

ABSORPTION OF THE EU FUNDS IN THE CONTEXT OF INSTITUTIONAL EFFICIENCY OF LOCAL GOVERNMENTS IN POLAND

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ABSTRACT This article reports an empirical study whose aim was to verify a hypothesis assuming the presence of a relationship between institutional efficiency of local governments and the value of financial means acquired from the EU budget and from other foreign programmes (including the contribution from the state budget as a co-financing of projects executed with the support of structural funds and the EU Cohesion Fund). The analysis was based on mixed data, i.e. primary (obtained via a survey from 1,220 municipalities) and secondary ones (from the Local Data Bank). The institutional efficiency of local governments was measured with an EFF aggregate metric, which was the sum of weighted synthetic partial metrics determined for the basic areas of activity pursued by local governments, while the identification of relationships was based on one-factor analysis of regression. The results substantiated positive verification of the hypothesis and demonstrated that efficiency (as defined for the purpose of this study) cannot be treated as an exclusive determinant of the absorption of EU funds by municipalities. More important in this respect are the size of a population and budgetary revenues in a given municipality.

Introduction

The question of institutions affecting economic processes is gaining increasing importance in both theoretical and empirical research. Most economists have agreed that a fundamental statement underlying new institutional economics (NIE) is the claim that institutions determine the long-term rate of economic growth. A review of the research into NIE supports the claim that there has been a change in the perspective of studies on institution. In the

1990s the focus was on determining the contribution of institutions to the shaping of incomes around the world as well as their influence on economic growth (Knack, Keefer 1995, pp. 207–224; 1997, pp. 1251–1286; Mauro, 1995; pp. 681–710; Hall, Jones, 1999, pp. 83–114; Kaufmann, et al., 1999, pp. 1–62; 2002, pp. 12–40; Rodrik, 1999, pp. 385–408; 2003, pp. 10–18; Rodrik, et al. 2004, pp. 10–18; Landes, 2000, pp. 12–30; Woolcock, Narayan, 2000, pp. 225–246; Acemoglu, et al. 2001, pp. 1369–1398; Kaufmann, Kraay, 2002, pp. 5–28; Acemoglu, 2008, pp. 11–30). Presently, more attention is paid to the quality of institutions, especially on the macro-economic level (Álvarez-Díaz, Miguez, 2008, pp. 161–167). Few papers deal with the efficiency of institutions (Putnam, 1995, pp. 10–30; Chousa, et al. 2005, pp. 69–81), particularly on a local level. In accordance with the guidelines of NIE, a local government is a formal institution which belongs to organisations and which functions in economy parallel to two other groups of institutions i.e. norms and markets (North, 1984, pp. 7–14).

The most essential area in which public sector organisations are active is the provision of public services. Pursuant to the requirement of public accessibility, these tasks should not be governed by market regulations *sensu stricto*. After all, their overriding aim is not a financial gain but maximisation of social benefits. This implicates the need to finance such type of services from public funds. At the same time, budget constraints currently felt by the entire public administration sector mean that the highest quality services must be provided in the most efficient and profitable manner (*Communication from the Commission*, 2011, pp. 8–17).

Available from 1st of May 2004 EU funds are one of the sources of financing public services. Nowadays, local government units, alongside business entities, are the major beneficiaries of nonreturnable funds originating from the EU budget (Jastrzębska, 2011, p. 18). These funds are dedicated to the construction and modernisation of infrastructure needed for the development of economic, social and cultural, tourist, sport and recreational functions, and to raise the level of education and employment in local communities (Pastuszka, 2012, p. 26). The efforts undertaken by a local government to acquire funds from the EU budget depend primarily on its institutional and programme readiness as well as the budgetary condition which allows the local authorities to secure the required own contribution (Churski, Perdał, Herodowicz, 2016, p. 96).

In this article, the authors have made an effort to verify the hypothesis assuming that there is a dependence between institutional efficiency of local governments and the revenues obtained by municipalities from the EU budget and other foreign programmes (including the contribution from the state budget which is to co-finance projects executed with the inclusion of financial means from structural funds and from the EU Cohesion Fund).

For the sake of our analysis, it was assumed that an efficiently working local government is one which in its pursuit of the aim, such as improvement of the social and economic situation, takes advantage of the endogenous potential to the highest possible degree and applies an optimal combination of various tools to this end. It creates partner-like relations with different groups of stakeholders (entrepreneurs, residents, potential investors, non-government organisations), providing a prompt and professional response to the needs they signal. It formulates goals skillfully, involving the local community in this process, and afterwards, with no undue delay, it makes decisions which lead to the attainment of the defined goals. An efficient local government is also quick at responding to exogenous factors, hence it is able to take full advantage of opportunities and minimise, as much as possible, any threats.

Research methods

This article reports an empirical study, which is based on two types of information – primary data (obtained via surveys) and secondary ones (from the Local Data Bank – LDB¹). The survey research² (a postal one) was conducted at the turn of 2015/2016 among representatives of local governments of all Polish municipalities (2,479). In order to gather all the necessary information, a survey questionnaire was established. It consisted of 50 questions (mostly semi-open-ended ones) and its purpose was to learn about the procedures, organisation of processes, applied tools and their advancement, to assess the effect of implemented activities in the following areas: economic and spatial, financial, administrative, human resources management in municipal offices, provision of social, cultural and educational services. Responses to particular questions were assigned point scores. Sums of points obtained from individual replies and average values of selected statistical indicators (from the LDB) pertaining to municipalities served to calculate values of the efficiency index for each local government studied.

Before starting the proper research, the research tool (as a part of pilot studies) was consulted with representatives of local authorities, as well as the Regional Audit Chamber and the Local Government Appeals Board. During the main survey research, completely and correctly filled surveys were returned by 1,220 respondents (150 from urban municipalities, 770 from rural and 300 from urban-rural), which ensured the return rate of 49.2%. An error of the data obtained from the above sample was 0.02 and a chi-square test indicated a lack of significant differences between the observed distribution (in the sample) and expected distribution (present in the population).

To assess the efficiency of local governments an aggregate metric (EFF) was applied. It is a sum of weighted synthetic partial metrics determined for the basic areas of activity of a local government, i.e. spatial-economic (EFF₁) (weight 0.25), financial (EFF₂) (weight 0.25), administrative (EFF₃) (weight 0.15), human resources management in the council office (EFF₄) (weight 0.20), and provision of social, cultural and educational services (EFF₅) (weight 0.15). The weights assigned to particular sub-areas were determined during interviews with experts, who represented municipal offices, business environment institutions and entrepreneurs. The partial measures EFF₁-EFF₅ were calculated as means of normalised values of 19 variables, which were a combination of primary and secondary data³. Before the actual calculations were started, the collected data had been reviewed in terms of discriminatory properties and mutual correlations, and transformed properly. The purpose of these steps was to exclude from the set so-called quasi-constant variables and characteristics which were too strongly correlated with one another, to run stimulations of characteristics of a negative nature (so-called destimulants), and to transform the characteristics to a comparable form through their normalisation.

The verification of the hypothesis presuming a relationship between the level of efficiency of local governments and absorption of EU funds was based on results of one-factor regression analysis, in which the explained

¹ The Local Data Bank (accessible at: <https://bdl.stat.gov.pl/BDL/start>) is the largest, ordered set of data in Poland providing information about the social, economic, demographic and environmental situation in the country, and describing administration units at all levels of the territorial division of Poland. It offers over 40,000 statistical measures grouped under subject headings according to the research programme in the public statistics area (<https://danepubliczne.gov.pl/dataset/bank-danych-lokalnych> z 19.07.2017).

² Detailed description of the methodological grounds (including the procedure for getting the primary data, information about the questionnaire etc.) together with a list of variables underlying the analysis is available in the research report (http://www.uwm.edu.pl/konferencjapgiir/pliki/raport_z_projektu.pdf).

³ For the purpose of this article, we excluded from the original set of indicators applied to estimate the institutional efficiency of local government in the financial sector (EFF₂) an averaged (for the years 2007–2013) value of financial means acquired from the EU budget in the total revenues of a municipality due to its strong correlation with the explained variable.

variable was a normalised value of financial means acquired by a local government from the EU and other foreign programmes in total (including the contribution made by the state budget as a co-financing of projects executed with the contribution of financial means from structural funds and from the EU Cohesion Fund), while the explaining variable (depending on a model) was either the synthetic metric of the institutional efficiency of local government (EEF) or the partial metrics EFF_1 - EFF_5 .⁴

Absorption of the EU funds versus the level of institutional efficiency of local governments

Since Poland's accession to the EU, the Polish local governments have been a rightful participant of the system of European Union funds and, as statistical data confirm, they all take advantage of this opportunity, although to varying extents. The total worth of the funds they acquired in the years 2006–2016 was 75,658.26 million PLN, which constituted 8.66% of the total budgets of Polish municipalities. Nearly 1/5 of this amount was received by the five largest cities in Poland, i.e. Warsaw (8.25%), Gdańsk (3.64%), Łódź (2.87%), Wrocław (2.55%) and Poznań (2.13%), and the remaining amount was distributed unevenly among the other 2,474 municipalities.

The biggest beneficiary of the EU funds were urban municipalities, which received almost 60% of the total resources. In the regional approach, the highest structure index was calculated for the provinces: *mazowieckie* (15.51%) and *śląskie* (13.09%), while the lowest one was found for the provinces: *lubuskie* (2.20%) and *opolskie* (1.62%).

Verification of the research hypothesis was started by preparing a model testing the relationship between the level of absorption of the EU 2006-2016 funds by local governments and their overall institutional efficiency (EFF). The statistically significant result of variance obtained for this dependence ($F(1, 1218) = 93.99$; $p < 0.01$) indicated that the proposed solution was well-fitted to the data and explained more variance of the dependent variable than its arithmetic mean did. The calculations demonstrated a small positive relationship between the analysed variables ($\beta^5 = 0.27$; $p < 0.01$), and the results of the estimation of the regression equation showed that an increase in the institutional efficiency factor of the analysed local governments by 0.1 caused an increase in the revenues from the European Union funds by 0.023. A similar analysis was conducted for each of the areas of institutional efficiency (i.e. economic and spatial, financial, human resources management and provision of social, cultural and educational services). Once again, the analysis produced statistically significant results of variance ($p < 0.001$). The highest correlation ($\beta = 0.33$; $p < 0.01$) was noted in the sphere of social, cultural and educational services ($\beta = 0.22$; $p < 0.01$), it was slightly lower in the domain of HR management in the administrative office of a municipality ($\beta = 0.21$; $p < 0.01$), while a lack of correlation was determined for the financial ($\beta = -0.10$; $p < 0.01$) as well as spatial and economic domains ($\beta = 0.18$; $p < 0.01$). The strongest effect of a change by unit in the efficiency indicator on the increase in the absorption of EU funds by local governments appeared in the domains of HR management ($\beta_1 = 0.59$; $p < 0.01$), and the supply of social, cultural and educational services ($\beta_1 = 0.32$; $p < 0.01$).

In our interpretation of the regression analysis results, it is important to notice that the tested models explained the variability of the dependent variable on a significant, but very low level. With respect to the equation which determined the effect of the overall efficiency of local governments (EFF) on the value of financial resources

⁴ The calculations were supported by IBM SPSS Statistics 24.

⁵ Standardized beta coefficient assumes values from -1 to 1 , and in one-factor regression analysis is interpreted in an identical manner as the Pearson's r correlation coefficient.

acquired by local governments, the determination coefficient (R^2) was 7.2%, whereas regarding the impact of the partial factors (EFF_1 - EFF_5) it ranged from 1% (the financial domain) to 10.5% (provision of social, cultural and education services).

The impact of efficiency on the level of absorption of EU funds was also analysed from the angle of provinces and types of municipalities. The results of estimations of regression equations are collated in Table 1.

Table 1. Results of estimations of the models for the level of absorption of EU funds including the EFF metric with respect to the provinces and the types of municipalities

Specification	Statistics F	Beta	β_0	β_1	R^2
Province					
Dolnośląskie	4.81 ^b	0.24 ^b	-0.09 ^c	0.30 ^b	0.06
Kujawsko-pomorskie	0.25	0.58	0.00	0.02	0.00
Lubelskie	11.58 ^a	0.32 ^a	-0.07 ^a	0.24 ^a	0.10
Lubuskie	1.66	0.21	-0.01	0.07	0.04
Łódzkie	4.86 ^b	0.23 ^b	-0.74 ^c	0.29 ^b	0.06
Małopolskie	2.18	0.15	-0.02	0.10	0.02
Mazowieckie	8.43 ^a	0.24 ^a	-0.01 ^c	0.07 ^a	0.06
Opolskie	6.53 ^b	0.41 ^b	0.00 ^a	0.02 ^b	0.17
Podkarpackie	12.19 ^a	0.36 ^a	-0.05 ^a	0.21 ^a	0.13
Podlaskie	13.66 ^a	0.43 ^a	-0.11 ^a	0.41 ^a	0.19
Pomorskie	17.53 ^a	0.49 ^a	-0.33 ^a	1.12 ^a	0.24
Śląskie	14.62 ^a	0.38 ^a	-0.06 ^a	0.24 ^a	0.15
Świętokrzyskie	4.59 ^b	0.29 ^b	-0.04	0.17 ^b	0.09
Warmińsko-mazurskie	15.36 ^a	0.46 ^a	-0.08 ^a	0.28 ^a	0.21
Wielkopolskie	7.86 ^a	0.26 ^a	-0.07 ^b	0.24 ^a	0.07
Zachodniopomorskie	11.36 ^a	0.44 ^a	-0.09 ^a	0.31 ^a	0.19
Type of municipality					
Urban	34.67 ^a	0.44 ^a	-0.31 ^a	1.00 ^a	0.19
Rural	18.75 ^a	0.15 ^a	0.00 ^a	0.01 ^a	0.02
Urban-rural	0.78	0.05	0.01 ^b	0.01	0.00

a, b, c – denote the significance of a parameter at a level of significance equal 0.01, 0.05 and 0.1, respectively.

Source: own survey.

In the regional approach, a statistically significant result of variance was obtained for most of the provinces except *kujawsko-pomorskie*, *lubuskie* and *małopolskie*, for which the value of p exceeded the highest permissible level, i.e. 0.1. In the other regions, the dependence between the efficiency of local governments and the amounts of EU funds they obtained was statistically significant and fell within the range of 0.23 (*łódzkie*) to 0.49 (*pomorskie*). The biggest effect of a unit change in the EFF efficiency measure was noted in the *pomorskie* province, where an increase in the independent variable by 0.1 caused an increase in the dependent variable by 0.112. This region also achieved the highest value of the determination coefficient (R^2) equal 24%.

The analysis which included the type of municipalities yielded a positive result only with respect to urban municipalities and rural ones. Among all the types of local governments, distinctly the strongest relationship between the analysed variables occurred in towns, where the correlation approximated 0.44, and the direction

coefficient β_1 reached 1.00. The model developed for this type of local governments was also distinguished by the highest percentage of variance of the dependent variable explained by the independent variable ($R^2 = 0,19$).

Conclusions

The considerations presented in this article focused on the verification of the research hypothesis assuming the presence of a relationship between institutional efficiency of local governments and sum of financial means acquired by them from the EU budget and from other foreign programmes (including the contribution of the state budget as co-financing of projects executed with the contribution of resources from structural funds and the Cohesion Fund of the EU). The analyses substantiate the conclusion that there is a weak, positive correlation between the two categories defined above, both on the level of overall efficiency (measured with the EFF metric) and three of the five sub-areas of efficiency (i.e. provision of social, cultural and educational services, HR management in the municipal offices, and administration). On the scale of the research sample, the strength of the relationship between the synthetic EFF metric and normalised value of the EU funds acquired by municipalities was 0.27, whereas in the regional context it ranged from 0.23 in the province *łódzkie* to 0.49 in the *pomorskie*. Moreover, a much stronger relationship was determined in urban municipalities (beta = 0.44) than in rural ones (beta = 0.15).

The research results provide evidence for positive verification of the hypothesis and, what is more important, generate additional information about the analysed dependence. The low values of standardised beta and R^2 statistics suggest that although there is a relationship between institutional efficiency of local governments and the amounts of funds they acquire from the EU, the efficiency of a local government (in the meaning defined in the introduction section) cannot be treated as an exclusive determinant of the absorption of EU funds by municipalities. The number of residents in a municipality as well as the volume of budgetary revenues played a much more important role. The correlation of these categories with the analysed variable was very high, reaching 0.95 ($p < 0.001$) for the former factor and 0.96 ($p < 0.001$) for the latter one.

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