

GAZDASÁG & TÁRSADALOM

Journal of Economy & Society

KÜLÖNSZÁM

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World Events Impact The German Stock Market:
DAX Analysis January 2000 to October 2009

Konecsny Jenő – Havay Dóra:
A magyarországi részvénykockázati prémium becslése különféle eljárásokkal

Bruder Emese – Obádovics Csilla:
A dolgozó szegények jellemzői az egyéni jövedelmek alapján

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Gazdasági válságból szociális válság?
– Új kihívások és megoldásra váró kérdések a szociális ellátások területén

Marisová – Fandel – Ilková – Malatinec:
Efficiency of Single Contact Points Services for Entrepreneurs: Case of Slovakia

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International Accounting Standardization in the Changing Economic Environment

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Efficiency of Single Contact Points Services for entrepreneurs: Case of Slovakia⁹⁰

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ABSTRACT The agenda of small business in Slovakia is administered by Single Contact Points (SCPs). The aim of SCPs was to establish efficient assistance to entrepreneurs in dealing with business license, but also streamline the procedure of district individual administrative offices at the center. To investigate how the new units are efficient in their role was the goal of the research presented in this paper. Two approaches were applied. First, qualitative analysis based on questionnaire survey among entrepreneurs was done within all 50 SCPs. Its goal was to learn how entrepreneurs view the quality and efficiency of SCPs from the prospective of their needs. Second, quantitative analysis of efficiency based on evaluation of transformation inputs into outputs was done on all 50 SCP. The goal of this empirical analysis was to compare all SCPs from the aspect of their performance and find factors, which may influence their efficiency. Nonparametric Data Envelopment Analysis and Malmquist index procedures were used to investigate static and dynamic nature of SCP's efficiency. The results of this study show that the proportion of efficient units is 16%, the average efficiency is 0.72. There are some statistically significant differences in average technical efficiency scores among regions. Analysis of the associations of efficiency measures and entrepreneur's perception of SCPs shows weak negative correlation. Comparison of result of years 2009 and 2010 showed growth of TFP productivity of SCPs by 7.9%, which is a result of a positive technical change by 15,5%, but negative technical efficiency change by 6,7%.

KEYWORDS public administration, services quality, single contacts points, small business, technical efficiency, scale efficiency, Malmquist TFP index, technical change

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Introduction

Small business has a long tradition in Slovakia. Small business is carried out on the basis of public authorization, which is a kind of permission of the state to make small business by either natural or legal persons. Conditions and relevance of doing small business are established by Act on small business No. 455/1991 Coll., amended by several acts. Within the reform process of public administration in the Slovak Republic, which began after 1989, public administration underwent several changes in structure and competences. At present the agenda of small business is administered by district offices in the frame of state administration. There are 50 district offices in Slovak Republic and in each district office within a Unit of small business, so called "Single contact place" (SCP) has been established since 1.10.2007. SCP is a "point" which accepts all necessary documents from natural persons and legal persons, wishing to start to do small business. The principle of the amendment to Act on small business is that the future entrepreneur can make all necessary actions required for the start of a small business „in one place“. SCP provides information for entrepreneurs, which has not character of law guidance, but it helps entrepreneurs get information about business conditions in Slovak Republic, about possibilities of access to public database of entrepreneurs-service providers, information about solution of disputes, information about subject, which can offer practical assistance for entrepreneurs, etc. Services, which SCPs provide to entrepreneurs, should contribute to improvement of business environment in Slovak Republic. It is expected in accordance with the principle of shift from "govern to governance", and therefore more effective actions and more activities of SCPs in favor of entrepreneurs are assumed.

Two main objectives and approaches are presented in this paper. The first is to evaluate the effectiveness of SPC in terms of entrepreneurs. Qualitative analysis based on questionnaire survey among entrepreneurs was done within all 50 SCPs. Its goal was to learn how entrepreneurs view the quality and efficiency of SCPs from the prospective of their needs. Second, quantitative analysis of efficiency based on evaluation of transformation inputs into outputs was done on all 50 SCP. The goal of this empirical analysis was to compare all SCPs from the aspect of their performance and find factors, which may influence their efficiency.

Nonparametric Data Envelopment Analysis and Malmquist index procedures were used to investigate static and dynamic nature of SCP's efficiency.

In the second part of the paper, we present characteristics of evolution and current status of the state administration in Slovakia, which is responsible for small business. In the third part of the paper, used methods and models DEA a MI are described. The fourth part gives characteristics of used data and the used variables are defined and justified. Results of empirical analysis are presented in part fifth and the final sixth part presents the conclusions.

Background

Since 1990 a dual (separate) model of public administration has been established. Its essence lies in the notion that the two basic components - state and self government, their powers and financing are separate and relatively independent. The development of one component is influenced by the other one. According Berčík and Kralik (2007) the public administration is closely linked to the political sphere of social life. In this sense, the public administration is a dynamic system, reflecting the changes in the political sphere of the society. Political changes reflect in the process of reform in the public administration. So far four stages of public administration reforms (1990, 1996, 2001, 2004) were carried out in Slovakia. The reasons of the continuing reforms were both political changes after the elections, and both governments efforts to streamline government by changing the specialized and general models of public administration (reduce the cost of government performance, reduce the number of employees, transfer the responsibilities from the state self-government, allocation of public funds between government and self-government).

All reforms were implemented in the spirit of generally declared attempts „to bring the administration closer to citizen”, which has partly succeeded. However, we can not overlook the negative side of „rotation” of the “general model” and „specialized model” of public administration within the reform process since the citizens did not understand the reasons for these changes. Since 2004 a specialized model of public administration is established but particularly at local level is to some extent confusing, since the territories for local government bodies in particular sectors are different. Ministry of Interior (Report on the effectiveness of public administration, 2011) is currently preparing further reform aimed at restructuring the state administration and integration of several specialized offices. For illustration we state, that local government authorities exercising state control in the individual sectors in the first instance are set up in 50 district offices (including Unites of small business and SCPs), 40 district forest offices, 44 district land offices, 46 district environmental offices, 46 district office for road and roads, 51 county director Fire and Rescue Service, 72 cadastral and 8 Territorial military offices, 101 tax offices. The above mentioned different numbers of local government bodies shows that the territorial districts for execution of various sectors are not identical. After 2004, when this “specialized model” of state administration was introduced, the citizens were considerably disoriented since many offices are located in different territorial constituencies. Citizens often do not understand why they must conduct their affairs in the various district offices, depending, to which territory the specific performance of public administration, respectively individual offices belongs.

The analysis of specialized offices established in not identical districts shows that the small business agenda is administered by departments of district offices (small business units and SCPs) and their districts are the second smallest ones compared to other local government bodies. As proposed, the streamlining of government is to reduce the number of district offices to 46, and foresees the integration of those local government bodies, whose number is now 46. The reform is often criticized by entrepreneurs due to the fact that number of SCPs will be reduced.

The main tasks of SCPs according to § 66 par.3 of small business act is to accept application for authorization of small business from natural and legal persons and decides on whether the applicant meets the legal conditions for doing small business.

The following attachments to the application (notification) are required :

- data of the applicant and documents, including administrative fees, which are required under special laws
- data necessary for registration and notification of the taxpayer under a separate regulation
- c) data necessary to log into a system of compulsory health insurance and notification of changes
- information and documents, including legal fees, required under a separate law

for the commercial register.

The applicant is not mandatory to submit the criminal records, this document is claimed from prosecution by SCPs directly.

Thus, all steps to start a small business are done by the applicant in one place. In case the SCP office finds, that the applicant satisfies the conditions laid down by law, the small business unit issues a business license within five working days from the date on which the application (notification) and extracts from criminal records are received.

Another service introduced by the Directive 2006/123/EC on services in the internal market, unlike previous legislation, regulates the duty of any SCPs to issue a business license record from the central register. It means not only the small business office in the district where the entrepreneur is seated, can issue this document as it was prior to the new EC regulation. Foreign entrepreneurs can in accordance with § 4 par. 2 of Act 136/2010 Coll. on the internal market services, apply by electronic means for authorization to do small business in Slovakia via central public administration portal. The competent authority, on the basis of any application that can be delivered by electronic means of communication, immediately informs the applicant on the conditions that must be met for granting the authorization. Providing of information has not character of legal

advice, information have only general and explanatory nature, and are provided in the national language.

Prior to the establishment of SCP, entrepreneurs had to go to register to the competent tax office, health insurance, business register but at present all the documents are delivered to SCP, which is linked to the all these institution. Also, criminal record, is already requested directly from SCP of competent offices of EU Member State. The whole procedure for issuing licenses is very fast and much less difficult for an entrepreneur mainly due to links with these institutions. However interaction with the social insurance agency and customs offices is lagging behind due to absent stipulation of the legal regulations.

Methodology

Two different methodological approaches are used for evaluation of the effectiveness of SPCs in this paper :

The first approach is based on assessment of SPCs by entrepreneurs in Slovakia through questionnaire survey. In the questionnaire the following questions were formulated:

- (1) How do you rate the quality level of services provided by SCPs
- (2) Evaluate the degree of complexity of services provided in SCP
- (3) Evaluate the match of the services provided and available at the SCPs to the needs of entrepreneurs
- (4) How do you assess the standard of professional competence of SCPs?
- (5) How do you assess the speed of administrative procedure at SCPs?
- (6) Evaluate the overall quality status of the business environment in Slovakia.
- (7) Did you ask for information at any SCP for business opportunities in other EU Member States?
- (8) Do you have experience with doing business in the EU?
- (9) Make suggestions for possible amendment of the SCP service

Entrepreneurs answered the questions 1 – 6 by intensity of Likert scale as follows:

<u>Degree of evaluation</u>	<u>Intensity</u>
Very low	1
Low	2
Medium	3
Rather high	4
High	5

Answer yes/no were expected on questions 7 and 8 and question 9 was open. Evaluation of questions 1-8 was carried with standard procedures based

on the frequency distribution, respectively on characteristics of medium value. Evaluation of questions 9 was used for qualitative analysis.

5160 questionnaires in total were distributed among entrepreneurs using SCP's services in all 50 districts. Return rate was 84,6% (4523 questionnaires).

The aim of this analysis was to identify perception of SCP by entrepreneurs in terms of quality expressed in various questions and state the variable intensity of their evaluation. Potential regional differences in the average intensity of evaluation and their probable reasons were also the subject of research.

The second methodological approach was focused on assessment of relative efficiency of all 50 SCPs in Slovak Republic in terms of used inputs and achieved performance. Nonparametric method of Data Envelopment Analysis (DEA) was applied for technical efficiency estimation.. Basic input and output oriented CCR DEA model (Charnes, Cooper and Rhodes, 1978) for constant returns to scale was applied and also its variant for variable returns to scale BCC DEA model (Banker, Charnes, Cooper, 1984).

The DEA methodology, originating from Farrell's (1957) seminal work and popularized by Charnes, Cooper and Rhodes (1978), assumes the existence of a convex production frontier. The production frontier in the DEA approach is constructed using linear programming methods.

Regarding public sector efficiency, the general relationship that we expect to test can be given by the following function for each SCP j :

$$Y_j = f(X_j), j=1, \dots, n \quad (1)$$

where we have Y_j – a composite indicator reflecting our output measure; X_j – spending or other relevant inputs in SCP j . If $Y_j < f(x_j)$, it is said that SCP j exhibits inefficiency. For the observed input level, the actual output is smaller than the best attainable one and inefficiency can then be measured by computing the distance to the theoretical efficiency frontier. The purpose of an input-oriented example is to study by how much input quantities can be proportionally reduced without changing the output quantities produced. Alternatively, and by computing output-oriented measures, one could also assess how much output quantities can be proportionally increased without changing the input quantities used. The two measures provide the same results under constant returns to scale (CRS) but give different values under variable returns to scale (VRS). Nevertheless, and since the computation uses linear programming not subject to statistical problems such as simultaneous equation bias and specification errors, both output and input-oriented models will identify the same set of efficient/inefficient producers or decision making units (DMUs).

The analytical description of the linear programming problem to be solved, in the constant and variable-returns to scale hypothesis, is presented below for both input-oriented and output-oriented specification.

Suppose there are i inputs and r outputs for n DMUs. For the j -th DMU, y_j is the column vector of the outputs and x_j is the column vector of the inputs. We can also define X as the $(m \times n)$ input matrix and Y as the $(s \times n)$ output matrix. The DEA model is then specified with the following mathematical programming problem, for a DMU under evaluation indicated with index DMU0:

Table 1: Input- and output-oriented DEA models

<i>Model 1: Input – oriented DEA model</i>	<i>Model2: Output – oriented DEA model</i>
$\theta^* = \min \theta$	$\varphi^* = \max \varphi$
subject to	subject to
$\sum_j^n y_{rj} \lambda_j \geq y_{r0} \quad r = 1, 2, \dots, s$	$-\varphi y_{r0} + \sum_j^n y_{rj} \lambda_j \geq 0 \quad r = 1, 2, \dots, s$
$-\theta x_{i0} + \sum_j^n x_{ij} \lambda_j \leq 0 \quad i = 1, 2, \dots, m$	$\sum_j^n x_{ij} \lambda_j \leq x_{i0} \quad i = 1, 2, \dots, m$
$\lambda_j \geq 0 \quad \text{CRS constraint}$	$\lambda_j \geq 0 \quad \text{CRS constraint}$
$\sum_j^n \lambda_j = 1 \quad \text{VRS constraint}$	$\sum_j^n \lambda_j = 1 \quad \text{VRS constraint}$

where

- x_{ij} i -th input of DMU j
- y_{rj} r - th output of DMU j
- x_{i0} i - th input of DMU under evaluation
- y_{r0} r - th output of DMU under evaluation
- λ_j intensity (or weight) variable of j -th DMU

In models in Table 1, θ is a scalar (that satisfies $\theta \leq 1$), more specifically it is the efficiency score that measures technical efficiency. It measures the distance between a SCP and the efficiency frontier, defined as a linear combination of the best practice observations. With $\theta < 1$, the SCP is inside the frontier (i.e. it is inefficient), while $\theta = 1$ implies that the SCP is on the frontier (i.e. it is efficient). The vector λ is a $(n \times 1)$ vector of constants that measures the weights used to compute the location of an inefficient DMU if it were to become efficient. The inefficient DMU would be projected on the production frontier as a linear combination of those weights, related to the peers of the inefficient DMU. The peers are other DMUs that are more efficient and are therefore used as references for the inefficient DMU. The restriction $\sum \lambda_j = 1$ imposes convexity of the frontier, accounting for variable returns to scale (VRS). Dropping this restriction would amount to admit that returns to scale were constant (CRS). Problem (2) has to be solved for each of the n DMUs in order to obtain the n efficiency scores.

The aim of application of the above models was to identify levels of technical efficiency for all SCP and subsequently to investigate what external factors influence their level. Analysis of the associations of efficiency measures

and entrepreneur's perception of SCPs was also the goal of this part of analysis. The aim results in the following questions:

- Are there significant regional differences in efficiency scores?
- Is the level of efficiency determined by factors such as economies of scale?
- Is the level of efficiency in relation with number of entrepreneurs served in district?
- Is the level of efficiency in some association with entrepreneurs' evaluation of SCPs?

For the analysis of dynamic nature of SCP's efficiency Malmquist index was applied. This methodology enables to measure change in productivity and efficiency between time periods. Malmquist index is defined using distance functions. In this paper we use output distance functions, which indicates a maximal potential proportional expansion of the output vector, given an input vector. The output distance function is applied in the methodology developed by Färe, Grosskopf, Norris and Zhang (1994).

Malmquist total factor productivity (TFP) index measures the TFP change between two periods by calculating the ratio of the distances of each period relative to a common technology. Following Färe, Grosskopf, Norris and Zhang (1994) Malmquist output-orientated TFP change index between period t (the base period) and period $t+1$ is given by

$$M_o(y_t, x_t, y_{t+1}, x_{t+1}) = \left[\frac{d_o^t(y_{t+1}, x_{t+1})}{d_o^t(y_t, x_t)} \times \frac{d_o^{t+1}(y_{t+1}, x_{t+1})}{d_o^{t+1}(y_t, x_t)} \right]^{1/2}, \quad (2)$$

where the notation $d_o(x_{t+1}, y_{t+1})$ represents the distance from the period $t+1$ observation to the period t technology. A value of M_o greater than one indicates positive TFP growth from period t to period $t+1$ while a value less than one indicates a TFP decline. Equation (2) in fact is a geometric mean of two TFP indices. The first is evaluated with respect to period t technology and the second with respect to period $t+1$ technology.

An equivalent way of writing the productivity index is

$$M_o(y_t, x_t, y_{t+1}, x_{t+1}) = \frac{d_o^{t+1}(y_{t+1}, x_{t+1})}{d_o^t(y_t, x_t)} \left[\frac{d_o^t(y_{t+1}, x_{t+1})}{d_o^{t+1}(y_{t+1}, x_{t+1})} \times \frac{d_o^t(y_t, x_t)}{d_o^{t+1}(y_t, x_t)} \right]^{1/2}, \quad (3)$$

where the ratio outside the square brackets measures the change in the output-orientated measure of Farrell technical efficiency between period t and $t+1$. That is, the efficiency change is equivalent to the ratio of the Farrell technical efficiency in period $t+1$ to the Farrell technical efficiency in period t . The remaining part of the index in equation (3) is a measure of technical change. It is the geometric mean of the shift in technology between the two periods, evaluated at x_{t+1} and also at x_t . Thus the two terms in equation (3) are:

$$\text{Efficiency change} = \frac{d_o^{t+1}(y_{t+1}, x_{t+1})}{d_o^t(y_t, x_t)} \quad (4)$$

$$\text{Technical change} = \left[\frac{d_o^t(y_{t+1}, x_{t+1})}{d_o^{t+1}(y_{t+1}, x_{t+1})} \times \frac{d_o^t(y_t, x_t)}{d_o^{t+1}(y_t, x_t)} \right]^{1/2} \quad (5)$$

Following Färe, Grosskopf, Norris a Zhang (1994), and given that suitable panel data are available, we can calculate the required distances using DEA-like linear programming programs. For the j -th DMU, we must calculate four distance functions to measure TFP change between two periods. This requires the solving of four linear programming problems. The required LP problems under constant returns to scale technology are as follows:

$$\begin{aligned} [d_o^{t+1}(y_{t+1}, x_{t+1})]^{-1} &= \max_{\varphi, \lambda} \varphi, \\ \text{subject to} \\ \varphi y_{0t+1} - Y_{t+1}\lambda &\leq 0 \\ X_{t+1}\lambda &\leq x_{0t+1} \\ \lambda &\geq 0, \end{aligned} \quad (6)$$

$$\begin{aligned} [d_o^t(y_t, x_t)]^{-1} &= \max_{\varphi, \lambda} \varphi, \\ \text{subject to} \\ \varphi y_{0t} - Y_t\lambda &\leq 0 \\ X_t\lambda &\leq x_{0t} \\ \lambda &\geq 0, \end{aligned} \quad (7)$$

$$\begin{aligned} [d_o^{t+1}(y_t, x_t)]^{-1} &= \max_{\varphi, \lambda} \varphi, \\ \text{subject to} \\ \varphi y_{0t} - Y_{t+1}\lambda &\leq 0 \\ X_{t+1}\lambda &\leq x_{0t} \\ \lambda &\geq 0, \end{aligned} \quad (8)$$

$$\begin{aligned} [d_o^t(y_{t+1}, x_{t+1})]^{-1} &= \max_{\varphi, \lambda} \varphi, \\ \text{subject to} \\ \varphi y_{0t+1} - Y_t\lambda &\leq 0 \\ X_t\lambda &\leq x_{0t+1} \\ \lambda &\geq 0, \end{aligned} \quad (9)$$

Notation:

- y_{0t} is $s \times 1$ vector of outputs of the unit under evaluation in period t
- x_{0t} is $m \times 1$ vector of inputs of the unit under evaluation in period t
- y_{0t+1} is $s \times 1$ vector of outputs of the unit under evaluation in period $t+1$
- x_{0t+1} is $m \times 1$ vector of inputs of the unit under evaluation in period $t+1$
- Y_t is $s \times n$ matrix of outputs of n units in period t
- X_t is $m \times n$ matrix of inputs of n units in period t

Y_{t+1} is $s \times n$ matrix of outputs of n units in period $t+1$

X_{t+1} is $m \times n$ matrix of inputs of n units in period $t+1$

λ is $n \times 1$ vector of constants

φ is scalar

Data and variables

The data used for this study stem from two resources.

First, 5160 questionnaires were distributed among entrepreneurs using SCP's services. Return rate was 84,6%. Within particular regions (8), the return rate was following: Bratislava region 61,9%, Trnava region 80%, Trenčín region 92,4%, Nitra region 87,7%, Žilina region 100%, Banská Bystrica region 88,7%, Prešov region 70,1% and Košice region 88,2%. In the analysis, 4523 correctly completed questionnaires were used. Distribution of respondents is presented in table 2.

Table 2: Distribution of respondents

	Entrepreneurs	%
Origin	- Domestic	90,85%
	- Foreign	1,19%
	- N/A	7,96%
Gender	- Male	56,49%
	- Female	36,06%
	- N/A	7,45%
Education	- primary	3,03%
	- secondary	58,68%
	- tertiary	26,20%
	- N/A	12,09%
Age (average)		
Total number of questionnaires used		4523

Source: own calculation

Second, data on inputs and outputs were collected from all 50 SCPs in Slovakia for the purpose of technical efficiency estimation. Two input and five output variables have been selected out of available data for the efficiency analysis. Basic descriptive statistics of data is presented in table 3.

Table 3: Descriptive statistics of input/output variables

Statistics	Variables						
	Labor costs (thous.€/year)	Material costs (thous.€/year)	Registration, decisions	Other actions	Cont-rolls	Block Fines	Deci-sions on fines
	Input1	Input 2	Output 1	Output 2	Output 3	Output 4	Output 5
Minimum	5928	208	480	706	75	196	0
Average	92600	13774	5717	5688	666	9379	78
Maximum	513552	152422	79597	48344	3288	58541	282
Stand. dev.	74774	20581	8872	6001	477	8878	65

Source: own calculation

Results and discussion

According to the results of a survey of entrepreneurs, which was focused on the evaluation of the degree of the quality of services provided by on SCP (Question 1), the degree of complexity of services provided by on SCP (question 2), the conformity of the services provided on SCP with the needs of entrepreneurs (Question 3), the evaluation of standard of professional competence of SCP staff (Question 4), we can say, that SCPs fulfill their purpose, entrepreneurs receive quality services, since the vast majority (41.53%) respondents state rather high quality. The degree of complexity of services provided by SCPs was also evaluated positively, since most respondents (41.92%) evaluated the complexity of services as rather high level. The degree of conformity with the needs of entrepreneur services was reported in 36.72% as rather high. Standard of professional competence of SCP staff was evaluated by entrepreneurs in 55.90% as high.

Although the recent amendments to the Small business act considerable shortened the legal deadline for issuing the business license and simplified the reporting procedure - „making the necessary formalities in one place” ,the degree of the speed of administrative procedure at SCPs- questions 5 and the overall qualitative state of the business environment in Slovakia- question. 6), results show that the views of entrepreneurs on the business environment in Slovakia have not changed. It is documented by the results of the survey, - with the overall qualitative condition of the business environment of the participating entrepreneurs only 7.10% (high level) are satisfied and 12.39% of entrepreneurs evaluate the overall level of business environment with level rather high. 29.15%

of entrepreneurs evaluate a low level, and 9.24% of entrepreneurs classified the overall business environment with very low degree. The most common reason for dissatisfaction with the overall business environment of entrepreneurs is a high levy burden on entrepreneurs themselves and levy burden on businesses - employers. Entrepreneurs used also the information on business opportunities in other EU Member States (Question 7), as 15.89% of entrepreneurs reported the exploitation of this service. 15.43% of entrepreneurs had business experience in the EU (Question 8). The ninth - last question, in which proposals to the services provided SCPs, 74.52% of the participating entrepreneurs answered and the most common proposals were proposals to improve, simplify, clarify the direct access from SCPs to Social insurance agency, customs offices and other government bodies. Through a single contact points - value added tax registration and the payment of excise duty are still not possible. Evaluation of questions in percentages and graphical representation of the evaluation SCPs at all district offices in the Slovakia is shown in Table 1 and in Graph 1.

Table 4: Results of survey of entrepreneurs – small business entrepreneurs with their place of business in Slovak Republic

Degree of evaluation	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6
Very low 1	0,09%	0,09%	0,14%	0,09%	0,21%	9,24%
Low 2	0,90%	1,47%	2,92%	0,62%	0,78%	29,15%
Medium 3	16,11%	22,06%	29,43%	8,79%	9,27%	42,12%
Rather high 4	41,53%	41,92%	36,72%	34,59%	28,26%	12,39%
High 5	41,37%	34,45%	30,79%	55,90%	61,48%	7,10%
Sum	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%
Average	4,2319	4,0914	3,951	4,4556	4,5002	2,7896

Source: own calculation

In the evaluation of the survey results we dealt also with the mean (average) value of questions answered in all regions of Slovakia, as well as for individual regions. We concluded, that Slovak entrepreneurs in average evaluate the degree of quality service provided by SCPs as rather high (4,2). Data processing includes also the evaluation of the individual regions of Slovakia. These results show differences in the evaluation of the level of quality services in SCPs compared between the regions themselves. Highest rating was achieved in the region of Banská Bystrica (4.4) and Košice (4.3). The lowest rating was recorded in the region of Bratislava (4.0) and also in the Nitra region (4.0).

The degree of complexity of services provided by SCPs in Slovakia as a whole was evaluated as rather high (4.1). When comparing the results for the region, again Banská Bystrica (4.3) and Kosice Region (4.2) achieved the highest rating . The lowest level of evaluation was represented in the Bratislava region (3.8).

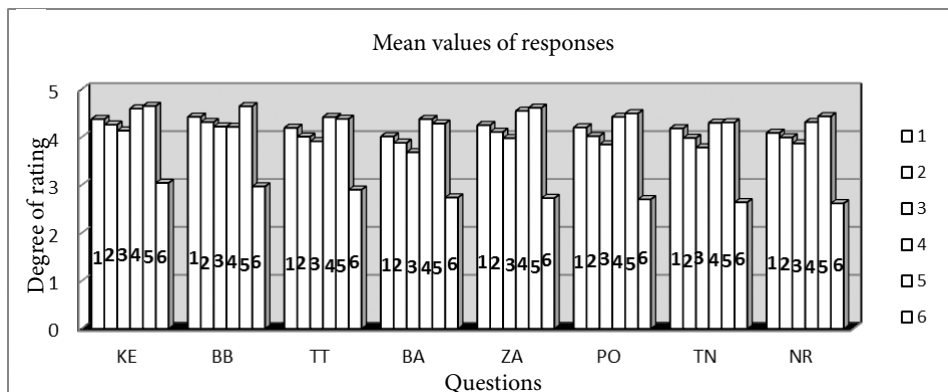
The degree of the match of services provided by SCPs to the needs of entrepreneurs in Slovakia achieved the evaluation as rather high (4.0). Regional results contain the following data: the highest mean value was reached in the region of Banská Bystrica (4.2) and Košice (4.1). The lowest rating again is in the Bratislava region (3.6).

Standards of competence of employees of SCPs was evaluated as high (4.5) (after rounding), as a whole in Slovakia. The most favorable rating reached region of Kosice (4.5) and Žilina region (4.5). At least favorable outcome in the range of responses recorded Banská Bystrica (4.2).

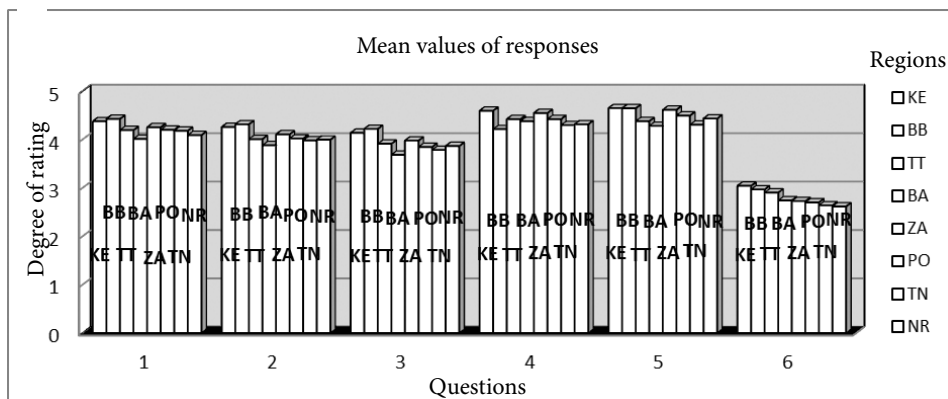
The degree of speed of administrative procedure for clients in the evaluation on SCPs reached a mean value (4.5) in Slovakia. After rounding this level can be defined as high. The evaluation data for the regions follows the highest rating for Kosice region (4.6), Banská Bystrica region (4.6) and Žilina region (4.6) and the lowest rating for the Bratislava region (4.2).

The overall quality of the business environment in Slovakia is rated (2.8). The best result was achieved in the Kosice region (3.0) and Banská Bystrica region (2.9). The lowest values were reached in regions: Nitra (2.6), Trenčín (2.6) and Prešov (2.6).

Graph 1 : Comparison of mean values of responses of entrepreneurs in the Slovakia regions:



Graph 2: Comparison of mean values of responses from individual Slovak regions in terms question:



Graph showing the mean values degrees of responses, resulting from a questionnaire survey, points out the differences between regions. The reasons of these differences can be derived from the socio-economic disparities in the territories of the regions of Slovakia. In the first area, which was aimed to determine the level of the service quality of SCPs, the biggest difference is between the region of Banská Bystrica, which reaches the highest value and the Bratislava region, which recorded the lowest rate of SCPs services. The second area of business opinion survey was aimed at evaluating the degree of complexity of services provided by SCP. Here, as in the first case, region of Banská Bystrica reached the highest evaluation and Bratislava region the lowest scores. A similar result as in the previous case is also represented in another area, aimed to determine the degree of conformity of the services provided and available on SCP with needs of entrepreneurs. The reason of this fact can be seen that in the Bratislava region up to 60% of entrepreneurs - legal persons are registered. Agenda for issuing business licenses for legal persons at SCPs is much more complicated, more professional-demanding, more time-consuming and also more complex than the agenda relating to entrepreneurs – natural persons.

The question directed to the identification of standards of professional competence of employees of SCPs shows the best rating in the Košice region and least favorable in the region of Banská Bystrica. The paradox is that just Banská Bystrica, which won the leadership, in the best evaluation of the degree of services quality at SCPs, is now ranked in the last place.

This fact was caused by the large staff turnover at the District office in Banská Bystrica in the previous period. Newly recruited staff provided services on a lower level. Also insufficient system of control between employees themselves in order

to provide quality services was observed. Skilled employees can be considered one of the determinants of quality of outputs that are provided by employees at SCPs.

The degree of speed was evaluated as the best in Kosice region, Banská Bystrica region and Žilina region, the worst in Trnava region, Trenčín region and Bratislava region.

The next area in the survey was focused on qualitative assessment of the overall state of the business environment. Evaluation of the responses observed decline in favor of negative results of mean values compared to the trend in previous issues. The best evaluation reached Košice region and Banská Bystrica region, which is again a paradox when compared with the real situation and available economic opportunities in these two regions. Lowest rate in this field Trenčín region and Nitra region reached. The business environment is evaluated mainly in terms of business opportunities for entrepreneurs. In Košice region and Banská Bystrica region, large foreign firms (KIA Slovakia, 2700 employees, U.S. Steel Kosice 14 453 employees, Civil Engineering, Inc. - 1558 employees) are allocated. Such big companies require various additional products and services, creating space for business. On the contrary, Nitra region and Trenčín region is dominated by small companies and low supplier-customer relationships with other entrepreneurs.

In terms of research, we investigated also the rate of using of electronic business services of SCPs in filling out forms for each institution. We found that most businesses use electronic services for submission to tax offices in Bratislava, Trnava, Trenčín, Nitra, Žilina and Prešov regions. The service was used in minimum in the Banská Bystrica and Košice. The using of electronic services for submission of health insurance was the most preferred in Bratislava and Žilina regions. This option was used at least in Košice and Banská Bystrica regions. The using of electronic services in the administration of the business register has been comparatively less used. The best results reached Bratislava, Trnava, Trenčín and Prešov regions. The minimum value was recorded of using of this service again in Banská Bystrica region and Košice region.

We can summarize that the highest use of electronic services reached the Bratislava region, Žilina region, the lowest result recorded region of Banská Bystrica and Kosice region. Other regions have similar value, as regards the using of electronic services.

Relative efficiency analysis via a DEA approach

In this section we present the results of analysis of the efficiency estimated for all SCPs by inputs-oriented model DEA, assuming constant and also variable returns to scale. Summary results for the Slovakia and for respective regions are presented in Table 5.

Analysis results show strong variability of technical efficiency scores of SCPs both under constant returns to scale (CRS), as well as variable-returns to scale (VRS). As it is evident from Table 5, in 2009 and 2010, efficient units (TE = 1) make 16% out of the total number of 50 SCPs.. They were represented mainly by SCPs in region BL (2), TN (2), TT (2), and ZA (2). The average score of technical efficiency (CRS) 0.72 (2009), respectively 0.69 (2010) indicate that other SCP on average achieve only 72%, respectively 69% of performance of effective units. The highest average score of TE were achieved by SCPs in the region BL and TT (right aligned figures) and the lowest one by SCPs in the region KE and PO (figures left aligned) Their comparison shows that for example SCPs in the Kosice region were about 22 (2009), respectively 42 (2010) percentage points lower in performance than the SCPs in the Bratislava region. Non-parametric Kruskal-Wallis test confirmed statistically significant differences in efficiency between different regions of the SR ($p = 0.007$). This applies especially when compared BL-KE region ($p = 0.007$), TT-KE ($p = 0.007$) and ZA-KE ($p = 0.047$).

Table 5: Basic characteristics of SCPs efficiency scores (n=50)

SR	2009			2010		
	TE CRS-I	TE VRS-I	SE-I	TE CRS-I	TE VRS-I	SE-I
Min	0,26	0,44	0,27	0,09	0,12	0,23
Avg	0,72	0,81	0,88	0,69	0,80	0,86
Std	0,19	0,17	0,15	0,22	0,18	0,16
TE=1 (%)	16%	26%	16%	16%	24%	16%
Regions						
Banská Bystrica (BB)	0,66	0,77	0,85	0,59	0,75	0,78
Bratislava						
(BL)	0,83	0,84	0,99	0,94	0,95	0,98
Košice (KE)	0,61	0,71	0,87	0,52	0,65	0,80
Nitra (NR)	0,73	0,83	0,89	0,74	0,83	0,89
Prešov (PO)	0,64	0,78	0,83	0,64	0,81	0,78
Trenčín (TN)	0,69	0,80	0,85	0,62	0,70	0,87
Trnava (TT)	0,86	0,95	0,90	0,81	0,88	0,93
Žilina (ZA)	0,80	0,87	0,93	0,79	0,87	0,90

The estimated measures of TE under CRS as well as VRS assumption allow calculating another efficiency measure called scale efficiency. It is given by ratio of TE CRS / TE VRS. Scale efficiency is the potential productivity gain from

achieving most productive or optimal scale size of SCP. In our sample 16% of SCPs is in the range of most productive scale size (SE=1). Average scale efficiency in years 2009 and 2010 is 0,88 and 0,86 respectively.

In the next part of the analysis we have tried to associate the scale efficiency with the size of the SCPs expressed in total number of workers. Scale efficient units (SE=1) are generally units with higher number of workers (11) than inefficient units (9). But regression analysis has shown weak relationship ($r=0,25$, $p=0,01$).

Interesting results were obtained by linking the results from the questionnaire survey and analysis of the efficiency of the SCPs. Analysis of the association of technical efficiency scores of SCPs and evaluation of SCPs by entrepreneurs in terms of survey questions 1 - 4 and 6, showed a weak negative dependence. Correlation with evaluations in terms of question 5 was recorded as moderate strong and significant on level of $p < 0.05$.

Table 6: Corelation matrix of questions of questionnaire and TE CRS

	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	TE CRS-I
Question 1	1,000	0,882**	0,778**	0,826**	0,734**	0,210	-0,169
Question 2	0,882**	1,000	0,935**	0,683**	0,595**	0,347*	-0,109
Question 3	0,778**	0,935**	1,000	0,570*	0,538*	0,440**	-0,149
Question 4	0,826*	0,683**	0,570*	1,000	0,828*	0,140	-0,113
Question 5	0,734**	0,595**	0,538*	0,828*	1,000	0,110	-0,400**
Question 6	0,210	0,347*	0,440**	0,140	0,110	1,000	-0,059
TE CRS-I	-0,169	-0,109	-0,149	-0,113	-0,400**	-0,059	1,000

Source: own calculation

Note: marked correlations are significant at the level $p < 0,05$ (*), or $p < 0,01$ (**)

We can conclude from the relationship between evaluation of SCPs by entrepreneurs and the efficiency scores of particular SCPs, that by the growth of their efficiency, the evaluation of SCPs by entrepreneurs decreases.

This finding may be explained by the negative correlation between the number of entrepreneurs accounted per one employee of SCP and the average assessment of SCP by entrepreneurs. From the above mentioned relationship it can be concluded that in districts with more intensive entrepreneur activities, the employees of SCP devote clients less time. Thus the efficiency of SCPs is increasing but it is reflected in worse ratings by entrepreneurs.

In the final part of the DEA-based analysis, we examined the development of efficiency scores of investigated SPCs. The available data allowed a comparison of only two years (2009 and 2010). Malmquist indices methodology was used for this analysis. Analysis results are presented in Table 7.

Table 7: Malmquist index summary – 2009/2010

Year	Efficiency change	Technical change	Pure efficiency change	Scale efficiency change	TFP change
2009/2010	0,933	1,155	0,968	0,965	1,079

Source: own calculation

Comparison of result of years 2009 and 2010 shows growth of TFP productivity of SCPs by 7.9%. It is an indicator of a positive growth of SCP's performance. Decomposition of this indicator shows, that it is a result of a positive technical change by 15,5%. It means that in the sample best practicing units (fully efficient SCPs) increased their productivity by 15,5%. But inefficient units are losing ability to keep pace with the best ones, what is indicated by a efficiency change score 0.933. This may be translated as a negative technical efficiency change by 6,7%. and it means, that average distance of inefficient units to the frontier created by efficient ones increased in years 2009/2010. Scale efficiency change 0.965 indicates that SCPs are further from the most productive scale size.

Conclusions

The survey conducted by evaluation of questionnaires answered by 4523 entrepreneurs registered in 50 SCPs in all regions of Slovakia, shows that entrepreneurs evaluate SCPs predominantly positive. In terms of quality services provided by SCPs, 82% of entrepreneurs evaluate the SCPs by degree 4 and 5, it means high level and level rather high. The same results were obtained in the degree of complexity of services provided by SCPs, where 76,4 % of entrepreneurs evaluate this question with degree 4 and 5. Although the recent amendments to the Small business act considerable shortened the legal deadline for issuing the business license and simplified the reporting procedure - „making the necessary formalities in one place”, results show that the views of entrepreneurs on the business environment in Slovakia have not improved. It is documented by the results of the survey - with the overall qualitative condition of the business environment of the participating entrepreneurs only 7.10% (high level) are satisfied and 12.39% of entrepreneurs evaluate the overall level of business environment

with level rather high. 29.15% of entrepreneurs evaluate a low level, and 9.24% of entrepreneurs classified the overall business environment with very low degree. As for the results of quantitative analysis, the proportion of efficient units is 16%, the average efficiency is 0.72. There are some statistically significant differences in average technical efficiency scores among regions. Analysis of the associations of efficiency measures and entrepreneur's perception of SCPs show weak negative correlation. Comparison of result of years 2009 and 2010 showed growth of TFP productivity of SCPs by 7.9%, which is a result of a positive technical change by 15,5%, but negative technical efficiency change by 6,7%.

Differences between the evaluation of entrepreneurs from different regions are affected by two factors. First one relates to the business environment and it can be seen in erratic allocation of large firms with possibility of various subsidies and support services from entrepreneurs. The second factor relates to the different levels of management of SCPs, which ultimately affects the overall quality of services provided. In this respect, there may be a significant improvement in the implementation of „Slovak National Quality Program” (2009-2012), introducing the quality management in public administration with a focus on client satisfaction.

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