

Economical Evaluation of Public and Foreign Finances of Selected Secondary Schools

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Abstract

The present situation of education in Slovakia is affected by various negative factors, like decrease of students for demographical reasons, discrepancy between kind and number of secondary schools and disregard to reactions of labor market. But, the main reason is an underfinancing across the education. Allocation of public finance by means of normative funding is inadequate. Normative funding forced secondary schools to accept students with low study score to gain more public finance. In the result it is wrong that school must find another foreign or external financial resource like grants and projects of the European Union. The aim of this paper is to assess the economy of selected secondary schools. Ten Business academies, with pupils aged 15–19 years old, established in Banská Bystrica and Žilina self-governing regions were examined. We used panel data gathered in school year 2013/2014 – 2017/2018 from valuable and verifiable sources like Annual reports of education and financial statements of schools. In paper we use qualitative method of semi-structured interviews with professionals in field to find out which indicators are suitable for economy measuring. Based on qualitative method we determined quantitative and financial indicators, like rate of public and external finance. We're editing data by part of multi-criteria analyze, in the concrete standardized method. We get the economy result of selected secondary schools by integral indicator of applied mathematical method. In the conclusion of paper, we create economy ranking of schools and we suggest the economical solutions for schools with under average results. Our finding is designed by hands of Business academies for comparison with competition, founders of secondary school and resort of education.

Keywords: Education, secondary schools, public finance, foreign finance, economy.

JEL Classification: I22

1 Introduction

Education favorably impacts economic, social and cultural life of the country. The financial resources going into the education system should lead to the best development of students [3, 4, 8]. We include secondary schools to the system of regional education. This system we define as effective education with high level of teaching and training. And, this system reacted on actual and expected needs of society and needs of economic situation of state. System of regional education is available for every social levels of society. It provides teachers with a dignified status and remuneration that is commensurate with the importance of their work [2]. Study at secondary school is a continuation of 10 years' compulsory education. Self-governing regions are responsible for regional secondary education. Public financing of regional education is through by normative funding. Normative funding is based on the law [7]. Secondary schools are divided into groups. Ministry of education dictated groups normative for wages, normative of teaching process, normative of heating, e i. The sum of normative forms is the annual total budget of public finance for every secondary school.

In paper, we focus on the inputs and costs that express the economy of secondary schools. As economical academies we evaluate those that achieve a minimum cost and economical use of their resources. When measuring economy, it is appropriate to consider the capacity of schools at the cost of pupils and staff. The research investigating value for money which includes economy measurement, is the background for our paper. The sample consisted of 19 secondary schools of the same type and used the method of multi-criteria analysis. Research results point to a

decreasing trend in the overall quality of secondary schools [14, 15]. In the paper we followed this research using a new sample of 10 Business academies established in two self-governing regions

Ten Business Academies with pupils aged 15–19 years old established in the Banská Bystrica and Žilina self-governing regions are objects of research. The curriculum of the Business Academy meets ISCED-3A standard, is carried out during a 4-year study and is focused on vocational training for economic, commercial, marketing, monetary activities and work in tourism [13].

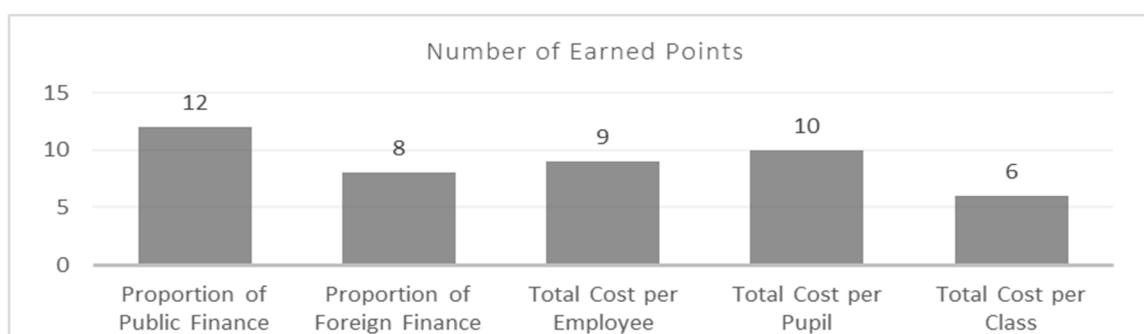
The subject of research is economy. Main indicators for measuring economy are school's own and external resources and taking into account the total cost per pupil and the total cost per employee, we gain a comprehensive view of the economy of selected secondary schools [6]. The use of foreign finance has an impact on increasing the school's overall resources, but it also benefits students who have opportunities to travel abroad through foreign projects, like Erasmus+. However nowadays, secondary schools are increasingly financing their activities from external sources, as our finding shows.

Cooperation with secondary schools formed the first stage of the research part. Through the method of semi-structured interview with the professional in field, we found suitable indicators for measuring economy. Since the research part uses panel data from 5 school years, the next stage was the collection of data from internal documents of selected schools. Subsequently, we use the method of standardized variable and integral indicator to determine the economy of the monitored schools. In the final part, we compare the economics of schools in individual self-governing regions according to the founder. The contribution of the research is to consider public and foreign finance of secondary schools. In this paper we also follow the development of individual resources over 5 school years at 10 Business academies. The research carried out serves the monitored secondary schools for comparison with the competition.

2 Material and Methods

In terms of methodological construction, the research is divided into 5 stages. In the first stage, we carry out primary research with members of the professional public consisting of directors, representatives and economic workers of secondary schools and former graduates by the method of semi-structured interview. The result is the identification of suitable indicators to measure the economy of schools.

Figure 1: Appropriate indicators for measuring economy according to professional public (in points)



Source: Own processing based on the results of semi-structured interviews (2020).

Several authors [5, 10] report that the method of semi-structured interview serves for qualitative research. The interview followed ethical principles. Figure 1 shows the results of the semi-structured interviews. Based on a semi-structured interview, we select the most highly rated indicators for measuring the economy of selected secondary schools.

In the second stage we created panel data for the school years 2013/2014 – 2017/2018. *Financial Statements, Internal Reports and Annual Evaluation of Secondary Schools* served as data collection materials. In the third stage, we monitored the development of public and foreign finance during the five school years in the selected Business academies.

The fourth stage includes analytical data processing by the method of standardized variable and integral indicator. We use part of multicriterial analysis, namely standardized variable [1, 11]. In the standard variable method, the original indicator values are adjusted to a dimensionless number. In the first step, we calculate the arithmetic mean, standard deviations for each performance indicator. In the second step, we subtract the arithmetic mean from the original indicator values and divide the value by the standard deviation. The overall effectiveness of secondary schools is expressed by an integral indicator [12] according to the formula:

$$d_i = \frac{\sum_{j=1}^m u_{ij} * p_j}{\sum_{j=1}^m p_j} \quad [12]$$

Where:

u_{ij} - the Value of the j-th Indicator in the i-th Subject,

p_j - Weight of j-th Indicator

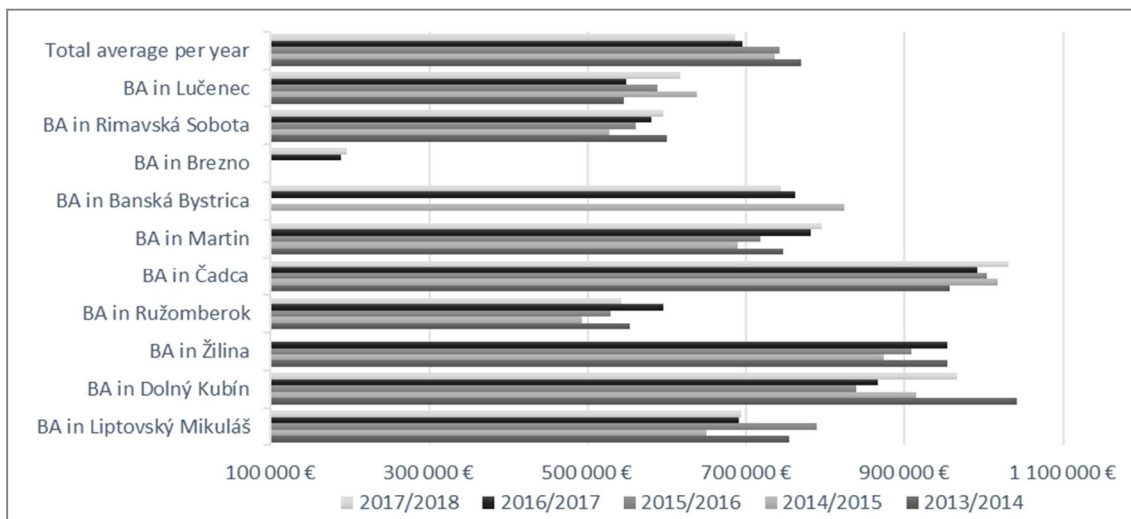
In interpreting the results, we consider that the best subject is most economical. To fill in the missing data, we replace the missing value of the indicator with the worst measured value in the given year. In the fifth stage, based on the findings, we propose options for improving the economy and the share of public and foreign finance for selected Business academies.

3 Results and Discussion

As mentioned in the introduction section of the paper, public finance in the academies constitute normative funding. Normative funding [9] creates more transparency between schools on the one hand, but on the other hand the struggle for students. Schools are thus forced to accept pupils with worse results when entering the first year. There is also no assessment of graduate employment.

In the analysis we examine the amount of public finance obtained from normative financing. In terms of normative funding per pupil, the number of pupils attending the academy is an important determinant. The average amount per student in the monitored academies in the school year 2017/2018 amounted to EUR 10 372.04. An important item of allocated public finance is also the salary norm per teacher. This item also includes personnel costs, which according to economic classification we classify as current. The average annual increase in the salary norm per teacher of the monitored academies is 7.19% (SE 1.755%). Thus, annual public finance per teacher increased by an average of EUR 371.91. Figure 2 shows the total amount of public finances of the 10 Business Academies (BA) in the monitored periods. Please note, that Business academy in Banská Bystrica has not made available data for the school years 2013/2014 and 2015/2016, Business academy in Brezno has not made available data for the school years 2013/2014 – 2015/2016 and Business academy in Žilina has not made data available for the school year 2017/2018.

Figure 2: Total amount of Public Finance of 10 Business Academies in the monitored periods (in EUR)

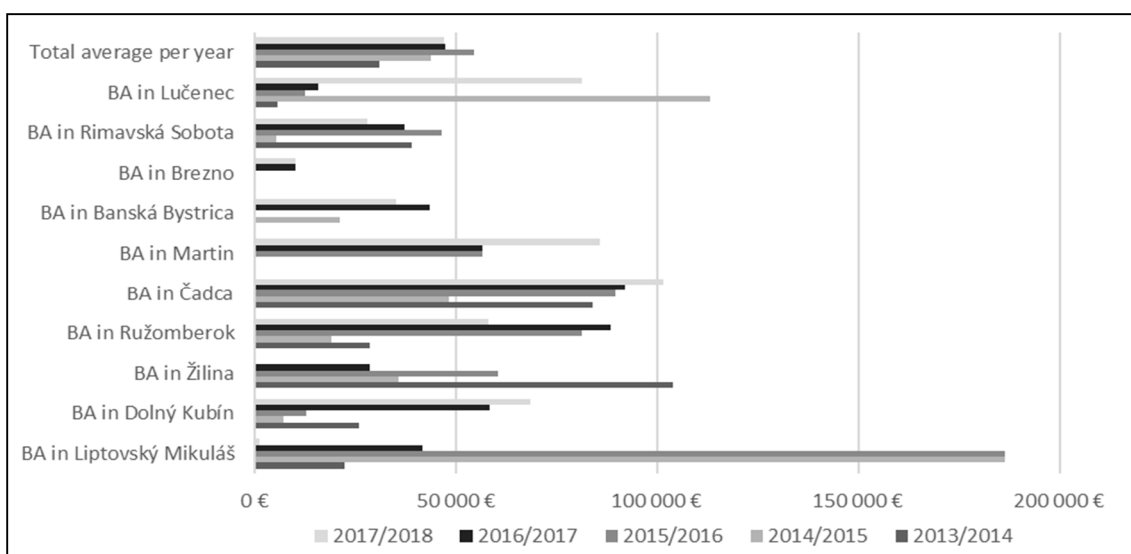


Source: Own processing based on Internal Reports of selected secondary schools (2019).

From the results we conclude, that despite the increase in funding from normative funding, the sources of academies from public finances are declining. The reason is the reduced interest in studying at a given type of secondary school due to the demographic decline of pupils, which is associated with a reduction in the number of classes in schools and a decrease in the number of teachers. At the same time, academies need to provide material and technical equipment. For this reason, they increasingly use external resources from foreign finance to cover such costs.

Foreign finances result from the use of European Union projects and grants and are a new element that affects the overall economy of schools. It is also an extension of total resources. Figure 3 shows the total amount of foreign finance of 10 Business academies in the monitored periods. The largest amount of foreign finance was used by the Business academy in Liptovský Mikuláš established in the Žilina self-governing region in the school years 2014/2015 – 2015/2016. These resources came from the *Road to Success* project, which was used to acquire new competencies of teachers and the international project *Comenius-Friendship links us*, which was realized with a partner school in Turkey.

Figure 3: Total amount of Foreign Finance of 10 Business Academies in the monitored periods (in EUR)



Source: Own processing based on Internal Reports of selected secondary schools (2019).

In the Banská Bystrica self-governing region, the largest amount of foreign finance was drawn by the Business academy in Lučenec. For the period under review, this amounts to EUR 228 373. In the school year 2014/2015, this academy awarded the highest grant of EUR 111 200 by the Slovak Academic Association for International Cooperation for the implementation of foreign professional experience under the *Erasmus+* program, which was attended by a total of 46 pupils in 3 countries, namely Czech Republic, Hungary and Great Britain.

From the semi-structured interviews with the professional public, we find out that the use of funds from foreign finance and the implementation of foreign projects is, on the one hand, a great benefit for pupils who in this way improve their language skills and offer them opportunities for implementation abroad. On the other hand, the quality of education at the Business academy is improving and the eligible material and technical costs for the modernization of schools are covered from foreign finance.

Table 1 below shows the overall value of the integral performance of economy indicator. Based on semi-structured interviews, we selected four indicators that scored the most points according to the professional public.

The average economy of academies in the Žilina self-governing region has a decreasing character. Of the monitored periods, the academies were the most economical in the school year 2015/2016. The reason is the low increase in the share of public finance resources in the recent reporting periods. The overall change is at the level of 0.35% (SE 0.12%), which represents an annual increase of only EUR 2 975.33 per academy. We find that Business academy in Čadca achieved the best economic performance in the monitored periods. It is the largest academy in the region with the capacity of 365 pupils and 52 employees. The lowest values are reported by Business academy in Liptovský Mikuláš. The performance indicator improved in school years 2014/2015 – 2015/2016 due to an increase in funds from foreign finances. For the academy we propose to increase the share of funds from foreign finances to at least 25% of public finances. This step would increase the efficiency by 59.6% (SE 5.8%). The second lowest economy was achieved by the Business academy in Ružomberok. The result of the Business academy in Ružomberok is half better than the result of the previous academy. For improvement we propose to increase the share of foreign finance by 6.34%, thus increasing by 13% (SE 4.12%) the economic performance indicator.

Table 1. Indicator of Economy of 10 Business Academies in the monitored periods

Žilina self-governing region						
Name of school/ School year	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	Average
BA in Liptovský Mikuláš	-1.181	-0.699	-0.291	-0.504	-0.838	-0.703
BA in Dolný Kubín	0.234	0.058	-0.350	-0.061	0.005	-0.023
BA in Žilina	0.784	1.208	0.484	0.168	-0.759	0.377
BA in Ružomberok	-0.295	-0.630	-0.398	-0.480	-0.285	-0.418
BA in Čadca	0.613	1.088	0.306	0.705	0.571	0.857
BA in Martin	-0.155	-0.038	0.249	0.172	0.547	0.155
Banská Bystrica self-governing region						
Name of school/ School year	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	Average
BA in Banská Bystrica	-0.073	0.642	-0.707	0.334	0.283	0.096
BA in Brezno	-0.846	-0.869	-0.707	0.143	-0.021	-0.460
BA in Rimavská Sobota	-0.182	-0.496	0.151	-0.236	-0.419	-0.236
BA in Lučenec	0.136	-0.284	-0.128	-0.241	0.157	-0.072

Source: Own processing (2019).

In the second part of the Table 1 we present the results of the economy indicator of Business academies established in Banská Bystrica self-governing region. The average economy of these academies has increased since the school year 2013/2014 until 2016/2017. An important factor for growth is the use of funds from foreign finances at 60.8% (SE 16.7%), which represents an average increase of EUR 27 413.34 over the reporting periods. On the contrary, when monitoring the development of public finance, they decreased by 10.26% (SE 2.40%) on average, which represents an annual decrease of EUR 3 845.03 per academy.

The best result of economy was achieved by the Business academy in Banská Bystrica at the level of 9.60% (SE 2.45%). The slippage of values is observed in the school year 2015/2016 when we used the worst measured values of individual indicators for the measuring due to has not made available data. The Business academy in Brezno ranked as the least economical. It lags behind the previous academy by 55.6%. However, in the school year 2016/2017 we see an improvement in the economy due to an increase in the share of foreign finances. For this reason, we propose to the academy to keep the share of foreign finance at EUR 20 000. This academy is smallest in terms of capacity: 100 students attend, it has 4 classes and employs up to 30 employees. The proportion of foreign finance proposed in this way should be enough, given the capacity of the academy.

5 Conclusion

The paper focuses on public and foreign finance, which together makes up the overall resources of secondary schools. We monitor the development of these resources during the 5- school year period at selected Business academies established in Banská Bystrica and Žilina self-governing regions. Subsequently, we use the method of standardized variable and integral indicator to evaluate the economics of academies, which are most influenced by public and foreign finance. Demographic decline in pupils has been shown to be associated with a decline in classes and staff. As a result, academies are less prescriptively financed from public finances. Normative funding per pupil puts pressure on admitting pupils for less benefit. We rate normative funding as demotivating for educational institutions. Therefore, there is a need to co-finance education through foreign finance through various grants and projects. This road is proving positive in the future. In the academic year 2015/2016, the monitored academies used a total of EUR 54 586 foreign finance on average. They use the external resources to provide material and technical equipment and modernize the educational process.

The monitored self-governing regions have different economic development. In the Žilina self-governing region, the economy of the monitored Business academies decreases. The reason is a low increase in the share of public finance resources in the recent reporting periods. In the Banská Bystrica self-governing region, the average economic performance until the school year 2016/2017 increased. An important factor for growth is the use of funds from foreign finance. In terms of the economics of academies, we find out that small Business academies achieve below-average economical values in both regions. We therefore suggest that they focus on raising funds from foreign finance to help them improve their financial situation.

In conclusion we remind that during the implementation of the research part three of the monitored academies did not provide us with all the necessary data. This may be due to slightly biased results or disproportionately high statistical error. However, it was not possible to abstract from these academies, as they are established by a self-governing region, for a comprehensive expression of the economics of the self-governing regions and their comparison. Also, please note that the measurement of the economy of secondary schools was carried out based on indicators that the professional public has marked as appropriate, valuable and meaningful. Using a different combination of indicators may result in differences in the overall results of secondary school economy.

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