Proceedings of the
24th International Conference

Current Trends in Public Sector Research

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Current Trends in Public Sector Research

Proceedings of the 24th International Conference

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The Governor of the South Moravian Region Bohumil Šimek

jihomoravský kraj

and with financial support of the South Moravian Region.

Current Trends in Public Sector Research

Proceedings of the 24th International Conference

Brno, 23.–24. 1. 2020

Masaryk University
Faculty of Economics and Administration
Department of Public Economics

Brno 2020

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Suggested citation
AUTHOR, A. Title of the paper. In: Dvořáková, P. (ed.) Proceedings of the 24th International Conference Current Trends in Public Sector Research 2020. Brno: Masaryk University Press, 2020. pp. xx-xx. ISSN 2336-1239. ISBN 978-80-210-9646-2 (online : pdf)

The publisher assumes no responsibility for proofreading and editing of the contributions.
All papers were reviewed by external reviewers and the Programme Committee.

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ISBN 978-80-210-9646-2 (online ; pdf)
ISSN 2336-1239

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Prologue

Dear friends,

I am honoured that you actively participated in our conference that we have been organising at Masaryk University in Brno every January for 24 years. That is a long time. Over the period, several of my colleagues had a turn as the head of the programme committee. Every one of them left their unique mark on our conference. I was thrilled that this year it was me who was given the opportunity to organise the conference and observe the joy of the participants from the front line. I was very pleased with the conference for several reasons. Let me share some of them with you.

First of all, I am happy that the conference has abandoned the concept of many papers and sections, where participants have little chance to meet one another. Instead, we embarked on a path that is more difficult but all the more interesting, one based on fewer contributions concentrated in just a single section followed by a poster session. This creates the opportunity to discuss papers in the main section in more detail and provide the authors with a more in-depth feedback.

Secondly, I am satisfied that the conference provides an opportunity for doctoral students. They can participate both in the main section and in the poster session. The poster session creates a space where they can practice their presentation skills in front of a smaller audience and in a less formal environment.

Thirdly, I am glad that our conference combines local significance with international outreach. It has become a good habit for our colleagues from other Czech and Slovak universities to attend our conference from time to time and present their current research. The conference also regularly attracts international researchers who work in the field of public sector research and are open to further cooperation. The international context is certainly highlighted by the choice of the keynote speaker. This year we had the pleasure to welcome professor René Bekkers and hear him delivered a paper on The Joy of Giving and Volunteering: Evidence from Longitudinal Panel Survey Data and Experiments.

René Bekkers is the director of the Centre for Philanthropic Studies at the Vrije Universiteit Amsterdam. Since 2013 he has been a professor at the Faculty of Social Sciences of VU Amsterdam. He is a co-designer of the Centre's biennial 'Giving in the Netherlands' Panel Study and the research chair of the European Research Network on Philanthropy. His current research examines the determinants and consequences of giving and volunteering, combining experiments and a longitudinal panel survey methodology in a multidisciplinary approach. Not only did René Bekkers deliver an excellent conference paper but, with his questions and discussion contributions, he was also an invaluable asset for the conference as a whole.

This year's conference proceedings contain mostly papers presenting research conducted by doctoral students. If you already participated in our conference, you have certainly noticed that the scope of the proceedings is smaller than in previous years. I hope that this search for quality, rather than quantity, will whet your appetite to read through the conference proceeding and inspire you to attend the conference in the coming years.

I wish you a pleasant reading experience and look forward to seeing you in January 2021.

Robert Jahoda
Head of the Programme Committee

An Assessment of the Public Financial Indicators with Budget Data in Turkey: Review post- 2000

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-1

Abstract

There have been changes in public financial indicators in Turkey after the year of 2000. In this paper, these changes were evaluated together with the budget data. In this context, this paper aims to reveal positive or negative effects of budget data on public financial indicators. The 2008 global financial crisis formed the external direction of the negativity in public financial indicators. In particular, before and after 2008, negative developments have been experienced in public financial indicators except for some years. The 2008 global financial economic crisis had also negative impacts on public financial indicators. Moreover, both general and local elections are a negative factor in public spending discipline in Turkey. Since the local elections, the ruling government has chosen extender budget policies as fiscal policies to win the elections. According to the findings of this study, it was determined that Turkey moved away from the Maastricht criteria after 2008, which stemmed from negative developments in budget data.

Keywords: Public financial indicators; budget data; primary surplus; public debt; fiscal discipline.

JEL Classification: H11, H61, H62, H63, H68

1 Introduction

Turkey has experienced many years of chronic budget deficit and debt problems in the post-1980 period. Along with 1994 economic crisis in Turkey, the 1997 Asian economic crisis and the crisis that occurred in Russia in 1998 negatively affected Turkey's economy. Within the framework of the stand-by agreement signed with the IMF to correct the macroeconomic environment, a comprehensive medium-term stabilization program has been launched since the beginning of 2000. However, during the implementation of the program, inflation rates increased and the current account deficit increased. In addition to all these drawbacks, the open foreign exchange positions of banks, the real sector and the public, job losses in state-owned banks and capital deficiencies in the financial sector triggered the 2001 crisis in Turkey. Therefore, various reforms and policies were implemented in order to escape the effects of the economic crisis and ensure fiscal discipline. Regarding financial sustainability, the suggestions of international organizations such as IMF and WTO were taken into consideration. As well as the suggestions of these organizations, other steps were compliance with Maastricht criteria and reforms in public fiscal management. In this framework, IMF's primary surplus policy has been implemented to reduce public debt stock. Thus, with the primary budget surplus targeted as 6.5% of the national income, international credibility and credibility would be provided, and the country's risk would decrease with increasing credibility, resulting in a decrease in real interest rates. With the decrease in interest rates, both consumption expenditures would be stimulated and a healthy investment environment would be created and a sustainable growth would be provided in the economy.

Two sizes are important in assessing the fiscal discipline of the public sector. These sizes are the ratio of budget deficits to GDP and the primary surplus. In this context, it is possible to evaluate by looking at the size of the budget over the effects of the fiscal policy implemented in after 2000 in Turkey. The effects of the policies implemented in the economy show up over time.

In line with this, the evaluations were carried out of budget size changes following the policies implemented after the crisis of 2001 and 2008 in Turkey.

1.1 The Concept of Fiscal Discipline and Connection of the Economic Crisis

The most basic definition of fiscal discipline concept is the preparation of the equivalent of the public budget. However, the budget deficits and borrowing of the states since the 1970s have necessitated the redefinition of this concept. Today, fiscal discipline is to achieve a sustainable debt level with a moderate budget deficit. When the budget deficits are off limits, negative internal and external shocks will be inevitable in the economy. Faced with these shocks, economies will engage in the fight against the economic crisis. The economic crisis is simply the deterioration in the economy due to the negative change in macroeconomic data. Given that there are various reasons for the crisis, negative indicators in public budget data are the triggers of the economic crisis. Market balances may begin to change as the public goes to borrow to finance budget deficits resulting from the imbalance of revenue and expenditure. Credit and liquidity squeeze that may start with the increase in interest rates in the market may occur. After this situation, with the increase in financing costs, production shrinks and unemployment starts to increase. The economic crisis that creates negative indicators such as the decrease in demand in the market, the increase in prices and in costs should be eliminated. For this, it is important to eliminate the deterioration in fiscal discipline, which is seen as a trigger for one aspect of the economic crisis. It should be aimed to achieve a sustainable fiscal discipline by decreasing the public expenditures in the public budget and increasing the public revenues. With the implementation of this policy, fiscal discipline will be re-established and the side of the economic crisis that may arise for different reasons will be eliminated. Governments should take into account the effects of budgetary decisions on public finances, taking into account structural and demographic factors, increasing public debt levels and evolving cyclical situation changes [1]. According to Allen Schick, maintaining fiscal discipline depends on the ability of governments to allocate public resources in line with strategic priorities and objectives, and the effectiveness of government activities [2].

The financing requirement that the government needs to perform the public functions it needs during the fiscal year is defined as the primary budget balance. In other words, the primary budget balance shows how much resources the government uses for its basic functions and how much borrowing is needed. If there is a difference in favor of income in primary budget balance, primary surplus is mentioned. Excessive primary budget balance indicates that net debt repayment is achieved and debt stock can be reduced. However, the primary surplus target is required for fiscal sustainability. In this context, primary surplus policy is applied in countries with high debt burden, especially after crises [3]. Otherwise, it is not possible for the state to repay its debts by borrowing. Repayment of these debts in the long run depends on the value of the primary surplus. If the present value of the primary surplus is equal to or greater than the value of the budget deficit, the budget deficit will be sustainable [4]. The main reasons for the selection of primary surplus as a criterion for the success of fiscal policy in economies with high debt stock and some risks in sustaining debt are the relationship between primary surplus and debt repayment capacity, the interaction between price stability and debt stock and the positive effect of fiscal discipline provided by the achievement of the primary surplus target on growth [5]. The common practice in assessing the sustainability of debts is to focus on gross or net government debt as a share of the country's GDP. A sustainable government debt is one in which the debt ratio remains constant or decreases over time. Whether the primary surplus target is realized is important for determining the next year's debt ratios [6]. Achieving the primary surplus target leads to a decrease in the public sector borrowing requirement and risk premium, a decrease in crowding out effect and a reduction in the financing constraint of the private sector.

In the relationship between fiscal discipline and economic crisis, countries should take into account the long-term costs of programs and government policies and the sustainability of fiscal policies in preparing their state budgets. This is particularly important given the effects of budgets on national debt. However, a medium-term outlook is also required for budgets since the time range of an annual budget is too short to set spending priorities. Macroeconomic estimates are based on the identification of targets and instruments in areas such as monetary policy, fiscal

policy, exchange rate and trade policy, foreign debt management, regulation and promotion of private sector activities and reform of public enterprises. For instance, the policy goal of reducing inflation normally corresponds to targets such as deficit and debt / GDP ratio. At the same time, special tools used in policy implementation may include changes in direct and indirect tax balance and credit policy measures [7].

Turkey, which is the scope of the study, has faced in the past and present in a variety of economic crisis. Along with crises stemming from its own internal dynamics, it was also exposed to the effects of economic crises in developed and developing countries in the 1990s and 2000s. The 2008 crisis was a similar to former crises. Economic events both nationally and internationally in the decade before 2000 have been the determinant of the fiscal policies implemented during the exit from the economic crisis in 2001. Given the impact of Turkish financial crisis in 2001 and 1994 and the increase of public deficit and Public Sector Borrowing Requirement (PSBR), the most important issue of fiscal policies has become sustainability of debts. The rules as it deems necessary to restore fiscal balance by the Maastricht were targeted for the fiscal balances in Turkey. In this context, the ratio of budget deficit to GDP should not exceed 3% and the ratio of public debt stock to GDP should not exceed 60%. Another indicator of fiscal discipline within the framework of the Transition to the Strong Economy program was seen as primary surplus of 6.5% of the GDP suggested by the IMF.

In 1980-2000 period, there were excessive increases in public expenditures in Turkey, which led to borrowing. The increase in the amount of debt caused the paid interest payments to increase. The interest payments of the domestic and foreign debts in the budget have increased gradually first and then exponentially since the beginning of the 1980s [8]. The primary factor determining the increase in public expenditures was interest payments. In the twenty-year period, the rate of increase of the share of interest expenditures in the budget was higher than the rate of increase of current and investment expenditures. In this period, it can be seen that the budget financed by debt increased the need for public sector borrowing. During the 1994 crisis, Turkey has met with the concept of primary surplus [9]. The primary surplus, which came to the fore in stand-by negotiations with the IMF in 1994, has attracted attention as an element of fiscal policy in negotiations since that year [10]. Given that the concept of primary surplus gained importance as the interest expenditures reached very high levels in Turkey, in the first letter of intent covering the period 2000-2002 for the stand-by arrangement between the IMF and Turkey, it was pointed out that the aim of the fiscal policy in the stabilization program would be achieved by reducing the public sector domestic debt stock and giving primary surplus in the public sector. Therefore, with the advance of stand-by agreement, Turkey's primary surplus target was determined as a performance criterion in proportion to GDP. Within this context, a budget policy based on primary surplus was in action as a fiscal policy application [11].

Initially, while combating economic crisis as the whole world, in Turkey monetary policy measures such as liquidity support loans, and interest rate cuts lowering the cost of the liquidity were taken. When these measures were insufficient, fiscal policy measures were taken to ensure financial recovery. In this context, public revenue and expenditure policies, which are fiscal policy instruments, were used to combat the crisis. The government made VAT and SCT reductions including selected sectors. In addition, incentive packages were prepared on the basis of regions and sectors. These measures both aimed at eliminating the problem of mistrust and uncertainty in the markets, and aimed at eliminating the demand contraction caused by the decrease in household consumption and private sector investment expenditures.

2 Material and Methods

As a method in the study, Primary surplus/ GDP, Interest expenditures/ GDP, Public sector borrowing requirement/ GDP, Gross Foreign debt/ GDP, Debt stock/GDP as well as budget data budgetary equilibrium, primary balance, budget revenue and expenditures were used as data within the scope of public financial indicators. All data used in the study were based on official data published (Strategy and Budget Presidency, Turkish Statistical Institute, Ministry of Treasury

and Finance) by the state of the Republic of Turkey. The evaluation is based on a period of seventeen years. 2019 data are realization estimates. International comparison of above-mentioned data was based on the Maastricht criteria. Turkey's fiscal discipline and sustainability will be analyzed within the framework of these data. Studies on fiscal sustainability analysis are grouped into two groups according to the method followed. Pioneers of these methods are Hamilton and Flavin [12] and Buiter's studies [13]. In this context fiscal sustainability analysis can be done by econometric methods and economic indicators. In both methods, the analysis of fiscal sustainability starts with the government's budgetary constraint. In this context, economic indicators were used as methods in the study. According to Buiter's study, fiscal sustainability can be mentioned if fiscal policy can keep the Public sector borrowing/GDP ratio steady. In the study, Turkey will be evaluated in the primary surplus from the economic indicators for the post-2000. As a result of our analysis with economic indicators, it will also be revealed whether there is a sustainable fiscal policy in Turkey from past to present.

2.1 Fiscal Discipline and Budget Data Connections

Although there are many reasons for the rapid increase in public debt and budget deficits, according to theoretical and empirical literature, inadequate fiscal discipline and weak fiscal management are the main reasons [14]. In theory, the benefits of a numerical target cannot be denied to ensure fiscal discipline. When a balanced budget law is applied, budget deficits caused by political distortion will disappear [15]. It is observed that budget deficits occur around the world especially in developing countries. Developing countries take various measures according to their own internal dynamics in combating their debts and budget deficits. Accordingly, emerging market economies (Chili, Brazil and Malaysia) have adopted some fiscal rules or targets. Spending or fiscal debt limits, structural accountabilities act, primary surplus target can be given as examples of the rules and targets. The ultimate target of all these fiscal rules or targets is to control public finance during elections, to prevent the increase of public debts, and to balance the spending or tax revenues decrease [16]. In post 2000 period, Turkey has resorted to similar measures for fiscal discipline and fiscal sustainability.

Public financial indicators and budget data are given in Table 1. In this context, in addition to fiscal discipline image in post 2000 period in Turkey scale, the changes experienced in public financial indicators and budget data have been demonstrated. According to Table 1, the ratio of budget deficit to GDP, which was 11.2% in 2002, decreased from 2003 to 6% in 2006. However, in 2009, the budget deficit increased to 5.3%. In the following years, it decreased to 1.1% in 2016. When we look at the data of the last three years, the budget deficit has increased again. While the share of interest expenditures in GDP was 14.4% in 2002, this rate has started to decrease since 2003. It reached 5.3% in 2009 and 2.4% in 2019. Considering the primary balance, while the primary surplus was 3.3% in 2002, this rate started to increase since 2003. According to the GDP targeted in accordance with the IMF recommendations in 2004, a primary surplus of 5.3% was achieved by approaching the 6.5% primary surplus rate. However, since 2005, primary surplus declined again as 4.3% in 2006, 3.0% in 2007 and 1.5% in 2008. In 2009, primary surplus realized as negative. Although primary surplus has increased again since 2010, it has remained below 2% until today. In 2013, 2014, 2015, average 0.5% primary surplus was given. In the last four years, primary surplus has decreased and realized as negative in 2019.

The data in Table 1 are based on the borrowing, Turkey's total gross external debt decreased in the period from 2002 until 2012. Foreign debts increased again after 2012 and approached the level of 2002 in the last 3 years. Public debt stock was reduced between 2002 - 2008. The debt stock increased slightly in 2009, but it decreased again in the next period. It was 32.6% in 2018. The borrowing requirement decreased after 2002. The borrowing requirement increased somewhat in 2009 and 2010. It decreased again after 2009 and became 1.6% in 2018.

Table 1: Central Government Budget Data (As of GDP, %)

Expenditures		Non-interest Expenses	Interest Expenses	Revenues	Budget Balance	Primary Balance	Foreign Borrowing (gross)	Debt Stock	Borrowing Requirement
Years									
2002	34.1	19.4	14.4	22.7	-11.2	3.3	54.8	72.1	9.7
2003	31.1	18.2	12.5	22.2	-8.6	4.6	45.9	65.7	7.1
2004	27.2	17.1	9.8	22.0	-5.0	5.3	40.0	57.7	3.5
2005	24.6	17.6	6.8	23.5	-1.0	4.6	34.2	50.8	-0.1
2006	23.5	17.4	5.8	22.9	-0.6	4.3	38.0	44.7	-1.8
2007	24.2	18.4	5.5	22.6	-1.6	3.0	36.9	38.2	0.1
2008	23.9	18.6	5.1	22.1	-1.8	1.5	36.2	38.1	1.5
2009	28.2	22.6	5.3	22.6	-5.3	-1.0	41.6	43.9	4.8
2010	26.8	22.4	4.2	23.1	-3.5	0.7	37.8	40.1	2.2
2011	24.2	21.0	3.0	22.9	-1.3	1.6	36.7	36.5	0.1
2012	25.5	22.1	3.1	23.5	-1.9	0.9	39.3	32.7	0.9
2013	26.0	22.9	2.8	24.9	-1.0	0.9	41.3	31.4	0.4
2014	25.7	22.8	2.4	24.3	-1.1	0.5	43.4	28.8	0.5
2015	25.9	23.2	2.3	24.7	-1.0	0.6	46.4	27.6	0.0
2016	25.9	24.7	1.9	25.4	-1.1	-0.6	47.4	28.3	1.0
2017	26.8	24.4	1.8	24.2	-1.5	-1.0	53.4	28.3	1.8
2018	22.3	20.3	2.0	20.4	-1.9	-2.1	53.8	32.6	2.7
2019	23.2	20.8	2.4	20.3	-1.8	-0.2	*	*	1.6

Source: Strategy and Budget Presidency, Turkish Statistical Institute, Ministry of Treasury and Finance.
**The data is not included because it is not disclosed by the relevant institutions.*

3 Results and Discussion

There are theoretical and empirical studies in the literature on fiscal discipline and sustainability worldwide. Studies on fiscal discipline and sustainability while Turkey in particular is limited. Turkey in particular on the issue of fiscal discipline and sustainability studies evaluating economic indicators or econometric methods are used. Using unit root test method and cointegration method with econometric method Sen, Sağbaş and Keskin evaluated fiscal sustainability over budget deficits, interest payments, and debt stock in 1975-2007 in Turkey [17]. According to the findings of this study, it has revealed no fiscal sustainability in Turkey in the period under review. In another study on the same period in Turkey, Gürdal dealt with the fiscal discipline of economic indicators [18]. In this context, Gürdal evaluated primary surplus, interest expenditures, budget deficit, PSBR, domestic and foreign debt stock and economic growth data in the period of 1975-2007. According to Gürdal's study, achieving the primary surplus target has a positive effect on the sustainability of debts and economic growth. In Turkey, there was a structural transformation occurred in 2001 with the economic crisis. In this context, another study in the literature that covers the period 2001-2007 belongs to Budina and van Wijnbergen [19]. Using fiscal sustainability forecasts, econometric analysis, and stochastic simulation methods and stress tests, Budina and van Wijnbergen showed financial sustainability projections after the 2001 crisis in Turkey. The authors revealed risks in fiscal sustainability and primary surplus for future projections in the study. In the study, it was stated that it would not be possible to maintain the 6.5% targeted especially in primary surplus. In the same study on Turkey's debt stock it has been stated that it would be reached below 50% of GDP respectively. We reached similar results in this study. In light of data that we have examined, in the period after 2000, Turkey has made some positive developments on the debt and budget deficit. However, according to the primary surplus target, it has been determined that Turkey has not reached the targeted level as regards to the fiscal discipline and fiscal sustainability.

4 Conclusion

As a result of data evaluation, within the framework of Primary surplus/ GDP, budgetary equilibrium/GDP, it can be said that the success of Turkey to achieve sufficient levels of public financial indicators is debatable. Budget balance in the period after 2000, Turkey has been fluctuated. Although there was a tendency to recover until 2009, the 2008 global crisis deteriorated the budget balance again. Although there were positive results in the budget balance in the following years, the budget balance deteriorated again in the last two years. According to Table 1 in the debt stock data in 2002, the public sector debt to GDP ratio was 72% in Turkey in 2018, this ratio stood at 32%. This ratio obtained in the debt stock is also compatible with the Maastricht criterion. The main objective of fiscal discipline for the period after 2000 was primary surplus. However, since 2000, 2001 period IMF policies targeted towards 6.5% primary surplus rate has not been realized in Turkey. Considering the relationship between primary surplus and debt payment capacity, low primary surplus rate is risky in terms of repayment of debts in the long run. In this context, it is important to increase the primary surplus value in the coming years. In order to reach this aim, reducing spending and increasing revenues is a solution. It will be easier to ensure fiscal discipline with the increase of primary surplus. In addition, the fiscal discipline achieved by achieving the primary surplus target will have a positive impact on economic growth. This will also be effective in terms of credibility and reliability in the international arena. In conclusion, to provide improvement on the public financial indicators, the primary surplus ratio, the ratio of public sector borrowing requirement/ GDP and the ratio of public sector debt stock need to be reached to the level of Maastricht Criteria. This condition has a great importance in terms of the re-establishment of Turkey's fiscal discipline and sustainability.

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Integrating Delphi and AHP Methods in Long-term Policy Decisions

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-2

Abstract

This paper presents the application of expert decision methods for the formulation and prioritisation of the long-term economic, social and environmental policies in the Slovak Republic. The Partnership Agreement for the Slovak Republic is an underlying strategy for investments from the European Structural and Investment Funds in the period 2021-2027. Policies implemented under the Partnership Agreement will allocate €13.4b on four policy objectives. This paper concentrates on the policy objective 4 'Social development'. The authors co-operated with the Deputy Prime Minister Office and assembled panels of top Slovak experts on social and economic issues. The Delphi and Analytical hierarchy process methods were combined for analysing major development challenges and eliciting policy priorities. The methods combined the bottom-up and top-down approaches to policy making. Consecutive rounds of the 'classical Delphi' generated consensus by experts on major development challenges of the Slovak Republic in period 2021-2027. The 'policy Delphi' encouraged structured public dialogue in order to generate policy alternatives for solving development challenges. The Analytical Hierarchy Process enabled the structuring of complex policy decision problems. A hierarchy of decision goals, decision alternatives and decision criteria was constructed. Some nine policy measures were drafted and prioritised.

Keywords: Delphi method; analytical hierarchy process; partnership agreement; long-term planning.

JEL Classification: E62, Z18

1 Introduction (Case for the Expert Methods in Planning and Policy)

The European Semester is a cycle of economic and fiscal policy coordination within the EU. The European Semester promotes co-ordination in structural reforms, fiscal policies and macroeconomic imbalances. The structural reforms focus on promoting growth and employment. The European Commission (EC) produces annual assessments of progress on structural reforms, prevention and correction of macroeconomic imbalances, and the results of in-depth reviews under Regulation (EU) No 1176/2011. The assessments point to major strengths and weaknesses, as well as opportunities and threats for the development of the EU Member Countries.

The 2019 European Semester report for the Slovak Republic contained Annex D on 'Investment Guidance on Cohesion Policy Funding 2021-2027 for Slovakia'. The 'Investment Guidance' suggested the major areas of policy intervention to be specified in the 'Partnership Agreement (PA) for the Slovak Republic in the period 2021-2027. The Partnership Agreement is an underlying document for the distribution of €13.4b from the European Investment and Structural Funds (ESIF). Policies implemented under the Partnership Agreement (PA) will allocate these funds in four policy areas: (1) research and innovation; (2) environment and climate; (3) mobility (transport) and connectivity (ICT) and (4) social development.

The Slovak Government wanted to ensure the best possible match between policy interventions suggested by the 'Investment Guidance' on one hand and the development challenges of the Slovak Republic on the other hand. The policy interventions for the PA should respect, in principle, the results of the European Semester assessment, but also foster development priorities considered important by the citizens and the government of Slovakia. The authors of this paper advised the Slovak Government on matters of social and economic policies. In 2019, the Deputy Prime Minister Office approached the authors and commissioned the elaboration of the PA document.

Preparation of the PA document had to comply with several conditions:

- ensuring broad participation of key policy stakeholders in drafting PA priorities, as required by the European Commission Delegated Regulation (EU) No 240/2014;
- identifying major development challenges and suggesting the most appropriate interventions for addressing the challenges;
- matching and harmonising Slovakia's development challenges and policy priorities with policy intervention fields suggested by the 'Investment Guidance' of the European Commission.

This paper concentrates on identifying the major development challenges, and prioritising policy measures suggested for the policy objective 4 of the PA: 'A more social Europe – Implementing the European Pillar of Social Rights'.

2 Application of the Delphi and AHP methods

The authors considered the complexity of the task and suggested combination of the bottom-up and top-down approach for drafting the PA document. The bottom-up approach is related to inclusion of representatives of all key stakeholders for identifying development challenges and suggesting policy interventions to address the challenges. The top-down approach relates to a dialogue with the central government ministries. The dialogue is aimed at (i) matching policy measures suggested by stakeholders with those suggested by the 'Investment Guidance'; (ii) drafting sets of policy measures for each policy objective of the PA, and (iii) prioritising policy measures on the criteria of importance, urgency and feasibility. The Delphi method was used to (a) identify major development challenges and (b), to create a list of prospective policy interventions to address the development challenges. The Analytical Hierarchy Process (AHP) was used to rank prospective policy measures on set of qualitative criteria.

The combination of the Delphi and AHP is not uncommon in policy practices. Integration of the two methods enhances the logic of proposed policy interventions and the validity of the policy exercise. Combination of the Delhi and AHP methods enables decision makers to determine policy priorities more objectively and efficiently [1]. The hierarchy of development problems is constructed as follows: complex problems are subdivided to partial issues, and are then evaluated case-by-case [2, 3, 4, 5, 6]. The combination of Delphi and AHP also was applied in Cohesion funding in the EU Member countries [7, 8].

2.1 The Delphi method

The aim of the Delphi method is 'structuring group communication as to deal with complex problems', or 'collecting and aggregating informed judgement from a group of experts on specific questions and issues' [9]. Diverse types of the Delphi method, with regard to the method applicability, validity and reliability are legitimate [10]. The Classical Delphi method aims at bringing together opinions by experts in specific fields. The basic principles of the classical Delphi include:

(i) *Anonymity of experts:* Experts do not know their colleagues. Each expert formulates his/her opinion anonymously. The opinion is free from pressure or influence by other members of the expert panel.

(ii) *Iteration and controlled feedback:* Individual opinions are presented to all members of the Delphi panel. Each panellist may judge the feedback by other experts and reassess his/her original opinion. Several iterations provide continuous feedback and improve potential for consensus

(iii) *Quantitative evaluation and consensus building:* Opinions by individual panellists are processed by simple statistical methods (mean, median) and presented to the panel in the next round of the expertise. Consecutive rounds of the Delphi exercise generate the highest possible consensus among experts.

Goals of the *Policy Delphi* are rather different from those by the *Classical Delphi*. The main goal of the Policy Delphi is to encourage structured public dialogue in order to generate policy alternatives. An opinion survey and generation of diverse policy options is more important than consensus by experts. Members of the expert panel may express their opinions anonymously in initial stages of the Delphi exercise, but they also may hold a group meeting in final stages of the Delphi. The Delphi method applies qualitative reasoning and assessment. It can be implemented in situations where no precise quantitative methods are applicable, but where problem can benefit from subjective judgements on a collective basis [11]. The Delphi is also the best option when a large pool of experts provides the judgement and group meetings are not feasible.

Contributions by diverse participants, individuals' feedback about group opinions, option to reassess one's views and gradual emergence of consensus are the major strengths of the Delphi method. The Delphi structure enhances the positive attributes of an interacting group (collecting knowledge from diverse fields) and downplays negative ones (social, personal and political clashes) [12].

The authors suggested using the two-step Delphi technique:

(a) Collecting, validating and harmonising individual expert judgements on anonymous basis.
(b) Consolidation of final list of development challenges and policy options on the collective workshops (face-to-face communication).

There is no general agreement on the optimal group size in the Delphi method. Some authors suggest groups of 5 to 20 experts [13], but groups with hundreds of experts also have been used [14]. Group size may reflect complexity of topic and diversity of viewpoints by panellists. The panel also may benefit from inclusion of experts with multiple specialties [15]. Higher numbers of participants are needed for complex problems. Diversity of expertise increases with number of participants. Large groups, however, may be difficult to manage. Consensus is also more difficult to reach when numbers of participants are high.

Some 327 experts were invited to participate in the Delphi exercise, of which 93 for policy objective 4 of the PA: More social Europe – Implementing the European Pillar of Social Rights, and 33 experts provided valid replies in the policy objective 4 (Table 1). Composition of the expert panel was consulted with the Deputy Prime Minister Office. Panel members included high-ranking government officials from the relevant ministries (Ministries of Education, Health, Economy, Labour and Social Affairs), representatives of the trade unions, industry and employer associations, local and regional governments, top academics in relevant science fields, and members of the non-governmental organisations. The structure of the expert panel reflected both the scope of the policy objective and the regulation of the EC on Partnership Agreement. Participation in the exercise was by invitation only.

Table 1: Sample size and structure of experts in the Delphi exercise

	Public sector	Economic and social partners	NGOs	Total
Invited	58	23	12	93
Responded	22	5	6	33

Step one of the Delphi exercise was implemented via an online software tool. All participants were anonymous. The experts should identify three major development challenges in the policy objective 4, and suggest the best policy solutions to address the challenges. Development challenges and policy solutions were ranked on scale, 3 – the top challenge / key policy intervention, 2 – significant challenge / important policy intervention, and 1 – challenge / policy intervention. Two rounds of the Delphi exercise were conducted in May 2019.

Step two of the Delphi exercise was performed via a collective meeting of panel members with the authors and representatives of the Deputy Prime Minister Office. Panel members were informed about exercise results. Panellists provided their final opinions about the list of

development challenges and policy priorities. The final results of the Delphi exercise for policy objective 4 are reported in Table 2.

Table 2: Results of the Delphi exercise in policy objective 4

Development challenges identified by participants	Activities/measures proposed		
	1st priority	2nd priority	3rd priority
• Insufficient integration of vulnerable and disadvantaged groups in the labour market • High unemployment of disadvantaged and vulnerable groups • Long-term unemployment of young, low-skilled people	• Support and development of social economy and social enterprises • Support to link education system and the labour market • Addressing the lifelong learning system	• Reduction of long-term unemployment of disadvantaged and vulnerable groups • Development of regions with the highest long-term unemployment • Introduction of tutoring at work	• Support of flexible form of employment • Introduction of professional counselling/guidance • Support of re-qualification
• Access to inclusive and good quality education • Declining quality of education and vocational training • Insufficient pre-school education of children from social disadvantaged communities	• Support for (assistant) teachers • Intensive cooperation between private and public institutions • Building additional capacities of kindergartens and elementary schools	• Reduction of early school leaving • Education in line with changing market needs • Increased accessibility of pre-school education	• Support to early intervention services • Support peer-to-peer learning among schools and teachers • Terminate segregation of Roma children into special schools
• High quality health care • Inclusion of communities from socially disadvantaged areas • Lack of professional capacities in the area of social and legal protection of children	• Support mobile and outpatient health services • support for marginalised Roma communities – employment, education, health, water, waste, housing • Support of new programmes, working methods, practices	• Support modernisation of health facilities equipment • Construction of utility networks, access to drinking water • deinstitutionalisation of children, seniors, handicapped people	• Ensure human resources in health and social care sectors • Introduction of rental housing • Training of staff in the area of social and legal protection of children

2.2 The analytical hierarchy process for prioritising policy measures

Policy alternatives

The authors discussed the results of the Delphi exercise with relevant ministries and representatives of the Deputy Prime Minister Office. Results of the exercise were incorporated in drafts of the policy measures. A total of 239 policy measures were drafted by the central government ministries, of which 77 in the policy objective 4. There were many overlaps in policy measures drafted by the different ministries. The authors further co-operated with the policy makers and agreed on aggregation of 239 policy measures to 46 ones (of which nine in the policy objective 4 (see Table 3 for list of policy measures and results of AHP evaluation). The grouping followed logic of the 2019 European Semester report for the Slovak Republic. List of the policy measures was subject to evaluation via the AHP method.

Criteria

Three criteria were used to evaluate the policy measures in Exercise 1 and 2:

- **Relevance:** the policy measure is highly relevant and significant for the further social, economic and environmental development of Slovakia. The policy measure is important for coping with societal challenges in the next decade.
- **Urgency:** the policy measure must be implemented as soon as possible. The policy measure is also a precondition for implementing next-stage policies.

- **Feasibility:** some economic, social and environmental challenges are extremely important for the future development of Slovakia (population ageing, climate change), but are of the remit of the Slovak government. Some other challenges fell within the scope of government intervention, but the government did not implement the policy measures properly in past. Do you think the government can implement this policy measure properly?

Panel size and structure

The structure of the expert panel was agreed with the Deputy Prime Minister office. Analytical units by the central government Ministries and agencies provided over half of the expert pool. The Ministries' ESIF implementation units were excluded from the sampling to avoid a potential conflict of interest. Other experts included top academics, members of the Prime Minister advisory board, and analysts of the National Bank of Slovakia. Small numbers of experts were recruited from business associations, non-governmental organisations and consultation companies.

There are diverse opinions on the size of expert panel in the AHP exercise. Some authors consider levels of expertise by each expert and the consistency of the expert judgements, and suggest no more than seven experts [16]. If decision problems are complex and different specialisations are required to judge specific aspects of decisions, higher numbers of experts can be invited. There is a risk that a high number of medium-quality experts may dilute opinions by small number of high-quality experts. Diversity of opinions partially can be addressed by aggregating judgements by individual experts in large expert panels [17]. In total, 71 experts participated in the AHP exercise, of which 17 were involved with the policy objective 4 (public sector 15, academia 2).

The AHP exercise was performed online and recorded in the Qualtrics XM software. Completion of each AHP evaluation took about 40-90 minutes. Participants were able to interrupt their work, save results and continue the next day. Data for the AHP exercise were collected in September 2019 and the invitation to fill in the online questionnaire was valid for one month.

Aggregation of individual judgments

Several methods for aggregating individual judgements are applied in group decisions, Aggregation of individual judgements (AIJ) or individual priorities (AIP) are the most common methods of grouping individual judgements. The former method aggregates individual judgments for each entry of the pairwise comparison matrices, while the later ones aggregate individual resulting priorities. The averaging procedure can use either weighted arithmetic mean (WAM) or weighted geometric mean (WGM). There has been an extensive discussion on aggregating methods and averaging procedures in group judgements [18, 19, 20]. The AIP aggregates and WGM averaging method generally are recommended [18, 20].

Priority vector

The AHP method produces the priority vector of weights **w**. The eigenvector method [18] is the most popular method to compute the priority vector in the AHP method.

$$\mathbf{Aw} = \begin{pmatrix} w_1/w_1 & w_1/w_2 & \dots & w_1/w_n \\ w_2/w_1 & w_2/w_2 & \dots & w_2/w_n \\ \dots & \dots & \dots & \dots \\ w_n/w_1 & w_n/w_2 & \dots & w_n/w_n \end{pmatrix} \begin{pmatrix} w_1 \\ \dots \\ \dots \\ w_n \end{pmatrix} = \begin{pmatrix} nw_1 \\ \dots \\ \dots \\ nw_n \end{pmatrix} = n\mathbf{w}$$

Where **A** is the comparison matrix for alternatives A_1 to A_n.

Consistency

Consistency of judgements is an important indicator of quality of judgements. The AHP comparison matrix should respect the transitivity property. The property means that if alternative A > B, and B > C, then A > C. If A is considered three times as more important as B and B is considered two times more important than C, than A should be considered 3*2 = 6 times more

important than C. Human judgement sometimes is not fully consistent. Some level of inconsistency is acceptable in the AHP exercise. The AHP measures the degree of consistency via the Consistency Index (CI) and Consistency Ratio (CR). The comparison of the Consistency Index (CI) to the Random Index (RI) generates the Consistency Ratio (CR). The rule of thumb says that CR ≤ 0.1 is considered acceptable in the AHP exercise. The authors checked consistency by individual experts in the panel. Experts with high inconsistency levels were excluded from computation of priorities.

Table 3: Results of the AHP exercise, policy objective 4: A more social Europe – Implementing the European Pillar of Social Rights

Measures	Relevance	Urgency	Feasibility	Total
4.1 Improving access to quality employment of all jobseekers, enhancing effectiveness of labour market institutions				
Consistency ratio: n.a.				
4.1.1 Improving access to employment and modernising institutions an services on labour market	0.68	0.71	0.49	**0.64**
4.1.2 Supporting a better work-life balance	0.32	0.29	0.51	0.36
4.2 Promoting equal access to quality and inclusive education, training and life-long learning				
Consistency ratio: 0.062				
4.2.1 Improving the quality and effectiveness of education and trainin systems	0.25	0.25	0.24	0.26
4.2.2 Equal access to quality and inclusive education	0.47	0.49	0.41	**0.46**
4.2.3 Support to life-long learning – adaptability of human resources to th skills of the 21st century	0.28	0.26	0.35	0.28
4.3 Enhancing equal and timely access to quality, sustainable and affordable social and health services				
Consistency ratio: 0.033				
4.3.1 Supporting active inclusion with the aim to promote equa opportunities and active participation	0.15	0.16	0.21	0.17
4.3.2 Supporting social and economic integration of marginalised Rom communities	0.33	0.30	0.24	**0.30**
4.3.3 Ensuring equal access to healthcare including primary care	0.30	0.30	0.27	0.28
4.3.4 Promotion of social integration of people at-risk-of-poverty o threatened by social exclusion ...	0.22	0.23	0.28	0.24

Source: Authors' summary of the exercise results.
Notes: top priorities are in bold. Consistency ratios can be only computed for matrices with 3+ alternatives.

Results of prioritisation

Results of prioritisation in the intervention fields 4.1, 4.2 and 4.3 are stated in Table 3. The intervention field 4.1 prioritised two policy measures, 4.2 three, and 4.4 four ones. Score for each policy measure on particular criteria, as well as the total score, are stated in the Table 3. The sum of criteria scores and total scores by specific policy measure is always equal to 1 within the intervention field. Values of the Consistency Ratio are stated for fields 4.2 (0.062) and 4.3 (0.033) in Table 3. Both values are below the 0.10 level. The field 4.1 contained only two policy measures. The Consistency Ratio can be computed only for three and more alternatives.

The prioritisation assigned following ranks to the policy measures:

1. Two policy measures were compared in the intervention field 4.1 'Improving access to quality employment of all jobseekers, enhancing effectiveness of labour market institutions'. The policy measure 4.1.1 'Improving access to employment and modernising institutions and services on labour market' achieved higher scores on criteria of relevance and urgency than the policy measure 4.1.2 'supporting a better work-life balance'. The policy measure 4.1.1 also achieved the highest overall score within the intervention field 4.1.

2. The policy measure 4.2.2 'Equal access to quality and inclusive education' dominated in the intervention field 4.2.2 on all criteria.
3. The policy measure 4.3.2 'Supporting social and economic integration of marginalized Roma communities' got the highest scores on all three criteria, and also the highest total score within the intervention field 4.3 'Enhancing equal and timely access to quality, sustainable and affordable social and health services'.

3 Conclusions

Choice of expert decision methods should reflect the purpose of the policy exercise, type of policy intervention and information available to decision makers. If exact policy goals are specified in quantitative terms, quantitative targets are set and there is enough quantitative information, quantitative evaluation methods should be used to select the best policy options, such as data envelopment analysis or cost benefit analysis. If the policy exercise aims at selecting the most important intervention fields and/or identifying the best policy alternatives to address major development challenges, the combination of quantitative and qualitative methods is appropriate to do the job.

The PA document covers very diverse fields of policy intervention. The policy objective 4, for example, supports social care, health care, social exclusion of marginalised communities, education, etc. These policy fields are sometimes intertwined. Increasing numbers of the early school leavers, for example, relate to the high numbers of children living in marginalised communities. Complex social topics should not be evaluated by experts narrowly specialised in some specific areas. It is a good idea to build a panel of experts who understand interconnections between policy fields.

Panels with diverse specialities necessarily are larger than those addressing narrow policy fields. Higher levels of inconsistency in the AHP exercise are a potential downside of large expert panels. Several procedures may address risk of excessive inconsistency:

Careful picking of experts for the AHP panels;

Reviewing individual inconsistencies by the panellists and excluding experts with high inconsistency levels from the aggregating procedures;

Using AIP WGM method for grouping individual expert opinions.

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Pork Barrel Politics in Context of Action Plan – Support of Least Developed Districts

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-3

Abstract

The aim of the paper is to find out and describe if and by which means the attributes of Pork barrel politics were present in redistribution of funds from Regional grants, which were part of Action Plan – Support of Least Developed Districts. Secondary aim is to see how receiving of this grant could have helped in reelection of incumbent in next election. An Index of political patronage was assembled to measure the level of pork barreling. Based on party affiliation, mayors with connections to government were not highly favored when receiving grant, not even in the case of affiliation with party, which redistributed the grants. Neither there were no significant differences in the odds of reelection based on whether the incumbent received a grant nor not. That is an unexpected result relative to other research in the field.

Keywords: Pork barrel politics; clientelism; reelection of candidate; regional politics; least developed districts.

JEL Classification: H76, Z18

1 Introduction

The malpractices used in political contest and efforts to abuse political systems are a subject of study of many scholars. Many concepts have been defined to describe at first sight similar concepts, the phenomenon of corruption, patronage, clientelism and pork barreling are being addressed by various scholars in various meanings. Pork barreling is often defined as a practice which aim is to gain voter´s favour in exchange for access to resources, as it is defined by Hoare [5] or Lancaster [8]. Very similar practices of exchange of voter`s favor, or change of voter`s behavior for some kind of reward are considered to be a trait of clientelism by Mares and Young [9] and [10], Örnebring [11] and Fox [4]. Furthermore, that is defined as one of corruption practices [1] and in definition is close to the concept of political and party patronage, as defined by Sičáková-Beblavá and Pavel [13]. For the purposes of our paper, we are going to narrow down the used concepts and based on existing knowledge in the field we form our definition of pork barreling that we will use in our research.

In definition of clientelism, we will try to narrow down the concept. There is more or less an agreement in the field of political studies, for example, we see in work of Mares and Young [9] and [10] or Örnebring [11] that it is a relationship between politician and voter, where vote is gained from voter by offering him some kind of incentive. Jonathan Fox [4] stated that it is obvious, what is clientelism for those, who come to contact with it. Being aware of the vagueness, he described propositions researcher needs to address while studying clientelism, in which he claims that clientelism is making the agent – principal (politician – voter in this case) relationship reciprocal and is one of the strategies of using resources for political manipulation [11]. This dyadic understanding of clientelism is also typical for the work of Mares and Young [9] where they describe it as a relationship based on "quid pro quo" principle, to be more concrete, exchange of voter`s support for some pre-agreed behaviour of the politician. Örnebring [11] diffuses the dyadic understanding of clientelism and claims, that media fit in the system of clientelism, both as a tool of elite-to-elite and elite-to-mass communication. His contribution we see not only as describing a new, third actor in the relationship, but as a way of pointing out the complexity of the phenomenon and a change of perspective from dyadic relationship to more complicated network of more possible actors. The "quid pro quo" principle is also addressed by Stokes et al [19] which

they consider to be especially harmful because it undermines the freedom of choice and the autonomy of the voter.

In the aspect of the reward for the voter itself, a very simple, but sufficient distribution is given by Mares and Young. They divide the incentives provided by politicians to voters into positive and negative ones [9]. The positive ones are practices like vote-buying (or as we will describe further in the text, the pork-barrel will fit here too) or providing any form of reward, in form of resources, money, goods, or services. The negative incentives are for example cutting off voters from systems of benefits [9]. These practices, if a secret ballot is respected, are being done more with the voters, whose behaviour is predictable [10]. To briefly sum it up, considering all the above mentioned, we can say that clientelism is a practice of political manipulation in order to change the voter`s behaviour using a system of incentives. There are many actors involved in the process, but crucial is the relationship of politician and voter.

Regarding pork barrel politics, useful is the definition provided by Lancaster who states, that pork barrel politics are distributive politics that favour specific districts which is somehow connected to politician from resources that were gained by general taxation [8]. Here we can see the difference compared to clientelism – pork barrel politics is having a geographical aspect. Lancaster also adds, that the reward voter gets can have an impact on re-election of the politician and therefore this phenomenon is present in all liberal democracies, because all of them generate politicians, which have the incentives to do so [8]. The geographical aspect of the pork barrelling is also stated in the work of Evans [3], also Takahashi [21] considers this geographical aspect to be the distinction between pork-barrel and clientelism, where both of it he considers to be practices which aim to gain political support in exchange for public resources, but clientelism is not geographically targeted, but rallies on building networks. Evans [3] also claims, similarly to Lancaster, that the aspect of re-election is fundamental for the pork barrel politics. Another definition provided by Hoare [5] also distinguishes between several types of pork barrel politics according to who is the key agent and what is the strategy of pork barrelling. He describes the individual form, where the goal is for the individual politician to keep his seat, safe seat form, where the political party rewards their voters and marginal form of pork barrel politics, where the political party tries to win the district. Based on above mentioned knowledge about both, clientelism and pork barrel politics, we will consider that for a phenomenon to be called a pork barrel politics, it needs to fulfil these 3 criteria:

1) Pork barrel politics is a distributive politics, which redistributes public resources based on geographical targeting that is made purposefully, and not on set of objective criteria.
2) Pork barrel politics functions on dyadic relationship of voter and politician on "quid pro quo" principle, where the aim is to exchange vote for a form of reward. In this relationship, other actors can enter too.
3) Pork barrel politics aims to change voter`s behaviour, it is a tool of political manipulation.

Research has been done on the topic of pork barrel politics in Slovakia, so far reaching also outside of the academic world. Transparency International Slovakia evaluated the programme of Grants for Individual needs of municipalities for year 2008, which was conducted by the Ministry of Finance, where they focused mainly on party membership of mayors and it`s compatibility to the party membership of those responsible for distribution, where those who had ties to government have 10 times higher probability in receiving a grant [12]. Their other research focused on fire trucks, which were given to municipalities by the Ministry of Interior in years 2014 to 2016. Here, the most successful were those who had ties to governmental party Smer-SD or were independent, where author states that they might still be linked to the party [6]. In year 2019 they evaluated 1.3 million € of grants, that were distributed at external meeting of the government in the district of Bardejov. 23 municipalities didn`t receive grant, out of them 21 had mayor with no ties to government. Out of 85 municipalities with mayor with support of one of governmental parties, 83 received funds [20]. Another organisation, Slovak Governance Institute, analysed Prime Minister`s reserve in years 2002 and 2013 and also found clear evidence of pork barrelling, where political ties of mayors meant their benefiting in the process of redistribution [7].

In academia, the topic is covered mostly by the work of Peter Spáč, researcher at Masaryk University. His work For the Game, For the loyal Partisans, where he evaluated a governmental programme of grants from year 2015 for building multi-functional sports centres, shows, that there were no objective criteria and the most important factor for receiving grant was having ties to government, and that being tied to opposition meant to be almost ignored [16]. A very similar situation was in the case of environmental grants between years 2005 and 2015 [17]. New observation here is that this practice was not tied to one specific government but is a settled trend that is present across all the governments [17]. Furthermore, research of Central Bohemia region confirmed, that pork-barrel politics occurs not only on national, but also on regional level of politics [18]. The same conclusion as in case of environmental and sports grants can be made about the programme of local infrastructure grants between years 2004 and 2014, but furthermore, Spáč proved that receiving a grant had impact on re-election of the incumbent [15]. The incumbent effect is present in Slovak municipalities, incumbents, who are defending their seats are 6 to 7 times more successful as their rivals [14]. Spáč`s research proves, that receiving a grant from the local infrastructure programme added extra 12% to the probability of incumbent`s re-election and that even small grants, where the upper limit was 13 500€, can play a role [15]. Bernhardt et al [2] further add, that senior incumbents are even more capable of pork barrelling into their own constituencies. Also, important to mention is the fact, that if distribution of the grant is in competence of only one governmental party solely, bigger advantage for the incumbents than just ties to the governments at all are ties to that exact party [17].

The paper has two aims, first is to find out and describe if and by which means the attributes of Pork barrel politics were present in redistribution of funds from Regional grants, which were part of Action Plan – Support of Least Developed Districts. Secondary aim is to see how receiving of this grant could have helped in re-election of incumbent in his next elections. We are going to answer these research questions "Are attributes of pork barrel politics present in re-distributing regional grants of the Action Plan – Support of Least Developed Districts?" and "How does receiving a regional grant affects the re-election of the incumbent?"

2 Material and Methods

As might be already clear from the aim of the research and research questions, in our paper we will analyse the programme of Action Plan – Support of Least developed districts (hereinafter Action Plan). To receive support from the Action Plan is possible for municipality, that are located amongst the 20 Least developed regions, and also other subjects located in the district, such as firms, municipality-run enterprises or third sector organisations [22]. For our research, we decided to take into account also those grants received by firms and institutions, not only by municipalities, Projects realised by them could be also projected into mayor`s political profit – we do not see much difference between a municipality directly receiving funds to renovate pavements or a firm in the village receiving grant to increase employment rate.

Responsible for distributing of the resources from Action Plan was the Government Office of the Slovak Republic (hereinafter the Government office) in the past, lately, the competence fell to the Office of the Deputy Prime Minister of the Slovak Republic for Investments and Informatization (hereinafter Office of the Deputy Prime Minister) [22]. For the incumbents, we know that they are advantaged by being tied to the government, especially to that exact party that distributes the resources [17]. In both cases, position of Prime Minister and Deputy Prime Minister was held by the government, and also by the same party, Smer-SD.

In the research, we are going to analyse all the contracts that have been signed in time period between 10.2.2016 (which is a date of launch of Action Plan for the first district – district of Kežmarok) until the date of last municipal elections, which were held on the 10.11.2018. We chose this time framing and decided not to analyse all the contracts signed by the term of writing this paper, because only those signed before the elections could have impacted the mayor`s chances in municipal elections.

We are going to analyse 13 districts (out of 20, which by definition are considered to be the least developed districts). We chose those districts that had at least one contract signed prior to the date of the municipal elections. It was the districts of Gelnica, Kežmarok, Lučenec, Poltár, Revúca, Rimavská Sobota, Rožňava, Sabinov, Sobrance, Svidník, Trebišov, Veľký krtíš and Vranov nad Topľou. In these districts there are 729 municipalities in total. All the data about the contracts were obtained in e-mail communication with the Office of the Deputy Prime Minister, all the statistical data about the municipalities we used, exactly the name of the mayor, his party affiliation, number of inhabitants and support of Smer-SD in elections were retrieved and are available on the official website of the Statistical Office of the Slovak Republic (hereinafter Statistical Office) where both the demographics and municipal elections of 2018 datasets are available to download.

To see whether the distribution of resources from the Action Plan has traits of pork barrelling or not, we constructed an index of political patronage. We based our index on one used by Transparency International Slovakia in the past. Index of political patronage is counted as share of share of mayors (of each category based on party affiliation) among those who received grant and share of mayors (of the same category) from all the mayors in the region. For example, if one category consists of 10% of mayors in the region, but the same category includes 30% of mayors who received grant, their index of political patronage would be 3.0, that means they were three times more successful compared to scenario based on random distribution.

Out of dataset of 729 municipalities, we had to exclude four, because we couldn`t retrieve the information about who was elected as the mayor in 2014, not even after trying to directly contact the municipalities. Our index therefore doesn't include the municipalities of Buzitka in Lučenec District, České Brezovo in Poltár district, Kuzmice in Trebišov District and Veľký Lom in Veľký Krtíš district. Also, we processed all the contracts received from the Office of the Deputy Prime Minister, where after selecting only those in time framing of our research and excluding all those, which were not assignable to a concrete municipality (for example, contract for creating a tourism centre for whole district), we ended up with 143 contracts about receiving regional grant.

The original index used by Transparency International Slovakia [13] divided the mayors into categories by affiliation to governmental parties one-by-one, to government at all and to opposition. We decided to not copy this, but adjust the categories on our own for two reasons. First one is, in time of distributing resources of the Action plan political situation changed dramatically compared to elections of 2014 and many parties, that used to be relevant back then, are now a non-parliamentary political plankton. We created 8 new categories, and those were; The mayors with support only of Smer-SD, Mayors with support only of SNS, Mayors with support only of Most-Híd, Mayors with support of at least 2 government coalition parties, Mayors with support of Smer-SD and any other political subjects, Mayors supported by at least 1 governmental coalition party, Mayors with support of any political party excluding the governmental coalition and the last one, Independents mayors. These categories were used as variables, and when there was affiliation of mayor to this group or not, we coded them 1 or 0. In the same way, we coded 1 or 0.

As we know from previous research in the field, even receiving a grant in the amount of few thousands of euro can play a role in re-election and increases the incumbent effect [15]. In the Action plan, some of the contracts are on higher, amounts, hundred thousand are sometimes granted to municipalities, firms, and other organizations for single purposes. To the database of 725 municipalities, we added information also about the mayor`s and their party affiliation from the year 2018. We again coded municipalities that received a grant or not 1 or 0, the same we way we coded the re-election. We then counted to share of re-elected mayor, where we created again three groups; all the mayors, mayors with support of Smer-SD and independent mayors.

3 Results and Discussion

As Lancaster mentioned, in all liberal democracies the politicians have incentives for pork barrelling [22]. This incentive might be not only to gain advantage in political competition, but

also might happen as a form of political reward [22]. We might predict, that pork barrelling in this case might have been not only how the money were distributed, but even the decision to establish the action plan that will cover the least developed districts, and starting with these 13 districts before elections might have been a case of pork barrelling. We therefore looked at the share of mayors in these districts compared to their share in all of the Slovak republic. As we see, there is only a marginal difference in the number of mayors who have affiliation to any governmental party. Where we see a difference, there is significantly less mayors with affiliation to non-governmental parties and a significantly greater number of independents. A further research, whether these independents were somehow party affiliated in the past and there might be some form of political strategy, where running as independent might be more appealing to the voters. Also, the voter preferences and support of Smer-SD in the districts could be interesting to look at.

Figure 1: Share of mayors after 2014 municipal ellections

Party affiliation of mayor	Share of mayors in 13 least developed districts	Share of mayors in all Slovak republic
Smer-SD only	29.7	29.1 (-0.6)
SNS only	1.4	1.4 (0)
Most-Híd only	6.8	3 (-3.8)
At least 2 government parties	2.1	2.1 (0)
Smer SD + any other subject	38.6	38.1 (-0.5)
At least 1 government party + any other subject	48.7	44.7 (-4)
Non-government parties only	23.2	17.3 (-5.9)
Independents	28.1	38.0 (+9.9)

Source: Authors.

Figure 2: Index of political patronage

Party affiliation of mayor	Share on all mayors in 13 least developed districts	Share on mayors who received grant	Index of political patronage
Smer-SD only	29.7	17.4	0.586
SNS only	1.4	0.0	0.000
Most-Híd only	6.8	4.3	0.643
At least 2 government parties	2.1	4.3	2.101
Smer SD + any other subject	38.6	34.8	0.901
At least 1 government party + any other subject	48.7	40.6	0.833
Non-government parties only	23.2	17.4	0.751
Independents	28.1	42.0	1.494

Source: Authors.

Regarding the Index of Political patronage (figure 2), the observations are nothing like expected. Interesting are the results of those mayors supported by single government coalition party. There is a strong evidence from previous research, mayors with government's ties and government party affiliation are more likely to be favoured. We see, that not in this case. There was only a small number of mayors with support of SNS, but none of them received any grant, also, for two other government coalition parties, they share on those who received grant was smaller than their share on total numbers. What contradicted the knowledge we have so far the most, was that the share smallest for the mayors who were supported only by Smer-SD. Index of political patronage for this group was 0.586. Even those with support of any other, but government coalition party had better outcome, their index was at 0.751. Those, who had support of Smer-SD and any other political subject were still less favoured, but not that much, their index was at value of 0.901.

Only two groups had bigger index than 1.0 are those with support of at least two parties, and those who were independents. Those with support of two parties reached index of political patronage at level of 2.101, they were more than two times more likely to receive a grant than in a scenario based on randomness. As we know, one of the aspects that makes incumbent effect stronger, is the ability and easier access to networking [14]. The fact, that they were able to bargain support from two parties might be an indicator of their better network, therefore, this might have had an impact on their ability to access the grants more easier. The other group were the independents, where they reached index level of 1.494. A further research on their previous party affiliation, or even their latter one, would provide a more sufficient answer. Their previous affiliation to government might mean, they are still cooperating, but to be an independent candidate is a form of strategy used in elections, their latter affiliation with the party could indicate, that receiving a grant might be a form of recruitment.

Figure 3- median and average amount of grant received per capita

Party affiliation of mayor	Average amount of grant per capita	Median amount of grant per capita
All mayors	74.46 €	35.80 €
Smer-SD only	52.31 €	38.09 €
SNS only	0.00 €	0.00 €
Most-Híd only	41.85 €	35.93 €
At least 2 government parties	27.72 €	27.78 €
Smer SD + any other subject	45.14 €	29.90 €
At least 1 government party + any other subject	50.89 €	33.37 €
Non-government parties only	98.00 €	34.64 €
Independents	88.03 €	36.43 €

Source: Authors.

Also, when analysing both, the median and average amount of grant per capita received, we don`t see, that those with party affiliation related to government parties have not been favoured again, furthermore, those with support of at least 2 coalition parties had about one third of money in the average compared to all the mayors in the regions. Who had more money in the average were the independents, and also, surprisingly, those mayors with party affiliation of all the other, but the governmental parties. In median amount, we don`t see that one group would be specifically better off compared to all of mayors. Therefore, we can say, that here, once again, we can`t see any pattern, that could imply that government tied mayors would receive bigger funds. Once again, we can`t spot pork barrelling here.

Figure 4- share of re-elected mayors

	All mayors		Mayors with grant		Mayors without grant	
Party affiliation	Amount	Re-elected	Amount	Re-elected	Amount	Re-elected
All mayors	725	72.40%	69	73.90%	656	72.30%
Mayors with support of Smer-SD	280	70.70%	24	62.50%	256	71.40%
Independents	204	69.60%	17	70.50%	187	69.50%

Source: Authors.

Although, Spáč in his previous research [15] found out, there even small grants up to 13 500€ can have an impact on re-election, in our case, where the regional grants amounts were in many cases much higher, we can`t see a significant difference in re-election. When comparing all the mayors, the rate of those re-elected who received a grant is only one and half percentual points higher than those without grants, in independents only, its only one percentual point difference in favour of those who received a grant. What was counter intuitive and unexpected was, that those mayors with support of Smer-SD who received a grant had an 8.9 percentual points lower rate of re-election as their party colleagues who didn`t receive a grant. A hypothetical

explanation could be that these projects might have been hard to notice by the voter. We will elaborate on this further in the conclusion.

4 Conclusion

This paper analysed distribution of Regional grants in the Action plan of Support of least developed districts, with focus on pork-barrel politics. Secondly, we tried to find, whether receiving this grant had impact on re-election and incumbent effect. Firstly, before going deeper into our conclusions, we would like to state all the limits of this research we are aware of.

First limit, we need to take into consideration is that the analysis would be more complete, if we would analyse all the available contracts, not only those 143 that were signed before the municipal elections of 2018. We are limited here by our own decision to subsequently analyse the impact of receiving regional grant on re-election. Second limit is that we are analysing the programme not after all the resources were distributed, but while it is still running. Also, the amounts of money distributed is so far smaller than amount of money allocated, therefore there is no need for the ones responsible for the project to choose from "theirs" and "other" mayors, although, incentives for pork barrelling as a tool to give advantage to your party mayors still remains. Also, we haven`t fully mapped all the processes about receiving the resources, applying for regional grants and how mayors are encouraged to use the programme, so for complete evaluation a deeper qualitative analysis would be beneficial. Another limit was the lack of some data – for a district to be considered least developed, one of the conditions is to have 1.5 times higher unemployment than is the average number in the republic. If we knew to analyse, whether the municipalities with greater unemployment rate received more funds that might be an indicator of objective redistribution. Unfortunately, unemployment data doesn`t exist on municipality level and we couldn`t find any other criteria of objective redistribution. We were also limited in part of research where we tried to map the effect of receiving regional grant on re-election, because we did not retrieve information which mayors did not run in the election anymore. From research of Sloboda [14] we know, that incumbent effect and chances for re-election also vary depending on how many terms the mayor has served. This information hasn`t been included in our research neither. We can`t therefore compare only those candidates, who would have the same starting line.

As we found out, there is no evidence of pork barrelling based on party affiliation of mayors, neither when we evaluated the decision to support the least developed districts itself, neither when we compared who received the grant and neither when it came to the amount. In the theoretical part we described three traits of pork barrel politics. We can`t say, that resources here have been redistributed purposefully, also, because we didn`t find evidence, that receiving a grant would give an advantage in re-election, we can`t say that it happened with incentive to reward voter in exchange for the vote, neither to change his/her behaviour in any other form. A further analysis, done after the completion of the plan, considering also factors we described in our limits is desired.

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Salaries of Elected Officials as Municipal Budget Expenditure

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-4

Abstract

Remuneration of politicians is a relevant social issue that is worth to research. Salaries of local representatives in the Czech Republic are set by law and their size is in case of municipalities derived by municipal population. At the same time municipal councils are free to choose, how many elected officials will serve full time and get paid for that service and how many will keep their proper jobs or entrepreneurships and serve only part time and get quite symbolic remuneration. This choice may result in substantial differences in total related budget expenditure in otherwise similar municipalities. The purpose of the paper is to describe the system of local elected officials' remuneration and its evolution since 2010 and to analyse municipal expenditure on elected officials' remuneration in Czech towns with 10 to 50 thousand inhabitants between 2010 and 2018. A key part of the research is the collection of data from local government budgets, their processing and construction of appropriate indicators. Subsequently, these indicators will be analysed through the basic statistical methods resulting in comparison of the selected municipalities.

Keywords: Logal budget, municipalities, expenditures, reprezentatives.

JEL Classification: H72

1 Introduction

Remunerations of voted representatives are specific topic. They are obviously one of the motivators to enter politics, which can attract more qualified people and it is possibly also stimulator for performing better politics. In Europe is also, thanks to transparency, possibility to get many information about remunerations and about other data representing public finances.

This paper is orientated only on remunerations for representatives in municipalities in the Czech Republic from 5 to 50 thousand inhabitants. The aim of this paper is to analyse the relation of remunerations for representatives with other expenditures of municipalities and find out, if is there any diversity across them.

These remunerations are defined by the law, but it does not mean, that two municipalities with similar number of inhabitants will spend same amount of resources on remunerations. I will use descriptive statistics to find relations to other remunerations, which municipalities pay. Moreover, will be calculated cost per representative and share on current expenditures. Statistics will be completed with graphs for a comprehensive overview.

Data will be taken from Monitor, public database of municipal budgets, and Czech statistical office. With them will be created 3 indicators to describe differences between municipalities [1].

2 Theoretical background

Remunerations of political representatives as topic were discussed many times in history, but on communal level is still a lot of unknown. Italian economists Garliarducci a Nannicini (2009) described in their research that politicians with higher remuneration reduce expenditures and revenues of municipality budget. In numbers it means that 33% increased remuneration reduced budget about 17.6%. They evaluate data from Italian municipalities from 1993 to 2001 in quasi-experimental framework [3]. Different results presented Linde (2014). In Netherlands

municipalities increase their budgets with higher remuneration, but he also argues that there is also better meeting with demand of the median voter group. Both researches were summed up by authors as positive outcomes with higher remuneration [6]. Feraz and Finan (2009) in Brazil also discussed causality between increased remuneration and better effectivity of working, but they are not sure, if is it because of remuneration itself or if higher remuneration attracts more qualified people, who perform better outcomes [2].

In the Czech Republic Palguta and Pertold (2018) presented paper about relations between remunerations and qualities of candidates and competition during elections in municipalities with less than 500 inhabitants, they used method of regressed discontinuity. Results also declare positive impact of higher remuneration on education level and the size of competition [7].

But in this paper, I will be focused more on amount of resources, which are used on remunerations of elected representatives.

Czech law describes two categories of municipal politicians. First category is called released member, who is basically full-time politician. Habitually released member is mayor. His remuneration is deduced from the number of inhabitants in municipality and depends also on which post he have.

Non-released member is also, in parallel, employed somewhere else. Beside released member, remuneration is not automatically claimable, and it must be approved by municipal council assembly, but the upper limit is defined by law [4].

Table 1: Remunerations of released and non-released politicians in selected municipalities in CZK

	Released				Non-released					
Inhabitants	**Mayor**	**Deputy mayor**	**Council member**	**Representatives**	**Mayor**	**Deputy mayor**	**Council member**	**Chairman of the Committee**	**Member of the Committee**	**Representatives**
5001 - 10000	65 806	57 909	51 329	44 748	39 484	35 535	7 897	3 948	3 290	1 974
10001 - 20000	71 312	62 755	55 624	48 492	42 787	38 509	8 557	4 279	3 566	2 139
20001 - 50000	77 834	68 494	60 711	52 927	46 701	42 031	9 340	4 670	3 892	2 335

Source: Annex to the Government Order no. 202/2018 Sb., Czech Republic.

As you can see in Table 1, there are significant differences between released and non-released politicians. For example, between representatives from city with 510 inhabitants could be difference more than 22.5 times. Categories are selected by the aim of this paper. From this Figure we could logically expect that in municipality budget the amount of resources allocated to remunerations of representative could be relatively similar.

Two mayors in cities with 10000 and 10001 inhabitants have different remunerations by 8%, which is possibly not adequate, and it is disadvantage of the system.

The number of representatives is also limited by law [5].

Table 2: Number of representatives in selected municipalities in Czech republic

Inhabitants	Number of representatives
3 000 - 10 000	11 - 25
10 000 - 50 000	15 - 35

Source: § 68, Law no. 128/2000 Sb., Czech Republic.

From Table 2 we can deduce that two cities with similar number of inhabitants could have significantly different number of representatives.

3 Data and methods

For research will be chosen three indicators extracted from budgets of 255 municipalities in Czech Republic with more than 5 000 inhabitants or less than 50 000. All data are taken from online public database Monitor provided by Ministry of Finance in Czech Republic. This database provides data from year 2010 till today. This research is done in 2019, so last data are from 2018.

First indicator is cost per representative (CPR).

$$CPR = \frac{Remunerations\ for\ representatives}{Number\ of\ representatives} \qquad (1)$$

Remunerations for representatives are meant as item in budget. It is found by paragraph 6112, item 5023 of the budget. Only real expenditures are used, not planned [1].

Number of representatives are taken from database Czech statistical office and their statistics from elections. Number of mandates in each election is used for calculation [8].

Second indicator is share on all remunerations (SOAR).

$$SOAR = \frac{Remunerations\ for\ represntives}{Remunerations\ in\ total} \qquad (2)$$

Remunerations in total include all expenditures on remunerations which municipalities have. It is found by bloc 50 of the budget. It is the superior category of remunerations for representatives. SOAS represent how big part of remunerations is given to representatives [1].

Third indicator is share on current expenditures (SOCE).

$$SOCE = \frac{Remunerations\ for\ representatives}{Current\ expenditures\ in\ total} \qquad (3)$$

Current expenditures are found as budget class number 5 and they are superior category of remunerations in total [1].

These three indicators will be analysed with descriptive statistics for each year and after that will be used graphical illustration to see, if is there any difference between year 2010 and 2018 and see the diversity between municipalities.

4 Results

Data about municipalities between 5 and 50 thousand inhabitants indicates that there is significant diversity across municipalities and amount of resources stated for representatives represents different share of budget.

Cost per representative

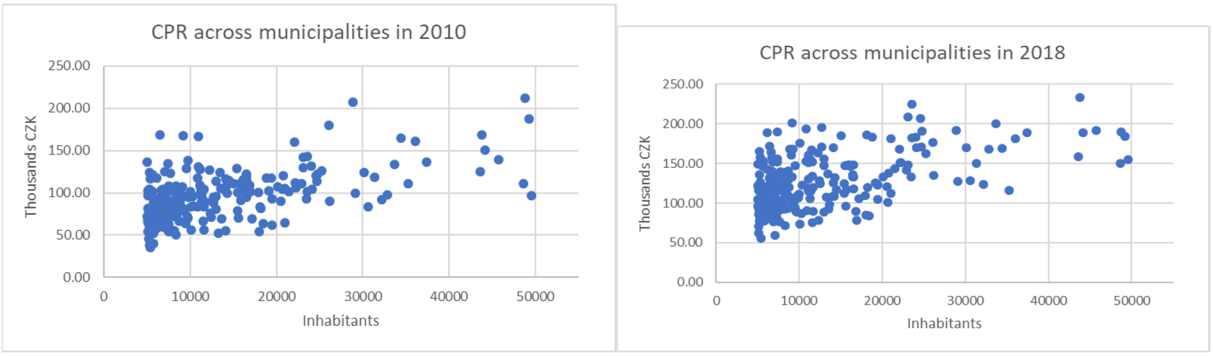
Table 3: Cost per representative in municipalities with 5-50 thousand inhabitants (in thousands CZK)

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Average	101.10	88.65	87.66	87.84	97.55	96.39	98.36	101.89	132.71
Max	211.68	181.59	159.50	164.80	187.61	191.75	201.45	197.89	233.68
Min	35.03	33.11	31.72	31.99	32.17	35.78	37.29	38.45	55.15
Spread	176.65	148.48	127.78	132.81	155.44	155.97	164.16	159.44	178.54
Median	90.48	77.61	76.93	77.56	87.12	84.23	87.63	90.75	119.61

Source: Author.

Wide spread in Table 3 indicates significant difference across municipalities, municipalities spend on remunerations for representative's different amount of resources. We can also see that numbers are mostly growing during time. Next figure shows distribution of CPR according to population in 2010 and 2018.

Figure 1: Cost per representative in municipalities from 5 to 50 thousand inhabitants in 2010 and 2018



Source: Author.

As we can see in Table 3, difference between municipalities is distinctive and it grows in 2018 in compare to 2010. There is also evident slightly growing trend. Growing number of inhabitants tends to growing CPR.

Share on all remunerations

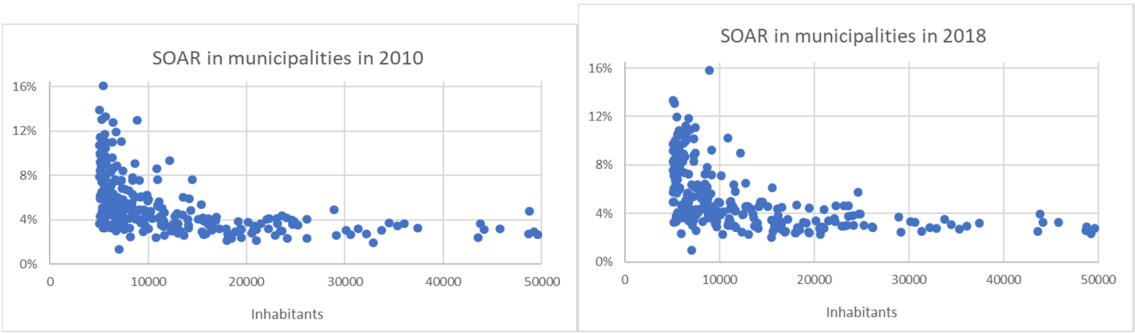
Table 4: Share of remunerations for representatives on all remunerations in municipalities with 5 - 50 thousand inhabitants

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Average	0.053	0.048	0.048	0.046	0.049	0.047	0.046	0.044	0.052
Max	0.161	0.148	0.137	0.141	0.144	0.145	0.149	0.146	0.158
Min	0.013	0.012	0.012	0.012	0.011	0.011	0.010	0.009	0.010
Spread	0.148	0.136	0.125	0.129	0.133	0.134	0.139	0.137	0.149
Median	0.044	0.040	0.040	0.038	0.041	0.039	0.038	0.037	0.044

Source: Author.

In Table 4 we can also see wide spread between maximum and minimum. Municipalities obviously have different attitude to the size of administration and other employed people. Graphical illustration (Figure 2) shows relation with number of inhabitants.

Figure 2: Share of remunerations for representatives on all remunerations in municipalities from 5 to 50 thousand inhabitants in 2010 and 2018



Source: Author.

As in previous graphs there is also noticeable variety across municipalities. Lower share on all remunerations is as expected in bigger municipalities, but the most interesting is wide spread of values in cities from 5000 to 10000 inhabitants. This indicates different attitude to management organisation in municipalities with similar size and there are no significant differences during periods.

Share on current expenditures

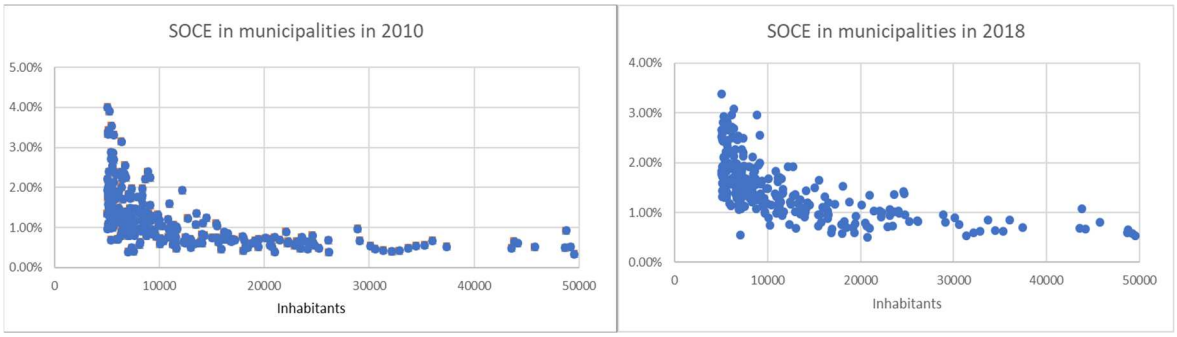
Table 5: Share on Current expenditures in municipalities from 5 to 50 thousand inhabitants

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Average	0,012	0,010	0,013	0,013	0,013	0,013	0,013	0,012	0,015
Max	0,040	0,037	0,035	0,041	0,028	0,031	0,030	0,027	0,031
Min	0,003	0,003	0,004	0,004	0,004	0,004	0,004	0,004	0,005
Spread	0,037	0,034	0,031	0,037	0,024	0,027	0,026	0,023	0,026
Median	0,010	0,009	0,012	0,012	0,012	0,012	0,012	0,011	0,014

Source: Author.

Table 5 basically copies the trends of previous table (Table 4). Spread is still relatively wide, and numbers confirms that there are differences between municipalities.

Figure 3: Share of remunerations for representatives on current expenditures in municipalities from 5 to 50 thousand inhabitants in 2010 and 2018



Source: Author.

Again, there is wide spread of values between municipalities from 5 to 10 thousand inhabitants, but the spread is decreasing during years. Bigger municipalities again have lower share remunerations for representatives on current expenditures. Different attitude to management organisation is obviously once more.

5 Conclusion

Data taken from 255 municipalities about budget for remunerations and current expenditures were analysed successfully. All data were firstly formed into three indicators - cost per representative (CPR), share on all remunerations (SOAR), share on current expenditures (SOCE) and after that values were expressed during years a with descriptive statistics. Finally, each indicator was shown in scatter diagrams in years 2010 and 2018.

All indicators confirm expectation of wide dissimilarity across municipalities, especially between municipalities from 5 to 10 thousand inhabitants. We can clearly declare that municipalities have different attitude to management organisation. And except SOCE there are not significant changes during years.

Next research should be orientated on finding reasons of diversity and relations to other items of budgets.

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Strategies for Activating Public-Private Partnerships of Social Service Provision of Indigenous Regions in Taiwan

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-5

Abstract

Compared with the mainstream society, the distinctively geographical, social and cultural environment of Taiwan's indigenous regions has caused many difficulties in social service provision. The model of public-private partnerships (PPPs) has been regarded as a main strategy to alleviate the difficulties. By adopting the qualitative research method and collecting data through individual in-depth interview (18 peoples) and focus group (2 groups with 11 peoples), this study aims to explore the operation and interaction of public sectors, non-profit organizations and grassroots groups in the indigenous regions, and to identify their internal strengths and weaknesses and external opportunities and threats (SWOT analysis) that affect social service provision, and further, to propose strategies related to activating PPPs. Based on the findings, we propose six discussions and suggestions for activating PPPs of social service provision of indigenous regions in Taiwan.

Key words: Network governance, public-private partnerships (PPPs), social service provision, non-profit organizations (NPOs).

JEL Classification: H53, I3, L32

1 Introduction

Taiwan's indigenous peoples are not only "minority" in population, but also in a relatively "disadvantaged" in life chance such as education, employment, income, and social relations (see table 1). These unfavorable phenomena have been reflected in the "3 High, 3 Low, 3 Less" situations for a long time - "high proportion of dependent population, high unemployment rate, high proportion of alcoholics", "low education, low income and low life expectancy" and "less welfare resources, less medical resources and less employment opportunities" [1].

Table 1 Comparison of socio-economic conditions between indigenous peoples and total population

Item/year	Indigenous peoples	Total population
% of elderly people (age 65+ in 2019)	8.1%	15.2%
life expectancy in 2018	Total: 72.57	Total: 80.69
monthly income/per person in 2015	US$ 950	US$ 1,264
yearly income/per family in 2015	US $ 21,937	US $ 35,714
poverty rate (household) in 2013	7.30%	1.79%
unemployment rate in 2019	4.06%	3.80%
labor participation rate in 2015	59.35%	58.65%
% of college degrees + in 2015	20.75%	48.62%
% of single parent under 18 in 2015	17.48%	9.82%

Source: revised from [2].

In addition, the social service provision have faced the constraints of "5 Lack" – "lack of suitable places", "lack of financial resources", "lack of service payment capabilities", "lack of local service manpower" and "lack of community organization capacities", and the limitations of "5 Shortage" – shortage of government funding, shortage of publicity in service information, shortage of coordination and integration of administrative agencies, shortage of administrative coordination role of township office, and shortage of civil participation in decision-making [3].

The “5 Lack and 5 Shortage” further widen the gap of life chance between indigenous peoples and main society.

The "3 high, 3 low, and 3 less" reflect the urgency of the indigenous people's welfare needs, but the "5 lack and 5 shortage" highlight the difficulty of accessibility of welfare provision. How to improve the long-standing difficulties of the "3 high, 3 low, 3 less" and the "5 lack, 5 shortage" through building a resource network and partnership to integrate resources of all parties related is an important issue that all stakeholders must face jointly. As Clarke and MacDonald believed, from a resource-based view, that local sustainable development is facing complex challenges that need to be addressed through coordinated action and partnership across multiple sectors (e.g. business, public and civil society) [4]. The aim of this study is twofold: (1) to explore the internal and external factors (SWOT analysis) that affect the social service provision in indigenous regions of Taiwan; and (2) to propose feasible strategies that can help to activate PPPs across sectors, so as to improve indigenous well-being.

2 Literature Review

The “network governance” has almost become an idiom of public service provision since the late 1990s [5]. The meaning of "governance" varies with the environment it exists. Rhodes defines governance as "self-organizing and inter-organizational networks”, and considers the network as another new governance model outside the government and market structure [6]. The thinking of governance is a reflection to state failure, arguing that the government must shift from the role of a single actor in the past to the role of balance, negotiation, enablement, and supervision among network groups [7]. Specifically, governance emphasizes the cooperation networks that link public, private and voluntary organizations involved in services outside the central and local governments when they interact with each other [8]. For social services, when the government cannot meet the needs of the people, the use of the private sector has become an indispensable process of service provision. This is, as Patti points out, the use of governance has become quite common, whether social welfare managers in the public sector, non-profit or for-profit organizations must all exert their operational effectiveness in the process of cooperation [9].

Thompson et al. distinguished governance into three models: bureaucracy, market, and network [10]. This distinction is similar to the three models of traditional public administration, new public management, and new public service distinguished by Denhardt and Denhardt [11]. Network governance under the new public service is an open system model, which refers to multiple organizations being combined in an informal way, often based on interpersonal relationships or common expectations or prospects, and promoting more informal interaction, value-sharing and cooperation. The network combines different agencies and stakeholders to work together in a new cross-cutting way [12], and has become the mainstream thinking of social service delivery since the late 1990s [13].

The PPPs is the main approach to carry out the concept of network governance, and has been regarded as a specific form of collaborative governance [14]. “Partnership” is an important issue in current public or social services, but it lacks a consistent definition. Nonetheless, a minimal definition would require the involvement of at least two agents or agencies with at least some common interest or interdependencies; and would also probably require a relationship between them that involves a degree of trust, equality or reciprocity (in contrast to a simple sub/superordinate command or a straightforward market-style contact) [15]. According to the closeness of the combination of action participants, the partnership can be divided into three types from loose to close: cooperation, coordination and collaboration [16]. If the PPPs can function and create higher efficiency, the operation of the network must gradually move from a cooperative to a coordinated relationship, and then to a collaborative relationship.

“Partnership” in social service provision can be regarded as a cross-agency or cross-organizational combination. It may be a combination, either a network or quasi-network relationship, between two or more different sectors or organizations. In practice, if all the actors of the partnership can participate in the operation rationally, the synergy that it can produce

would be mutually beneficial for the stakeholders including service users [13], and be able to encourage innovation, provide comprehensive and high-quality services, increase choice and encourage more providers to join the services [17, 18]. However, when partnership is considered to be a good thing, there has been many evidences that this is not always the case. A comment often used to criticize the operation of partnership is that "your integration is my fragmentation" [13, 16]. Therefore, participation in partnerships has its potential costs and risks.

3 Methods and Data

This study was conducted through the qualitative research method, and the research field is the whole island of Taiwan and divided into central, northern, southern, and eastern regions. The representatives of public and private sectors, experts and scholars familiar with the research issues were selected and invited as the interviewees. All participants are indigenous origin. Data were collected through individual in-depth interviews of 18 peoples and 2 focus group of 11 peoples.

4 Results

The indigenous tribe traditionally was a relatively closed society. As the tribal people communicate with the mainstream society more frequently, coupled with the improvement of transportation and the development of information networks, most tribes have moved towards an open society. Therefore, factors influencing tribal development is no longer just a matter of the internal environment, the external environment cannot be underestimated, and social service related matters are no exception. Based on the respondents' views, by means of the SWOT approach, the internal and external factors influencing social services provision in the indigenous regions were analyzed as table 2.

Table 2. SWOT analysis of influencing social service provision in indigenous regions

S – internal strengths	**W – internal weaknesses**
• Community Development Association (CDA) is the most common and grassroots organization in indigenous tribes • Number of tribal non-governmental organizations (NGOs) has increased and their services have become more diverse. • Some sound tribal organizations can undertake programs commissioned by public or private sectors. • Most of tribes are highly cohesive and mobilizing. • The willingness of youth to return tribes has emerged. • Tribal elites and young people have potential leadership.	• Most of tribes short of professional and full-time staff, which is not conducive to funding application and program implementation. • Excessive inner cohesion of family and religion hinders the operation of the tribal organizations. • Conflict between the village head and the CDA's chairman is not conducive to tribal normal operation. • Insufficient trust of inter-organizations is prone to misunderstandings or conflicts. • Tribal young and middle-aged manpower have been draining and sense of belonging to tribes has gradually alienated. • Strife of tribal inter-organizations is severe, weakening the leader's enthusiasm for services. • Tribal power structure is complex and difficult to coordinate and integrate between factions. • Tribal residents have little spare time to put in services voluntarily due to less job opportunity and high economic pressure. • Location of indigenous tribes are mostly remote and scattered, making it difficult to provide services.

O – external opportunities	T – external threats
• The red tape between public and private sectors is weakening. • Informal relationships reconcile and bridge the gap between sectors. • Central and local governments fund services and provide learning opportunities. • Injection of outside private resources has been gradually increasing.	• The traditional culture of indigenous tribes has faced challenges due to communication with outside societies. • The government regulations are not conducive to striving for external resources. • Intervention of outside political forces has often distorted tribal social service provision. • The interactions between public sectors related to social services have less or even buck-passing. • The interaction between public and private sectors has more only limited to paperwork required by the business.

Source: Authors.

5 Discussions and Suggestions

Based on the results of the above SWOT analysis, this study proposes the following discussions and suggestions that can help to activate the PPPs across sectors, so as to improve resident's well-being of indigenous regions.

5.1 Establishing the foundation for the partnership of tribal inter-organizations by shaping the vision of tribal development

The partnership of network governance is based on the trust and consensus of stakeholders [19]. This study found that the power structure within the indigenous tribes is often complex, and it is difficult to coordinate and integrate factions. Some leaders' service enthusiasms have weakened due to factional struggles. If these phenomena are not effectively resolved or relieved, the decline of indigenous tribes may be further worsening. In order to transfer the relationship between the tribal organizations from the struggle for power or resources to sincere cooperation, coordination or collaboration with each other, it is first necessary to reconcile their interests and persuade stakeholders to work together towards a collective goal. The collective goals must be based on mutual consensus, and the shaping of the tribal vision may be the basis for consensus building. As Klijn and Koppenjon believe that, in complex network actions, even if the stakeholders have different feelings, interests and values, by establishing an agreement based on a set of common principles, "vision" can promote joint action [20]. The indigenous tribes may use a mechanism such as tribal conference to shape their vision, so as to lay the foundation for the formation and operation of the partnership of tribal inter-organizations.

5.2 Resolving the crises of tribal hollowing-out by establishing platforms for resource intermediation and integration.

Due to the losing of traditional culture of indigenous peoples, the outflowing of young and middle-aged people, the declining of tribal consciousness, and the divisions and conflicts among tribal organizations, a phenomenon of "hollowing-out tribes" has emerged". The complexity of the hollowing-out problem could not be resolved by stakeholder individually. This study found that most tribal organizations are generally lacking in energy and ability, coupled with faction's fighting and limited internal and external resources failing to effectively perform their functions, making tribes unable to escape the threat of "hollowing-out". The "hollowing-out state" derived from the differences of public services in the late twentieth century was intended to be resolved by "contractual government" [21] or "contractual governance" [22], and the results are not as expected. Similar situation also seems to appear in the indigenous tribes. Although the governments have tried to help the tribes to get rid of the dilemmas that cause the tribes to hollow-out through various subsidies or outsourced programs, those negative phenomena, such as faction's fighting, rigid government regulations, and lack of full-time and professional manpower have led the tribes, which have already been quite vulnerable, into a hollowing-out crisis. If all stakeholders inside or outside the tribes can jointly build a platform for resource

intermediation and integration through rational communication and coordination, it may be able to alleviate or even eliminate the crisis.

5.3 Leading the tribes to build and recreate vitality by educating and cultivating cross-professional young manpower

This study found that, with the promotion of some government's economic industries or social service programs, the willingness of young people to return to their tribes has increased, and young people are considered to be potential leaders of the tribes. However, if tribes lack livelihood and development opportunities, no matter how high their enthusiasm is, it is difficult to bear under the real-life test. Human resource is definitely a key factor in the construction and activation of tribal capabilities [23, 24]. Cultivating tribal talent is the common responsibility of tribal organizations and governments. If they can discover potential indigenous youth inside and outside the tribes, and jointly cultivate their cross-professional knowledge and skills, coupled with giving them the remuneration needed to support their livelihoods, they may be willing to focus on and work on the tribe's construction without any worry, thereby creating new vitality for the tribes.

5.4 Strengthening organizational intention to cooperate by building trust and informal relationships among stakeholders

This study found that informal relationships can bridge the barriers between organizations and benefit tribal cohesion. However, this study also found that the lack of trust between organizations has affected each other's cooperation intentions. The struggling for power and the competing for resources have been the causes of lacking trust between organizations. Trust is one of the components of social capital, and social capital is a part of community assets and capacities [23]. Trust and informal relationship among stakeholders are necessary elements for promoting tribal construction and activating cooperation between organizations. Trust attitude cannot be formed in a short while and must be cultivated through long-standing interaction and contact. In order to build a trust relationship between stakeholders, whether organizational leaders, government officials or NPO employees, they should grasp all opportunities of participating various activity that could promote informal communication, mutual understanding and maintaining connection in a reciprocal and sincere manner.

5.5 Avoiding withdrawal of tribal elites and leaders due to burnout by fostering team's collaborative model

The affairs involved in tribal building or governance are very extensive and cumbersome. If just individual's or a few people's involvement, it would be difficult to cope with or maintain their operations. This study found that the promotion of daily affairs of tribal organizations, such as the writing, implementation and verification of programs, often relies on leaders or a handful of enthusiastic people. Under the turbulence of inter-organizational or inter-factional fighting, even those who have high commitment or enthusiasm for the tribes would meet the moment of burnout or exhaustion, especially tribal elites or leaders. Resident's participation organizational connection or collaboration are necessary elements of community capacity building or strengthening [23]. Tribal building or governance is by no means few elites or individual heroism can achieve, it is a matter of all residents and organizations. For this reason, whether it is a government unit or a tribal organization, the person in charge or leader must be able to create and foster a team-style operation. By doing so, the tribal consciousness can be deepened due to resident's participation, and the withdrawal of elites and leaders can be avoided due to team-working. In addition, the potential or future leaders can be cultivated through team-working experiences, and further to contribute to tribal sustainable development.

5.6 Building a set of governance culture conducive to tribal activation by establishing a coordination and integration mechanism between public and private sectors.

This study found that, when the tribal NGOs or grassroots interact with public sectors, the bureaucratic mentality of "top-to-bottom" of government units has tended to fade, but the flexibility in funding application, execution, and verification procedures are still insufficient. In addition, inner units of government department usually have fewer intentions and opportunities to interact with each other. When the tribal business involves multiple government's units, under the situation of unclear authority and responsibility, each unit still has a bureaucratic mentality of buck-passing. The phenomenon may have shown that the understanding between units is insufficient, and the trust relationship between sectors also has encountered obstacles, which would make it difficult to establish a governance structure for partnerships [25]. For tribal governance to operate effectively, the premise is that all sectors can operate in an equal and reciprocal relationship, otherwise, the cooperative relationship between the parties would be difficult to maintain [26]. To this end, whether it is the interaction between government inner units or government and the tribal NPOs or grassroots, in order to avoid and resolve gridlock or conflict between each other, a coordination and integration mechanism should be established. By doing so, a set of governance culture based on the principle of equality and reciprocity could be formed, and further to lay the foundation for activating the PPPs of social service provision in indigenous regions.

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LEGAL STATUS OF A PHARMACIST AS A PARTICIPANT OF THE PHARMACY MARKET IN POLAND

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-6

Abstract

The provision of the pharmaceutical service is the basic designation of the pharmacy activities as a public health care facility and is a correlate of the subjective right to health care guaranteed under the Polish Constitution. The provision of the pharmaceutical service remains within the scope of the profession of a pharmacist as a profession of public trust, which is also a regulated profession. Taking into account the need to ensure the highest level of implementation of the right to health care, the legal status of a pharmacist as a participant in the pharmacy market should be subject to special legal protection. The assessment of the existing legal status in this respect remains justified by both the subjective distinction between categories of entrepreneurs who hold a permit to operate a generally accessible pharmacy, as well as the legislative process on principles of fulfilling the pharmacist's professional obligations included in the draft Act on the profession of pharmacist. The purpose of this article is to assess the indicated legal conditions undertaken both on the basis of the existing legal status and proposed statutory solutions.

Keywords: Pharmaceutical Law, pharmacist, pharmacy market, public health.

JEL Classification: K20, K32, I11, I18

1 Introduction

Practicing the profession of a pharmacist as a profession of public trust relating to the most essential personal rights of a person, such as life and health, remains under the special scope of legal regulations, shaping both the legal requirements to obtain the right to practice the profession of pharmacist, standards of its performance and the scope and principles of legal liability, including professional liability. Giving the pharmacist's profession the character of a regulated profession remains justified by the importance of the social significance of the pharmacist's professional activities and the essence and nature of the pharmaceutical services provided, with particular emphasis on their provision as part of activities of generally accessible pharmacies. A determinant of the high standard of pharmacist's personal qualifications required by law is the premise of giving a warranty on the proper performance of the profession, which, according to art. 4 par. 1 point 4 of the Act of April 19, 1991 on Chambers of Pharmacies (JoL of 2019, item 1419 - hereinafter: a.c.p.), is a *conditio sine qua non* of the granting by the competent body of pharmacy self-government the right to practice the profession of a pharmacist. In the light of judicial decisions, giving a warranty of proper performance of the profession should be understood as *"all the features, events and circumstances related to the practice of a given profession that make up its image as a profession of public trust. The concept of warranty consists of such qualities as: nobility, integrity, honesty of the person practicing this profession. The notion of warranty is defined in Polish dictionaries as <<a solemn surety, guarantee and assurance of something>>. The warranty consists of two elements: character traits and current behaviour of the candidate for a given profession. The warranty should be understood as such a set of personal traits of character and behaviour that make up the image of a person of public trust who is not charged with any objection that undermines their credibility"* [1]. Considering the indicated scope of the pharmacist's legally determined personal qualities as a special guarantor of patient health protection and public health protection, an adequate legal appreciation of the pharmacist's status as a participant in the pharmacy market should be expected. The provision by the legislator of

legal guarantees for the autonomy of decisions and the activities of a pharmacist practicing the profession in a pharmacy is an indispensable condition for achieving the objectives of health protection in a manner appropriate for pursuing the profession of public trust. The above issue deserves special attention due to the change in the rules of undertaking pharmacy activity, which entered into force on June 25, 2017 pursuant to the Act of April 7, 2017 amending the Act - Pharmaceutical Law (JoL of 2017 item 1015 - hereinafter: a.a.p.l.), as well as proposed statutory changes in the scope of principles of practicing the profession of a pharmacist, in the form of the Act on the profession of a pharmacist.

The purpose of this article is:

- the assessment of the legal status of a pharmacist as a guarantor of health protection in the area of the pharmacy market in Poland on the basis of the provisions of the Pharmaceutical Law of September 6, 2001 (consolidated text JoL of 2019, item 499, as amended - hereinafter: the Pharmaceutical Law or a.p.l.),
- the assessment of the scope and guarantee of the pharmacist's autonomy of professional activities and independence as a person practicing the profession of public trust, with particular emphasis on the provision of pharmaceutical services,
- the analysis of the proposed legal solutions of the Act on the pharmacist profession in relation to the necessary appreciation of the status of the pharmacist as a medical practitioner and the demarcation of the autonomy of practicing the profession of a pharmacist in a pharmacy in relation to the implementation of ownership functions by the entity operating the pharmacy.

The research methodology is the methodology appropriate for legal sciences. The article is based on the legal status of February 10, 2020 and the draft act on the profession of pharmacist of December 31, 2019.

2 Material and Methods

The entire analysis was based on judicial decisions, with particular emphasis on the achievements of administrative courts, and the spectrum of literature on the subject. However, taking into account that in essence the subject of the research covers the area of new regulations or solutions in the nature of a bill, the scope of the sources used is essentially determined by the course of analysis and conclusions of an author nature.

The article uses the method of legal regulation analysis and the descriptive method.

3 Results and Discussion

3.1 The evolution of pharmacy market regulation

Considerations regarding the legal status of a pharmacist as a participant in the pharmacy market should begin by emphasizing the duality of operations and the objectives of generally accessible pharmacies. According to art. 86 par. 1 a.p.l. the pharmacy is a public health protection facility in which authorized persons provide pharmaceutical services. Therefore, the main goal of the pharmacy's activity remains the protection of the public interest in the sphere of public health, which, based on a broad scientific discourse, including the argumentation underlying the legislative process, remains confronted with the economic goal. The pharmacy perceived in the field of business activity is an enterprise within the meaning of art. 55_1 of the Act of April 23, 1964 - Civil Code (consolidated text, JoL of 2019, item 1145 as amended - hereinafter referred to as c.c.), i.e. an organized set of intangible and tangible components intended for conducting business activities [2]. The evolution of legal solutions aimed at ensuring the necessary harmony between the natural economic need to implement the economic assumptions of the pharmacy and the primacy of protecting public health was reflected in a significant change in the rules of undertaking pharmacy activities under the Pharmaceutical Law, which entered into force on June 25, 2017, and whose basic assumption was the pharmacist's exposure as a basic participant in the

pharmacy market, including by granting pharmacists the exclusive right to obtain authorization to operate new pharmacies.

According to art. 99 par. 1 and 2 a.p.l., a generally accessible pharmacy may be operated only on the basis of the obtained authorization to operate a pharmacy, granted by a local body of state government administration, i.e. a voivodship pharmaceutical inspector. The basis of the change was the conviction of the legislator about the necessity of the conflict between the public and the economic sphere of the pharmacy's business objectives, which was expressed in the justification of the draft amendment to the act, indicating that *"dualism of the objectives of the business, i.e. the commercial objective of economic activity and the social objective of protecting public health , is the source and root cause of any irregularities in the operation of pharmacies"* [3]. Arguing, among others in the above manner the legal admissibility of limiting the constitutional principle of freedom of economic activity in the area of pharmacy activity, the legislator reduced the subjective scope of entrepreneurs authorized to obtain permission to operate new pharmacies, excluding the entrepreneurs from its range who are not pharmacists having the right to practice. Therefore, the legislator made an intentional return to the legal solution underlying the Pharmaceutical Law in its original form from 2001. According to art. 99 par. 4 a.p.l. in the wording of the adoption of the Pharmaceutical Law, i.e. from 6.09.2001, only the pharmacist who was an entrepreneur within the meaning of the Act of November 19, 1999 - Business Law had the right to obtain permission to operate a pharmacy. Moreover, the provisions of the Pharmaceutical Law in its original wording also introduced a significant quantitative limitation indicating, in accordance with art. 99 par. 5, that the pharmacist could obtain only one permit to operate a generally accessible pharmacy. Therefore, it is necessary to emphasize the absolute primacy of the pharmacist's legal status and their position as participants in the pharmacy market, which existed at the root of the assumptions of the Pharmaceutical Law in its original form. The adopted solution constituted a pharmacist in a broader spectrum of entities pursuing an independent and autonomous profession of public trust as part of their business operations and as practice has shown and the current need for legislative changes, this solution was accurate and fully justified. However, its denunciation took place quickly, because still during *the vacatio legis* of the Pharmaceutical Law (the Pharmaceutical Law was promulgated on October 31, 2001, but did not enter into force until October 1, 2002), i.e. with the entry into force of the Act of August 30, 2002 amending the Pharmaceutical Law (JoL of 2002 No. 152 item 1265), which introduced a key transformation of the wording of art. 99 par. 4 a.p.l. - and in force until June 25, 2017- pursuant to which the right to obtain permission to operate a pharmacy was held by a natural person, a legal person and a commercial law company without legal personality. As a consequence, the right to run a pharmacy was granted to every entrepreneur conducting business activity in any form provided for by law. Thus, the legislator abolished the basic guarantee of protecting the qualifications of pharmacy benefits by shifting the burden of shaping the pharmacy market from the sphere of dominance of qualified professional competences of the pharmacist to the sphere of dominance of owner's capital and the superior position of the owner of the pharmacy as an employer. It should be noted that under the same amendment, the legislator lifted the quantitative limit on the number of permits for operating pharmacies, possible to be obtained by one entrepreneur, expressed in the content of the original wording of art. 99 par. 5 a.p.l., repealing this provision. Reforming the principles of shaping and functioning of the pharmacy market, the legislator confirmed and clarified at the same time the mechanism of managing the pharmacy based on the diversification of the ownership prerogatives of the pharmacy operator and the management prerogatives of a pharmacist employed as a pharmacy manager responsible for maintaining an adequate standard of services, including in particular pharmaceutical services. This system is still valid today. According to art. 88 par. 1 and 2 a.p.l., a pharmacist must be appointed in a generally accessible pharmacy, as referred to in art. 2b par. 1 points 1, 2 and 5-7 of the Act of April 19, 1991 on Pharmacy Chambers, responsible for operating a pharmacy, hereinafter referred to as the "pharmacy manager"; you can be the manager of only one pharmacy. The pharmacy manager may be a pharmacist who has at least 5 years of experience in the pharmacy or 3 years of experience in the pharmacy if they have a specialization in pharmacy. In turn, according to art. 99 par. 4a, the entity operating the pharmacy is obliged to employ a person

responsible for operating the pharmacy referred to in art. 88 par. 2, guaranteeing proper operation of the pharmacy. Establishing a pharmacist as a pharmacy manager as a sufficient guarantor of the proper functioning of the pharmacy and the implementation of the objective of protecting public health, has found, among others an expression in the case law of the Constitutional Tribunal, according to which *"from the mere fact that someone may be the subject of rights and obligations resulting from the business activity in the form of running a pharmacy, it cannot be concluded that without the specialist knowledge it is dangerous for legally protected goods. Such a danger can only result from actual activities, which are strictly regulated in the field of running a pharmacy and reserved for persons having appropriate qualifications"* [4]. Without depreciating the legitimacy of the adopted assumption *per se*, practical importance remains conditioned by maintaining the necessary balance between the scope of responsibility, decision-making and autonomy of the pharmacy manager and the natural tendency of the pharmacy owner to intensify interference in the sphere of its operation and activities. A particular degree of sensitivity of this relationship raises the question of the legitimacy of the risk taken for its implementation in the sphere of protection of human personal property characterized by exceptional sensitivity and meaning, which are health and life.

Expressed by the legislator in the justification of the amendment to the Pharmaceutical Law of 2017, the belief that the public and economic purpose of the pharmacy is inconsistent may be considered too far-reaching. Efficient and effective implementation of the economic goal is a natural and direct guarantee of achieving the public goal in the form of public health protection, in particular if the operation of the pharmacy is covered by the economic activity carried out by the pharmacist. Nevertheless, the regulatory opening of pharmacy activities to non-pharmacists in 2002, with the simultaneous abrogation of the quantitative limit of pharmacies operated, should be considered polemical both in the field of public health protection as well as the protection of patient health, understood not only in basic terms as observing due diligence in the provision of pharmaceutical services, but also as a limitation of the progression of consumer tendencies in the area of excessive and unreasonable need for pharmacotherapy of taking medications and consuming dietary supplements. A similar, but far more convincing conviction was expressed by the legislator justifying the need for changes introduced in the Pharmaceutical Law in 2017, according to which legal regulations existing before the change did not ensure appropriate conditions for practicing the profession of a pharmacist, which resulted in the inability to achieve the quality of pharmaceutical services necessary from the point of view of public health protection [3]. The special risk of subordinating the pharmacist to the superiority of the entity operating the pharmacy and not being a pharmacist is also indicated by the case law of administrative courts, according to which *"only independent pharmacists, performing their professional duties in appropriate conditions, guarantee the achievement of the objective of protecting public health. (...) Practicing the profession of a pharmacist in a pharmacy belonging to, e.g. a pharmacy chain causes the pharmacist's practical dependence on the owner, who does not necessarily have to be a pharmacist"* [5]. Considering the above, it should be regarded as significant that the amendment to the Pharmaceutical Law, which entered into force on June 25, 2017, in essence returned to the solutions appropriate for the Pharmaceutical Law in its original form, i.e. from the date of publication of the Act on October 31, 2001, which should be in particular considered the subjective limitation of the right to obtain a permission to operate a pharmacy only to the group of entrepreneurs who are pharmacists and companies in which only pharmacists are partners, as well as the restoration of the quantitative limitation of the operation of new pharmacies. An in-depth assessment of the legal solutions introduced in this respect raises the question about the importance and impact of the new regulations on the position of the pharmacist as a significant participant in the pharmacy market. It should be noted that while the adoption of such solutions as originally shaping the pharmacy market and formulating the principles of its functioning *ab initio* would be indisputably justified and expected, the implementation of such restrictions on the basis of the shaped structure of the pharmacy market may prove counter-effective.

3.2 Pharmacist's position in the light of changes in the Pharmaceutical Law

Pharmaceutical Law change, which entered into force on June 25, 2017, resulted not only in limiting the right to obtain permission to operate pharmacies to the professional group of pharmacists, but also significantly reduced the forms of economic activity appropriate for operating pharmacies. In accordance with art. 99 par. 4 a.p.l., the right to obtain a permission to operate a generally accessible pharmacy is held by: 1) a pharmacist authorized to practice the profession being self-employed; 2) a general partnership or a professional partnership whose object of activity is only running pharmacies, and in which associates (partners) are exclusively pharmacists who have the right to practice. Importantly, each of the aforementioned forms of pharmacy activity gives the entrepreneur full financial liability, including personal property, with the proviso that in the case of a general partnership and a professional partnership, this liability is solidary and subsidiary, which is reflected in the regulation of art. 22 § 2 and art. 31 § 1 of the Act of September 15, 2000, Commercial Companies Code (consolidated text, JoL of 2019, item 505, as amended), pursuant to which each partner is responsible for the company's obligations without limitation with all their assets jointly and severally with the other partners and with the company, whereby the creditor of the company may carry out enforcement of a partner's property if the enforcement of the company's assets proves ineffective. The provision of art. 99 par. 4 point 2 a.p.l. also excludes the pharmacist from running a company with the participation of a person who is not a pharmacist, irrespective of the actual possibility of significant support for the company's activities, e.g. through making a financial contribution or specific competences and knowledge. The effect of the indicated restrictions is the potential depreciation of the pharmacist's position as a participant in the pharmacy market regarding entities operating in the structure of this market before the change in the Pharmaceutical Law. This depreciation occurs in particular in the sphere of increased property liability, as well as in the area of sources of support for the pharmacy's operations both in financial terms and in individual competences. All statutory changes introduced by their nature relate only to facts and events after the date of their entry into force. The indicated demarcation line was clearly defined by the legislator pursuant to art. 2 a.a.p.l., according to which the proceedings initiated and not completed before the date of entry into force of the amendment to the Pharmaceutical Law regarding applications for authorization of operating a pharmacy shall be subject to the provisions before the amendment, and permissions for operating generally accessible pharmacies issued before the date of entry into force of the amendment to the Act have remained valid. As a consequence, it was possible to significantly diversify participants of the pharmacy market into entities that have obtained permission to operate pharmacies, or at least have submitted an application for its issuance before the date of entry into force of the amendment to the Pharmaceutical Law and entities that submitted this application after that date. As a consequence, the first of these groups of entities may continue to carry out pharmaceutical activities in their current form, including in a more advantageous form of limited companies, while the second group, although nominally currently only privileged in the field of undertaking pharmacy activity, in the scope of its performance remains forced to perform it on less favourable terms. At this point, reference should be made to the proposed legal changes on the basis of the Act on the profession of pharmacist [6] (hereinafter: a.p.p.), which shapes the broad catalogue of economic activities relevant to the profession of a pharmacist, but does so in a way that conflicts with the provisions of the Pharmaceutical Law. In accordance with the proposed art. 36 par. 1 point 5 a.p.p. the profession of a pharmacist is carried out as a partner of a general partnership, partner of a professional company or general partner of a limited partnership or limited joint-stock partnership, whose object of activity is the operation of a pharmacy. The proposed solution is expressed *in plus* both by expanding the scope of business activities to include a limited partnership or limited joint-stock partnership, and not excluding the admissibility of non-pharmacists' participation in the company. However, it turns out that this solution, despite referring the activities of the indicated companies to the sphere of running pharmacies, loses its significance in the light of the applicable regulation of art. 99 par. 4 a.p.l. which invariably limits the permissible scope of economic forms of pharmacy activity to: 1) sole proprietorship, 2) a general partnership and 3) a professional partnership, with the exception of

the participation of persons who do not have the right to practice as a pharmacist. Marked potential collision of the standard of the designed art. 36 par. 1 point 5 a.p.p. and the applicable art. 99 par. 4 a.p.l. is subject to decision in the interpretation of law on the basis of *lex specialis derogat legi generali*. Considering that in the field of taking up and carrying out pharmacy activities, the provisions of the Pharmaceutical Law constitute specific norms to the draft provisions of the Act on the profession of pharmacist, regulating in essence the more general sphere of practicing the profession of a pharmacist as such, determining the scope of economic activities appropriate to pursue the profession of a pharmacist in a broader way than the scope of forms provided for by the Pharmaceutical Law for the operation of a pharmacy is not *de facto* relevant. Pharmaceutical law remains in this respect absolutely binding and constituting the sole legal basis for granting authorization to operate a pharmacy.

3.3 Regulation of the pharmacist's profession and the protection of professional independence

In terms of *ratio legis*, the draft act on the profession of a pharmacist has, among others to ensure legal protection for the independence of the pharmacist's profession at the pharmacy. According to the content of justification for the project *"in the current legal status, self-sufficiency and professional independence in the profession of pharmacist is not adequately protected. The conditions of functioning of the profession of pharmacist, who very often works in an economic entity, owned by a non-pharmacist, favour the creation of a bonus system, accounting or often pressure on the way the pharmacist works, who has no guaranteed possibility of unrestricted relationship with the patient. The draft act on the profession of pharmacist guarantees measures to protect professional independence*"[7]. The indicated change is expressed in particular in the proposed wording of art. 35 par. 1 a.p.p., according to which the apothecary makes its own decisions regarding the provision of pharmaceutical care and provision of pharmaceutical services, guided solely by the patient's best interests and is not bound by an official order in this respect - whereas the "apothecary" should be in accordance with art. 30 par. 1 a.p.p. understand as a pharmacist practicing in a pharmacy, pharmaceutical outlet, hospital pharmacy department or pharmaceutical warehouse. In accordance with the intention of the legislator, the regulation of art. 35 par. 1 a.p.p. aims to explicitly exclude the performance of the pharmacist's professional activities from the domain of authoritarian interference of the owner of the pharmacy, whose effect should be seen in particular in the *explicite* exclusion of the above mentioned sphere of pharmacist's activities under the prerogatives of official orders issued to them. However, while the adopted concept should be assessed positively, its expression may raise certain reservations. First, the legislator, by excluding the provision of pharmaceutical care and pharmaceutical services from the binding instruction of a service order, referred to the service order as such and did not specify the category of exclusion. Meanwhile, one cannot agree with the assumption that a pharmacist in the provision of care or pharmaceutical service should remain in complete autonomy with respect to each official order. When performing the pharmaceutical service, the pharmacist should remain strictly bound by the official instructions of the pharmacist's supervisor performing the function of a pharmacy manager, which is in correlation with the content of the tasks of the pharmacy manager, which, in accordance with art. 88 par. 5 point 1 a.p.l., include organization of work in a pharmacy involving, inter alia, the receipt, issuing, storage and identification of medicinal products and medical devices, the correct preparation of prescription and pharmacy medicines and provision of information on medicines (draft change pursuant to art. 83 point 5 a.p.p. of the wording of art. 88 par. 5 a.p.l. remains in the discussed scope in accordance with its previous meaning). Secondly, it should be noted that the legislator has not decided to explicitly sanction the violation of pharmacist's autonomy through the unauthorized interference of the pharmacy owner. It is true that, in accordance with the proposed art. 35 par. 2 a.p.p., an entity operating a pharmacy, pharmaceutical outlet or hospital pharmacy department is obliged to enable the apothecary to make independent decisions regarding the provision of pharmaceutical care or provision of pharmaceutical services to the extent that they are related to the entity's activities - nevertheless the consequences of violating the above rule seem apparent. According to the proposed change pursuant to art. 83 point 13 a.p.p., of art. 103 a.p.l., in the event of a failure to implement the abovementioned obligation by the pharmacy

operator, this circumstance is to constitute the basis for the obligatory withdrawal by the voivodship pharmaceutical inspector of the authorization to operate the pharmacy granted to that entity, but only if the breach of this obligation is persistent. The obvious blurring of the premise of "persistence" and evidentiary difficulty in demonstrating it may in practice constitute the ineffectiveness of the proposed sanction.

While remaining in the assessment of the regulation of the pharmacist's profession in terms of protecting their professional independence, one should also refer to the importance of the proposed solutions in the context of the relationship between the entity operating the pharmacy and the manager of the pharmacy. This relationship has aroused polemics regarding the appointment and qualification of the deputy manager, including in particular the issue whether the deputy manager should have the same qualifications as the manager, i.e. in accordance with art. 88 par. 2 a.p.l. be a pharmacist with at least 5 years work experience in a pharmacy or 3 years work experience in a pharmacy, if they have a specialization in pharmacy. The resolution of the above issue was reflected in the case law of administrative courts, according to which *"the condition for the operation of a pharmacy is the presence of the pharmacist there during business hours who meets the requirements necessary to take the position of a pharmacy manager"* [8]. In addition, according to the position of the Supreme Administrative Court, *"pharmacies conduct activities that require special diligence and high qualifications in the implementation of tasks, because negligence resulting from lack of diligence and high qualifications of staff can lead to very serious damage to the health and even the lives of people using their services. Therefore, it is obvious that permanent, on-going supervision over their activities is required by people with special qualifications and professional experience. Such a reading of the content of art. 92 a.p.l., which implies the obligation to ensure a permanent presence at the pharmacy of the pharmacy manager within the meaning of art. 88 par. 1 and 2 a.p.l., or at least another pharmacist with the competencies required from the pharmacy manage, should therefore be considered in line with the teleological interpretation"* [9]. The case law formed in this way, although in its essence appreciating the status of a pharmacist, is a significant burden for entities operating pharmacies, in particular in the scope of verification and strengthening of personnel policy. Therefore, it should be considered as important, the designed change pursuant to art. 83 point 6 a.p.p., to art. 92 a.p.l., according to which a pharmacist or a pharmacist employed in the pharmacy during its working hours performs their duties at the pharmacy on a different legal basis, what *a contrario* means the exclusion of the obligation to ensure permanent presence at the pharmacy of the pharmacist in the function of the manager or their deputy. The indicated solution seems to harm the essence and the purpose of fulfilling the function of the manager of a pharmacy which is an enterprise with a special social status of a public health care facility. The question arises as to whether the operation of a pharmacy deprived in a given time of a person in the position of a manager should be considered justified and acceptable. Such a solution should be considered not only as likely to pose a risk to the protection of patient's health and public health, but also to be pointless and contentious in the context of the legal obligation to perform the tasks of the pharmacy manager within the meaning of the draft Act on the profession of a pharmacist, and consisting of personal management of the pharmacy, including among others supervision over the on-going operations of the pharmacy and supervision over activities, including professional activities performed by the pharmacy staff. Only on the margins of the considerations carried out it should be noted that the proposed requirement for the personal management of the pharmacy by its manager may be regarded as excluding the possibility of appointing another pharmacist as their deputy, which, taking into account even the employee's right to leave, seems to be misguided.

4 Conclusion

The statutory appreciation of the status of a pharmacist as a participant in the pharmacy market and the need for legal protection of the independence and autonomy of practicing the profession of a pharmacist in a pharmacy constitute the expected and fully justified direction of legal changes. The social significance of the profession of a pharmacist and the special function of a pharmacist as a guarantor of public health protection make the indispensable implementation of solutions not only affirming the status of a pharmacist in terms of conditioning the medical profession, but primarily in the context of legal relationships with a complex subject structure, appropriate for the functioning of the pharmacy market.

Recognizing the intentional legitimacy of the legislator's actions, one should note, however, the unusual conservativeness of the implemented solutions, which, although nominally should support the position of a pharmacist and ultimately serve to improve the quality of pharmaceutical services, can ultimately be assessed as affirming the interest of pharmacy owners to the detriment of the originally assumed goal. Recognizing and identifying the existing range of objective restrictions in this area, however, one should postulate the widest possible return to the concept underlying the regulation of the Pharmaceutical Law in its originally adopted and published wording, i.e. promoting and autonomizing a pharmacist. While the transformation of the pharmacy market towards the dominant role of pharmacists as persons running pharmacies may prove to be *per facta* significantly difficult or impossible, the legal protection of the independence of the pharmacist's profession should be considered as a correlate of the constitutional right to health and life protection, and thus subject to strengthening and special attention for the legislator.

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Application of the Non-Parametric DEA Method to Analyze the Efficiency of Selected Services Provided by Municipalities, Example of Public Libraries

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-7

Abstract

The paper deals with the possibility of applying the DEA method to measure the efficiency of local public services provided by municipalities and towns in the Czech Republic. It is testing and modeling data on the effectiveness of local libraries, which for 100 years had to provide basic education and disseminate education in municipalities. There are many models in the literature dealing with various problems of efficiency analysis. A particularly suitable and elegant model is the DEA model based on Chebyshev distance. This model can be formulated with both the assumption of constant range returns and the assumption of variable range returns. Similar to the classical DEA model, this method can be formulated as a set of optimization problems looking for weights for given inputs and outputs.

Keywords: Technical efficiency; DEA local services; municipalities; public libraries.

JEL Classification: C44, H41, H76, Z18.

1 Introduction

The issue of efficiency of public services in the Czechia is a subject of both professional and political interest. This is due, among other things, to the high degree of atomisation of local government, which is represented by 6258 independent municipalities and the impossibility of their aggregation through administrative mergers or municipalization.

In this respect, the Czech Republic, together with Slovakia and France, present in the European context quite unique situations that are the subject of scientific research. In this respect, attention is paid to the verification of various methods of measuring the efficiency of public services provided at local and sub-regional level. All Czech municipalities are obliged to provide basic administrative services to a minimum extent and with regard to their population size and budget also local public services. Public libraries represent traditional public service provided by communities and towns. The above-average number of local libraries, compared to other countries, correlates with the high number of municipalities.

According to Saur (2001) and Lison and Reip (2016), public libraries can be defined as organizations that are established, supported, and subsidized by the society, either via local, regional, or national governments that ensure the access to knowledge, information, artworks, and to life-long education via various sources and services. The main services fulfil the mission of public libraries is defined by a specific Library Act; an important feature and a necessary condition of public libraries is their unlimited social-economic accessibility.

Data envelopment analysis or (DEA) is a non-parametric method for estimating the production boundary presented in Charnes et al. [8]. DEA measures the technical efficiency of a decision making unit (DMU) relative to other units. Technical efficiency is therefore relative and depends on the set of all units. Units that lie at the production line are marked as effective, while units that lie below the production line are marked as ineffective. Inefficient units are also assigned an efficiency score of between 0 and 1, which indicates how far the unit is from the production boundary. Units with an efficiency rate of 1 are effective and units with an efficiency rate of less than 1 are ineffective.

In the original DEA model of Charnes et al. [8] all effective units are equal. There are many extension models of the so-called super-efficiency in the literature that evaluate and compare the effective units among themselves.

2 Material and Methods

2.1 Theoretical beckground

DEA is a benchmarking tool in operations research and has a wide range of applications including but not limited to banking [5], business [17], agriculture [1], transportation [22], health care [14], education [9], research [7], public libraries [6]. One particular issue many studies face is heterogeneous operating environment. For DEA to make sense, however, the operating environment should be homogeneous. There exist several approaches for dealing with heterogeneous operating environment in the literature. For a review of such methods, see Yang and Pollitt [19] and De Witte and Marques [4]. We briefly describe the four most commonly used methods for DEA. The separation approach splits the heterogeneous data sample into several homogeneous subsamples according to one or more environmental variables and performs DEA separately for each subsample. The advantage of this approach is its simplicity and straightforward interpretability. However, it significantly reduces the sample size making it unusable in many studies. The all-in-one model directly includes environmental variables in DEA as inputs or outputs. The two-stage model adjusts the efficiency scores based on the dependence between preliminary efficiency scores and environmental variables using regression analysis.

As stated by Stroobants & Bouckaert [18], public-funded libraries are generally technically inefficient in providing programs and services to users and visitors. They consider the assessment of the technical efficiency of public-funded libraries is incomplete and inaccurate because previous studies have excluded electronic - and Internet-based outputs from the analysis.

It should be noted that a number of previous analyses differs considerably with regard to the range of libraries studied and its importance, the inputs and outputs examined and, of course, the methodology of the solution. What is concerning input specification, they are generally taken into account operating expenditures (including or excluding personnel expenditures [3, 4], staff ([10, 11, 16] and others), book materials held [15, 16], size of libraries. There are other inputs reflected by authors as [13] (total expenditures), total holdings of all items - books, audiovisual, maps, etc. [21], acquisitions of new material [12, 21], etc.

2.2 Methodology

To obtain technical efficiencies, we utilize the Chebyshev distance DEA with variable returns to scale (VRS) proposed by Hladík (2019). Let $X = (x_{i,j})^{n,r}{}_{i=1,k=1}$ be the non-negative matrix of inputs and $Y = (y_{i,k})^{n,s}{}_{i=1;k=1}$ be the non-negative matrix of outputs. We denote $x_i = (x_{i,1}, \ldots, x_{i,r})'$ and $y_i = (y_{i,1}, \ldots, y_{i,s})'$ the vectors corresponding to the i-th row. We also denote X_{-i} and Y_{-i} the matrices with i-th row missing, i.e. the inputs and outputs of every DMU but i. Specifically, the resulting efficiency score for i-th DMU is equal to $r_i = 1 + 2\delta_i^*$, where δ_i^* is the optimal solution to the optimization problem

$$\max_{\delta_i, \upsilon_i, \mu_i, \varphi_i} \delta_i \qquad (1)$$

$$\begin{aligned}
&(1-\delta_i)\gamma'_i\mu_i - \varphi_i \geq 1,\\
&(1+\delta_i)x'_i\upsilon_i \leq 1,\\
&(1+\delta_i)Y_{-i}\mu_i - (1-\delta_i)X_{-i}\upsilon_i - 1\varphi_i \leq 0,\\
&\mu_i \geq 0\\
&\upsilon_i \geq 0
\end{aligned}$$

Hladík (2019) shows in several examples that the linear approximation is quite precise and can be effectively utilized in practice. The efficiency scores r_i, $i = 1, \ldots, n$ lie in the interval [0; 2] whether given by the original non-linear optimization problem or its linear approximation. Values r_i 2 [0; 1) indicate inefficient DMUs while values r_i 2 [1; 2] indicate efficient DMUs.

2.3 Variable Selection

In our study, we utilize 10 variables in total. All variables except the town distance are strongly positively correlated while the town distance is moderately negatively correlated with the others. For the efficiency analysis, we consider the following r = 3 input variables:

- Total Expenditures: The total expenditures in CZK by the municipality to library activities (class 3314 in the sectoral classification of budget structure) in 2016 and 2017. We aggregate the expenditures to two years to capture long-term investments and smooth out annual budget changes. The data source is information portal MONITOR of the Ministry of Finance of the Czech Republic.
- Employees: The number of full-time equivalents of library employees in 2017. Note that 64.07% of libraries have no own employees as very small libraries are run either by employees of the municipal office or volunteers. The data source is NIPOS.
- Collection: The total number of book units owned by the library in 2016. This variable represents the capital of the library. We use the value from the previous year as we consider the increase in book collection in the current year to be output variable refflecting the performance of the library management. The data source is National Information and Consulting Centre for Culture (NIPOS).

We denote the input variables respectively as $x_{i,1}$, $x_{i,2}$ and $x_{i,3}$, i = 1, . . . , n. Further inputs such as the area of the library, the equipment, more detailed expenditures or more detailed collection could also be utilized. Unfortunately, we do not have these variables available in our data.

We consider the following s = 4 output variables:

- Registrations: The total number of users registered in the library in 2017. This variable captures the size of the reader base. The data source is NIPOS.
- Circulation: The total number of book loans in 2017. This variable captures the main activity of libraries - book lending. The data source is NIPOS.
- Events Attendance: The total number of visitors of events organized by the library in 2017. This variable captures the cultural role of libraries. Many libraries do not organize any events while others offeer regular cultural program. The data source is NIPOS.
- Collection Additions: The positive part of difference between the book collection in 2017 and 2016. This variable captures the increase of the capital of libraries. Book collection of 50.56% libraries remains the same as in 2016 or in some cases even decreases. The data source is NIPOS.

We denote the output variables respectively as $y_{i,1}$, $y_{i,2}$, $y_{i,3}$ and $y_{i,4}$, i = 1, . . . , n. Further outputs such as the number of visits, the number of consultations, the opening hours, the inter-library circulation or various measures of the internet activity could also be utilized. However, we do not have these variables available in our data.

Finally, we consider the folowing 3 variables potentially describing the environment in which libraries operate:

- Population: The number of inhabitants of the municipality as of January 1, 2018. The data source is the Czech Statistical Office (CSO). We denotethis variable as p_i i = 1, . . . , n.
- Population Density: The number of inhabitants of the municipality per hectare as of January 1, 2018. The data source is CSO. We denote this variable as d_i i = 1, . . . , n.
- Town Distance: The travel time by car in minutes to the municipality with extended powers. The data source is web mapping service Mapy.cz. We denote this variable as t_i, i = 1, . . . , n.

The services of the municipal library are provided by a very heterogeneous spectrum of minicipalities, represented by small heights with several dozens of citizens up to the big cities. In order to make comparisons in as homogeneous groups as possible, categories of municipalities were proposed that reflect the size of the domestic population and the position of municipalities in the settlement structure. Regarding the hierarchy of settlements, it is based on the Government-approved Strategy of Regional Development of the Czech Republic for 2021-2027 (Government Resolution No. 775/2019), which as higher-ranking settlements distinguishes regional (age) centers and core agglomerations (essentially regional cities), metropolitan areas (the largest cities of the Czech Republic). Most of them have the role of a municipality with extended power (a third type municipality). Thus, the size of the population representing potential local demand and the proximity of the municipality to the municipality with extended competence (third type) or the position of the municipality within the agglomeration, metropolitan area is monitored. The distance of the municipality to these higher centers is monitored by means of time availability when using a passenger car.

Table 1: Expert category

Expert category	Population (number of inhabitants)	Distance (minutes by car)	Averige distance (minutes by car)	Units (municipalities)	Units with Library*
E01	[0, 200)	(0:00, 15:00)	8,9	603	290
E02	[0, 200)	[15:00,)	12,0	829	405
E03	[200, 500)	(0:00, 15:00)	8,1	1104	821
E04	[200, 500)	[15:00,)	11,1	888	697
E05	[500, 1 000)	(0:00, 15:00)	7,8	855	761
E06	[500, 1 000)	[15:00,)	10,5	524	478
E07	[1 000, 2 000)	(0:00, 15:00)	7,0	499	475
E08	[1 000, 2 000)	[15:00,)	11,1	256	242
E09	[2 000, 5 000)	(0:00, 15:00)	7,6	259	251
E10	[2 000, 5 000)	[15:00,)	10,4	168	166
E11	[5 000, 10 000)	(0:00, 15:00)	8,8	112	103
E12	[5 000, 10 000)	[15:00,)	7,3	30	30
E13	[10 000, 20 000)	-	0,0	69	53
E14	[20 000, 50 000)	-	0,0	44	14
E15	[50 000, 90 000)	-	0,0	8	1
E16	[90 000, 300 000)	-	0,0	8	4

** Before deleting data for libraries with zero inputs/outputs*
Source: Author.

3 Results and Discussion

On the basis of the above mentioned data, an analysis of the effectiveness of municipalities in individual expert categories was performed. Due to the small number of observations in the cities with the largest population, these expert groups were aggregated. Prague and Brno were completely excluded, as unique cases that are not comparable.

Table 2: Mean efficiency scores within each expert category

Expert category	Population	Distance	Units	Mean efficiency
E01	[0, 200)	(0:00, 15:00)	270	0.4181
E02	[0, 200)	[15:00,)	376	0.3275
E03	[200, 500)	(0:00, 15:00)	785	0.3089
E04	[200, 500)	[15:00,)	682	0.3001
E05	[500, 1 000)	(0:00, 15:00)	741	0.3346
E06	[500, 1 000)	[15:00,)	474	0.4641
E07	[1 000, 2 000)	(0:00, 15:00)	463	0.5887
E08	[1 000, 2 000)	[15:00,)	249	0.6862
E09n	[2 000,)	(0:00, 15:00)	281	0.6350
E10n	[2 000,)	[15:00,)	201	0.8787
E11n	[2 000,)	0:00	138	0.9256
All			*4 660*	*0.4458*

Source: Author.

The efficiency of libraries regardless of categorization by municipalities reaches an average of 0.4458. Subsequently, the mean efficiency values for the given expert category were calculated. In the case of the smallest municipalities, the values range from 0.3 to 0.5, which represents a significant inefficiency. It can be argued that the operation of most municipal libraries is ineffective with respect to the input and output data analyzed. As the size of the settlement increases, efficiency increases on average. The most effective are library services in towns and cities.

The influence of the agglomeration, respectively the position of the municipality in the hinterland of a larger city, is noticeable only from municipalities with more than 500 inhabitants. Easily accessible regional center, metropolis, where the population of the village spend at least a few hours during the day - employment, use of higher public services, reduces the efficiency of the operation of local libraries.

4 Conclusion

We assess technical efficiences of 4 660 public libraries established by municipalities in the Czech Republic in the year 2017. In the first stage, we adopt the Chebyshev distance DEA and utilize its many attractive properties including the super efficiency and natural normalization.We consider total expenditures, employees and book collection as inputs with registrations, book circulation, event attendance and collection additions as outputs.

Subsequently, the effectiveness of the whole set of libraries was assessed first and then according to the categorization of municipalities based on expert approach.

The operation of most libraries seems ineffective. Similar efforts have been made to try to homogenize the environment through the categorization of municipalities. The legitimacy of the classification according to expert criteria was also confirmed by an automated decision tree. The efficiency scores are significantly dependent on the population of the municipality and distance to the municipality with extended powers or regional centers.

We received the similar findings as Stroobants & Bouckaert [18], that argued, that public-funded libraries are generally technically inefficient in providing programs and services to users and visitors. They consider the assessment of the technical efficiency of public-funded libraries is incomplete and inaccurate because previous studies have excluded electronic - and Internet-based outputs from the analysis. In our case, too, we have not examined other services that libraries offer to citizens because of lack of data. Gradually, the importance of local libraries as a portal to internet access is declining due to the wide coverage of the population. However, libraries perform other cultural and educational activities that are important for the life of local communities and in this snow often become part of the community centers of the village.

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Economical Evaluation of Public and Foreign Finances of Selected Secondary Schools

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-8

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].

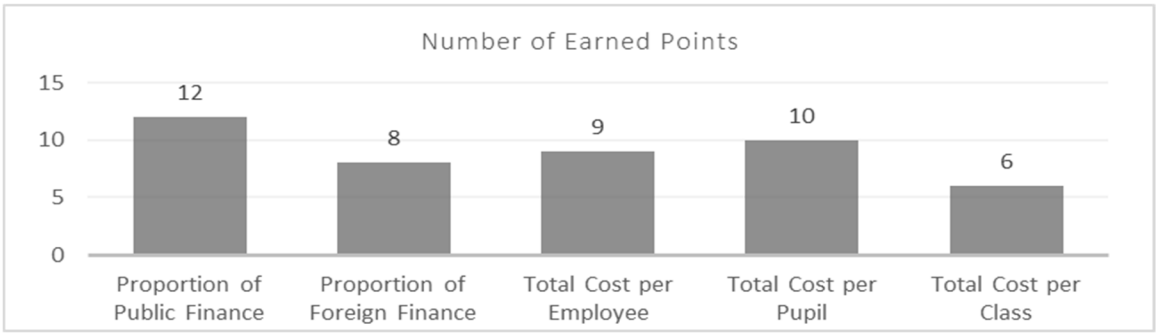
The subject of research is economy. Main indicators for measuring economy are school's own and external resources and taking into account the total cost per pupil and the total cost per employee, we gain a comprehensive view of the economy of selected secondary schools [6]. The use of foreign finance 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:

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

Where:

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

p_j - Weight of j-th Indicator

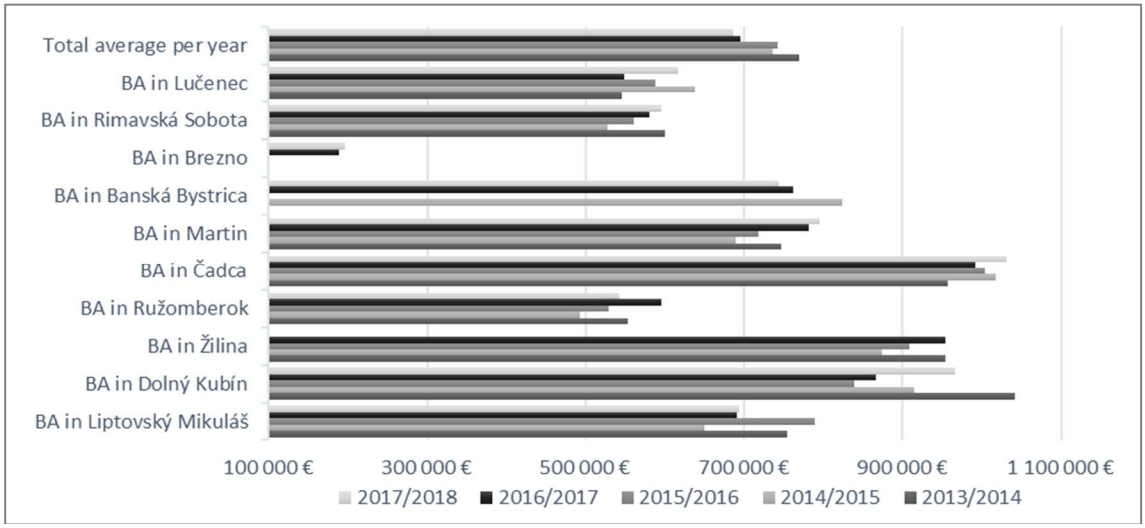
In interpreting the results, we consider that the best subject is most economical. To fill in the missing data, we replace the missing value of the indicator with the worst measured value in the given year. In the fifth stage, based on the findings, we propose options for improving the economy and the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

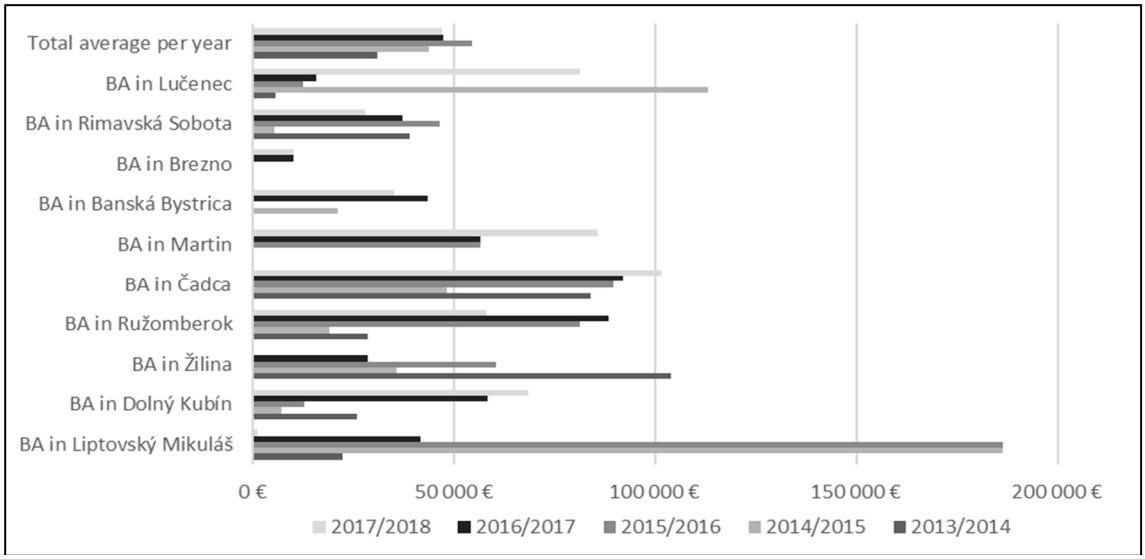


Source: Own processing based on Internal Reports of selected secondary schools (2019).

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 economies 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.

Acknowledgements

This paper is part of the project VEGA 1/0334/19 Evaluating the performance of regional education by the value-for-money method, using the example of grammar schools.

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Voluntary Cooperation of Citizens in the Community Model of Public Service Delivery

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-9

Abstract

Most of the developed countries have implemented new principles of public sector reform – new approaches to the management of the public sector. A major feature of the new public management (NPM) is the introduction of market type mechanisms (MTM) to the running of public service organizations: the marketization of the public service. The marketization of public services aims at a continuous increase in public expenditure efficiency, continual improvements in public services quality, the implementation of the professional management tools in the public sector, and last but not least, charge for public services. Price of public services in mainstream economics theory is connected with preference revelation problem. Economic models explain the relationship between consumer behavior (revealed preferences) and the value of public goods, and thus determine the value of the goods themselves. The aim of the paper is to determine the success of the community model of public service delivery based on the demonstrated preferences of individuals in the consumption of public services/public goods. The direct way of determining the preferences of individuals was used in this paper (willigness to pay and willigness to accept). These preferences will be identified based on the crowdfunding campaign as an example of community model of public goods provision by using survey experiment method. The willingness of individuals to pay is dependent on the individual's relationship with the organisation, the organisation's employees, or sympathise with those for whom the collection is, for whom the project is designed.

Keywords: Cooperation; public service delivery; preferences; willingness to pay.

JEL Classification: C93, D12, D64, H41

1 Introduction

The relationship between the public, private and third sectors is evolving in the context of public administration reforms, which have taken place mainly from the end of the last century to the present. Since neither the bureaucratic system based on the public to private management relationship nor the system based on the competitive sectoral relationship have proven successful in the provision of public services [9, 25, 26], a new trend has become "new public governance" and public-private partnership (including non-profit sector) and active citizen participation in the process of providing services in the implementation of new Alternative Service Delivering Arrangements (ASDA).

In the context of the promoted New Public Governance concept with the dominant principles of democratization and civic participation, it is important to look more closely at the citizen's position in the public service system, which is described in more detail by the New Public Services (NPS) concept. NPS is a certain alternative to the New Public Management approach [14]. The concept of NPS is characterized by the fact that it actively involves citizens in the public governance [16]. Citizens, citizenship and pursuit of the public interest are a priority of public administration. A new role of the citizen in society delivers changes that are being applied in the administration. The power of scrutiny is no longer the prerogative competence and function of the public administration. It is shared with citizens who also control the activities carried out by the public administration (the so-called lay control of citizens). Increased involvement and activity of citizens, especially through their involvement in non-governmental non-profit organizations or civic communities, leads to a higher level of civic engagement and responsibility. However, the activities of non-governmental non-profit organizations and civic communities do

not replace the provision of public services by public authorities. In this respect, it should be understood as a complementary, non-substitute element, as well as alternative approaches to the provision of public services – co-creation [20] and co-production [19]. The NPS seeks to find common values and interests of society through dialogue and involvement of citizens in this process. The public service is seen as an extension of citizens who are motivated by the effort to serve others and fulfill the development goals of society.

With the NPS approach, citizens connect with professionals to address the important problems that society is experiencing - a community model of public service provision is emerging [12] as an alternative to both administrative service provision and public service provision on a market basis. In the context of this model, the recipient of public services is seemd as a citizen, not as a client or customer. The aim of the community model is to provide the citizen with certain care, standard and specific type of service. Citizens who are interested in the community model of service provision realize their needs of community work, solidarity or enthusiasm. This confirms their belonging to the society in which they live, their trust in others, returning the meaning of citizenship and civil society. Public interest is a primary concern. As the model tends to maximize welfare in society, it is the government's task to create and support such functioning communities.

The advantage of this model is the constant effort to provide high quality services, because the quality does not depend on the disposable income of the individual or his willingness to pay for the service. The disadvantage of the model is the need of solidarity and socially minded citizens to its function.

1.1 Factors affecting individuals' willingness to cooperate voluntarily

The economically rational reason why a public good is to be realized on the political market is that consumers do not prove their preferences when it is consumed, i.e. the willingness to provide countervalue for satisfying their needs, in simple terms the willingness to pay [4]. Individuals are aware that regardless of whether they pay or not, they will not be excluded from the consumption of a public good (free rider problem – [14]). The lack of consumer preferences (demonstrated preferences) in the consumption of public goods (e.g. environmental protection measures) means that there is no information on the expected ex-ante benefit from the consumption of these goods, as would be the case with private goods (e.g. hamburger). The problem is if all the members of society would apply the free rider strategy, the public good would not be produced and the strategy itself would become ineffective.

The realized experiments however show that the production of public goods, respectively public services is possible due to factors affecting the willingness of individuals to cooperate voluntarily. By this we mean differently arranged context of the given situation, i.e. how the problem is presented to the individual [33]. They are basically factors that can result in an individual saying 'yes', while in another case, the same request can be answered 'no' [13]. According to the behavioral approach of individual preference, the choice of consumption and other activities of the average individual (housing choice, type of leisure activities) depends more on the individual's experience of childhood, life, social interactions and cultural influences [7], so from past, respectively future experience. The fact that an individual smoked last month has a profound effect on whether he will be smoking this month as well. Both men and women need to receive recognition, respect, prestige, acceptance by family, friends, relatives, members of reference groups to which they belong, as well as other individuals in society. Individual decisions are often influenced by the choices of their reference groups [7], but also by minor and "unimportant details".

In practice this means e. g. that the individual is influenced by the person who communicated the information (expert vs. laic) (messenger), how the problem is presented (positive vs. negative impacts of project implementation) (incentives), existence of social norms (norms), repetition of the situation in an individual, i. e. whether it faces it repeatedly (defaults), the ability to attract the attention of the individual (salience), stimuli acting on the individual (priming), emotional state during the decision (affects), the obligations of the individual and the ego of the individual (commitments), respectively overestimating own performance (ego).

It is possible to find out what preconditions the community model of public service provision needs to have to be successful in the reality by examining the preferences of citizens as consumers in the consumption of public services/public goods. Exploring the factors (preferences) that affect individuals' willingness to cooperate is a potentially new way for politicians, professionals and the community to develop a community model of public service provision. Using the crowdfunding campaign we focused on the factors that influence the willingness of individuals to cooperate voluntarily.

2 Material and Methods

The aim of the paper is to determine the success of the community model of public service delivery based on the demonstrated preferences of individuals in the consumption of public services/public goods. The preferences of individuals in the consumption of public services / public goods are subject of examination. We will identify these preferences based on the crowdfunding campaign we have prepared as one of the alternative to the community model of public service provision.

Factors that may influence the willingness of individuals to pay, respectively, to do voluntary work according to the concept of MINDSPACE [17] in nine groups (messenger, incentives, norms, defaults, salience, priming, affect, commitment, ego).

The MINDSPACE concept highlights the ways in which an individual can be "pushed" in terms of "desired" behaviour, e.g. if an individual is conveyed a message by someone who is pleasant or similar in something to the individual, the individual is, until we "strum the correct string" willing to respond to the message in a "desirable" way. Thus, when organising a campaign (e.g. crowdfunding), it is possible to achieve a higher success rate.

To determine the preferences of individuals, we used the experimental economics method, namely the population experimental survey.

One of the practical challenges of the population experimental survey is the questions to propose. In this case, questions should not only focus on whether an independent variable has an impact on a dependent variable, but also on how to formulate questions and the problem itself to encourage individuals to change their behaviour. In our experimental research, this means that if an individual did not pay to a collection or project in 2018, they would pay to the project we created after formulating the problem, or, how many respondents we were able to convince about the importance of our community project. In the population experimental survey, it is also of importance how the questions are laid down and in which order (e.g. identifying with the statement, past experience with the community centre). By first asking the respondents a question relating to a statement to the given declaration, we assumed that the respondent would remember their mark on the scale which would influence them when making further decisions. It was also important for us to find out whether or not the respondent has experience with the community centre. According to our assumption, the experience of an individual with the community centre, whether positive or negative, could significantly influence the willingness of individuals to pay. The order of questions thus set up should not adversely affect the results of the experimental survey [5].

The first part of the experimental survey is focused on finding the real state and then verifying the answers. Experimental research is a combination of "experimental" questions and questionnaire questions that may occur at the beginning and end of an experimental survey. Questionnaire questions were in our case focused on the willingness of individuals to pay in 2018, to measure the level of agreement with a given factor and socio-demographic features. Considering the 43 factors expressed through 48 statements, which may influence the willingness of individuals to pay, we have chosen a question with a scaled response option, since in a conventional laboratory experiment under normal conditions it is not possible to examine the range of factors affecting an individual's willingness to cooperate voluntarily. The experimental part of our survey included questions that we formulated in different situations, i. e. different mechanisms, with varying degrees of volunteering, where individuals should decide whether and

how much they will pay or not pay to public goods, a public service (repetition of the situation under changed conditions – conjoint experiment – [23]). Questionnaire questions were used to determine the real state and follow-up form of control. It means that if an individual has answered this question truthfully, they should answer next one truthfully, and thus we will avoid deliberately "overestimating" their behaviour.

We provided the condition of control in the experimental survey with the same input information. Our trained students should not interfere in any way with the instructions of the experimental survey. Individuals only knew what we had told them at the beginning of Google Forms. Of course, we admit that during the filling out stage, they might have been disturbed by environmental influences, and there could have been a different focus on filling out the form, but the same distortion may also be caused by the experimenter in the lab experiment (for example, if they are wearing something inappropriate).

Although we did not reward the respondents and in no way motivate their behaviour, by pointing out to them the amount of the total levy and tax burden, we could motivate them to approach the assessment of the contribution "responsibly" with respect to their overall net monthly income.

With slight modifications, we have followed almost all the conditions of the experiment, i.e. repetition, control, "reward - financial motivation" though in a different form than in laboratory experiments. Respondents responded to various hypothetical situations (which do not exist in the questionnaire survey). The questionnaire asks questions that the respondent can actually answer and which are not hypothetical (e.g. how much of your income are travel expenses, etc.). They do not consider these questions in the light of the situation that might arise if they decided to pay to the project. It may happen that a city or organisation may access a service charge due to the results of an experimental survey and the expressed willingness of consumers. Thus, the individual must also take this risk into account [3]. While on a question of the type of your travel, dining, and housing costs per month, they only consider their own situation with no risk attached to it, which basically does not affect their response. However, in our experimental survey, this risk must be perceived and taken into account in the decision.

Although survey experiments are extremely useful tools, they are not a panacea for the major challenges to causal inference [15, 28]. This is because manipulation of one feature of the scenario will generally change subjects' beliefs about other features of the scenario [15].

At the beginning of our survey, we informed the respondents about the focus of the survey, which monitors factors affecting individuals' willingness to pay to public goods. In order to avoid any distortion as to what public goods are, we defined them at the outset.

Subsequently, we processed the research outputs using relevant mathematical-statistical methods and evaluated the results. The obtained data are processed by selected mathematical-statistical methods. We use the IBM SPSS Statistics 19 statistical software for evaluation, when evaluating we consider the significance level of 0.05.

2.1 Data

The subject of our experimental survey applied to the selected public goods is heterogeneous in terms of gender, age, and educational attainment. The basic sample consists of inhabitants of the Slovak Republic above the age of 18. Our research sample (368) of respondents is structured in such a way that by its structure according to the basic features of sex, age category and highest achieved education it corresponds to the basic sample of all inhabitants of the Slovak Republic.

Table 1: The selected sample for measuring willingness to pay for public goods

Classification symbol		Selected sample %	Basic sample (%)
Gender	Men	48.91	48.78
	Woman	51.09	51.22
Age group	18–24	10.60	10.34
	25–34	19.29	18.85
	35–44	20.38	19.92
	45–54	16.85	16.26
	55+	32.88	34.63
Education	Elementary	15.49	18.39
	Secondary without final exams	29.35	28.29
	Secondary with final exams	37.50	36.31
	Tertiary	17.66	17.10

Source: Authors.

We used the chi-square test to verify the selectivity of the sample in relation to the base file. We found that the selected sample is representative of all sorting characters, e. g. gender, age category and the highest achieved education (p-value 0,959; 0,973; 0,559). The results found in the survey can be generalised to all inhabitants of Slovakia.

3 Results and Discussion

In this paper we found out what factors influence the willingness of individuals to pay to a community development project. We evaluated the impact of individual factors in four cases. In the first case, we started from respondents' answers to the question "did you pay to a collection or project in year 2018?". In the second to fourth cases we observed the willingness of individuals to pay by the change in the rate of coercion.

In the second case, the degree of coercion was the lowest. Respondents had to decide whether or not they would voluntarily pay for the services of the community centre in their municipality from their net monthly income. We assumed that if community development facilities exist in the municipality, individuals will act as a free rider, they will use goods they haven't paid for. In this case, there is no risk of a reduction in the utility of the consumption of a good of which the individual is not interested, because his consumption is not mandatory.

In the second case, the degree of coercion was higher. In this case, we asked respondents "Are you willing to support the project of community development in your municipality, if the municipality set a fee for community centre services?". Unlike the first case, it is assumed that an individual consumes only the goods he or she is genuinely interested in, respectively he shows preferences in the consumption of a public good. If he or she is interested in an event or an activity carried out by a community centre, they will have to pay for joining a community centre.

In the last, third, part the level of coercion was the highest. Individuals didn't have the option of avoiding paying for a community centre, because the state as a paternalist ordered individuals to pay to this project a certain amount of funds in the form of an increase in tax burden over a period of 5 years. With this mechanism, the value of an individual utility may fall because of the consumption of a good that individual isn't interested in.

The following table (Table 2) shows the willingness of individuals to voluntarily pay for community centre according to selected mechanism.

Table 2: Comparison of selected mechanisms (n = 368)

		Paid in 2018	Voluntarily	Partly voluntarily	Involuntarily
Willingness to pay	Paid	237	152	172	95
	Not to pay	131	216	196	273
Amount of contribution	Average	58.38	35.85	42.02	41.22
	Min	1	0.10	0.05	0.05
	Max.	600	500.00	1,500.00	500.00
	Total	13,438	5,342.00	7,228.05	3,915.50

Source: Authors.

In an involuntary mechanism (an individual is forced by the state), we asked about the willingness of individuals to pay in two ways. In the first way, we gave respondents a choice of intervals of the amount they should pay each month for the period of five years to a 'community development project'. In the case of a closed question, 41.5% of respondents were in favor of €10.01 to € 20. If we recalculate it for a 5-year period, the total amount collected from the respondent would be between € 600.60 and € 1,200. In the open question, the highest number of answers (28.82% of answers) regarding willingness to pay falls into the third, based on the answers of respondents created interval ranging from € 10.00 to € 19.99. In this case, respondents were asked to write the highest amount they are willing to pay to a 'community development project' if the state so ordered. Otherwise, the instructions given (another language) caused a diametric difference in respondents' responses and their willingness to pay to the "community development project" [3].

In the following table (Table 3) we compare the results of our experimental survey and economic experiments, respectively experimental surveys by other authors dealing with factors influencing the willingness of individuals to pay to public goods, respectively utilities according to the MINDSPACE concept.

Table 3: Factors affect individuals' willingness to pay to different modes of cooperation

MINDSPACE	Selected factors	Paid in 2018		Voluntarily		Partly voluntarily		Involuntarily	
		p-value	r_s/C_v	p-value	r_s/C_v	p-value	r_s/C_v	p-value	r_s/C_v
Messenger	Affection, sympathy	0.000	0.411	0.000	0.290	0.000	0.249	0.000	0.149
	Relationship to organization	0.000	0.212	0.000	0.272	0.000	0.234	0.000	0.209
	Relationship to employees	0.158	0.074	0.001	0.167	0.015	0.127	0.003	0.153
Incentives	Fear	0.000	0.261	0.000	0.216	0.000	0.184	0.000	0.240
	Tax policy	0.618	0.026	0.095	0.087	0.526	0.033	0.017	0.124
	Tax policy	0.001	0.179	0.000	0.240	0.000	0.217	0.005	0.145
	The size of the public sector	0.000	0.280	0.000	0.190	0.002	0.162	0.001	0.171
	The size of the public sector	0.000	0.330	0.000	0.190	0.000	0.186	0.004	0.149
Norms	Information	0.000	-0.203	0.018	-0.123	0.027	-0.115	0.211	0.065
	Information	0.000	-0.189	0.021	-0.120	0.013	-0.130	0.903	0.066
	Social rules	0.006	0.144	0.002	0.164	0.038	0.108	0.002	0.157
	Social rules	0.051	0.102	0.000	0.209	0.006	0.142	0.000	0.225
	Moral duty	0.000	0.329	0.000	0.218	0.000	0.236	0.000	0.232
	Religious duty	0.003	0.157	0.436	0.041	0.411	0.043	0.001	0.177
	Conscience	0.000	0.227	0.008	0.138	0.022	0.120	0.014	0.128
	Relationship to the final beneficiary	0.001	0.173	0.117	0.082	0.007	0.141	0.020	0.121
Defaults	Invitation to participate	0.000	0.232	0.028	0.114	0.078	0.092	0.175	0.071
	Nature of the situation	0.941	-0.004	0.242	0.061	0.910	-0.006	0.125	0.080
	Fundraising methods	0.000	0.367	0.000	0.314	0.000	0.221	0.000	0.198
	Fundraising methods	0.000	0.215	0.012	0.130	0.038	0.108	0.104	0.085
	Fundraising methods	0.172	-0.071	0.202	-0.067	0.145	-0.076	0.834	0.011
Sal.	Gratitude	0.006	0.143	0.001	0.177	0.001	0.166	0.000	0.225

MINDSPACE	Selected factors	Paid in 2018		Voluntarily		Partly voluntarily		Involuntarily	
		p-value	r_s/C_v	p-value	r_s/C_v	p-value	r_s/C_v	p-value	r_s/C_v
Priming	Volunteering and civic participation	0.000	0.350	0.000	0.320	0.000	0.262	0.000	0.231
	Compassion, regret	0.000	0.312	0.000	0.231	0.000	0.198	0.000	0.220
	Esteem	0.000	0.320	0.000	0.299	0.000	0.282	0.001	0.174
	Need to belong somewhere	0.000	0.234	0.000	0.225	0.000	0.214	0.000	0.223
Affects	Empathy	0.000	0.397	0.000	0.267	0.000	0.308	0.000	0.203
	Belief in justice	0.000	0.343	0.000	0.267	0.000	0.255	0.001	0.176
	Belief in justice	0.000	0.199	0.000	0.284	0.000	0.220	0.000	0.218
	Warm glow	0.000	0.440	0.000	0.280	0.000	0.309	0.000	0.224
	Warm glow	0.000	0.411	0.000	0.284	0.000	0.335	0.000	0.195
	The feeling of irreplaceability	0.755	0.016	0.001	0.173	0.007	0.141	0.000	0.197
Commitments	Political influence	0.582	-0.029	0.463	0.038	0.942	0.004	0.143	0.077
	Personal contacts	0.514	0.034	0.009	0.136	0.101	0.086	0.071	0.094
	Knowledge	0.003	0.154	0.000	0.195	0.003	0.153	0.000	0.226
	Commitment to the society	0.000	0.213	0.000	0.219	0.000	0.221	0.001	0.179
	Commitment to the society	0.001	0.168	0.007	0.141	0.002	0.160	0.000	0.195
	Reciprocity	0.093	-0.088	0.866	0.009	0.703	-0.020	0.053	0.101
Ego	Conviction	0.000	0.380	0.000	0.352	0.000	0.326	0.000	0.229
	Conviction	0.000	0.411	0.000	0.327	0.000	0.285	0.000	0.205
	Conviction	0.000	0.390	0.000	0.295	0.000	0.301	0.000	0.212
	Valuation	0.878	-0.008	0.028	0.115	0.144	0.076	0.003	0.153
	Valuation	0.449	-0.040	0.714	0.019	0.612	-0.027	0.138	0.078
	The desire for power	0.409	-0.043	0.925	0.005	0.788	0.014	0.238	0.062
	Reputation	0.207	0.066	0.100	0.086	0.045	0.105	0.001	0.166
	Selfishness	0.741	-0.017	0.111	-0.083	0.066	-0.096	0.781	0.015
	The effect of the viewer	0.002	0.163	0.015	0.127	0.004	0.148	0.000	0.229
	The effect of the viewer	0.000	0.287	0.000	0.241	0.000	0.214	0.000	0.251

Source: Authors

The first factor messenger has a direct relationship [32]; i.e. willingness to cooperate voluntarily increases if there is a factor that supports it. Broad media can impress an individual and increase their willingness to pay. Demographic and psychological similarities between individuals are also important [11]. The relationship with the organization, the reputation of the organization, the services provided by the organization and organization promotion present the factors increasing the willingness of individuals to pay. Organization promotion can contribute to increased payments, especially for women, younger contributors, and individuals with lower education. Relationship to employees, employee referrals and previous work experience in an organization are among the factors that significantly influence individuals' decisions about their voluntary contribution.

The second incentives factor has also a direct relationship [24]. If individuals do not know the decisions of other individuals, their willingness to pay is lower (social risk). The willingness to pay is largely dependent on trust between individuals. Under incentives we meant e. g. impact of tax factor on individuals. In the UK, tax benefits have a major impact on individuals' willingness to pay [31]. A tax factor affects an individual only if the individual is aware of the tax benefits. The solution is to popularize such tax benefits [18]. The willingness to pay in case of the second factor

also depends on the quality of the information available to the individual (quality of public good, public services).

There is a direct relationship with the norm factor [8]; e. i. the willingness to pay varies depending on the individual's social pressure (observed by family, friends, acquaintances or someone unknown) [21][21.]. Individuals maintain moral principles because they are happy that what they are doing is right. The willingness to pay is therefore also conditional on private goods, i. e. a good feeling of voluntary contribution [1]. The individual feels better if he volunteers. Rich individuals consider the financial support of those who are not doing well as their responsibility, making voluntary payment a certain philanthropic tradition for them [11]. An individual volunteers to cooperate if they experience a particular problem in their community, their surroundings, i.e. working for the well-being of own community.

The fourth factor of the defaults directly affects the willingness to cooperate voluntarily [21]. If an individual is directly asked by someone whom he/she knows (informal contribution), his / her willingness to pay is higher than if asked by someone he/she does not know personally (formal contribution). For individuals, the context in which individuals and households make decisions is important. Individual decisions is affected by social pressure, region and income levels in the region, number of community members and political representation [22]. Marking an individual as a potential contributor encourages voluntary contributions. The way in which an organization manages financial contributions is also essential for the individual. Effective organization management and transparency of financial transactions leads to a higher willingness of individuals to pay [8] (e.g. simple envelopes, simple applications without color images - Vriens et al., 1998). The willingness to pay increases when the problem is presented as a positive externality.

There is a direct relationship with the fifth factor of salience [34]. As with the reciprocal effect, if someone has helped an individual, he needs to return it [13]. Individuals who volunteer pay more regularly, as opposed to those who do not.

The priming has a direct impact on individuals' willingness to pay. This is a central factor (p-value = 0.001). E. g. an increase in the empathic score leads to an 8% increase in willingness to pay [2]. Andreoni et al [2], together with empathy examined the impulsiveness that has a negative impact on the willingness to pay. There is a 12% decrease in willingness to pay if the impulse score increases by 1. For individuals who hold prosocial values, altruistic values who are generally less materially based, profess moral principles, care for others, feel social justice, feel be responsible for society, etc., it is possible to observe an increase in willingness to pay, if the given collection or project addresses the incurred "injustice". An individual who holds the same values as a given collection or project pay more. Individuals who do not provide voluntary contributions regularly, but only repeatedly (e.g. every year) are influenced in decision-making by political factors, social rules and so on. Individuals with a more liberal mind are willing to pay more, while conservative individuals pay more to religious organizations [10]. Political engagement has little impact on individuals' willingness to pay. Students and the unemployed cooperate voluntarily, as long as this collaboration benefits them, by taking full advantage of the time to bridge the gap between searching and finding a job. In the view [29], although knowledge is a strong factor affecting individuals' willingness to cooperate voluntarily, this factor is suppressed because an individual wants to hide their selfish motives for engaging in volunteer cooperation.

The affects factor influences the willingness to cooperate voluntarily directly [29]. An individual sympathizes with people that no one has to take care of. Similarly, the factor may also be based on the prior experience of the individual, i. e. the individual cared for someone with the same problem or with the same disease. Direct relationship – individuals living in large communities pay more regularly to solve the poverty [10]. The willingness to pay also depends on whether or not an individual is asked for a voluntary contribution. At the same time, the individual adapts his or her behavior to others in the community.

Commitment directly affects individuals' willingness to co-operate voluntarily [13]. The need for aid is reciprocated by the same amount of aid [13]. This is a direct relationship in a positive or negative direction. Important is a reason for the existence of a collection or project. A negative reciprocal effect can be observed in a situation where an individual feels some injustice,

e.g. his work was not appreciated properly (ultimate game). A positive reciprocal relationship can be seen in a situation where an individual is "fairly" appreciated (gift-exchange game).

The last ego factor has a direct relationship [17]. A misunderstanding of the importance of certain information, due to its overestimation results in an increase in the willingness of individuals to pay in the short term. Individuals' willingness to pay increases if they are asked by someone significant who appreciate their contribution. In some cases, there is no established relationship (. Reputation can also be seen from the perspective of a contributor. When an individual is aware that others are also paying to a given collection or project, they perceive it as a credibility signal for that collection or project [25]. An individual engages in voluntary cooperation when asked by his friend, family or acquaintances [3].

The results show that in most cases the experimental research conducted by us regarding the willingness to pay coincides with the results of the experiments, respectively experimental surveys conducted abroad. However, there are factors for which the dependence has not been confirmed, respectively they have an indirect impact. If an individual identified with a statement in a given set of factors, his or her willingness to pay was lower, respectively none. With regard to the factor of religious duty, it can be stated, individuals who have identified themselves with the statement: “Because of my religious beliefs” are willing to pay more as results of experiments conducted abroad. In this case, identifying with religious beliefs has a rather negative effect on the willingness of individuals to pay. In our experimental survey, we were unable to confirm the impact of the character of the situation on individuals' willingness to pay.

In the experimental survey, we did not present only one solution, but introduced several mechanisms, of which we believe the mechanism partially voluntary was most suitable, i.e. the individual pays the entry for the activity they are interested in or will show preference in its consumption. The results show that this is the alternative that individuals chose most often (172 respondents chose this option).

4 Conclusion

The aim of the paper is to determine the success of the community model of public service delivery based on the demonstrated preferences of individuals in the consumption of public services/public goods. We identified these preferences based on the crowdfunding campaign as one of the alternatives to the community model of public service delivery. To determine the respondents' preferences, we used the experimental survey method.

There are different factors that affect individuals from all sides (television, internet, acquaintances, family, friends, etc.) that consciously or unconsciously interfere with their decision-making. We already know that an individual often overestimates their decisions, behaviour, limits and abilities, either because they want to be appreciated and accepted by society, crave for power or reputation, or believe in justice, and that only they can ensure it or that they do it because of the good feeling, or some "recompense" from society [17].

Given all these factors that enter and influence individual decision-making, they can understand the individual's behavior and thus move closer to achieving a community model of public service delivery. For example, if a non-governmental organization, a municipality, or a state undertakes an activity, it can identify that a certain group of factors affects respondents' willingness to a greater extent than others. The non-governmental organization, municipality or state will thus create activities related to this group of factors, which will be targeted directly to individuals in the subject matter of its interest. If an organization draws attention in its report (project, collection, etc.) to a certain demographic or character similarity to the respondent "we are near you, in your city/town", "services are also for you", "our clients are similar to you", "your neighbor helps us ", it is likely that individuals' willingness to cooperate voluntarily and participate in the provision of public services/collective goods will be higher.

It is possible that the revealed willingness to pay to the community development facility may be somewhat distorted. One reason why individuals do not want to reveal their preferences about the price they are willing to pay for a given good is the concern that people who set the price

of a good may test their offer, whether to see what their price ceiling is or will artificially increase the price of a good based on individual offers. In an ideal world, i.e. in a world where the individual is homo oeconomicus, respectively a rational individual should attribute a certain value to every good he wants to buy. "How much do I value this thing? What am I willing to give up for it? What are the costs of the lost opportunity? This is exactly what I will pay for this" [3]. But as we have already indicated and the results of our experimental research prove it, people are not perfect, they are not just doing rational calculations. Individuals make calculations and decisions based on prejudice, imperfect information, which is strongly influenced by the social desirability bias, respectively leading to a socially appropriate response with regard to maintaining the individual's reputation and perception by society, because the individual has the need to belong somewhere, to be accepted by society.

Acknowledgements

The paper was prepared within the project of the Czech Science Foundation "Alternative service delivery arrangements" (GA19-06020S).

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Impact of Fiscal Decentralization Reforms in Albania

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-10

Abstract

Decentralization and fiscal decentralization constitute one of the most followed trends for political and economic reform in recent years around the world. Albania, in the 1990s, begins its process of transitioning from a centralized economy to a free-market economy. This process is accompanied by transforming existing economic mechanisms and infrastructure to better function the free-markets model, but above all, with the need to develop and create new legal, institutional, economic, and social instruments and spaces to increase the allocation and efficiency of public and private resources. The objective of this study is to give an appropriate answer to the question: What has been the impact of decentralization reforms on the performance of public services provided by local government? The research paper will focus on the role that improvements and legislative changes play in the country's economic growth. Within the past two decades, progress is made in advancing decentralization reform, but there are still many challenges ahead, such as the lack of a clear legal and regulatory framework. Adding to that concern is the financial autonomy of local governments, which remains a challenge for the future. The research methodology used will be a descriptive analysis of data obtained from the Ministry of Finance and Economy and local municipalities on the impact of the reforms. Recommendations and suggestions will be given on the reforming process, as well as ways to increase the efficiency of local government units.

Keywords: Public expenditure; challenges; reform; fiscal decentralization.

JEL Classification: H50, H71, H72

1 Introduction

In the last two decades, many countries around the globe have implemented fiscal and political decentralization. Garman et al. [4] shows that more than 80 percent of the seventy-five developing countries analyzed have been undergoing some sort of decentralization of authority by the beginning of the millennium. The situation is similar in developed countries. Albania is considered a country in transition. Transitional nations have implemented economic systems reforms through the 1990s, focusing them on free trade, improving the business environment, and the "business climate." The main focus is on developing the private sector, as previously in these countries, this sector is virtually non-existent. Numerous reforms in this sector accompany the first years of implementing a free-market economy. But an important factor in fostering further economic development in these countries is the public sector. During the transitional years, efforts are made to redefine the role of the public sector and to improve its performance. An essential component of these reforms is the introduction of decentralized policies for government functions. A common characteristic of almost all transitional economies is that they originated from a highly centralized public finance system with local governments acting primarily as administrative units with little fiscal responsibility and independence. Although these countries initially had similar economic structures and political systems, they chose very different paths and approached to decentralization.

Increasing fiscal decentralization itself has been seen as an essential tool for enhancing democratic participation in the decision-making process while increasing the responsibility, accountability, and transparency of governing bodies. In other countries, the tendency for greater autonomy to govern locally is driven by the need for national coherence in the face of centrifugal forces due to ethnic and regional problems or internal conflicts. The paper aims to analyze the progress and the current situation of fiscal decentralization in Albania over the years and to assess

whether the administrative-territorial reform is impacting and further improving the fiscal decentralization process.

2 Decentralization process in Albania

Albania commenced its path of political decentralization after nearly half a century of highly centralized governance. The first free elections were held in 1992. Despite the importance of this political start-up movement towards increasing democratic representation, local administrative and fiscal autonomy remains very weak. The reforms of 1992 set the stage for the creation of local democratic authorities; however, the decentralization process received a second impetus by the end of the nineties. In the period 1990–2000, the most critical decisions regarding the provision of services to the 3.1 million inhabitants are mainly from the central government, which has a significant presence throughout the country through its own deconcentrated agencies in all 36 districts controlled by 12 prefectures. During 1998–2000, the country formally ratifies the European Charter of Local Self-Government, embodied its core principles in the new Constitution, and adopted legal reforms for local self-government. This marks the second crucial moment, creating the framework for full administrative and fiscal decentralization. Both of these documents identify as one of the main objectives of decentralization reforms in Albania, the need for Local Government Units to be able to deliver on their own the functions once performed under the umbrella of the central government.

The formal ratification of the principles of local self-government consolidated the political decision for a decentralized governance structure. Adopting the laws on the organization and functioning of local government reduces the direct political influence of the state on local government activities. This creates a stable legal framework that would enable decentralized administrative and fiscal structures to function, which include self-governing counties, municipalities, and communes.

Since 2000, critical institutional amendments and regulations are made:(i) the adoption of the National Decentralization Strategy for Local Decentralization and Autonomy; (ii) the transfer of some special vital functions to local authorities (including some second-hand services passed to counties); (iii) creating a mechanism-based of a formula on how to allocate grants unconditionally (which partially replaces conditional, targeted transfers); and (vii) the adoption of an essential fiscal reform package in 2002 (including domestic small business tax, simplified income tax, property tax, and changes to the tax and fee system) that extend the fiscal autonomy of local governments. At the same time, the legislature is adopted regarding local borrowing [11] and local budgeting systems [12].

In 2014, the Albanian government initiated the Territorial Administrative Reform (RAT), one of its main reforms, and creates the premises for reforming local government and deepening decentralization in the country. The reform generates a new territorial map, reducing the number of first-tier local government units by six times, from 373 municipalities and communes to just 61 municipalities and 12 counties (2nd tier of local self-government). The concept of rural communes is finally abolished. The main criterion that guided the Administrative-Territorial Reform is the concept of "functional areas," which must be capable of generating income, creating space for commercial development, and a dense economic, institutional, social and cultural interaction between residents.

At the district level, the population ranges from the lowest level of 61,423 in Gjirokastra district to the highest level of 895,160 inhabitants of Tirana county. Continuing the enhancement of decentralization, the following legislations are designed and adopted into law: (i) 'Intersectoral Strategy for Decentralization and Local Government 2015-2020' and an action plan for its implementation; (ii) Law nr. 139/2015 'On Local Self-Government,' which, among other things exclusively transfers to local municipalities several new functions; (iii) Law nr. 68/2017 'On Local Government Finance,' which was further followed by the law nr. 106/2017 'On Some Amendments and Additions' to the Law nr. 9632, date 30.10.2006, 'On the Local Tax System.' The Small Business Tax is finally eliminated between 2014 and 2015. In 2016 the Albanian

government implemented the new tax reform. The change brings about the abolition of the simplified income tax payment for small businesses with an annual turnover of up to 5 million ALL (€40,000). The number of companies that will benefit from the fiscal changes, and specifically whose profit tax will be zero, is estimated at around 85,300. Reducing the fiscal burden on these businesses will improve their finances and bring about economic growth to the country. Recently, the government has granted tax exemptions to particular categories of companies, without necessarily compensating local governments for this revenue loss.

While Albania is far from completing the picture of political, administrative, and fiscal decentralization that could satisfactorily improve service delivery, governance, and accountability, it must be acknowledged that considerable progress is made in establishing institutions that will enable a fairer implementation of decentralization policies. In terms of the basic legal framework, all that is necessary for the successful continuation of this process is sanctioned by defining once more the rules of the game or better intergovernmental fiscal relations.

3 Literature review

Decentralization is known as the process of transferring authority and responsibility for public functions from the central government to subordinate or quasi-independent governmental organizations, or the private sector. There are different types of decentralization (political, administrative, fiscal, or market), and each has different characteristics, political implications, and conditions to be successful and productive. If local governments and private organizations effectively carry out decentralized functions, they must have sufficient revenues (locally realized or transferred from central government) and authority to make spending decisions.

Fiscal decentralization to be effective depends on a) appropriate expenditure assignments-with the division of functions between different levels of government depending upon their comparative advantage; b) applicable tax or revenue assignments; and c) the efficient design of a system of transfers and its proper implementation [9]. In this way, decentralization leads to minimal vertical imbalances and shortens the distance between the recipients and suppliers of public goods and services.

Davoodi and Zou [2] look at the relationship between economic growth and fiscal decentralization, measured as the subnational share of total government spending, and argue that fiscal decentralization is associated with slower economic growth. Different researchers acknowledge that fiscal decentralization has positive effects on economic growth ([3] for Switzerland, [15] for China, [5] for OECD countries). In contrast, many studies starting from the 1990s show that fiscal decentralization has a positive effect only up to some optimal level, and these levels are different from country to country. Thiessen [16] shows that exist a positive relationship when fiscal decentralization is increasing from low levels, but after reaching a peak, it changes and turns negative. Theoretically, more fiscal autonomy may be associated with a higher output per unit of labor and higher growth rates [1]. Some economists assume a vice versa relation: economic development increases demand decentralization. Martinez [14] shows that economic growth causes decentralization, but it seems that problems of decentralization in developing countries are related to low-efficiency issues from local governments.

Albania is a country that has a new democracy and aspires to become a member of the E.U., therefore strengthening local governance and democracy is an essential element to study. If countries have more significant financial autonomy or higher amounts of unconditional transfers to local levels of government, it will increase efficiency in both allocation and use of funds which ultimately, will bring about economic growth for the whole country. Kapidani [8], show that the new reform in Albania provides proper planning for local economic development and the reduction of problems between administrative boundaries and the area of influence of the services offered by neighboring local government units.

Guga [6], analyzed three indicators for the fiscal decentralization effect: 1) the proportion of subnational expenditure over national expenditure; 2) of total subnational revenues over total

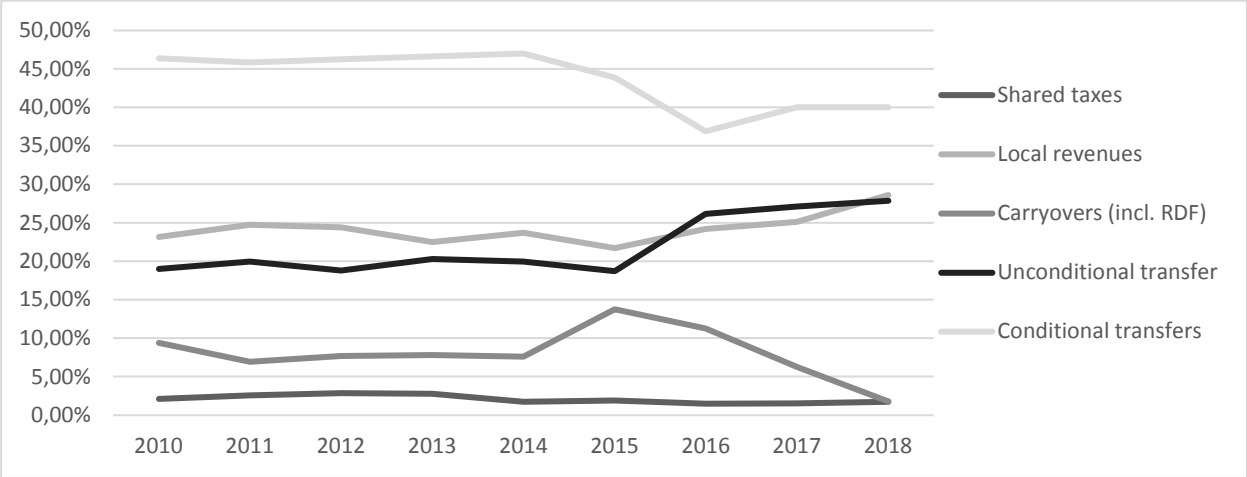
revenues of the central government; and 3) the indicator of own subnational revenues over total revenues of the central government. Her research concludes that the territorial and administrative reform have not generated the expected results. Toska and Bejko [16] suggest in their studies a lack of real vertical decentralization, high financial dependence on central government, and a high level of inequality between municipalities. Under the hegemony of a top-down approach, districts fail to capitalize on the informational advantages; they have to address the preferences of the population in the territories under administration and, consequently, to improve their quality of life.

4 Analysis

The administrative-territorial reform leads to the consolidation of small local government units into more extensive and more efficient groups that are capable of providing greater access and delivering high quality and adequate public services to their citizens and communities. 2015 is the first year of a fully implemented territorial reform and the transfer of new functions towards the local level.

Revenue from unconditional and specific transfers is an essential source for financing functions and exercising competencies by municipalities. In 2018 on average, for all 61 municipalities in the country, self-generated revenues account for about 28.6% of total resources, 27.8% from unconditional transfer income, 40% from conditional transfers, 1.7% shared tax revenue, and 1.75% from carryovers for complete funding sources. Data from 2010 -2018 are shown in figure 1. In the first half of 2018, about ALL 8.5billion (€ 69.8million) are transferred from the ministry responsible for health and social protection to the Territorial Administrative Ministry. About ALL 5.4billion (€ 44million) are allocated by Territorial Administrative Ministry for infrastructure and energy; education, sports and youth; and urban development (Regional Development Fund).

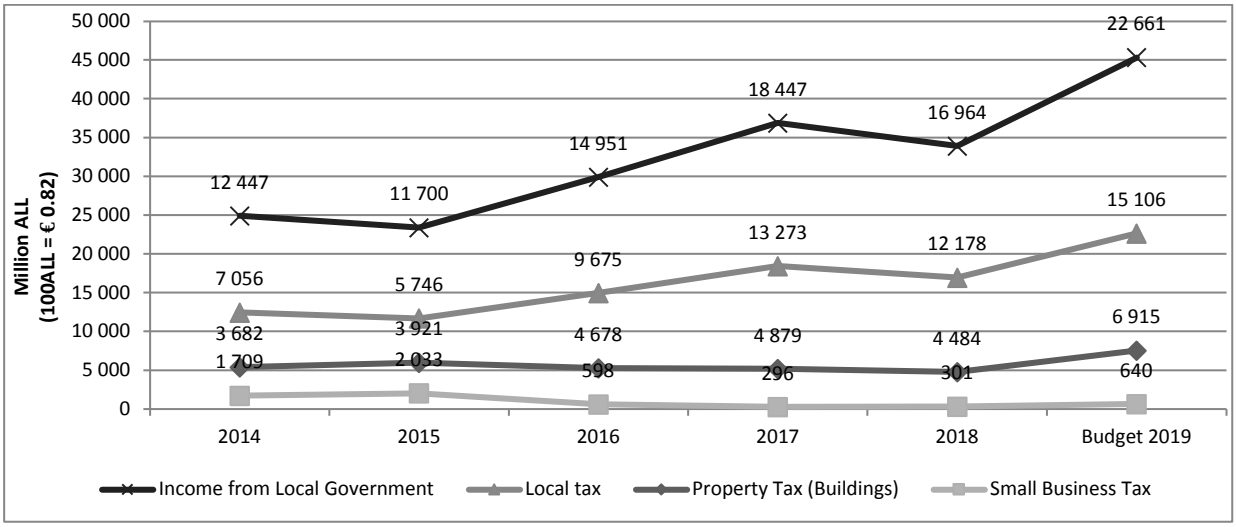
Figure 1. Total local income by financing sources



Source: Financat Vendore. Total income by financing sources [online]. Availablea at: http://financatvendore.al/data/revenues

Figure 2 shows that proceeds collected from the local self-government units during 2015–2018 have an upward trend, which reflects the increase in weight these shares have on revenue as a percent of total resources of the state budget, as well as revenue income to overall GDP.

Figure 2. Income from local government units



Source: Directorate of Local Finance, Ministry of Finance and Economy

In figure 2, the chart indicates revenue improvements for municipalities, especially after the year 2015, which is directly related to the increase in local taxes proceeds. Local taxes include:

Income from other local taxes and fees such as hotel accommodation tax, occupancy fees, administrative fees, parking fees, income from local asset management.

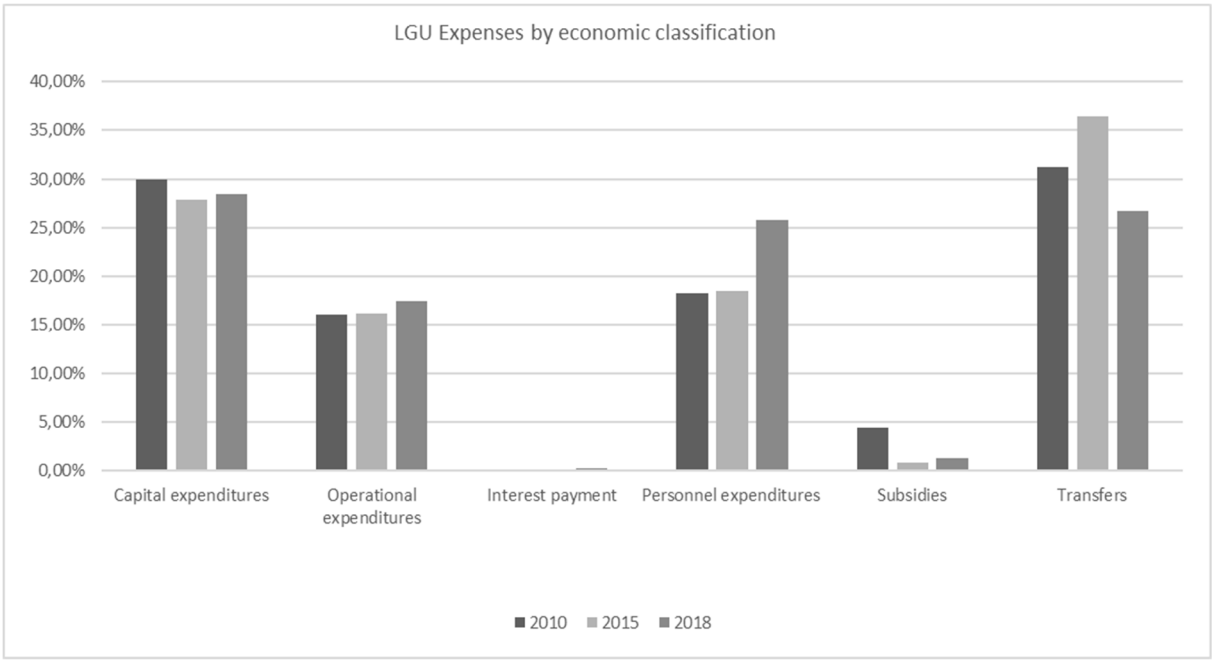
Revenues from local tariffs, which include yearly fees for waste collection and disposal services, street cleaning, greenery, and public lighting.

Local tax revenue shows an increase in recent years, doubling in 2018 compared to 2015. The upward trend is a significant indicator of the effects of implementing the territorial administrative reform. It conveys the improvements in fiscal management processes at the local level. Although part of the increase in revenue may also be due to the increased number of fees that the taxpayer is required to pay, nevertheless, the major part of the rise comes from expanding the taxable base or increasing the number of taxpayers and more effective administrative procedures.

Fees from building permits are an essential source of funding for municipalities. The income from this fee is directly related to the demand for land development and new construction and tends to be very volatile from year to year. In 2018, approved applications and building permits were high, reaching ALL 6.9billion (€ 56million). Proceeds from this fee should go towards financing the public infrastructure needed to serve and integrate new development zones with the rest of the territory.

The small business tax is a local tax that has been reformed more times than any other tax type on local government units. The tax reform implementation of 2016 reduced small business tax revenues by 71% compared to 2015, and in 2017 it was reduced by 51% compared to 2015. In 2018, revenues from this tax amounted to ALL 301million (€ 247million), with a slight increase of only 2% compared to the previous year. Currently, the share of this source of income for the local self-government units is meager. Now it is considered a separate tax, collected by the central government, and then fully shared with municipalities.

Figure 3. Local Government Expenses by economic classification



Source: Directorate of Local Finance, Ministry of Finance and Economy

Expenditures of local government units in Albania, including investment funding from the Regional Development Fund, have been on the rise. Figure no. 3, shows the structure of domestic expenditures by economic nature**.** In 2018 capital investments amount to about ALL 14.2billion (€ 116million) or 29% of total internal expenses. The local government is continuously placing an increasing emphasis on investment**s** to improve the infrastructure managed by the municipalities. Operating expenses that are very important for local governments in providing daily services to its residents show a slight increase in 2018 compared to the previous year. Operating expenses account for about 29% of local government expenditure for 2018. Municipal expenses include:

- Maintenance and repair of schools and public recreational buildings
- Local public transport
- Repair of local roads
- Construction/maintenance of the sewage system
- Housing and communities' amenities
- Salaries of officials and other municipal employees, including payment of social and health insurance

In 2018 these expenditures reached about ALL 20.6 billion (€ 169million) or ALL 1.5 billion (€ 12.3million) more than 2017. These types of expenses are inconsistent with the objectives of the administrative and territorial reform in terms of better operational efficiency and a reduction in administrative costs. On average, local governments spend more than half of their budget on general public services, and about 30% on road infrastructure and transport services. Social assistance accounts for about 30% of the total local expenses. Sports organization and management, institutions and administration of institutions (day centers, nursing homes, and orphanages) account for about 5% of local government expenditure. Local roads, public lighting, parks, and public squares are mainly financed through local government spending itself, and in some cases, through conditional grants received in the competitive grant scheme.

5 Conclusions and recommendations

Analyzing the revenues for the past few years, the decentralization process since 2016 and onwards has had a significant effect in allowing local self-government units to collect more money. Comparing this to neighboring countries, local governments in Albania collect less per capita income from local taxes and tariffs than their counterparts. Increasing the efficiency of local government tax collection makes it possible to ensure a higher level of financial independence, indicating that a new period of financial management has already begun. All constituent items of local income are increasing except for the small business tax. This significant increase in general revenue mainly refers to the gain resulting from local taxes collected by the municipalities themselves. All these positive developments also create the preconditions for improving the quality of local services such as improving rural public transport, improving the irrigation and drainage system, increasing the number of forests and pastures, etc.

Local government units have had insufficient funding for years. This lack of financing, along with the territorial-administrative fragmentation makes it challenging to provide services in line with the needs and expectations of their residents. Recent legal changes transfer many of the spending competencies and functions to local units, but the financial resources for their support are still limited. Some services, such as education, health, and social protection, are almost entirely covered through public spending and local government contributions. Local governments spend more than half of their budget on general public services and about 30% of the expenditure on road infrastructure and transport services. Although recent years show progress and success in terms of improving the regulatory framework, expanding the tax base requires further steps to consolidate local government finances. It is vital that reforms are implemented and that improvements are made to the performance, will, or choices that local government units make regarding the administration of local taxes and tariffs and the public assets they own.

The following recommendations are given to increase the local government budget by improving local tax administration and the development of new policies:

- To provide continuous improvement of information exchange with the central tax administration and other agencies, the National Business Registration Center, Agency for Legalization of Urban Construction Zones, Agency for Property Restitution and Compensation, National Civil Registry, and the new address system.
- To increase and improve information systems for local taxpayers regarding their domestic obligations, the calculation method, and payment deadlines.
- To reduce the informal sector, and expand the taxable base with more taxpayers, installment of cash registers as a legal instrument to measure daily sales.
- To create a productive management system environment, efficient and in line with the expectations of taxpayers, adopting policies necessary to ensure a successful tax collection and effective management of public investments.

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State Aid and Competitiveness of European Union Economies – Legal and Economic Approach

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-11

Abstract

The Lisbon strategy and the Europe 2020 strategy pointed to the need for a series of reforms to ensure economic growth, while stressing the creation of conditions for the competitiveness of enterprises. An important determinant of economic growth is the development of enterprises and entrepreneurship. When considering the impact of enterprise size on its competitiveness, it can be stated that small and medium-sized enterprises play a key role in the development of entrepreneurship. An important factor that, on the one hand, can contribute to the development of small and medium-sized enterprises and the elimination of barriers related to their activities, and on the other can be conducive to regulating the market mechanism, is the system of State intervention, within which State aid can be distinguished. In the single European market, where free competition is the regulator of all on-going processes, there is a rule that State intervention is permissible if the market alone cannot solve certain problems. According to the claims of welfare economics, when there are no premises for market failure, the domain of the State should be only redistribution of income, since the operation of a free-competitive market will ensure efficient allocation of resources. The purpose of the article is to present the issue of competitiveness of the economy, based on the competitiveness of enterprises, from the perspective of solutions adopted as part of the European Union's development strategies in relation to State aid.

Keywords: State aid, European Union, development strategies, economies, competitiveness.

JEL Classification: E62, K20, K33

1 Introduction

The main goal of the European Union development strategies, i.e. the Lisbon Strategy implemented until 2010 and the Europe 2020 Strategy currently implemented, is to transform the European Union into the most competitive economy in the world, based on knowledge and capable of sustainable economic development, creating more jobs and ensuring social cohesion. To achieve this goal, it has been decided that the modernization of the European economy requires a focus on actions leading to strengthening the competitive capacity of the EU economy [1; 11; 12; 22]. These activities concentrate on innovation, liberalization, entrepreneurship and social cohesion. The most important of these goals is the development of entrepreneurship, which has become a reference point for reforms prepared as part of the strategy [19]. The development of small and medium-sized enterprises can be regarded as a measure of the entrepreneurship of societies. The potential and number of enterprises in this group are one of the measures for assessing economic growth, and their functioning is an expression of healthy competition, thus reflecting the entrepreneurship of society.

An important factor that, on the one hand, can contribute to the development of small and medium-sized enterprises and the elimination of barriers related to their activities, and on the other can be conducive to regulating the market mechanism, is the system of State intervention, within which State aid can be distinguished. In the single European market, where free competition is the regulator of all on-going processes, there is a rule that State intervention is permissible if the market alone cannot solve certain problems. According to the claims of welfare economics, when there are no premises for market failure, the domain of the State should be only redistribution of income, since the operation of a free-competitive market will ensure efficient allocation of resources [29]. In turn, the occurrence of significant market reliabilities, such as

imperfect competition and information, external effects, public goods or unemployment, inflation and imbalances, may cause a lack of market efficiency within the meaning of Pareto. In such a situation, the State is entitled to interfere with the market mechanism, but it must be demonstrated that there is a kind of intervention that provides benefits within the meaning of Pareto, i.e. it improves the situation of one entity, without worsening the situation of other entities. From the point of view of the admissibility of State aid, the Pareto principle is important because it postulates the introduction of changes that bring specific benefits, if this change serves to improve the situation of some entities, without worsening the situation of other entities. The problem is that the decisions taken by the State regarding the provision of aid usually lead to an improvement in the position of some enterprises and a deterioration in the position of others. The issue of fundamental importance here is the obtaining of an unfair advantage over competitors by an enterprise which has received or continues to receive support from the State. Therefore, the Treaty on the Functioning of the European Union [32] prohibits the provision of state aid to enterprises, unless such support is justified due to general economic development. In order to ensure compliance with this prohibition and the consistent application of derogations by Member States, the European Commission manages the process of monitoring compliance of planned and already granted State aid with EU regulations.

The purpose of the article is to present the issue of competitiveness of the economy, based on the competitiveness of enterprises, from the perspective of solutions adopted as part of the European Union's development strategies in relation to State aid.

2 Competitiveness in terms of EU development strategies

The main goal of the Lisbon Strategy adopted in 2000 was to make the European Union a leading global economy by 2010. This intention was due to the numerous weaknesses of the socio-economic nature that the European Union had characterized over the last decade of the twentieth century [10; 20]. These weaknesses resulted in a slower pace of economic development and difficulties in the transition to a knowledge-based economy, which was manifested mainly in the lower ability to create and absorption of new technologies [2]. The adoption of the above objective required all Member States to take action towards the development of the information society, support for research and innovation, training relevant qualifications and skills, and development of entrepreneurship, which was to be achieved through easier access to capital and technology, elimination of administrative and legal barriers, reform of State aid restricting competition and creating a level playing field [3]. In addition, it was also necessary to liberalize and integrate those markets and sectors that were not covered by the single market, i.e. telecommunications, energy, postal services, transport and services market, as well as an increase in employment and a change in the social model, which was to take place in the field of increasing professional activity, making the labour market more flexible, improving education, modernizing the social security system, and reducing poverty and social exclusion.

However, the original strategy has gradually become an overly complex program, with significantly different goals and activities with a vague division of responsibilities and tasks, especially between the European Union and the Member States [8; 26]. Therefore, after the mid-term review in 2005, the Lisbon Strategy was reinitiated and focused on economic growth and employment. A new governance structure was also established based on partnership between Member States and EU institutions [13]. The effective functioning of the partnership required appropriate instruments, which was reflected in the national reform programs, which managed to combine the priorities of national and European policy and define macroeconomic, microeconomic and employment reforms. The Lisbon Strategy has thus gained a greater impact on national political debate and has enabled a wider exchange of experience and best practices between Member States. National reform programs have been useful tools to promote comprehensive strategies for economic development in greater relation to macro- and microeconomic policies and employment policy [28].

The renewed Lisbon strategy focused on specific structural reforms that included research and development, labour markets (*flexicurity*, skills and lifelong learning), the business environment and the consolidation of public finances [7]. Nevertheless, from the perspective of time it is clear that the strategy should have been better organized and focused more on the elements that played a critical role in initiating the financial and economic crisis in 2008, such as robust supervision and systemic risk in financial markets, financial bubbles (e.g. on the real estate market) and the credit-based consumption model, which in some Member States, combined with an increase in wages progressing faster than productivity gains, accounted for the high deficit in current accounts. The macroeconomic imbalances and competitiveness problems that underpin the financial crisis did not get the right response as a result of the surveillance of Member States' economies under the Stability and Growth Pact and the Lisbon Strategy, which were implemented in parallel instead of being complementary to each other [9; 25].

The main strategic goal of the Lisbon Strategy was to improve the international competitiveness of the European Union's economy [6]. Currently, this objective significantly determines the Europe 2020 Strategy [5; 23]. The competitiveness of the European Union can be considered in terms of three components, which include potential competitiveness (ex ante competitiveness), competition strategy (instruments of competition), realized competitiveness (*ex post* competitiveness). In terms of the Lisbon Strategy and the Europe 2020 Strategy, the competitiveness of the European Union is potential competitiveness over a ten-year perspective. In the proposed so-called competitiveness pyramid in 1997 by the European Commission a set of factors was presented on the basis of which competitiveness models can be built not only in macroeconomic but also microeconomic terms. At the top of this pyramid, the standard of living was placed as the main factor of competitiveness, whose synthetic measure is GDP *per capita*. In turn, two factors affect the standard of living, i.e. employment rate and productivity. Further decomposition of the pyramid makes it possible to indicate more and more detailed determinants defining the level of employment and productivity, and thus factors affecting the overall level of competitiveness. One of them is the State's economic policy, which is implemented, among others through State aid instruments, exerting a significant impact on both the competitiveness of the economy as a whole and individual enterprises operating within it [14, 16; 21]. Apart from human, capital and natural resources as well as the international environment, state intervention is undoubtedly one of the most important determinants defining the competitiveness of a given national economy.

There is a strong interdependence between the factors that affect the increase in the competitiveness of the national economy and the actions of enterprises to improve their own competitiveness [30]. The competitiveness of the enterprise, on the one hand, reflects successful management practices on the part of entrepreneurs, while on the other hand, the competitiveness of the enterprise arises from the strength and efficiency of the productive structure of the national economy, its technical infrastructure and other factors determining the external effects that can form the basis of the enterprise activity [15]. On a macroeconomic scale, competitiveness is conditioned by both the actions of central level institutions, decisions taken by legislative and executive authorities, and the potential of entrepreneurship, which varies depending on the level of socio-economic development of society. In turn, the economic, legal and administrative environment created by the State has a significant impact on the possibilities and manner of conducting business activity, because this environment shapes the external factors of the competitiveness of enterprises. In general, it should be stated that competitiveness is the result of many factors and activities of many institutions, among which the State and its economic policy play an important role. The ability of enterprises to achieve economic success is co-determined by the economic environment in which they operate. It is the public authorities that define the economic system, which is a more or less favourable environment for enterprises to gain competitive advantage. The competitiveness of the entire national economy is constructed on the basis of the competitiveness of enterprises that operate within its borders. In terms of both the Lisbon strategy and the Europe 2020 strategy, the competitiveness of the European Union economy was based on the competitiveness of enterprises. The enterprise competitiveness can be defined as the enterprise ability to operate in a given industry in a free market economy. There

is also a correlation that the greater the competitiveness, the more reliable the company's position on the market and its functioning is less exposed to external factors and adverse economic conditions [4].

3 State aid and competitiveness

The announcement by the European Commission in June 2005 of the consultation document "State aid action plan - Less and better targeted state aid: a roadmap for state aid reform 2005-2009" [31] was one of the elements of the general reform of competition rules in EU law, and the purpose of this proposal was for the State aid rules to better contribute to sustainable development, competitiveness, social and regional cohesion and environmental protection. This document stated that well-functioning competition, which is not distorted by the granting of State aid, is to work so that the markets supply the best and cheapest goods at the same time and, as a consequence, increase the competitiveness of European enterprises in relation to third-country enterprises. The action plan for the development of State aid rules also envisaged strengthening the economic approach in the analysis of State aid, which aimed to better synchronize the delivery of aid with the priorities of the renewed Lisbon strategy [27]. A practical dimension of the economic approach was the development by the European Commission of a balancing test, which was henceforth to be the benchmark for assessing the compatibility of State aid with the Treaty provisions on competition protection in the internal market. The Commission began assessing the compatibility of a given State aid with the internal market on the basis of a comparison of the positive and negative effects of granting the aid and approving such aid in the case where the positive effects prevail or at least balance the negative effects. In order to compare the positive and negative effects of the aid, those effects should first be assessed and measured in qualitative and, where possible, quantitative terms, and an overall assessment should be made of their impact on producers and consumers in each of the markets concerned. In this context, it is helpful to apply a social welfare standard that facilitates the analytical description of a common interest by separating effects of different nature for different entities. In economic theory, consumer welfare is usually defined as the surplus available to the consumer in all markets, i.e. the difference between what the consumer is ready to pay for a given product and its actual price. On the other hand, the welfare of the producer can be considered the same as the surplus at their disposal, i.e. the amount that they gain when selling the product at a market price that is higher than the marginal cost of production. Social welfare takes into account not only the sum of consumer and producer surpluses, but also the way in which wealth is distributed between countries and citizens. The concept of social welfare thus includes elements of efficiency (by examining how much prosperity arises by influencing the surplus of consumers or producers) and justice (by examining how wealth is distributed between Member States and citizens). The consumer welfare standard takes into account any effects that State aid can cause.

The positive effects of the aid are directly related to the change in the beneficiary's behaviour, which enables the implementation of the planned objective of common interest. In the case of an efficiency objective, the positive effects of the aid can be seen as increasing or reducing the activity on the final products market, beneficial to the achievement of an objective of common interest. For example, environmental aid reduces the production of hazardous substances, and research and development aid enables the development of new or improved products. In the case of the objective related to justice, the positive effects of the aid can be the development of final products that increase the level of justice or a change in the way they are produced: location in another region or use of other factors of production (e.g. disabled workers). Similarly, the impact on production factors markets can be described as a change in activity compared to a situation where no aid is received (e.g. higher sales of suppliers to companies that have moved to a region covered by aid, more jobs or higher wages for employees in the region). Positive effects for consumers may include lower prices in the long run, more product selection, better quality and a higher level of innovation.

The negative effects of the aid on competition and trade also result from a change in the behaviour of the beneficiary, with at least three types of distortions of competition caused by State aid.

Firstly, State aid, by interfering in the allocation of profits in markets, can have a long-term and dynamic impact on investment and competition motivation. Enterprises, expecting that the profits, in addition to their own efforts, will also be affected by State aid, may find that the optimal solution is to limit their efforts. State aid may therefore have a negative impact on investment and innovation motivation of both the beneficiary and its competitors. In the long run, such a change in dynamic incentives leads to a narrower choice, which in turn can cause lower quality or higher prices for consumers.

Secondly, State aid may affect competition in the product market and trigger different reactions from competitors depending on the circumstances. Competitors may react in particular by limiting sales and investment plans, which will be expressed in the fact that actual competitors may limit efficiency and potential competitors may opt out of entering the market. However, competitors will react to varying degrees depending on market conditions and the characteristics of the aid measure. For example, if competitors sell products that are substitutable to products sold by the aid beneficiary, the impact of the aid on their activities will be greater and a change in their behaviour can be expected to be greater. Distortions of competition can be reduced if the beneficiary of the aid has market power. In a situation where the beneficiary of the aid already has a dominant position on the product market, the aid measure may strengthen their dominance by further weakening the restrictions related to the existence of competition.

Thirdly, State aid can affect competition in factor markets in a situation where it favours the use of specific factors of production (such as a particular type of workforce or environmentally friendly intermediates). Some types of aid may also reduce the costs of production factors (e.g. training aid or environmentally friendly materials) or change the production process, which happens when thanks to the aid other production factors are used (e.g. more disabled workers are employed, pollution is reduced)). This aid may be valuable to consumers, beneficiary and entities operating on the production factors market, but may be harmful to suppliers of competitive factors of production. As with product markets, the overall impact on production factors markets can be negative if the aid discourages competitors from investing. However, the greatest distortion of competition on the production factors market occurs with respect to the selection of a specific location. Aid to attract investments may have a negative impact on the region from which investments have been withdrawn. This can lead to a waste of resources if a region without investment has a comparative advantage in relation to this particular production.

All the types of distortions of competition outlined above affect the distribution of economic activities between sectors and Member States, and harm the internal market by disrupting trade and effective allocation of activities within different countries. The mere possibility of approving State aid in one Member State may cause other Member States to want to use aid measures to strategically increase the attractiveness of their areas for different types of activities, which may increase the risk of rush in subsidies. Hence, it can be said that the introduction of the balancing test as a concretization of the economic profit and loss account (costs) of a specific aid measure was a breakthrough in the assessment of compliance with the principles of the common market of state aid granted by Member States, since so far market analysis has been marginalized in practice and thus was not often used in State aid control**.** It resulted from the fact that the decision-making process of the relevant European Union authorities regarding the possibility of granting State aid focused mainly on the aspect of compliance of a given aid measure with relevant legal regulations, largely ignoring the problem of costs and benefits of State aid [24]. Hence, the road map indicated the need for the Member States to make thoughtful choices when granting State aid and to introduce a sensible hierarchy of goals and actions, not on the basis of political but economic arguments.

4 Results and Discussion

The Lisbon strategy and the Europe 2020 strategy pointed to the need for a series of reforms to ensure economic growth, while stressing the creation of conditions for the competitiveness of enterprises. An important determinant of economic growth is the development of enterprises and entrepreneurship. When considering the impact of enterprise size on its competitiveness, it can be stated that small and medium-sized enterprises play a key role in the development of entrepreneurship. Small and medium-sized enterprises, creating the largest number of new jobs on the European Union economy scale, have an impact on the socio-economic processes taking place within the free market economy. On the one hand, it will affect the unemployment rate and the possibility of investment mobilization of relatively low savings to take up, run and develop an economic activity. On the other hand, the dimension of impact on social processes will be the contribution of the development of SME sector enterprises to the creation of so-called middle class in society. Hence, under EU law, the necessity to provide small and medium-sized enterprises with a unique position compared to large enterprises has been clearly indicated. The first step in this direction was to recognize the key role played by small and medium-sized enterprises in the economy, and the next was to precisely define and reduce the barriers in their operation and development.

Small and medium-sized enterprises play an important role in the economy, because they constitute almost 99% of all entities conducting business activity in the European Union, they create the largest number of jobs. However, it was pointed out that the activities of these enterprises were associated with relatively high risk and difficult access to capital. Thus, on the one hand, enterprises in the SME sector are the main source of employment and contribute to the increase in competitiveness of the EU economy, because the greatest innovation potential is seen in them, on the other hand, the undertakings carried out by these enterprises are characterized by a significant risk of their implementation due to a kind of "caution" of financial institutions in granting loans for this kind of projects. Therefore, it became necessary to take various actions to ensure efficient undertaking of economic activity and access to inexpensive sources of financing for this activity. First of all, these activities focus on creating easier access to capital and the latest innovative achievements. Secondly, they aim at reducing the bureaucratic burden as far as possible and simplifying the legal regulations applicable to small and medium-sized enterprises.

It should be emphasized that an important tool for applying effective measures and programs supporting the development of SME group enterprises is the SME definition introduced by the European Commission Recommendation 2003/361/EC [17], which was then transferred to the legal solutions adopted in 2014 in the so-called a new block exemption [18], which draws attention to the real economic situation of the enterprise. The need to reflect the actual situation of the enterprise is dictated by the exclusion of the possibility of granting State aid to those entities that in fact cannot be included in the group of SME enterprises. In order to determine belonging to the small and medium-sized enterprise sector, it is first necessary to conclude whether the cumulative quantitative criterion regarding the number of persons employed and the financial criterion, which alternatively indicates the ceiling of annual turnover or the enterprise's total annual balance sheet, are fulfilled. The criterion of the number of employees is one of the most important and must be respected as the main criterion. The financial criterion, however, is a necessary supplement, as its purpose is to determine the actual scale and results of the enterprise's operation and its position in comparison with competitors. The reservation is that trading should not be used as the sole financial criterion, as enterprises operating in the trade and distribution sectors generally have higher turnover rates than production enterprises. This means that the turnover criterion should be linked to the total annual balance sheet criterion, which reflects the enterprise's overall financial situation, with the possibility of exceeding any of these two financial criteria. In addition, a distinction should be made between different categories of enterprises, depending on whether they are independent enterprises, are related to other enterprises, or hold equity or voting rights in other enterprises which do not entail the creation of a dominant position (partner enterprises). The above elements of the definition of small and medium-sized enterprises are important because in the context of the granting of State aid by

Member States, their use to identify potential SMEs allows for better targeting of aid, leading to providing support to enterprises which are particularly important for the development of entrepreneurship and job creation in EU socio-economic strategies.

5 Conclusion

The Lisbon Strategy and the "Europe 2020" strategy currently being implemented highlight the role of small and medium-sized enterprises in the European economy as a "driving force" in terms of job creation and economic growth. Public support for small and medium-sized enterprises is an important element of both strategies. In particular, in addition to other vulnerabilities in the business environment, Member States were required to address the particular financial difficulties of these enterprises. If market forces alone are not sufficient, state aid measures can play a complementary role by providing public funding. However, State aid control is an essential factor in maintaining equal opportunities for all enterprises active in the internal market, irrespective of the Member State in which they are established. The European Commission controls the right orientation of these measures, ensuring that State aid does not discourage investors, is not allocated to investments that keep unprofitable enterprises on the market and does not distort competition. State aid for European enterprises in the SME sector will have a positive impact on their competitiveness only if it is oriented towards structural improvement of market conditions through "smart investments" leading to increased innovation, increase of the scale of scientific research, increase of energy efficiency, improvement of training quality and quality of work places.

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Health Technology Assessment: Literature Review

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-12

Abstract

Health Technology Assessment (HTA) is one of the tools that can be used to support rational and objective decision-making in healthcare in the endeavour to contain public expenditure while maintaining the availability of healthcare interventions. The complex process of HTA often struggles to find its place in public policies and faces pressure from various stakeholders. HTA has existed since the 1970s and as a formal process has its roots in the United States. During the 1980s, HTA began to spread outside the US and over the next twenty years, reached almost all European countries, including some countries in Central Europe. The rise of HTA brought about an exponential increase in the empirical studies of HTA available in academic databases. This study reviews the available literature to analyse the development and research topics and the potential pitfalls of HTA implementation.

Keywords: Health technology assessment, pharmacoeconomics, Czech health policy, public health economics.

JEL Classification: I180

1 Introduction

Health care is an important part of the public sector. Technological changes in healthcare have been repeatedly identified as one of the most important factors behind the rise in healthcare spending [6]. These changes involve both diagnostics and treatment and have become the driving force of rapidly rising healthcare costs [61]. This development created the need for ever more sophisticated tools, which would support rational and objective decision-making in allocating these resources. These are usually provided by public budgets to ensure the provision of high-quality healthcare while maintaining the principle of fair and equitable access to healthcare.

While the new technologies make it possible to treat more patients, improve the quality of life and significantly shorten treatment time, there is a discrepancy between the available resources and technological progress. HTA is a tool that can be utilised to maximise the health of the population while taking into account the limitations set by scarce resources [10].

With the increased pressure on the effectiveness of using public resources, HTA has begun to be used as a tool to manage healthcare spending through economic analyses, such as cost minimisation analysis (CMA), cost-effectiveness analysis (CEA) and cost-utility analysis (CUA). In other words, HTA is one of the tools used to balance the economic perspectives and models, inspired by the effort to contain public expenditure (or its ineffective allocation) and the need to maintain the availability of healthcare interventions while taking into account the new ethical challenges of personalised medicine. However, it is also a complex process that often struggles to find its place in public policies and faces pressure from various stakeholders.

For practical purposes, it is necessary to distinguish between HTA as a scientific process and HTA as a formalised process. This is because there is a significant difference between the assessment of healthcare technologies as a part of a scientific process and the assessment that takes place in the context of public policies and involves various parties to the political process. In this respect, HTA is often described as the bridge that spans the gap between research and political decision-making (e.g. [4]).

All of the above clearly shows that HTA is a multi-faceted category that has its challenges, whether these arise from the difficulties in defining a standardised methodology (which is difficult to achieve when comparing different healthcare technologies) or from data analysis in the field.

It is only natural that the progress of HTA has created an exponential increase in the number of empirical studies on the subject published in the last 30 years.

Since the HTA process is so vital to all stakeholders – governments, patients, healthcare providers, healthcare insurance payers, and pharmaceutical and technological companies – it would be natural to expect that there have been major studies devoted to mapping the existing HTA literature.

However, the analysis provided by one of the few studies that reviewed the empirical literature on HTA [6]. O'Donnell [39] shows a lack of review studies of HTA literature. The overwhelming majority of HTA literature reviews focus on the specifics of the formal methodological aspects and steps of HTA and not on HTA as a research process. Furthermore, O'Donnell [39] points out that the existing HTA theory is completely missing any analysis and assessment of the impact of HTA on public budgets and does not study the society-wide consequences of introducing HTA. This might be caused by the disparity between the simple assessment of the formal outputs of the HTA process and the complications that arise when attempting to assess the effectiveness of public spending and the impact on healthcare budgets.

A search of international HTA literature reviews available in academic databases revealed a detailed 250-page long paper by Murphy [38], which presents a general study of qualitative research methods. However, despite being titled Qualitative Research Methods in Health Technology Assessment: a Review of the Literature, this paper does not contain a review of HTA literature.

Another literature review focusing on certain elements of HTA, particularly on healthcare cost-benefit analysis (CBA) and cost-effectiveness analysis (CEA) was conducted in 1980 by Warner and Hutton who analysed the CBA and CEA-related literature published between 1966 and 1978 [60]. Their chronological analysis of the number of studies published in each year of that period showed that the numbers had risen from single digits in the early years to almost 100 studies conducted within the last two years of the period. The largest increase was recorded for decision-making at the lowest level of healthcare, represented by individual GPs. The increase in studies exploring the society-wide impact was not as significant [60]. According to the results of the study, the CEA analysis gradually gained preference over the CBA analysis. Klarman [35] is another author who studied the literature on CEA in healthcare. Based on the literature available at the time, he concluded that CEA was more appropriate than CBA for decision-making in healthcare.

The present study aims to fill the gap in research focusing on the HTA literature review and provide a complete review encompassing both studies on HTA as a research process and studies that explore the theoretical approaches to formalising HTA; obviously, some studies contain both aspects of HTA. The ambition is to contribute to the academic discourse on the theoretical approaches to HTA, since it is the theory that underpins any academic process, and also to the central policy decision-making on HTA.

This literature review has the following objectives:

- To identify the relevant published studies on HTA.
- To develop a comprehensive overview or database of the studies including the author(s), title, year of publication, publisher, the country that the research relates to and other specific aspects of the studies, including the healthcare segments they focus on. The scientific approach to HTA and the research focusing on formalising the HTA process for policy decision-making were both given equal weight in the literature database search.
- To analyse the key trends in chronology, authorship and study focus.
- To identify any weaknesses of HTA mentioned in the reviewed literature so that they could be included in the risk assessment should HTA be implemented in the Czech Republic.

When these objectives have been met, the study also aims to suggest directions for future research analysis.

2 Material and Methods

This study focuses primarily on theoretical approaches to HTA and is grounded in a review of existing literature, most of which was published outside the Czech Republic. To date, there have been no relevant Czech theoretical studies of HTA. The study uses quantitative methods to provide a systematic overview of the identified papers and qualitative methods to examine major HTA studies. It also utilises the deduction and synthesis of the findings to reach a conclusion, which provides directions for future research. The list of literature contained in this study represents a core database of available and highly relevant HTA literature.

The HTA literature analysed in this study is comprised mostly of studies published in academic journals, as these are the most easily identifiable resources that can be accessed for the purposes of an HTA literature review. Therefore, this type of literature represents the main body of the texts reviewed in this study. The primary resources used to identify the studies were academic databases such as Google Scholar, JTOR, ScienceDirect and Web of Science.

This literature review maps reliable studies on HTA published between 1970 and 2010. The author presumes that in the subsequent papers, studies on HTA were published at an even higher rate. Therefore, the HTA literature after 2010 will be analysed in a separate follow-up paper. It is the first review of its kind to be undertaken. Overall, the literature search identified 74 results, including three books and two expert reports, while the overwhelming majority (93%) of the results is comprised of academic studies. Relevant studies were identified using keywords such as "economic assessment" AND "healthcare" or Health Technology Assessment. The results were then assessed by the author. Some of the results were found to be unreliable and so could not be included in the study, while others were not accessible. When the complete study could not be accessed but the abstract was available and contained the facts relevant to this research, the study was included in this analysis; otherwise, the study was excluded. Duplicates of the same paper resulting from scanning various databases were removed as a part of the search process.

3 Results and Discussion

Chronological Analysis

Prior to any academic studies on HTA, there was another milestone that is closely related to the beginnings of healthcare analysis. In the mid-1930s, Bradford Hill postulated the core principles of randomised controlled trials (RCTs), which remain the key tool for the overwhelming majority of economic assessments of healthcare interventions to this day. The first randomised controlled trial was conducted when testing a whooping cough vaccine. Interest in the economic analysis of healthcare and the related academic literature began to appear in the mid-1960s [24].

Some of the first studies to mention cost-benefit analysis, which is now used as a part of HTA, were Fein [25] and Weisbrod [62]. However, while these studies mention measuring the intangible effects on health, they do not expand on this topic in further detail.

The turning point for formalised HTA came in 1965 when the US Congressional Committee on Science and Astronautics identified the need to assess the intended and unintended social, economic and legal consequences of modern technologies to inform the legislative process. Based on these conclusions, the US Congress authorised the establishment of the Office of Technology Assessment (OTA) in 1972, which started to publish the first studies. The development of HTA was spurred on by healthcare spending, which was rapidly rising even then. Cost-effectiveness analysis became an important and increasingly studied component of HTA [41].

1971–1980

During this decade, Cochrane published *Effectiveness and Efficiency* [13]. This book formulated the opinion, which is now prevalent, that all healthcare interventions should first be tested in RCTs and that the clinical effectiveness of the results should be systematically assessed. The resulting data should be then used further to underpin political decisions by evaluating the

cost of the treatment and its social utility. Cochrane's book had a large impact on medical practice and on assessing healthcare interventions.

As regards the first formalised health technology assessments, the OTA published its first report in 1972, followed by another in 1976 [40].

1981–1990

Overall, the chronological study analysis included six studies published between 1980 and 1990. The key author who initiated the development of HTA into a formalised process was Professor David Banta, who worked for the US OTA and who was the first to formulate the methodological framework for HTA [2]. The names of other authors publishing works on HTA in this early period are included in Table 1. Two of the analysed publications from this period examined HTA as a scientific process: Klarman [35], and Birch [5].

Table 1. An example of a table (only black-and-white)

Study details	Subject matter
Banta (1981)	HTA in policy decision-making (USA)
Klarman (1982)	CEA
Drummond (1981)	HTA – policy decision-making in drug reimbursement mechanisms Use of HTA in pharmacoeconomics (on the examples of Germany, Netherlands and Sweden)
Birch (1987)	Application of CBA to healthcare
Foote (1987)	The future challenges facing HTA
Feeny (1988)	Arguments for establishing HTA agency in Canada

Source: Author.

1991–2000

From the overall number of 74 publications, 27 studies were published in this period. As opposed to the previous era with similar proportions of studies published in public policy journals and in healthcare journals, the majority of HTA studies between 1991 and 2000 were published in healthcare journals, such as the *International Journal of Technology Assessment in Health Care*, *Medical Care*, *Health Economics*, *Kidney International* and the *Journal of Health Economics*. One of the authors with more than one paper during this period was Briggs, who published economic analyses of healthcare and extended them with a sensitivity analysis [8]. In another study, he constructs the confidence intervals to determine the incremental cost-effectiveness ratio (ICER). Drummond, another author active during this period, published studies on the methodology of economic assessments [18, 20]. The study by Laupacise and his team of Canadian authors discusses the decision-making aspect of HTA with regard to the economic assessments to make sure that the results can be used in the policy decision-making process and suggests a formal HTA methodology [36]. Another of his studies examines HTA in the context of kidney transplants [37]. The other studies cover a wide variety of topics, with the overarching theme of the international exchange of the experiences gained by individual countries that implemented HTA (e.g. Ross, 1995 – Australia), and discuss the challenges of HTA. The publications are spread more or less evenly throughout the whole period. From the total number of 26 publications, 10 examine HTA as a scientific process, 9 focus on the decision-making phase of HTA and 8 involve both approaches.

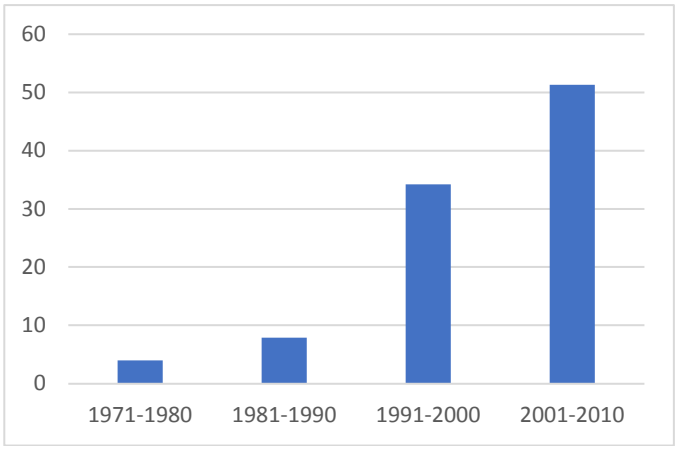
2001–2010

As expected, this period yielded the most publications on HTA. Compared to the preceding decades, the number of published HTA studies almost doubled. The research concerns a wide range of topics with a special focus on refining methodologies, an international exchange of experience and the development of HTA guidelines. The study by Ross, 1995 (Australia) discusses the future of HTA and the challenges it faces although there are also critical studies that point out the pitfalls of HTA. The review study by Garcia-Altés, 2001 reviewed 87 Spanish studies; the technique most frequently employed in the studies was a cost-effectiveness analysis (CEA). In most cases, the review revealed significant flaws in the studies. The review noted that there was

often no objective that would be directly linked to the decision-making process and that the studies often completely excluded indirect costs from their calculations [27]. Another criticism of CEA pointed out that it ignored opportunity costs [15]. Further criticism of the economic assessments draws on the Canadian experience [30]. Hoffman's study analysed a sample of decision-makers and concluded that in general, they recognised the importance of economic assessments for the decision-making process. However, an analysis of available published economic assessments, which was part of the same study, came to the conclusion that these assessments were often insufficient for the decision-making process, usually because of faulty generalisation of the findings, missing answers to research questions or inadequate methodological accuracy.

Out of the total number of 74 studies, 43 were published during this period. In addition to the journals that have already been mentioned in the preceding era, some studies during this period were published in a journal which has an important place in the development of HTA – the independent *Health Technology Assessment* journal established after 1993.

Figure 1: The percentage of studies published in each decade

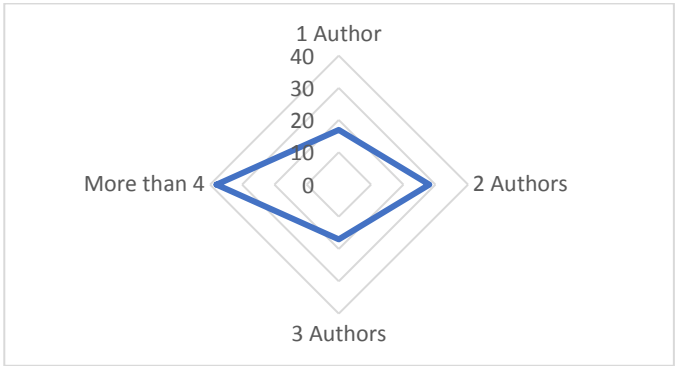


Source: Author.

Authorship

As mentioned in the introduction to this study, HTA is a multidisciplinary field that collects and assesses data on the medical, social, economic and ethical impact of healthcare technologies. Since this is the case, it was expected that the analysis would identify multiple studies published by a team of authors. Out of the total number of 74 analysed studies, 12 were written by a single author, 17 studies had two authors, 12 studies had three authors and the remaining 26 studies had more than three authors. Four of the studies in this last group were written by a team of seven authors, which was the highest number of authors identified in the analysed literature. It should be noted that institutional reports were excluded from the authorship analysis.

Figure 2. Publications according to the number of authors (%)



Source: Author.

3.1 Categorisation of the Studies Based on the Subject Matter

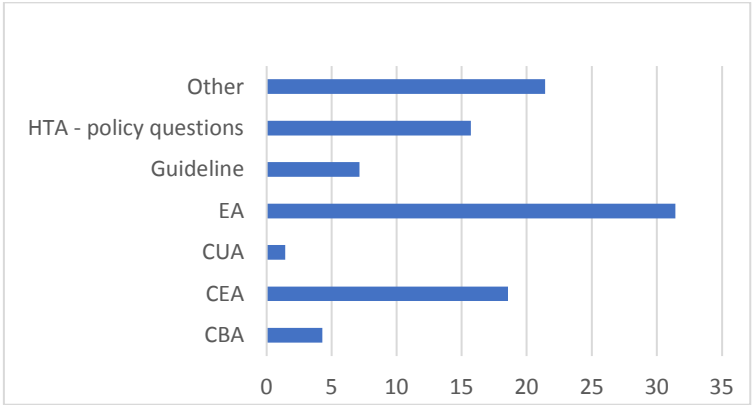
The analysed studies were divided into the following categories according to the focus of the research:

(a) HTA and policy. This category includes studies that explore the relationship between HTA and its main purpose, which is to inform the decision-making process of the policymakers to allocate scarce resources in healthcare.
(b) Guidelines. These are studies that provide general directions for high-quality decision making while using HTA. These studies usually contain charts of the decision-making process.
(c) Economic studies. These are studies that focus on HTA as a scientific process and on economic assessments. They usually explain the purpose of economic assessments in healthcare and give detailed information on the individual analyses and the differences between them.
(d) Studies focused solely on cost-utility analysis (CUA).
(e) Studies focused solely on cost-effectiveness analysis (CEA).
(f) Studies focused solely on cost-benefit analysis (CBA).
(g) Other. This category includes studies that did not fit into any of the other groups. It includes studies focusing specifically on the implementation of discounting in economic analysis, the use of databases while drafting an HTA analysis etc. Due to the heterogeneous nature of the literature analysed in this study, this category is relatively large and contains over 20% of the publications.

3.2 Categorisation of the Studies Based on the Scientific Field of the Journal

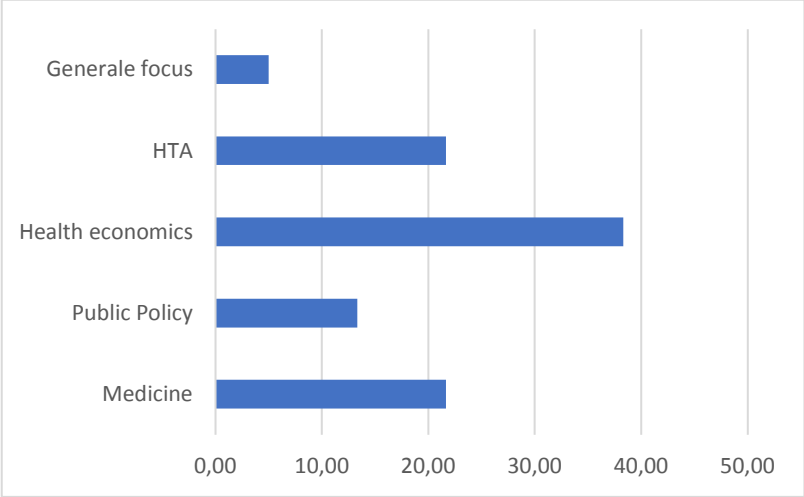
The studies were also categorised according to the scientific field of the journal. This analysis excluded books and HTA reports by agencies and organisations. The journals fall into the five categories (General, HTA Health economics, Public policy and Medicine), results summarised in Fig. 4.

Figure 3: Study categories according to the subject matter (%)



Source: Author.

Figure 4: Study categorisation according to the scientific field of the journal



Source: Author.

The most common category in this analysis was health economics with almost 38% of the analysed studies. Public policy journals account for 13% of the studies. Medical journals and HTA-specific journals each account for 22% of the studies while only a fraction of the overall number of studies was published in general journals.

Potential Pitfalls of HTA

The existing literature lists the numerous benefits of HTA and stresses the need to take advantage of these assessments. However, this study also identified the potential pitfalls and challenges that can face the implementation of HTA, which are summarised in the following overview:

The difficulties in selecting suitable methods and obtaining relevant data for the economic assessment (e.g. [39]).

The missing connection between economic assessment and public policy [38].

The costs and benefits considered by the policymakers may differ from the costs and benefits usually covered by economic assessments [32].

The potential conflict of interest in creating HTA analyses. A study that examined the potential conflict of interest in the economic assessments of cancer therapy found a significant correlation between positive economic assessments and studies sponsored by pharmaceutical companies. On average, studies financed by pharmaceutical companies were almost eight times less likely to report negative results compared to studies sponsored by government or non-profit organisations [25].

4 Conclusion

The paper analyses 74 studies published in scientific journals between 1970 and 2000. After introducing the topic and defining the methods and research questions, the first part of the paper presents a chronological analysis of the identified studies followed by an analysis of the frequency of authors. The chronological analysis shows that the number of HTA studies increased from single digits in 1970–1990 to dozens of studies in 1990–2010. This finding is in line with the results of the literature review. As regards the preference for the individual types of analysis in the reviewed studies, the review identified a preference for CEA over CBA. A review of the literature published from 2010 onwards would presumably show a high rate of published studies and should be undertaken in future research.

The review also analysed the proportion of the individual scientific disciplines based on the journals that published the reviewed studies. Surprisingly, 22% of them are in the medical field.

This shows that even specialised medical journals recognise the importance of HTA as part of the decision-making process in healthcare funding and that the research of new innovations in medicine does not take place in a vacuum that would disregard the costs and benefits of potential treatments.

Future studies should analyse the literature published from 2010 onwards, as it is possible that the analysis will reveal new trends that differ from those that prevailed in the past. Due to the noticeable increase in the frequency of studies published between 2001 and 2010 and, in particular, due to the presumably even higher rate of publications from 2011 onwards, an analysis of the studies from this period exceeds the scope of this research. Our article contributed to the field of scientific base of HTA in two aspects. It showed the development of HTA as an individual scientific discipline on the case of development of publishing activities and pointed out to the main trends of HTA prevailing for idividual periods of its development. As a suggestion for further research we suggest a deeper content analysis which could bring result useful for evidence based decisionmaking when considering the setting up of methods of HTA.

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Do Public Enterprises Manage Earnings? Evidence from Germany

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https://doi.org/10.5817/CZ.MUNI.P210-9646-2020-13

Abstract

Earnings management is among the most extensively analysed topics of empirical accounting research since the 1980s. However, studies have focussed on commercial enterprises only and not yet properly covered the case of public enterprises. We try to close this research gap by modelling the management incentives to manipulate earnings with reference to institutional economic theory. Based on that, we analyse the financial reporting of 14,800 German public companies over a period of 16 years. The data shows clear signs of earnings management for those public enterprises that are more independently run, rather detached from traditional municipal activities, and operating in a more competitive market environment, which is in line with our theoretical model.

Keywords: Earnings management; empirical accounting research; public enterprises.

JEL Classification: H83, M41, L32, L33

1 Introduction

There exists a variety of organisational models for the provision of public goods in an effective and efficient manner. This ranges from the state, i.e., the public administration to private sector companies. Within this range, state-owned or public enterprises have an intermediate position. They are predominantly established in association with a type of outsourcing procedure: the transfer of tasks from a public entity (a public budget) to a public enterprise. They are also classified as not being part of the public administration itself. German federal statistics define a public enterprise as an organisation with a share of more than 50% of its nominal capital or voting rights held by at least one public owner [11]. For 2016, the German Federal Statistical Office reports data on 16,833 such enterprises that apply commercial accounting as opposed to fiscal accounting. Most of these companies can be characterised as market producers (81%) [9]. These are able to predominantly fund themselves by means generating of own revenues which stem to more than one fifth from outside the public sector [10].

Furthermore, around 67% of all public enterprises in Germany that apply commercial accounting are organised as institutions by commercial law. A vast majority, 88%, of these commercial-law enterprises were limited liability companies. Regarding industries, public enterprises appear in great variety. Federal statistics reports public enterprises to be active in many industries based on NACE code classifications. These are for example electricity, gas, heat and water supply, health care, housing, culture, waste and waste water management etc.

Following the information-based agency theory, a company's annual financial statement consisting of the balance sheet and profit and loss statement can be interpreted as an instrument of communication vis-à-vis its stakeholders. Since the management usually possesses informational advantages over the stakeholders, various types of disincentives might arise as is depicted by the classical principal-agent problem. One of the means to exploit such advantages is the possibility of applying earnings management that goes unnoticed by the stakeholders. Earnings management enables the management to intentionally produce financial statements that present an adjusted view on the company to serve the management's purpose. It is performed by legally utilising the given degrees of freedom within a specific accounting framework: "earnings management occurs when managers use judgment in financial reporting […] to alter financial

reports to […] mislead some stakeholders about the underlying economic performance of the company […]" [4]. A common finding of empirical research on the matter is the smoothing of earnings, especially to prevent the report of small accumulated losses [1, 2 ,8]. While this has been subject to a multitude of empirical research studies focusing on the private sector, there exist only a few insights on whether the management of publicly owned enterprises is also prone to such behaviour.

We hypothesise that the fundamental disincentive structure that promotes earnings management in the private sector also holds for public enterprises. This expectation is fostered by the complex, multi-tiered principal-agent setting surrounding a public enterprise. It consists of the relationships between citizens, politicians and a public enterprise's management and forms a feasible breeding ground for earnings management to be performed. On the other hand, there also exist reasons why managing earnings might be of lesser importance. Public enterprises usually have multidimensional goal systems such that profit maximisation and subsequently cost efficiency are not the overall or most important goals. Negative consequences of reporting a loss or missing profit/efficiency goals on a public enterprise manager's employment conditions (e.g. lower bonus payments or higher probability of being laid-off) might thus be less severe compared to his or her counterpart in the private sector. To sum up, there might be differences to what extent public enterprises perform earnings management. Out of these considerations, two questions emerge:

1. Do public enterprises perform earnings management?
2. Is earnings management more pronounced in certain types of public enterprises?

To analyse these questions we distinguish two motives for companies to apply earnings management: Firstly, public enterprises might have the incentive to avoid small losses by using accounting techniques to transform them into small (or zero) profits (loss avoidance motive). Secondly, the management might want to smooth out fluctuating earnings into more steady flows to approximately meet their financial goals since both, negative and positive deviations from these goals might induce unwanted implications (profit-smoothing motive).

The aim of this paper is to give an empirically-based answer to these questions. For this purpose, several hypotheses will be discussed in section 2. Section 3 introduces the data and the empirical strategy. After that, the results are presented. Section 4 concludes the paper.

2 Deduction of hypotheses

One differentiation of public enterprises can be made in terms of legal forms. There exist commercial-law as well as public-law public enterprises that bear implications for the autonomy of the management and the influence of the public administration. It seems reasonable that earnings management is subject to the autonomy of the management. Higher degrees of freedom for the management to run the company and therefore a bigger informational gap between insiders and outsiders [5] might lead to more earnings management. Usually, management autonomy is rather high in the institutional setting of commercial-law companies. Cronauge [3] and Krause [7] see a higher degree of management autonomy for commercial-law companies compared to public-law companies. Therefore, we focus on the analysis of the differences between commercial-law vs. public-law companies and, more specifically, between different legal forms within these two groups (e.g. limited liability companies vs. public limited companies or Eigenbetriebe, i.e., owner-operated municipal enterprises without a legal personality, vs. other public-law legal forms. This leads to hypothesis 1:

H1: Public enterprises under commercial law manage their earnings more actively compared to public enterprises under public law.

Next, we assume a positive relationship between the size of a public enterprise and the extent of earnings management. This is based on the idea that the necessary accounting adjustments require a certain effort by the management. This effort seems less worthwhile in smaller companies, i.e., when smaller earnings and cash flows are involved. In line with this

argument, Jegers [6] finds empirical support for a relationship between the size of non-profit enterprises and earnings management. Therefore, we formulate hypothesis 2:

H2: Larger public enterprises utilise earnings management to a higher extent compared to smaller public enterprises.

Furthermore, we assume that both scope and incentives for earnings management vary across industries where public enterprise are engaged in. Firstly, as the capital structure differs by industry, the discretionary scope for evaluating different types of assets differs as well. This is especially true for intangible assets. Thus, the scope of earnings management is subject to the industry-specific capital structure. Secondly, incentives to perform earnings management only exist if a companies' success is subject to monetary goals such as the annual surplus. The importance of financial success is again industry-specific as their goal could also be in terms of social welfare instead of economic success. Therefore, the probability for earnings management is supposedly higher in more competitive industries (e.g. electricity, gas or heat supply, i.e., industries where private sector companies are usually also engaged in) than in classically subsidised undertakings (e.g. arts, entertainment and recreation) or industries that supply mostly goods with high public good character (e.g. public administration, national defence). Thus, hypothesis 3 summarises both reasons:

H3: Public enterprises belonging to competitive industries perform more earnings management.

According to the German Commercial Code (HGB), there is a disclosure requirement for financial statements on the individual company level. This is true for holdings as parent enterprises as well as for their subsidiaries. Regarding the common corporate structure of public enterprises that comprises of parent und subsidiary enterprises, it can be assumed that the management is foremost held accountable for the annual result of the highest level of aggregation. Lower levels, i.e. subsidiaries are less visible for stakeholders. Thus, separate financial statements may not be the focus of stakeholders. It follows:

H4: More earnings management is performed in public enterprises that are holding companies.

The final two hypotheses are motivated by the funding structure of public enterprises. In addition to the owners, lenders such as banks appear as another important stakeholder for the management. They have a special interest in the financial soundness of their debtors and as such constantly monitor their financial statements and possibly tie contractual conditions to it. Therefore, pleasing lenders e.g. to meet financial covenants as contractual obligations may be another motivation to perform earnings management. This motivation should then depend on a public enterprise's leverage ratio. According to these considerations, we formulate hypothesis 5:

H5: Public enterprises with a high leverage ratio perform earnings management to a higher extent.

Additionally, the extent of earnings management might also differ between purely public and mixed enterprises. While the former are in 100% ownership of the public sector, the latter combine public as well as private shareholders. However, due to insufficient data availability, we can only analyse enterprises with a majority of public owners. We assume that private shareholders have a high interest in the financial soundness of the enterprises they are invested in. Comparable to the role of lenders in H5, private shareholder thus also apply monitoring efforts with respect to financial indicators. Also, mixed enterprises exhibit a higher non-payment-risk compared to those in exclusive public ownership. The underlying reason may be that a bailout by the public administration is more likely for enterprises in their full ownership. Therefore, mixed enterprises might be more interested in the adjusted communication of their financial statements to meet their reporting obligations. This leads to hypothesis 6:

H6: Public enterprises with a degree of public ownership below 100% perform more earnings management compared to fully public-owned enterprises.

3 Material and Methods

3.1 Indicators of Earnings Management

For the empirical testing of the presented hypotheses, the existing data set is divided into subgroups, for each of which four indicators for earnings management can be calculated and analysed. We use different proxies because earnings management cannot be measured directly, but can only be made visible indirectly [8].

A first indication for the existence of earnings management is given by the empirical distribution of the reported profits and losses of the public enterprises in the data set. Without the use of earnings management, the annual profits would have to be distributed symmetrically around zero in a sufficiently small interval or at least follow an unknown continuous distribution. On the other hand, if the annual results are deliberately controlled by management, small losses are likely to be a rather seldom phenomenon: a small loss leads to unpleasant discussions with stakeholders, especially with regard to behavioural distortions of perception (prospect theory, loss aversion). Also, a small loss should be easy to conceal or to turn into a small or zero profit ("black zero") with the help of accounting policy without overstretching the framework of accounting standards. This approach is included in the study as indicator for earnings management E1. In order to describe the distribution anomaly and in accordance with the approach of Leuz/Nanda/Wysocki [8] and Burgstahler/Hail/Leuz [2], the annual net profit or loss is scaled with the balance sheet total of the previous year to control for differences in the size of the companies. A small profit is operationalised as the interval from 0 to 0.01 and a small loss as the interval from -0.01 to 0. We therefore define the indicator E1 as the ratio of small profits to small losses and indicates earnings management related to the loss avoidance motive. A higher value of E1 suggests a greater degree of earnings manipulation:

$$E1 = \#[0;0{,}01] \,/\, \#[-0{,}01;0].$$

A second approach for the indication of earnings management results from the structure of accounting. A company's profit consists of cash flows and non-cash accruals. While cash flows result from the operations and are thus determined by economic events during the reporting period, accruals are calculated ex post and result from the application of accounting standards by the management. If it pursues a policy of smoothing earnings, it will attempt to compensate cash flow fluctuations by consciously structuring the accruals as to achieve a more steady annual result. In this case, the annual result will fluctuate less than the cash flow. According to Leuz/Nanda/Wysocki [8], a comparison of the standard deviations of both variables is a suitable proxy for earnings management. Indicator E2 is the quotient of the standard deviation of the annual profit and the standard deviation of the cash flow for each company in the data set. It points out earnings management following the profit-smoothing motive. The smaller (larger) the value, the greater (smaller) the tendency to smooth out earnings in the companies:

$$E2 = \sigma(\text{Earnings}) \,/\, \sigma(\text{Cash flow}).$$

If the management consciously uses the design of the accruals to level out cash flows, this would also have to be reflected in a negative correlation of both values. The stronger the negative correlation between accruals and cash flow, the more extensive the management applies earnings management [8]. We compute the relative changes in both values to the previous year. Indicator E3 thus also relates to the profit-smoothing motive is defined as follows:

$$E3 = \rho(\Delta\text{Accruals}, \Delta\text{Cash flow}).$$

Finally, the size of the accruals is in itself already considered an indicator of the management's ability to manipulate earnings [2,8]. In accordance with the approach of Leuz/Nanda/Wysocki [8] and Burgstahler/Hail/Leuz [2], indicator E4 is calculated by scaling accruals with the operating cash flow to control for different company sizes and profitability. Thus, E4 points out the profit-smoothing motive:

$$E4 = |\text{Accruals}| \,/\, |\text{Cash flow}|.$$

3.2 Data

The data set is based on the annual accounts statistics of the public funds, institutions and enterprises of the Research Data Centres (RDC) of the Federal Statistical Office and Statistical Offices of the Länder. It comprises the profit and loss account and balance sheet of all German public enterprises that apply commercial accounting for the period 1998 to 2014. For reasons of comparableness, this study focuses on municipal enterprises, i.e. public enterprises owned by one or more municipalities (and therefore ignores enterprises owned by the German states or Federation). These make up the vast majority of all public enterprises. In 2016, 14,812 (88%) of the 16,833 public enterprises were owned by municipalities.

4 Results and Discussion

Indicators E1 and E3 are calculated for all observation units within the respective subgroups. E2 is available at company level, where the median in the respective groups is determined in analogy to the procedure of Leuz/Nanda/Wysocki [8]. E4 is available for each enterprise and year; the values get averaged at enterprise level. The median of the enterprise values defines the group result. The sub-groups are formed according to the hypotheses, i.e. on the basis of their legal forms (H1), balance sheet totals (H2), industry classification (H3), holding characteristics (H4), leverage ratio (H5) and shareholder structure (H6).

4.1 Legal forms (H1)

H1 is confirmed in particular for earnings management to avoid losses (E1). Commercial legal forms show significantly higher values for E1, which corresponds to larger distribution anomalies in the annual results. This anomaly is also more pronounced in public limited companies than in limited liability companies, which can be explained by even greater management autonomy.

However, the findings are less clear with regard to the cash and accrual components of earnings, i.e., the profit-smoothing motive. Here, a mixed picture emerges that H1 seems to confirm in part, such as the strikingly low relative standard deviation of annual results (E2) and the strong inverse correlation between accruals and cash flow (E3) for public limited companies. For the other legal forms, however, the findings are less clear and partly contradict the hypothesis.

The clear picture of indicator E1 and the ambiguous trends in E2 to E4 need not, however, be contradictory: E1 shows that commercial companies make greater use of earnings management than public-law companies. By means of indicators E2 to E4, however, this can only be attributed to a different treatment of accruals for public limited companies, while the other legal forms show little differentiation. On the one hand, it might be that the management tries to influence cash-relevant earnings components rather than in the ex-post design of the accruals. Alternatively, the stabilisation of annual results (E2 to E4) could be generally less relevant for the management of public enterprises than in the private sector. As a result, H1 can only be considered confirmed with regard to loss-avoidance accounting policies. An increased application of earnings smoothing policies is only conspicuous in the case of public limited companies, while the picture remains unclear for the other legal forms.

Table 1: Legal forms

	E1	E2	E3	E4
Public law	1,565655	0,538634	-0,742200	1,022191
Eigenbetriebe	1,537837	0,557700	-0,707200	1,020140
Other companies under public law	1,646357	0,490906	-0,822000	1,027488
Commercial law	2,284951	0,588029	-0,704300	1,000023
Public limited companies (AG)	5,820000	0,476817	-0,846200	0,986078
Limited liability companies (GmbH)	2,292731	0,584341	-0,717800	1,001378
Other commercial law companies	1,455823	0,662335	-0,546100	0,959736

Source: RDC of the Federal Statistical Office and Statistical Offices of the Länder, [Jahresabschlüsse der kaufmännisch buchenden Extrahaushalte und der kaufmännisch buchenden sonstigen öffentlichen Fonds, Einrichtungen und Unternehmen], survey years 1998-2014, own calculations.

4.2 Balance sheet totals (H2)

To test hypothesis H2, public enterprises are grouped into quintiles according to their balance sheet totals. The relationship between loss avoidance (E1) and enterprise size in the five enterprise size classes appears U-shaped. The distributional anomaly is most evident in enterprises with a balance sheet total below €950T€ (Q1) and in large enterprises with a balance sheet total above €35.5 million (Q5), while medium-sized enterprises show less clear characteristics. This finding, which at first glance may seem surprising, becomes plausible when looking at the concrete decision situation of the management: In small companies it is a matter of relatively small amounts of money to turn a small loss into a small profit. An accounting strategy comparable to that of large private sector companies and implemented top-down according to plan is in turn expected to be more prevalent in large companies, which explains the conspicuous features in the quintiles Q4 and Q5. A different picture emerges for the indicators of the profit-smoothing motive through the design of the accruals (E2 to E4): While E2 and E4 hardly vary in the size classes, an inverse U-shaped relationship is evident for E3: In small and large enterprises cash flows and accruals are only weakly correlated, in the middle classes (Q2 to Q4) the correlation is strikingly high. As a result, hypothesis H2, which assumes a proportional relationship between company size and earnings management, must be rejected.

Table 2: Balance sheet totals

	E1	E2	E3	E4
Q1 [min; 950.242]	2,097146	0,623524	-0,638100	0,9999991
Q2 [950.242; 4.195.018]	1,712949	0,559892	-0,796500	1,0311520
Q3 [4.195.018; 12.200.000]	1,537877	0,562929	-0,812000	1,0382060
Q4 [12.200.000; 35.500.000]	1,713153	0,523305	-0,732400	1,0037810
Q5 [35.500.000; max]	2,328953	0,532982	-0,805000	0,9948422

Source: RDC of the Federal Statistical Office and Statistical Offices of the Länder, [Jahresabschlüsse der kaufmännisch buchenden Extrahaushalte und der kaufmännisch buchenden sonstigen öffentlichen Fonds, Einrichtungen und Unternehmen], survey years 1998-2014, own calculations.

4.3 Industries (H3)

There are clear differences between the individual sectors. In more competitive sectors such as electricity, gas and heat supply and waste disposal, indicators E1 and E3 are above the average and for E2 below the average, which can therefore be interpreted as a greater use of accounting policy leeway to avoid losses and smooth annual results. In the arts, entertainment and recreation and public administration, defence and social security sectors, E1 and E3 are below average and E2 above average, which is associated with a lower tendency to manipulate earnings. The ratio E4 shows a rather inconsistent picture with little variance. In sum, there is sufficient evidence to confirm hypothesis H3 from the point of view of both possible motivations.

Table 3: Industries

	E1	E2	E3	E4
Electricity	2,525328	0,439353	-0,828800	0,882857
Gas and heat	2,444444	0,460418	-0,870400	0,878250
Water	1,399803	0,474625	-0,699100	1,007692
Sewage disposal	1,808650	0,473559	-0,834800	0,986427
Waste disposal	2,887608	0,391234	-0,868300	0,905939
Transport	2,044800	0,579192	-0,709400	1,000216
Land and housing	1,986305	0,636432	-0,788700	1,083836
Professional services	2,392233	0,527618	-0,786700	1,006685
Management activities	2,143478	0,811204	-0,649800	1,149686
Public administration, defence and social security	1,786618	0,621335	-0,672300	1,012400
Health and social services	2,274221	0,650201	-0,658500	1,170721
Arts, entertainment and recreation	1,348203	0,845711	-0,519500	1,076352
Other	2,199309	0,618928	-0,757900	1,035554

Source: RDC of the Federal Statistical Office and Statistical Offices of the Länder, [Jahresabschlüsse der kaufmännisch buchenden Extrahaushalte und der kaufmännisch buchenden sonstigen öffentlichen Fonds, Einrichtungen und Unternehmen], survey years 1998-2014, own calculations.

4.4 Holdings (H4)

For companies with a holding function, the distribution anomaly of the annual results hinting at loss avoidance (E1) is more pronounced than for operating companies. In contrast, the role of accruals and deferrals in stabilizing profits remains rather unclear (E2 to E4). This finding seems plausible if one assumes that profit control at holding companies is primarily carried out by controlling the cash-effective profit distributions of the subsidiaries and that period accruals tend to play a less important role. Hypothesis H4 can therefore be considered as confirmed.

Table 4: Holding companies

	E1	E2	E3	E4
Holdings	2,14347826	0,8112037	-0,64980	1,149686
Operative companies	1,84574626	0,5552586	-0,71360	1,007288

Source: RDC of the Federal Statistical Office and Statistical Offices of the Länder, [Jahresabschlüsse der kaufmännisch buchenden Extrahaushalte und der kaufmännisch buchenden sonstigen öffentlichen Fonds, Einrichtungen und Unternehmen], survey years 1998-2014, own calculations.

4.5 Leverage ratio (H5)

For all companies, the leverage ratio was calculated as the percental ratio of liabilities (provisions and liabilities) to equity. The distribution anomaly of the annual results (E1) is more pronounced for more indebted companies and increases steadily over the five quintiles. The higher the debt-equity ratio, the less the annual result fluctuates relative to the cash flow (E2), i.e. fluctuating cash flows are smoothed to more homogeneous annual results by means of accounting policy. This is done by means of contrasting accruals, which counteract the changes in cash flow (E3); and all the more strongly as the gearing ratio rises. E4 makes no contribution to differentiation with regard to hypothesis H5. Overall, the hypothesis can be regarded as confirmed with respect to both motivations of applying earnings management.

Table 5: Leverage Ratio

	E1	E2	E3	E4
Q1 [min; 43.14648]	1,57195	0,72118	-0,58890	1,04364
Q2 [43.14648; 106.0787]	1,87623	0,59392	-0,65660	1,01217
Q3 [106.0787; 203.7968]	1,90035	0,53548	-0,74550	1,00775
Q4 [203.7968; 478768]	2,03543	0,49895	-0,80760	0,99752
Q5 [478768; max]	2,23406	0,42106	-0,85900	1,00000

Source: RDC of the Federal Statistical Office and Statistical Offices of the Länder, [Jahresabschlüsse der kaufmännisch buchenden Extrahaushalte und der kaufmännisch buchenden sonstigen öffentlichen Fonds, Einrichtungen und Unternehmen], survey years 1998-2014, own calculations.

4.6 Partial private ownership (H6)

Indicator E1 is much more pronounced in public enterprises with partial private ownership than in fully publicly owned enterprises. The participation of private stakeholders is accompanied by a stronger tendency towards loss avoidance (E1). However, this does not seem to apply to profit-smoothing (E2 to E4), where the picture is again insignificant. In this respect, Hypothesis 6 can be confirmed with regard to loss avoidance and rejected with regard to the implementation of profit smoothing.

Table 6: Partial private ownership

	E1	E2	E3	E4
Fully public	1,81721772	0,5739302	-0,71900	1,017234
Partial private	2,75950999	0,5698286	-0,67660	0,9817136

Source: RDC of the Federal Statistical Office and Statistical Offices of the Länder, [Jahresabschlüsse der kaufmännisch buchenden Extrahaushalte und der kaufmännisch buchenden sonstigen öffentlichen Fonds, Einrichtungen und Unternehmen], survey years 1998-2014, own calculations.

5 Conclusion

Public enterprises account for an important and growing share of economic value added, but have only been considered comparatively rarely by empirical research on annual financial statements in the past. This paper attempts to close this research gap for the topic of earnings management by firstly elaborating the incentives of management to manipulate accounts theoretically. For this purpose, we chose institutional economics as the framework of analysis. Similar to the situation in the private sector, there are information asymmetries between management and stakeholders at the expense of the latter, which give the management various leeway for opportunistic behaviour in the application of accounting standards. Financial results, however, are not equally important measures of management performance for all public enterprises and their significance may lag behind non-financial objectives. With regard to that, we expected earnings manipulation to become visible in those public enterprises that are more independently run, rather detached from traditional administrative activities, and operating in a competitive or quasi-competitive market environment. Earnings management becomes more important for the management to the extent that the annual financial results become more important for the stakeholders as an indicator for management's own performance.

This tendency was essentially confirmed in the empirical study based on the annual financial statement data of about 14,800 public enterprises in municipal ownership from 1998-2014. Common indicators for earnings management are more evident in commercial legal forms (especially public limited companies) than in those by public law and more in competitive markets than in subsidised businesses. With the increasing influence of lenders and private investors in public enterprises, the strategic manipulation of annual financial statements is gaining in importance.

The results of this descriptive analysis also point to a need for further research: On the one hand, the company characteristics (legal form, industry, debt, etc.), which have been analysed individually and at group level, need to be integrated into a multivariate model in order to assess the influencing factors in a more differentiated manner. This appears to be challenging insofar as the indicators used for earnings management are usually only applicable to aggregates of enterprises and are not designed for individual enterprises as observation units. On the other hand, further research on the nature and direction of earnings manipulation is desirable. While empirical analysis often revealed distributional anomalies of annual results, which indicate that managers tend to avoid losses, the indicators of profit-smoothing often remained insignificant or inconspicuous. This point requires a deeper theoretical and empirical investigation in order to better understand the handling of financial accounting in public enterprises.

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CURRENT TRENDS IN PUBLIC SECTOR RESEARCH
Proceedings of the 24th International Conference
organised by the Department of Public Economics,
Faculty of Economics and Administration, Masaryk University

Editor: Petra Dvořáková
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Editorial Board: P. Pirožek, P. Suchánek, M. Viturka, V. Hyánek, E. Hýblová, D. Němec, M. Matulová
Published by Masaryk University Press, 2020
1st edition, 2020

ISSN 2336-1239
ISBN 978-80-210-9646-2 (online ; pdf)

Proceedings of the
Conference Current
Sector Research
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