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INSTITUTION EFFICIENCY *VERSUS* THE LEVEL OF DEVELOPMENT OF LOCAL GOVERNMENTS (A STUDY AT THE LEVEL OF POLAND'S REGIONAL DIVISION)

Magdalena Wojarska✉, Renata Marks-Bielska, Wiesława Lizińska, Karolina Babuchowska

University of Warmia and Mazury in Olsztyn

ABSTRACT

As the socio-economic reality is growing increasingly complex, the role of local governments in the management of events and processes occurring in local communities gains importance. Considering the fact that the basic task of local authorities is to stimulate the growth and development of a given local entity, an analysis was undertaken to the aim of assessing the relationship between the level of local development and the institutional efficiency of local self-governments and vice versa, in a regional approach (NUTS 2). To achieve this aim, mixed data were analysed, that is raw data (acquired via survey from 1,220 municipalities) and secondary data (from the database of the Local Data Bank). The efficiency of local governments was measured with an aggregate factor *EFF*, while the level of development was assessed with the *DEV* measure. The results indicate that the local governments did rather poorly in terms of both efficiency and development. In both cases, the mean value of the applied synthetic measures reached no more than 30% of the maximum attainable score. The basic tools in the research were correlation and regression analysis. Both procedures demonstrated the presence of a relationship between the two analysed categories ($r = 0.365$). Moreover, the analysis of regression showed that the impact of developmental processes on the improvement of efficiency of local governments was stronger that the influence of improved efficiency on developmental processes occurring in the analysed municipalities.

Key words: synthetic measures, institutional efficiency of a municipality, local development, regression analysis, Pearson's correlation coefficient

INTRODUCTION

The role of local governments regarding the management or coordination of events and processes occurring in local communities has been gaining importance over the recent years. Stoker [2011] concluded that local authorities assume such a responsibility in response to changes in contemporary lifestyle and complexity of thereof as well as challenges of the modern world. However, the principal role of local authorities is to stimulate the development and growth of a given local system [Marks-Bielska et al. 2014]. The central place in all actions undertaken for the sake of local development should be occupied by efforts to create and stimulate the economic development, because the economic sphere is fundamental to development processes in all other aspects of life [Marks-Bielska et al. 2017].

The accomplishment of the above objective involves intricate efforts, mainly because each municipality represents various groups of interests (residents, authorities, business, organisations).

✉ magdaw@uwm.edu.pl

Management of a local community calls for coordination (harmonisation) of these interests. This, in turns, requires knowledge, skills, experience as well as intuition. It is well known that any weaknesses of a municipality's economy are, in equal measures, a consequence of insufficient funds and flaws in the management system [Wojciechowski 2013]. Thus, among the challenges that local authorities face there are the changing expectations and needs of local communities. Management at a local level is a complex and multi-dimensional problem, which involves the management of various development processes that can engage many participants. It encompasses processes, mechanisms and institutions through which local residents, entrepreneurs and communities can express their needs and interests, and which strive towards solving public problems in collaboration with one another [Herrera 2016].

While making every effort to meet the above challenges, local administration must undertake actions whose aim is to build institutional capacities [Savitch 1998]. The local social and economic development depends on both the available economic base and potential financial support, although institutional factors are increasingly often implicated as playing an important part [MacLeod and Goodwin 1999, Gibbs et al. 2001].

Institutional development at a local level involves such steps as formation and implementation of mechanisms and guidelines in order to enhance the efficiency of local government administration offices in actions they undertake within their basic domains of activity (strategic management of funds, human resources, provision of public services social communication, creation of suitable conditions for the development of entrepreneurship) [Marks-Bielska et al. 2017].

Creation of efficient and effective institutions can be supported by continuous research into the concepts, process of formation, strategy of action, monitoring and evaluation of the capacity of these institutions [Vincent and Stephen 2015]. Activities designed to build institutional capacity building can be helpful in the effective use and allocation of the institution's resources. Thus, capacity building implies actions that strengthen knowledge, abilities and skills, thereby leading to improved institutional structures and processes, so that organizations can effectively fulfil their mission and objectives in a sustainable manner.

Fundamentally, desirable institutional changes arise from the fact that efficient institutions assist businesses in making a more efficient use of their potential and continuing their development [Marks-Bielska et al. 2017]. Pro-developmental actions undertaken within the local economic policy are most often directed at supporting the existing business entities and enabling their further development, although another aim is to create conditions that would stimulate the establishment of new companies [Lizińska et al. 2017]. The economic activity of business entities is a necessary condition for the initiation of an economic growth. Companies affect the local economic space by engaging local production means in their business activity, and through various economic relations they stimulate the growth within the regional dimension [Typa 2016]. In market economy, institutional structures, which are composed of individual institutions (formal and informal ones), form a mechanism that allocates resources [Marks-Bielska et al. 2017].

Taking into account the importance of shaping the socio-economic development and institutional efficiency on a local level, it is reasonable to pay attention to both of these issues not only separately but also in terms of their mutual relations. As underlined by Gómes et al. [2016], analysis of interrelations between institutions, local management and development is currently an important area of academic research. Some 20 years ago, the above relations were not considered to be so obvious.

Two main views on the interactions between economic development and institutional efficiency can be found in the literature. On the one hand, the importance of institutional efficiency as a key stimulant of the level of development is indicated (and this view is dominant) [Evans and Harding 1997]; in the other approach, it is not negated that this development determines efficiency [Fried and Rabinovitz 1980].

The main objective of this analysis has been to assess the relationship between the level of local development and the institutional efficiency of local self-governments and *vice versa*, in a regional approach (NUTS 2). The results presented in this paper come from a larger study accomplished within the project

titled *Institutional efficiency* versus *local economic development – shaping factors and interactions*[1].

MATERIAL AND METHODS

The research aim, such as diagnosing the relationship between institutional efficiency and the level of development of the local governments in Poland, was achieved in three steps. The first step was to identify the level of development and institutional efficiency of municipalities, using two aggregate measures to this end, i.e. the efficiency measure (*EFF*) and the development one (*DEV*). The measure of *EFF* was calculated as a sum of weighted partial measures EFF_1–EFF_5, determined for basic fields of activity of municipal governments, i.e. economic and social (EFF_1) (weight 0.25), financial (EFF_2) (weight 0.25), administrative (EFF_3) (weight 0.15), management of the human resources in the local administration offices (EFF_4) (weight 0.20) and provision of social, cultural and educational services (EFF_5) (weight 0.15). The weights for these sub-areas of efficiency were determined during interviews with experts, such as representatives of municipal offices, business environment institutions and entrepreneurs. The partial measures EFF_1–EFF_5, as well as the *DEV* measure, are averaged of normalised values of different variables, which are a combination of raw data (obtained from surveys) and secondary data (from the Local Data Bank)[2]. The survey was conducted at the turn of 2015 and 2016, and the questionnaire was mailed to representatives of local authorities of all Polish municipalities. Complete and correctly filled in questionnaires were returned by 1,220 respondents, which means that the return coefficient reached 49.2% (an error of response in the sample thus obtained was 0.02) – Table 1. In order to verify whether the distribution of municipalities achieved in the study differed from the one present in the whole population (in regional approach) a χ^2 test was applied. In each case, the result was statistically non-significant ($P > 0.1$), which indicated a lack of significant differences between the observed distribution (in the sample) and expected distribution (present in the population).

Prior to the actual calculations, the collected data had been tested for discriminatory properties and mutual correlations, in addition to which they were transformed accordingly. The purpose was manifold, namely: to exclude from the set the so-called quasi-constant variables and traits that were too strongly correlated with each other; to conduct stimulation of negative traits (the so-called destimulants), and to bring the features down to mutual comparability through their normalisation.

Table 1. Structure of the research sample (regional outlook)

Voivodship	Return		Voivodship	Return	
	Number	%		Number	%
Dolnośląskie	80	47.34	Podkarpackie	85	53.13
Kujawsko-Pomorskie	74	51.39	Podlaskie	62	52.54
Lubelskie	102	47.89	Pomorskie	58	47.15
Lubuskie	40	48.19	Śląskie	87	52.10
Łódzkie	86	48.59	Świętokrzyskie	51	50.00
Małopolskie	104	57.14	Warmińsko-Mazurskie	61	52.59
Mazowieckie	135	42.99	Wielkopolskie	110	48.67
Opolskie	35	49.30	Zachodniopomorskie	50	43.86

Source: Own studies.

[1] Project was financed from the funds of the National Centre of Science according to decision DEC-2013/09/B/HS4/03039.

[2] A detailed list of indicators describing institutional efficiency of local governments as well as the development of local governments are presented in the annex.

In the subsequent steps of the analysis, the relationships between the *EFF* and *DEV* aggregate measures were determined, which allowed us to identify the relations between institutional efficiency and the level of development of the municipalities participating in the research. Two methods were employed at this stage[3], so-called Pearson's correlation coefficient[4] (for preliminary identification of the relationship) and linear regression analyses (for a more detailed diagnosis). During the econometric modelling, two options were tested, i.e. the influence of efficiency (an independent variable) on the development of municipalities (a dependent variable), and next the influence of development (an independent variable) on the efficiency of municipalities (a dependent variable).

RESULTS AND DISCUSSION

The research results suggest that local governments in Poland were characterised by quite an unfavourable condition, in terms of both institutional efficiency and the level of development. In both cases, the mean value of the synthetic measure, which aggregated various data pertaining to the analysed municipalities, reached no more than 30% of the maximum attainable score, with *EFF* equal 0.301, and *DEV* just 0.295, on average.

Having averaged the results achieved by local governments from individual Voivodships, it became evident that the highest institutional efficiency (*EFF* = = 0.330) was obtained by local governments from the Dolnośląskie Voivodship while the lowest score (*EFF* = = 0.274) was assigned to the Podlaskie Voivodship. In the former case, the high result was owed to the minimum value being the highest among the whole analysed group ($\min_{EFF}$ = 0.208), as well as a relatively high maximum value ($\max_{EFF}$ = 0.507) (Fig. 1), and one of the lowest dispersion values (191.13%). Moreover, this region was distinguished by the highest percentage of municipalities with the highest institutional efficiency level[5] (25.0%) and the lowest percentage of municipalities in class III (6.25%). Meanwhile, the relatively low share of the municipalities with the highest achievement of the *EFF* measure (6.45%) in the Podlaskie Voivodship was accompanied by the highest, in the whole sample, percentage of municipalities with low values of the synthetic variable (30.65%). The region was also characterised by a low value of the range (0.251 – fourth lowest value) and standard deviation (0.056 – third lowest result).

Other distinguishing regions include the Łódzkie Voivodship, mainly because of the length of range it achieved (Fig. 1). The value of this statistical measure was 0.453, i.e. nearly twice as much as the lowest result (0.230), which was noted in the Kujawsko-Pomorskie Voivodship. Consequently, the former region also had the highest standard deviation (0.070) and coefficient of variability (23.956).

In the second analysed area, i.e. level of development of local governments, the Śląskie voivodship took the leading position (*DEV* = 0.330), while among the regions whose average values of this synthetic measure exceeded the country's average there were Voivodships of: Zachodniopomorskie (0.328), Dolnośląskie (0.320), Pomorskie (0.320), Wielkopolskie (0.318), Lubuskie (0.312), and Opolskie (0.309) – Figure 2. Surprisingly, the Mazowieckie Voivodship scored low, as its average *DEV* equal 0.276 gave it the third lowest position in the country[6]. At the same time, this province was distinguished by the

[3] Calculations were run in Statistica 13.

[4] The analysis took into account the significance test of Pearson's linear correlation coefficient.

[5] Due to the multitude of data harvested at the onset of the study, from 1,220 municipalities, the research sample was divided into three separate sets, distinguished by different intensity of the efficiency factor (*EFF*). Group I included municipalities with the highest values of the synthetic measure, i.e. ones for which the *EFF* was within $(\bar{x} + SD, \max\rangle$, i.e. (0.36; 0.62⟩. Group II was composed of municipalities which met the condition: $EFF \in \langle \bar{x} - SD, \bar{x} + SD\rangle$, i.e. ⟨0.24; 0.36⟩ – these entities were treated as municipalities with a moderate level of efficiency. Group III contained municipalities with the lowest *EFF* values, that is the ones within the range $\langle \min, \bar{x} - SD)$, i.e. ⟨0.15; 0.24).

[6] The biggest city (Warsaw) in Masovia did not participate in the study.

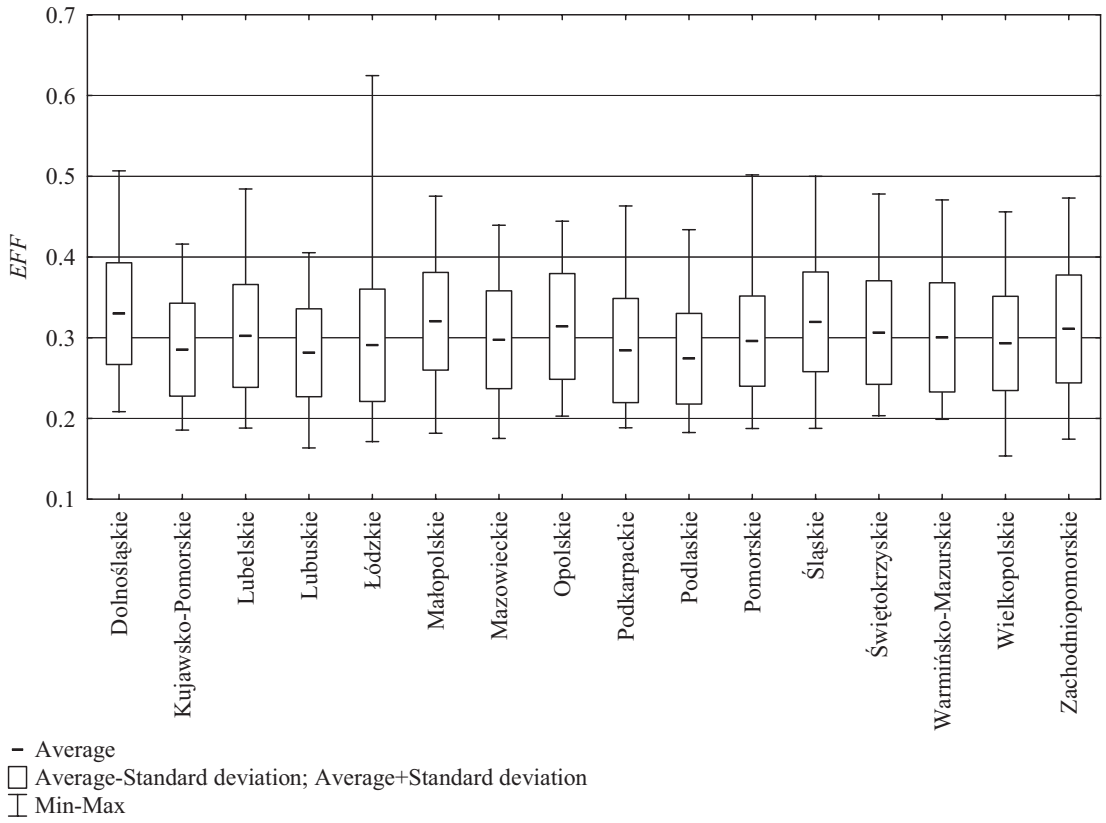

Fig. 1. Distribution of the efficiency index factor (*EFF*) according to the Polish Voivodships

Source: Own studies.

highest variability of the synthetic measure of development (v_k) (19.939), and therefore a relatively high range (R) (0.275). A similar degree of variation was noted in the Łódzkie Voivodship (v_k = 19.075, R = = 0.422) and in Zachodniopomorskie Voivodship (v_k = 19.484, R = 0.305). The most 'stable' one proved to be Opolskie Voivodship, where the variability of *DEV* was 106.96%, and the difference between the maximum and minimum values equalled 0.128. This region was also characterised by the highest percentage of municipalities with moderate development[7] (88.57%) and an absence of administrative division units falling into the group with the lowest achievements of the variable *DEV*. Zachodniopomorskie Voivodship was found to be in a similar situation, as the percentages of municipalities within classes I and II were, respectively, 30.00 and 70.0%. Additionally, the group of Voivodships in which the share of most developed municipalities exceeded 0.25 comprised the Voivodships of: Śląskie (36.78%), Dolnośląskie (31.25%), Pomorskie (31.03%) and Lubuskie (25.00%). Voivodships with a considerable

[7] In order to simplify the analysis, the set of 1,220 municipalities was divided into three separate sets, by analogy to the solution applied in the analysis of the *EFF* factor. Group I contained the most developed municipalities, i.e. the ones whose *DEV* values were within $(\bar{x} + SD, \max\rangle$, i.e. (0.35; 0.64⟩. Group II was composed of municipalities which satisfied the condition: $DEV \in \langle \bar{x} - SD, \bar{x} + SD\rangle$, i.e. ⟨0.25; 0.35⟩ – they were treated as moderately developed entities. Group III included the least developed municipalities, with the *DEV* values within the range $\langle \min, \bar{x} - SD)$, i.e. ⟨0.17; 0.25).

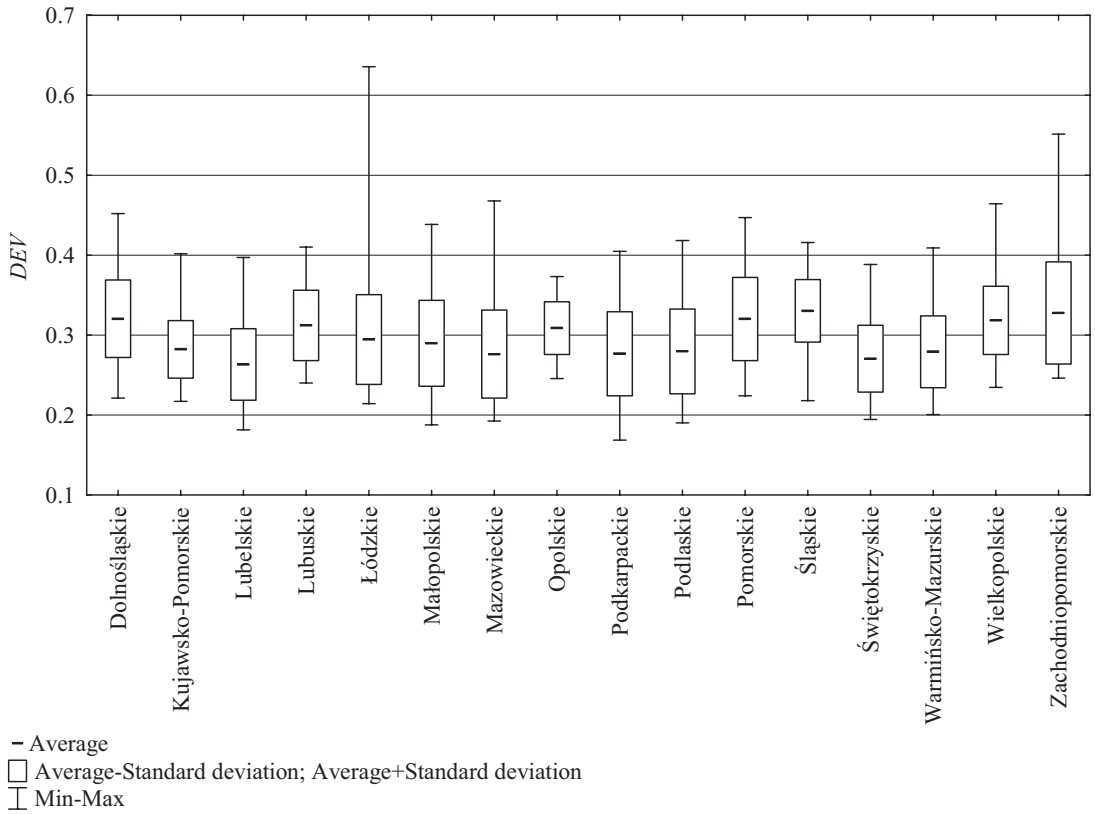

Fig. 2. Distribution of the development factor (*DEV*) according to the Polish Voivodships

Source: Own studies.

share of municipalities with low values of the *DEV*, i.e. Lubelskie (35.29%), Mazowieckie (28.89%) and Świętokrzyskie (27.45%), were at the other extreme.

Our comparison of the values of *EFF* and *DEV* measures in particular provinces enabled us to identify three patterns in their mutual relations[8]:

– Relatively high values of the efficiency factor were accompanied by relatively low values of the development factor (the difference between the *EFF* and *DEV* was within 0.021 and 0.039);
– Both measures assumed similar values and the difference between them was close to zero (ranging between –0.006 and 0.009);
– the level of efficiency was much higher than the level of development, and results of our comparative analyses were within the range of –0.011–0.031.

The first situation occurred in five Voivodships, including Lubelskie, Świętokrzyskie, Małopolskie, Mazowieckie and Warmińsko-Mazurskie, the second one was found in six Voivodships, i.e. Dolnośląskie, Podkarpackie, Opolskie, Kujawsko-Pomorskie, Łódzkie and Podlaskie, while the third one appeared in the remaining five Voivodships, i.e. Śląskie, Zachodniopomorskie, Pomorskie, Wielkopolskie and Lubuskie. These results suggested the presence of correlations and encouraged us to make a deeper analysis of the mutual relation-

[8] To divide the results obtained from our comparison of the *EFF* and *DEV* values, a procedure relying on the range size and *k* parameter, developed by Kukuła [2015] was applied.

ships. To this end, the Pearson's correlation coefficients and econometric modelling were employed.

Statistically significant correlations were determined for nearly all Voivodships except Kujawsko-Pomorskie, Małopolskie and Opolskie. For the other Polish Voivodships, the correlation coefficient ranged from 0.240 (in Mazowieckie Voivodship) to 0.601 (in Łódzkie Voivodship) – Table 2.

Positive values of the correlation coefficients indicated directly proportional changes in both measures, which meant that an increase in the *EFF* was paralleled by an increase in the *DEV* and *vice versa*. The diagnosed relation could be investigated more specifically through an analysis of regression. Detailed results of this procedure are set in Tables 3–4.

Table 2. r-Pearson correlation coefficient

Voivodship	r-Pearson	Voivodship	r-Pearson
Dolnośląskie	0.375[a]	Podkarpackie	0.459[a]
Kujawsko-Pomorskie	0.224	Podlaskie	0.385[a]
Lubelskie	0.264[a]	Pomorskie	0.395[a]
Lubuskie	0.444[a]	Śląskie	0.380[a]
Łódzkie	0.601[a]	Świętokrzyskie	0.446[a]
Małopolskie	0,158	Warmińsko-Mazurskie	0.536[a]
Mazowieckie	0.240[a]	Wielkopolskie	0.441[a]
Opolskie	0,325	Zachodniopomorskie	0.473[a]

a – denote the significance of a given parameter at a level of significance equal 0.01.

Source: Own studies.

Table 3. Results of estimation of the development index versus the efficiency index models for individual provinces in Poland

Voivodship	F	β_0	t	β_1	t	R^2	S_ξ
Dolnośląskie	12.75[a]	0.225	8.32[a]	0.288	3.57[a]	0.141	0.045
Kujawsko-Pomorskie	3.80[b]	0.242	11.59[a]	0.140	1.95[b]	0.050	0.035
Lubelskie	47.52[a]	0.207	9.90[a]	0.186	2.74[a]	0.070	0.043
Lubuskie	7.48[a]	0.211	6.26[a]	0.360	3.05[a]	0.197	0.040
Łódzkie	9.32[a]	0.154	7.30[a]	0.485	6.89[a]	0.361	0.045
Małopolskie	2.61	–	–	–	–	–	–
Mazowieckie	8.16[a]	0.211	9.08[a]	0.219	2.86[a]	0.058	0.054
Opolskie	3.9[b]	0.257	9.66[a]	0.164	1.97[b]	0.106	0.032
Podkarpackie	22.11[a]	0.171	7.37[a]	0.373	4.70[a]	0.210	0.047
Podlaskie	10.43[a]	0.180	5.71[a]	0.364	3.23[a]	0.148	0.049
Pomorskie	10.36[a]	0.211	6.15[a]	0.367	3.22[a]	0.156	0.048
Śląskie	14.34[a]	0.253	12.24[a]	0.241	3.79[a]	0.144	0.036
Świętokrzyskie	12.18[a]	0.181	6.97[a]	0.290	3.49[a]	0.199	0.038
Warmińsko-Mazurskie	23.73[a]	0.172	7.64[a]	0.356	4.87[a]	0.287	0.038
Wielkopolskie	26.15[a]	0.224	11.91[a]	0.322	5.11[a]	0.195	0.038
Zachodniopomorskie	13.8[a]	0.187	4.85[a]	0.451	3.71[a]	0.223	0.057

R^2 – determination coefficient, S_ξ – standard deviations of residuals.

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

Source: Own studies.

Table 4. Results of estimation of the development index versus the efficiency index models for individual provinces in Poland

Voivodship	F	β_0	t	β_1	t	R^2	S_ξ
Dolnośląskie	12.75[a]	0.174	3.92[a]	0.488	3.57[a]	0.141	0.059
Kujawsko-Pomorskie	3.80[c]	0.184	3.53[a]	0.358	1.95[c]	0.050	0.056
Lubelskie	7.48[a]	0.203	5.55[a]	0.375	2.74[a]	0.070	0.062
Lubuskie	9.32[a]	0.110	1.95[c]	0.548	3.05[a]	0.197	0.049
Łódzkie	47.52[a]	0.071	2.20[b]	0.745	6.89[a]	0.361	0.056
Małopolskie	2.61	–	–	–	–	–	–
Mazowieckie	8.16[a]	0.225	8.61[a]	0.264	2.86[a]	0.058	0.059
Opolskie	3.90[c]	0.115	1.14	0.644	1.97[c]	0.106	0.063
Podkarpackie	22.11[a]	0.128	3.80[a]	0.564	4.70[a]	0.210	0.058
Podlaskie	10.43[a]	0.160	4.47[a]	0.407	3.23[a]	0.148	0.052
Pomorskie	10.36[a]	0.160	3.73[a]	0.425	3.22[a]	0.156	0.052
Śląskie	14.34[a]	0.122	2.31[b]	0.600	3.79[a]	0.144	0.057
Świętokrzyskie	12.18[a]	0.121	2.25[b]	0.685	3.49[a]	0.199	0.058
Warmińsko-Mazurskie	23.73[a]	0.076	1.62	0.805	4.87[a]	0.287	0.058
Wielkopolskie	26.15[a]	0.100	2.64[a]	0.605	5.11[a]	0.195	0.053
Zachodniopomorskie	13.80[a]	0.149	3.35[a]	0.495	3.71[a]	0.223	0.060

R^2 – determination coefficient, S_ξ – standard deviations of residuals.

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

Source: Own studies.

Estimated values of the regression coefficient of the models for all Polish Voivodships (except Małopolskie) were positive and statistically significant, mostly at p equal 0.01. This implicated a significant dependence between the measures of development and efficiency in such territorial division units as Voivodship in Poland. The greatest change in the development index caused by a unit increase in efficiency was observed in Łódzkie Voivodship (0.485), followed by Zachodniopomorskie Voivodship (0.451), while the lowest one was noted in Kujawsko-Pomorskie Voivodship (0.140). In contrast, the strongest positive and statistically significant impact on institutional efficiency was observed in the Voivodships of Warmińsko-Mazurskie (0.805) and Łódzkie (0.745). The smallest gain in the efficiency index induced by a unit increase in the development index was observed in Mazowieckie Voivodship (0.264).

Comparison of the regression coefficients β_1 for both models showed that in all these regions where we were able to match the model to the data an increase in *DEV* by one unit stimulated a higher increase in the *EFF* measure than it happened otherwise – the greatest difference occurred in Opolskie Voivodship (0.480), whereas the lowest one was in the Podlaskie Voivodship (0.043). It should be underlined that the models explained the variability of the development and efficiency factors on a significant *albeit* low level, i.e. the coefficient of determination (R^2) ranged from 5.0% in Kujawsko-Pomorskie Voivodship up to 36.13% in Łódzkie Voivodship.

The research results (including the outcome of the correlation and regression analysis) show unambiguously that there are relations between the level of local development and the institutional efficiency in the municipalities which participated in this study.

CONCLUSIONS

Two main views on the interactions between economic development and institutional efficiency can be found in the literature. On the one hand, the importance of efficiency as a key stimulant of the level of development is indicated (and this view is dominant); on the other hand, it is not negated that development determines efficiency. With this duality borne in mind, the authors planned this study in order to verify the relationship between institutional efficiency and development of municipalities. First, the level of institutional efficiency was determined, to which aim two aggregate measures were employed. This part of our analysis showed that the group of 1,220 municipalities which took part in the study was characterised by relatively low institutional efficiency (*EFF* = 0.330), or the level of development (*DEV* = 0.295). The next step was to identify the type, direction and intensity of the dependences between the *EFF* and *DEV* measures. This part of the research showed moderate, positive correlation between the analysed parameters. The Pearson's correlation coefficient for the whole sample was 0.365, reaching the highest value in Łódzkie Voivodship, but falling to its the lowest in Mazowieckie Voivodship (0.240). Then, the regression analysis was used which allowed to specify the intensity of the relationship. It turned out that a unit increase in the *DEV* stimulated a higher increase in the value of the *EFF* than *vice versa*. Comparison of the results obtained for the two regression equations (which was made possible owing to the normalisation of input data) showed that the impact of developmental processes on the improvement of efficiency of local governments was bigger that the influence of improved efficiency on developmental processes occurring in the analysed municipalities.

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ANNEX

Indicators describing institutional efficiency of local governments

Area of efficiency	No of an indicator	Name of an indicator	Character of an indicator
Economic and spatial	x_1	averaged (over the years 2007–2013) number of foundations, associations and social organisations per 10 thous. residents	S
	x_2	averaged (over 2009–2013) percentage of the municipality's geodesic area covered with spatial management plans	S
	x_3	sum of points scored in the survey for questions about: application of business support instruments, entrepreneurship, collaboration of the local government with entrepreneurs, collaboration of the local government with institutions, efforts to improve infrastructure, efforts to improve spatial management	S
Financial	x_4	averaged (over the years 2007–2013) value of the municipality's public debt	D
	x_5	averaged (over 2007–2013) value of the municipal budget result	S
	x_6	averaged (over 2007–2013) contribution of funds acquired from the EU budget in the municipal budget total revenue	S
	x_7	sum of points scored in the survey for questions about actions whose aim is to rationalise the management of finances (including the management of the debt) and contribution of the local community to the planning of investments financed from the municipal budget	S
Administrative	x_8	averaged (over the years 2006–2014) participation in elections of local authorities	S
	x_9	averaged (over 2007–2013) worth of expenditure into public administration in the municipality	S
	x_{10}	averaged (over 2007–2013) number of recall elections (to recall a council or a mayor)	S
	x_{11}	averaged (over 2007–2013) percentage of councilors with higher education	S
	x_{12}	sum of points scored in the survey for questions regarding the organisation and improvement of service provision (including collaboration with other units and institutions), improvement of the organisational structure of the municipal office, expenses on public administration	S
HR management in the municipal office	x_{13}	sum of points scored in the survey for questions regarding: raising qualifications and skills of employees at the municipal office, rational HR policy, efforts to improve communication between employees so as to better the efficiency of services provided	S
Provision of social, cultural and educational services	x_{14}	averaged (over the years 2007–2013) worth of the expenses from the municipal budget into physical culture and sports per capita	S
	x_{15}	averaged (over 2007–2013) worth of expenses from the municipal budget into education and dissemination of knowledge per capita	S
	x_{16}	averaged (over 2007–2013) number of places in nursery schools in relation to the number of children aged 3–6 years	S
	x_{17}	averaged (over 2007–2013) number of places in creches per 100 children aged 0–2 years	S
	x_{18}	averaged (over 2007–2013) worth of expenses from the municipal budget into health care expressed per capita	S
	x_{19}	averaged (over 2007–2013) worth of expenses from the municipal budget into social welfare and policy per capita	S
	x_{20}	sum of points scored in the survey for questions regarding the scope and quality of obligatory and elective services	S

S – stimulant; *D* – destimulant.

Source: Own elaboration.

Indicators describing the development of local governments

Area of development	No of an indicator	Name of an indicator	Character of an indicator
Municipality's financial management	y_1	averaged (over the years 2007–2013) value of the municipal budget's revenue from income taxes from physical persons calculated per 1 resident	S
	y_2	averaged (over 2007–2013) share of own revenue in total budget of municipalities	S
	y_3	averaged (over 2007–2013) worth of own revenue in the municipal budget per capita	S
	y_4	averaged (over 2007–2013) worth of development expenditure from the municipal budget per capita	S
	y_5	averaged (over 2007–2013) share of development expenditure in total expenditure from the municipal budget	S
Infrastructural demand	y_6	averaged (over the years 2007–2013) percentage of the population with access to sewers	S
	y_7	averaged (over 2007–2013) percentage of the population with access to waterworks	S
Entrepreneurship	y_8	averaged (over the years 2007–2013) number of physical persons who run buisness enterprises per 100 working age residents	S
	y_9	averaged (over 2007–2013) number of the national economy enterprises per 1,000 residents	S
	y_{10}	averaged (over 2009–2013) value of the ratio of the new registered businesses to businesses deleted from the state REGON system, per 10,000 residents	S
Situation on labour market	y_{11}	averaged (over the years 2007–2013) share of unemployed persons in the total number of working age population	D
	y_{12}	averaged (over 2007–2013) share of persons working in the total working age population	S
Socio-demographic issues	y_{13}	averaged (over the years 2007–2013) number of postworking age persons per 100 working age persons	D
	y_{14}	averaged (over 2007–2013) value of the internal migration balance in the municipality	S
	y_{15}	averaged (over 2007–2013) value of the balance of foreign migrations in the municipality	S

S – stimulant; *D* – destimulant.

Source: Own elaboration.

Wojarska M., Marks-Bielska R., Lizińska W., Babuchowska K. (2018). Institution efficiency *versus* the level of development of local governments (a study at the level of Poland's regional division). Acta Sci. Pol. Oeconomia 17 (2) 2018, 133–144, DOI: 10.22630/ASPE.2018.17.2.29

SPRAWNOŚĆ INSTYTUCJONALNA A POZIOM ROZWOJU SAMORZĄDÓW LOKALNYCH (STUDIUM NA POZIOMIE UKŁADU REGIONALNEGO)

STRESZCZENIE

Ze względu na coraz większą złożoność rzeczywistości społeczno-gospodarczej wzrasta znaczenie władz samorządowych w zakresie zarządzania lub koordynowania zjawisk i procesów zachodzących w społecznościach lokalnych. Mając na uwadze, że podstawowa rola władz lokalnych to stymulowanie wzrostu i rozwoju danego układu lokalnego przeprowadzono analizę, której celem była ocena zależności między poziomem rozwoju lokalnego a sprawnością instytucjonalną samorządów lokalnych i *vice versa*, w ujęciu regionalnym (NUTS 2). Do jego realizacji wykorzystano dane mieszane, tj. pierwotne (pozyskane w ramach badań ankietowych od 1220 gmin) oraz wtórne (pochodzące z zasobów Banku Danych Lokalnych). Sprawność samorządów lokalnych została zmierzona za pomocą miary agregatowej *EFF*, a do określenia poziomu rozwoju wykorzystano miarę *DEV*. Z badań wynika, że w samorządach panowała niekorzystna sytuacja zarówno pod względem sprawności, jak i rozwoju. W obu przypadkach średnia wartość miary syntetycznej osiągnęła wartość stanowiącą jedynie 30% maksymalnie możliwej do osiągnięcia noty. Podstawowym narzędziem realizacji celu badawczego była analiza korelacji i regresji. Obie procedury wykazały istnienie związku między analizowanymi kategoriami (r = 0,365). Ponadto regresja wykazała, że siła oddziaływania procesów rozwojowych na poprawę sprawności samorządów lokalnych była intensywniejsza od siły wpływu sprawności funkcjonowania na procesy rozwojowe zachodzące w badanych gminach.

Słowa kluczowe: miary syntetyczne, sprawność instytucjonalna gminy, rozwój lokalny, analiza regresji, korelacja Pearsona