Local Economy in Theory and Practice

Planning and Evaluation Aspects
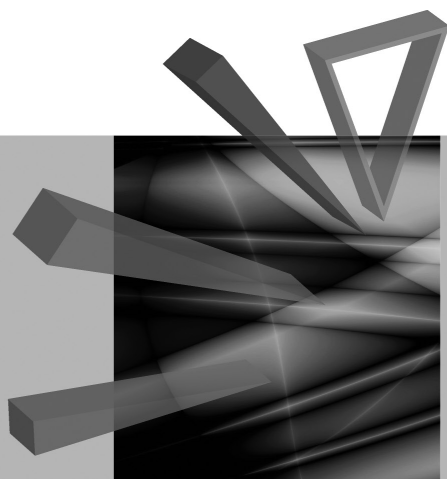
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THE DEVELOPMENT OF THE REWAL AND BOGDANIEC COMMUNES – A COMPARATIVE STUDY

Summary: The purpose of this research was to evaluate the socio-economic development of two communes located in the Lubuskie and Zachodniopomorskie voivodeships, as well as to identify and measure the socio-economic development factors. Changes taking place in the communes and affecting their budgets within the period 2002–2010 were analyzed. Statistical and econometrical methods were applied for the analysis of the collected data. Diagnostic features concerning the demographical situation, socio-economic activity and financial standing of the communes were applied to identify and measure socio-economic development. Synthetic indicators of social and economic development for both communes were calculated.

Keywords: social and economic development, diagnostics features, synthetic development indicators.

1. Introduction

Pursuant to the Constitution of the Republic of Poland, a commune is the core and nexus of local government. It is a separate public authority entity established by law, its constituent being a self-governing community and a given territory. A "self--governing community" consists of the total of individuals residing in a given area, an organized community, joined by common interests. It manages matters of a public nature in order to satisfy the collective and individual needs arising in that community [Strahl, Jaworska-Dębska 2010, p. 54].

Day to day life unfolds at local level, and this is why a commune is responsible for the satisfaction of collective needs. A commune is also obliged to deal with all public matters which are not within the authority of other organs. The commune's primary responsibility is to provide satisfactory infrastructure and facilities, education, health care and health awareness, social care etc. [Wykrętowicz (ed.) 2008, p. 164].

A commune is also one of the most important entities of the public finance sector. It is a local government unit that has to apply the appropriate accounting tools, such as financial analysis, in order to identify factors which stimulate economic growth and thus contribute to the community's wellbeing. Moreover, with a commune's financial condition as point of reference, one can determine the economic situation affecting its inhabitants, the efficacy of actions undertaken by local government and the commune's growth potential. The commune's financial condition is defined as the capacity to generate sufficient funds; this term also describes the commune's financial self-sustenance that translates into independence in the taking of decisions regarding the commune's finance, based solely on the commune's budget.

The purpose of this research was to evaluate the level of the socio-economic development of two communes located in the voivodeships of Zachodniopomorskie and Lubuskie, as well as to identify and measure the socio-economic development factors (Poland's territorial and administrative structure: commune – district – voivodeship equivalent to *gmina – powiat – województwo*). The changes that took place in the communes and their budgets in the period between 2002 and 2010 were also considered.

2. Description of the subject of research

The commune of Rewal is a rural commune located on the Baltic Sea coast, in the Gryfice district, of the Zachodniopomorskie voivodeship. It neighbors with four communes: Świerzno and Dziwnów, which belong to the Kamień Pomorski district and the Trzebiatów and Karnice communes which are part of the Gryfice district. All localities in the Rewal commune are typical holiday resorts. The natural environment, attractive location and continuous investment make tourism the commune's leading economic activity. There are seven rural tourist resorts within its boundaries: Pobierowo, Pustkowo, Trzęsacz, Rewal, Śliwin, Niechorze and Pogorzelica. Rewal became the administrative seat of the commune in January 1973. Despite the administrative reforms, the commune's borders have still not been altered to this day. The commune is developing continually, with most of its expenditure spent on tourism and environment protection. Naturally, its location on the seacoast and the abundance of historical sites and natural values make it only rational to focus on the recreation and tourism sector.

The commune of Bogdaniec is situated on the Berlin–Kalingrad route, with the city of Gorzów Wielkopolski to the east. This typically rural commune constitutes one of the five rural communes of the Gorzów district, the Lubuskie voivodeship. The commune includes 21 villages (Bogdaniec, Motylewo, Chwałowice, Gostkowice, Jasiniec, Jenin, Jeninek, Jeniniec, Jeże, Jeżyki, Krzyszczyna, Krzyszczynka, Kwiatkowice, Lubczyno, Łupowo, Podjenin, Racław, Roszkowice, Stanowice, Wieprzyce, Włostów). Within the boundaries of the Bogdaniec commune, one can find many sites rich in historical, cultural and environmental attractions.

The two communes vary in terms of geographical location, number of villages under their authority, total area and number of permanent residents.

The number of villages and total area of the Bogdaniec commune is three times higher than in the Rewal commune. Its permanent population is double and the population density is approximately 43% higher than the Rewal commune. In future, these proportions might change in favor of the latter commune as population growth is 40% higher in the Rewal commune (see Table 1).

Table 1. Basic data regarding the two communes in 2010

	Unit	Communes	
		Bogdaniec	Rewal
Villages	village	21	7
Land area	ha	11 212	4 113
Permanent residents	person	6 977	3 598
Population per 1 km²	person	62	89
Birth rate	per 1000 inhabitants	3.9	2.8

Source: own elaboration based on data from the Polish Central Statistical Office.

3. Methods

Inter and intra-regional variations are related to regional development areas. To evaluate the degree of regional variation the following statistical measures must be applied: feature variation, maximum and minimum value, standard deviation and coefficient of variation. These measures provide information on the degree of variation in development between the two communes.

In order to present the dynamics of the communes' development, statistical and econometric methods were used, i.e. the trend function, correlation and regression coefficients [Nowak 2002].

To identify and measure socio-economic growth of the subject communes, diagnostic features were applied regarding:
- demographic situation,
- socio-economic activity,
- commune's financial condition.

The set of features taken for analysis must meet certain content and formal criteria. Diagnostic variables must fulfill, *inter alia*, the following requirements:
1) play an important role in the description of the analyzed phenomenon,
2) be available and complete,
3) show high variation and hold relative information value,
4) selected variables should be weakly correlated so that they do not reproduce information provided by other variables,
5) explained variables should be strongly correlated with explanatory variables.

Once diagnostic variables were chosen, they were standardized and aggregated. Standardization was conducted with the use of the unitarization method. With the above given formal requirements in mind, synthetic measures of socio-economic development for both communes were constructed [Kukuła 2000].

4. Analysis of socio-economic potential

The social potential of communes is reflected in the following factors:
1) demographic load index,
2) birth rate per 1000 inhabitants,
3) internal and external migration balance ratio (per 1000 permanent residents),
4) population density.

Economic potential is reflected in:
1) population structure by age,
2) employment-to-population ratio,
3) number of business entities in the private sector,
4) commune's budget income *per capita*,
5) commune's own income *per capita*,
6) total commune's budget expenditure *per capita*,
7) capital expenses and investment expenditure *per capita*.

There was an increase in the number of people actually living in both communes over the period 2002–2010. In 2002 in the Bogdaniec commune there were 6.5 thousand inhabitants and by 2010 there was a 10% increase. Similarly, in the Rewal commune, the population grew by 15% over this period, starting from 3.3 thousand inhabitants in 2002 (see Table 2).

Table 2. Actual population of the Bogdaniec and Rewal communes in 2002–2010 (persons)

	Characteristics				
	Correlation coefficient	Regression coefficient	Min	Max	Range
Bogdaniec					
Total	0.9977	69	6429	7084	655
Women	0.9932	39	3227	3607	380
Men	0.9986	30	3202	3477	275
Rewal					
Total	0.9562	49	3281	3791	510
Women	0.9582	25	1703	1946	243
Men	0.9433	24	1578	1845	267

Source: own elaboration.

Since changes in the size of the population show a linear trend, a linear regression coefficient was applied. Anually, on average, the Bogdaniec commune's population

increased by 20 persons more than Rewal's. Moreover, in the Bogdaniec commune a bigger variation in the annual average female and male population increase was observed (39 women and 30 men). In the Rewal commune this variation was only 1 person (respectively 25 and 24).

These changes were affected by two primary factors: birth rate and migration balance in relation to permanent residence. In the research period, the annual average birth rate per 1000 inhabitants was 3.13 in the Bogdaniec commune and 1.1 in Rewal. Positive migration balances result mainly from internal migrations (within the commune). In Bogdaniec the balance was 378 persons and in Rewal – 486. Relations between the non-working, working and post-working age population are illustrated by demographic load indexes. In both communes similar trends can be seen (see Table 3).

Table 3. Demographic load indexes in the Bogdaniec and Rewal communes in the period 2002–2010 (persons)

Demographic load indexes	Communes	2002	2003	2004	2005	2006	2007	2008	2009	2010
Non-working age population per 100 working age persons	Bogdaniec	61.2	58.9	56.7	55.3	53.2	53.5	53.8	53.8	54.2
	Rewal	58.3	55.1	52.1	51.7	49.9	50.2	51.4	51.7	52.6
	Polska	60.7	58.9	57.5	56.3	55.7	55.3	55.1	55	55.2
Post-working age population per 100 pre--working age persons	Bogdaniec	49.8	51.3	51.5	51.4	53.4	55.5	56.9	60.7	64.1
	Rewal	59.9	61.3	66.0	69.3	73.3	74.8	78.7	81.7	86.5
	Polska	66.5	69.5	72.3	74.9	78.1	81.2	84.3	87.3	90.3
Post-working age population per 100 working age persons	Bogdaniec	20.3	30.0	19.3	18.8	18.5	19.1	19.5	20.3	21.1
	Rewal	21.9	20.9	20.7	21.1	21.1	21.5	22.6	23.2	24.4
	Polska	24.2	24.1	24.1	24.1	24.4	24.8	25.2	25.6	26.2

Source: own elaboration.

The non-working age population per 100 working age persons is decreasing, which is a positive phenomenon. In Bogdaniec in 2010 this population decreased by 12% compared to 2002, in Rewal – by 10%. In 2010 the index for Poland was higher than in the subject communes, that is 55.2 (and 10% lower than in 2002).

The post-working age population per 100 pre-working age persons shows a growing tendency, which is not positive. In the Bogdaniec commune the index grew by 29% over the nine-year period, and in Rewal by no less than 44%. The index for Poland was significantly higher and amounted to 90.3 in 2010, that is 35.8% higher than in 2002.

Also the size of the post-working age population per 100 working age persons is on the increase. In the Bogdaniec commune it grew by 4% and in Rewal by 11%. The all-Poland index grew by approximately 8%.

The number of working individuals in both communes is on the rise and shows a linear trend, which is why a linear regression coefficient was applied to interpret these dynamics (see Table 4).

Table 4. Working population dynamics in the Bogdaniec and Rewal communes in 2002–2011

Communes	Characteristics				
	Correlation coefficient	Regression coefficient	Min	Max	Range
Bogdaniec	0.9620	38.0	298	602	304
Rewal	0.9674	63.5	495	1057	562

Source: own elaboration.

Between 2002 and 2011 the average annual increase in the number of working people was 38, and in the Rewal commune it was 25 persons more. Over the ten-year period the size of the working population in both communes doubled.

In 2010, 227 unemployed persons from the Bogdaniec commune filed for unemployment status with the District Employment Agency in Gorzów Wielkopolski. Unfortunately, in this area hidden unemployment can be observed. A large number of people, the so-called passive job-seekers, never turn to the Employment Agency. Some of the commune's inhabitants emigrate for work and when they are successful, they tend not to report it. Therefore, one may assert that a certain part of the Bogdaniec commune's inhabitants does not report the change in their employment status. The share of formally registered unemployed in the entire working age population of the Bogdaniec commune is just 5%. The unemployment rate dropped over the period 2003–2010. The number of unemployed people decreased by 356 persons (in 2005 it was 479 and fell by 123 in 2008). Unfortunately, 2009 was not a very favorable year for the commune's inhabitants. Compared to 2008, the number of unemployed increased by 128 persons, 68 women and 60 men. However, in the next year (2010) the population of unemployed females did not rise, and the unemployed male population decreased by 24 persons. In 2010 the overall number of unemployed inhabitants of the Bogdaniec commune was 227.

In the Rewal commune the total of formally registered unemployed at the end of 2010 was 250 (46% females) and the employment-to-population ratio was 10.6% (in 2009 there were 239 unemployed and the ratio was 10.2%).

This increase in the working population was mostly brought about by the revitalization of the private business sector in both communes (see Table 5).

Table 5. Number of private business entities in the Bogdaniec and Rewal communes in the period 2002–2011

Communes	Characteristics					
	Min	Max	Range	%	Correlation coefficient	Regression coefficient
Bogdaniec	519	683	164	131.60	0.9504	18.4
Rewal	944	1364	420	144.49	0.9552	44.9

Source: own elaboration.

Over a 10-year period, the number of public employers in both communes remained on the same level, but private employers grew by 30% in the Bogdaniec commune and approximately 45% in Rewal. This rise meant that anually on average, 18 new businesses were established in the Bogdaniec commune and about 45 in Rewal.

The vitality of the private sector was reflected in decreased unemployment. The employment-to-population ratio dropped by 2% per annum in Bogdaniec and 1.5% in the Rewal commune (−0.91 correlation coefficient in both communes).

Drawing on the analysis of employment trends in the Bogdaniec commune, one may assert that the total working population is growing. In the entire Gorzów district it is the Bogdaniec commune that shows the smallest industrial employment (22.2%). The employment in the service sector is about 20% of the overall working population, with the main services being car service garages, transport, warehousing and hospitality jobs. A significant part of the commune's inhabitants, no less than 37%, work in the building industry. The remaining part (about 43%) is employed in agriculture, forestry and other national economy sectors. In 2010, employment growth could be observed in the Bogdaniec commune. Compared to 2009, the working population increased by 66 persons, and in 2010 it totaled 574 persons. This growth was caused by new companies appearing in the service and building sectors and people starting one-man businesses. As of 31.12.2010., the number of business entities was 22 in the Bogdaniec commune. Inhabitants were able to find jobs in various sectors of the economy, mostly in trading, transport, food service business and in finance. As little as 14% of the economic entities operate in the public sector. Most entities are private businesses, in particular businesses run by natural persons (50%), trading companies (27%) and non-profit organizations (9%).

In the Rewal commune the distinct predominance of the private sector over public can be seen, with the private employment rate almost double. At the end of 2010 the number of formally registered unemployed was 250 (46% females). The employment-to-population ratio was 10.6% (in 2009 with 239 people it was 10.2%). The number of business entities was 1385 at the end of 2010 (including 1364 private businesses), with 32 new entities compared to 2009 and 24% growth compared to 2005. Accommodation and food service business were the primary businesses (61.4%), trade and car servicing came second (15.02%) followed by the building

sector (5.5%). In 2009 the business-to-population ratio was 383 businesses per 1000 people. The overwhelming majority of these were micro businesses (as many as 97.3% of all business entities), employing up to nine persons. Moreover, most of these businesses were run by natural persons (87.4%).

For local government to function or expand, a stable financial foundation is fundamental. Without regular revenue, local government cannot act effectively [Owsiak 2001, p. 333]. A commune's revenue is the total of proceeds to the commune's budget. The proceeds consist of money collected by a governmental unit from business entities and natural persons and funds received from the state budget and other public finance organs.

Pursuant to the Act on revenue of local government units, a communes' revenue can be divided into:

- own revenue consisting of all kinds of fees and shares in personal and corporate income tax;
- general subsidies, which in the case of rural communes have the largest share in the revenue structure. Subsidies are non-returnable and they are meant to supplement the revenue otherwise insufficient with regard to tasks set [Stahl, Jaworska-Dębska, 2010, p. 34];
- earmarked subsidies from the state budget transferred to local municipalities for specific purposes or under specific terms as to how they should be spent.

The budget revenue of the two communes in 2002 was predominantly made up of own revenue and general subsidies, whereas in 2010, the communes benefited from other sources of revenue, that is grants, subsidies and other EU funds.

The revenue structure in the years 2002 and 2010, along with its dynamics, is shown in Table 6.

Table 6. Budget revenue structure of the Bogdaniec and Rewal communes in 2002 and 2010

	2002	2010	2010/2002	2002	2010	2010/2002
	Bogdaniec			Rewal		
Overall revenue	1.0000	1.0000	2.1453	1.0000	1.0000	2.1998
Own revenue	0.3946	0.3303	1.7954	0.8707	0.8559	2.2132
Overall grants	–	0.2986	–	–	0.0620	–
General subsidies	0.4325	0.3711	1.8406	0.1005	0.0821	1.7975
Education subsidies	–	0.2384	–	–	0.0816	–
EU funds for EU projects	–	0.0078	–	–	–	–

Source: own elaboration.

Since the revenue of both communes per 1 inhabitant constantly grew over the period analyzed, a regression coefficient was used to describe the trend (see Table 7).

Table 7. Revenue and expenditure of the Bogdaniec and Rewal communes per 1 inhabitant in the period 2002–2010

Communes	Characteristics				
	Correlation coefficient	Regression coefficient	Min	Max	Range
Overall revenue					
Bogdaniec	0.9036	142	1 305	2 584	1280
Rewal	0.8895	1 117	6 011	16 649	10 638
Own revenue					
Bogdaniec	0.8559	53	510	974	465
Rewal	0.8690	1008	5113	15 202	10 089
Expenditure					
Bogdaniec	0.7277	155	1297	3166	1870
Rewal	0.9143	1 704	5723	20 802	15 080

Source: own elaboration.

Within nine years in the Bogdaniec commune, budget income per 1 inhabitant grew by 1280 PLN (annual average of 142 PLN), and in the Rewal commune the growth was 10 638 PLN (annual average of 1117 PLN). In the first commune, the share of own revenue was only 31-43%, whereas in the second commune it was 85–93%. The Bogdaniec commune's own revenue showed an increase of 53 PLN, in stark contrast to the 1008 PLN increase in the Rewal commune's own revenue.

The Bogdaniec commune demonstrated more efficacy in obtaining EU funding. In the period 2005–2009 it received over 30 million PLN in subsidies and grants, whereas the Rewal commune received funds worth only 95 thousand PLN.

In the research period, expenditure per 1 inhabitant in the Bogdaniec commune was close to the revenue level, whereas in the Rewal commune since 2008 expenditure has exceeded revenue (see Figure 1).
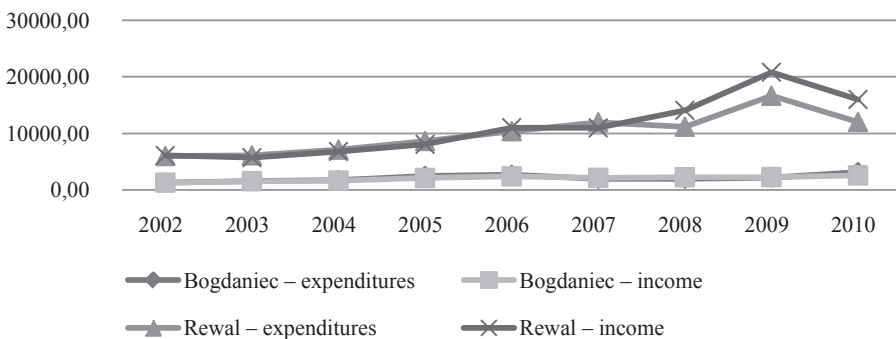
Figure 1. Revenue and expenditure per 1 inhabitant of Bogdaniec and Rewal communes in the period 2002–2010 (in PLN)

Source: own elaboration.

5. Conclusions

The evaluation of the socio-economic development of the subject communes with the use of synthetic indicators construed, proved that the two communes definitely differ from one another in terms of socio-economic development (see Table 8).

Table 8. Synthetic development indicators for the Bogdaniec and Rewal communes

Commune	Indicators		
	socio-economic development	social development	economic development
Bogdaniec	0.5468	0.5225	0.5253
Rewal	0.4028	0.5468	0.4167

Source: own elaboration.

The synthetic indicator of socio-economic development for the Bogdaniec commune is approximately 20% higher than for the other commune. When examining social development only, the difference is slight, even in favor of the Rewal commune, whereas the economic development indicator is to the disadvantage of the Rewal commune.

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ROZWÓJ GMIN REWAL I BOGDANIEC
– STUDIUM PORÓWNAWCZE

Streszczenie: Celem zaprezentowanych w artykule badań była ocena rozwoju społecz-no-gospodarczego dwóch gmin położonych w województwach lubuskim i zachodniopomor-skim, a także identyfikacja i pomiar czynników tego rozwoju. Analizie poddano zmiany, jakie miały miejsce w tych gminach, i które miały wpływ na ich budżety w okresie 2002-2010. Do identyfikacji i pomiaru rozwoju społeczno-gospodarczego gmin wykorzystano ich włas-ności diagnostyczne dotyczące sytuacji demograficznej, aktywności społeczno-gospodarczej i sytuacji finansowej. Dla obu gmin obliczono również syntetyczne wskaźniki rozwoju społecznego i gospodarczego.

Słowa kluczowe: rozwój społeczny i gospodarczy, własności diagnostyczne, syntetyczne wskaźniki rozwoju.