. Zou, H. 1996. The Composition of Public Expenditure and Economic Growth. *Journal of Monetary Economics*, 37(2), 313-344.

Drucker, P. F. *Harvard Business Review on Decision Making*. Harvard Business School Press, 2001.224 pp.

Easterly, W.,Rebelo, S. 1993. Fiscal Policy and Economic Growth: An Empirical Investigation, *Journal of Monetary Economics*, 32, pp. 417-458.

French, S. 1988.*Decision Theory: an Introduction to the Mathematics of Rationality*, Ellis Horwood, Chichester.

Hudec, O., Urbančíková, N., Džupka, P., Šebová, M., Klimovský, D., Suhányi, L. 2009.*Podobyregionálneho a miestnehorozvoja* (Patterns of Regional and Local Development) Košice.EkF TU in Košice.

Hughes, J., Sasse, G., Gordon, C. 2007. Conditionality and Compliance in the EU's Eastward Enlargement: Regional Policy and the Reformof Sub-nationalGovernment. *Journal of European Social Policy*. November, 2007 17: 349-360.

Klassen, L.H.,Vanhove,N.1987. *Regional Policy: an European Approach*, 2nd edition. Aldershot: Avebury.

Maass, A., Benefit-costanalysis: its relevance to public investment decisions. *Quarterly Journal of Economics*, Vol. 80, No. 2, Kay 1966, pp. 208-226.

Malizia, E. E.,Feser, E.J. 1999. *Understanding Local Economic Development.* New Brunswick, Center for Urban Policy Research.

Matlovič, R., Ira, V.,Korec, P.,Ondoš, S. 2009.Urban Structures and their Transformation (the contribution of Slovak geography). In: Ira, V., Lacika, J., eds., *Slovak Geography at the Beginning of the 21st Century*. GeographiaSlovaca, 26, 2009, 71-99.

Novakova, R., 2011. Scientific-Research Cluster as a form of Knowledge Transfer. In: *Drvnaindustrija*. Issue 62, No. 4, pp. 291 - 300.

Richardson, H. W. 1978. *Regional economics*. Urbana: University of Illinois Press.

Streeck, W., Mertens, D. 2011.Fiscal Austerity and Public Investment. Is the Possible the Enemy of the Necessary? *MPIfG Discussion Paper11/12*.Max Planck Institute for the Study of Societies, Cologne.

Vaughan, R., Bearse, P. 1981. FederalEconomicDevelopmentPrograms: A FrameworkforDesign and Evaluation, in Robert Friedman and William Schweke (editors), *Expanding the Opportunity to Produce: Revitalising The American Economy Through New Enterprise Development*, Washington.

Zgodavová, K., Džupka, P., Klímová, N. 2005. Issues in the improvement of healthcare services in five countries of the European union. *Sociologia* 37 (6), pp. 487.

Zgodavová, K., Slimák, I. 2008. Advanced Improvement of Quality. In: Annalsof DAAAM for 2008 & Proceedings oft he 19th International DAAAM Symposium: *Intelligent Manufacturing &Automation: Focus on next Generation of Intelligent Systems and Solutions*. Vienna: DAAM International, 2008. pp.1551-1552.