



THE INSTRUMENTS OF STIMULATING ENTREPRENEURSHIP BY LOCAL GOVERNMENT UNITS (LGU'S)

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ABSTRACT

This article diagnoses the use of instruments supporting entrepreneurship by the Podkarpackie Province communes. The main research problem was formulated as follows: Do the instruments of supporting entrepreneurship used by self-government affect the development of economic initiatives in the area of the surveyed communes? We analyzed it in two areas. The first one focuses on the present state, analyzing the quality and directions of actions taken by commune authorities in supporting economic initiatives as well as their results. The second one attempts at pointing the solutions conducive to enterprise development and instruments ensuring their stimulation. The results of the conducted analyses allowed us to assess the effectiveness of the instruments supporting entrepreneurship used by local government units. The main conclusion derived from the research is that the use of fiscal instruments does not constitute the strongest factor in determining the location of economic activity. The use of tax forms of support dependant on the economic situation turns out to be much less important than the use of solutions such as improvement of infrastructure conditions, selection of areas for investment, lease of commune facilities for economic activities, creation of capital back-up comprised of loan funds, as well as implementation of organizational changes aiming at better efficiency of the office.

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I. INTRODUCTION

Social and economic development of each country is closely tied to cooperation between self-government administration and local entrepreneurs' community (Szewczuk, 2003). Research conducted on the local level indicates strong relationship between the specificity of self-government budget policies and the development of entrepreneurship. This issue has been discussed in the analytical works (Carlino, Mills, 1985; Bartik, 1985; Bartik, 1988; Carlton, 1983; Papke, 1991). These works emphasize a close tie between the policy of local authorities and location decisions made by businesses. According to the opinion expressed by D. Bondonio (2003), creating and stimulating development of enterprising environment of self-government communities is an important phenomenon for many reasons, each of them playing a different role in shaping firm and stable social and economic structures. This view is also shared by T. F. Buss (2001), who claims that the key to effective entrepreneurship support is to perceive the significance of its development for local communities and to demonstrate to local authorities the benefits resulting from its stimulation. Taking the above into consideration, we wrote this article with the purpose of determining the scale and range in which local government units at the commune level can apply instruments of supporting entrepreneurship and the effectiveness those forms of support. This article therefore, not only aims at determining the scale and range of the instruments of supporting entrepreneurship used by communes, but, more importantly, at examining the effectiveness of these tools. It is commonly thought that facing a relatively limited set of support instruments, it is of vital importance for local government units to use fiscal preferences as the main tools for stimulating economic boom. This article aims at verifying this belief and also determining the whole range of instruments that allow not only active but also effective support of economic initiatives by self-government communes. This fact is of vital importance, not only due to its cognitive aspect, but also due to its practical significance. Improperly selected and unjustified instruments not only fail to deliver the expected results (that is, they fail to bring about the economic boom on the local level), but also drain the local government budgets, reducing the resources available to them. It is by all means worth determining which instruments really contribute to the development of entrepreneurship and which exert destructive influence on budget economy and put the obligatory tasks of local government units at risk. The article provides an answer to the above questions and, being an outcome of empirical analyses, becomes part of the discussion on general issues of entrepreneurship support by local government.

II. REVIEW OF LITERATURE

Although the issue of instruments of supporting entrepreneurship is often the subject of empirical research, the published results of this research do not allow us to draw clear and coherent conclusions. Taking this dissonance as the starting point, it is of key importance to review the results of the research on particular forms of supporting entrepreneurship. Among all instruments used for supporting entrepreneurship, tax preferences are the most popular form and they are the most popular subject of research. At the beginning, however, we should note that there are no explicit proofs that the reduction in tax rates will automatically allow us to achieve our non-fiscal objective.

The research conducted by R. Levine and D. Renelt (1992) emphasizes the lack of correlation between fiscal policy tools and stimulating function of taxation. On the other hand, E. Engen and J. Skinner (1999) and G.M. Milesi – Fereti, E. Mendoza and P. Asea (1996, 1997) believe that we can even observe negative influence of taxation on the established non-fiscal objectives. On the other hand, a sporadically appearing positive effect oscillating in the 0.2% - 0.3% annual GDP range

is clearly too weak to use this phenomenon for the purpose of economic policies that would stimulating the growth of local economy. Similarly, the research by Cashin (2003), Leibfritz, Thorton and Bibbee (1997), as well as Folster and Henrekson (1998) and Bossanini and Scarpetta (2001) do not clearly confirm the thesis that there is a statistically significant correlation between the level of tax rates and the performance of the stimulating. The relatively weak influence of tax instruments on decisions concerning location of economic activities is also widely discussed in Polish research. According to R. Kamiński (2003) stronger influence on economic entities is exerted by moderate level of local fees for communal services than by spectacular reduction in local tax rates.

On the other hand, E. Bończak-Kucharczyk, K. Herbst and K. Chmura (1998) point out that taxes and fees should, most of all, be stable, smaller damages can be caused by higher, but stable taxes than by lower, but ever-changing ones. W. Dziemianowicz and W. Misiąg (2000) claim that from the perspective of the entrepreneurs, the most significant thing is not the level of rates or exemptions but the stability and transparency of fiscal solutions. A similar view is presented by A. Okraszewska, I. Brzeziński and J. Kwiatkowski (2002) according to whom the system of tax preferences offers an undisputable advantage, however, itself it is not a sufficient stimulator for making decisions on locating economic activity.

Taking into account such significant discussion in research on stimulating influence of tax instruments, it is necessary to quote the results of the research on the effects of using other, non-fiscal, instruments of supporting entrepreneurship. S. Kłosowski and J. Adamski (1999) claim that the location of new enterprises is determined by: area management consisting in eliminating legal obstacles concerning the use of communal property, spatial development plans that clearly define the principles of managing the area, corporate culture shown by offices and clerks and creating a climate for developing entrepreneurship. On the other hand, according to W.C. Wagner (1999), among factors influencing location decisions we have commune location, its resources, its real estate management policy, the size of local and regional markets, quality, qualifications and availability of labor, possibility of choosing subcontractors or cooperating with local firms in a selected industry, as well as the differences in the level of prices of goods and services (including communal services) compared to other regions and their influence on the costs of starting economic activities. From the research conducted by E. Bończak-Kucharczyk, K. Herbst and K. Chmura (1998) we learn that non-fiscal factors stimulating development of entrepreneurship are the infrastructure of the area, marketing image of the local government unit, how investors are serviced by the self-government and competition. The research conducted by A. Noworól and K. Dąbrowska (2003) shows that among effective tools of supporting economic initiatives (apart from the above-mentioned ones) are professional and complex approach to investors, high quality and professionalism in servicing economic entities, and most importantly, efficient and effective organization of the office.

Another form of support with proven effectiveness is the so-called "fast administrative track", that is streamlining the administrative servicing of companies. The implementation of the above solutions allows us to streamline the servicing of companies, which, combined with keeping continuous dialogue with the entrepreneurs' circles, creates an image of a commune that is open to investments and pro-development initiatives (F. van de Boel, 2003; Geisler, Koćwin, 2001). Finally, quoting the research by A. Foeller (2003) and W. Burdecka (2004) we can notice that a vital element in supporting entrepreneurship by local government units is the operation of the entities constituting the institutional environment of business. The presented research proves that the discussed issue has been broadly analyzed, although it has not been, by any means, exhausted or determined. Therefore this article, by becoming an element of the discussion on the scale and

effectiveness of forms of supporting economic initiatives used by local government units, may contribute to at least wider explanation of the analyzed issues, basing the results and related conclusions on the experiences of commune self-government in Poland.

III. METHODOLOGY

This article is a diagnosis of the Podkarpackie Province communes as far as the use of instruments supporting entrepreneurship is concerned. The article defines one main research problem and a series of detailed questions which expand on the main problem. The set of questions we obtained in this way enabled us to direct our empirical analyses correctly. The main research problem was formulated in the following question: Do the instruments of supporting entrepreneurship used by self-government affect the development of economic initiatives in the area of the surveyed communes? The adopted research problem is described by two areas in which its analysis should be performed. The first one is the diagnosis of the present state. It covers the analysis of the quality and directions of present actions taken by commune authorities in supporting economic initiatives as well as their results. The second dimension is an attempt at pointing the solutions conducive to enterprise development and instruments ensuring their stimulation. The main problem defined in this way is accompanied by a number of detailed questions concerning, for example, the most frequently used instruments and the reasons behind their choice, the most effective support forms, the assumptions of constructed development strategies as well as investments made to improve the conditions of conducting business activities.

The construction of research problems allows full analysis of the researched issues. The initiated research process allowed us to verify the specificity of the Podkarpacie communes as far as the use of instruments supporting entrepreneurship is concerned. This formula let us group the dominant directions and solutions supporting development of entrepreneurship that are applied by the local government. On the basis of cognitive analyses concerning the issue of supporting entrepreneurship by territorial self-government we assumed a set of hypotheses related to the above-mentioned research problems. We selected one main hypothesis and five detailed hypotheses. The main hypothesis has the following form: The instruments of supporting entrepreneurship used by local governments influence the development of economic initiatives in the surveyed communes.

In relation to the main hypothesis we adopted a set of detailed hypotheses:

1. The most frequently used instruments of supporting entrepreneurship are income instruments (creating tax preferences), however they do not constitute the conclusive argument in deciding on and conducting economic activity.
2. Good state of technical infrastructure is a determinant of economic entities location and a factor stimulating the development of economic initiatives from within.
3. The use of expenditure instruments is reflected in creation of the commune surroundings consisting of business-related institutions and non-governmental organizations and their initiation of actions aimed at supporting entrepreneurship.
4. The use of instruments supporting entrepreneurship affects the number of jobs in the commune as well as mobility of production means.
5. Most communes do not have a program of supporting entrepreneurship and focus their activities concerning the support of economic initiatives on building investment or development strategies.

The above research hypotheses determined the direction of the conducted cognitive analysis. While developing a set of five detailed hypotheses, their selection was determined by the specificity of local government policies in the area of supporting enterprise initiatives. Therefore each hypothesis is a specific axis around which further, more detailed sets of questions concentrate. The developed system allowed us to present the research results so that they show relations between particular instruments of supporting entrepreneurship and the results of their application.

The research process initiated in this way allowed us to verify the characteristics of the analyzed communes as regards the solutions used by them to support entrepreneurship. This has also allowed us to group dominant directions and solutions supporting economic initiatives taken up by the self-government.

The analysis of the instruments applied to support entrepreneurship and their effectiveness required adoption of time framework enabling us to examine the relation between the activities of self-governments and measurable effects of undertaken initiatives. The time horizon of the analysis covered years 2006-2009 inclusive. The verification of the scope of application and effectiveness of particular support forms used by JST required transformation of the concepts in which research problems were formulated into variables. The independent variable were the instruments of supporting entrepreneurship by communes, catalogued into three groups: infrastructural instruments, legal and organizational instruments and promotional instruments.

The dependent variable was defined as the development of entrepreneurship in analyzed communes. It was described using parameters reflecting the influence of support instruments used by communes on the number of established enterprises. The selected variables reflected the features through which we learnt the phenomenon of applying the instruments of supporting entrepreneurship by commune self-governments.

The territorial dimension of conducted analyses covered the area of the Podkarpackie province, located in the south-east of Poland. The research sample reflecting the population structure had the layer and proportional characteristics. Each layer corresponded with the type of commune. The size of the research sample was chosen so as the percentage of each category of analyzed communes corresponded with the percentage of such communes in the province, namely: rural, urban, town-and-country communes as well as cities with district rights. In the layers selected in this way, we conducted the samplings, following the scheme of the sampling without replacement). The chosen sample consisted of 61 communes (including 7 urban communes (2 of them were cities with district rights), 11 town and country communes and 43 rural communes).

The diversity of factors influencing the development of entrepreneurship accounted for the fact that each determinant affecting entrepreneurship was evaluated on the basis of established scale of correlation power verified over four analyzed years. The scale reflecting the direction and power of correlation between parameters reflecting instruments of supporting entrepreneurship and parameters reflecting the effects of applying particular support forms covered gradation of the relationship power. The analysis covered the direction and power of the relationship between applying a particular instrument and the effects invoked by it (that is whether it contributed to the support of entrepreneurship, and if so, to what extent). The scale of the correlation established for the purpose of this article is presented below: very strong correlation, strong correlation, weak correlation, very weak correlation and no correlation.

The adopted method was divided into two stages. The first stage was the static analysis for each year separately, using the linear correlation coefficient. It consisted in examining the existence of a relation between the use of particular instruments of supporting entrepreneurship and

the effects of these activities. In the second stage we focused on the analysis covering the whole examined period, due to the fact that the instrument used in 2006 could affect the conditions of enterprise development not only in 2006 but also in the next years. Therefore it was necessary to verify the influence of a given instrument on the development of entrepreneurship in the whole examined period. In this way we selected the instruments whose application significantly contributed to the development of communes and we indicated those which only marginally affected new enterprise activities. To measure the power between variables in the analyzed period, assuming their direction remained unchanged (that is the correlation coefficients have the same sign each year), the measures of correlation between variables (CM) were defined as follow:

Where:

i – number of analyzed year,

α_i – ratio typical for the i -th year (that is the weight assigned to linear correlation coefficient for r_i),

$$CM = \sum_{i=1}^4 \alpha_i r_i$$

r_i – linear correlation coefficient for the examined pair of variables (that is the used instrument of supporting entrepreneurship and the measurable result of its application year, $r_i \in [-1; 1]$).

Source: *Own elaboration.*

Determining weights α_i we adopted the following assumptions:

1° assumption: $\alpha_i \geq 0$ ($i = 1, 2, 3, 4$). It was assumed that weights α_i take values of above zero or zero, which means that the instrument applied in a particular year influenced or did not influence the development of entrepreneurship, while it did not have negative influence (its use did not worsen the conditions of conducting economic activity).

2° assumption: $\sum_{i=1}^4 \alpha_i = 1$. It was assumed that the sum of α_i coefficients for the whole analyzed period ($i = 1, 2, 3, 4$), equals 1 - ($\alpha_1 + \alpha_2 + \alpha_3 + \alpha_4 = 1$)

Defining the measure of correlation (CM) we assumed that $CM \in [-1; 1]$ and is con-

tained in the same range as the linear correlation coefficient r_i – therefore: $-1 \leq \sum_{i=1}^4 \alpha_i r_i \leq 1$.

In order to establish the numerical value α_i we adopted the following line of thinking: as the instrument used in i – th year influenced the ratio describing the development of entrepreneurship in that year and in the next years, therefore the direction and correlation in the analyzed year were also influenced by the actions taken in previous years. Detailed assumptions concerning the activities taken in a particular period and their influence on the development of entrepreneurship in consecutive years are presented in Table 1.

TABLE 1. ACTIONS CONCERNING SUPPORT OF ECONOMIC INITIATIVES AND THEIR INFLUENCE ON ENTREPRENEURSHIP DEVELOPMENT.

<i>Actions taken</i>	2006	2007	2008	2009	<i>Total</i>
<i>Influence</i>					
2006	+	-	-	-	1
2007	+	+	-	-	2
2008	+	+	+	-	3
2009	+	+	+	+	4
Total					10

Source: Own elaboration.

The first year of the analyzed period was 2006, thus the use of support instruments brought the weakest effects. Then, respectively, each consecutive year in which communes supported entrepreneurship, brought better results, as there were new instruments and the sum of instruments from previous years active in it. This leads us to the assumption that $\alpha_1 \leq \alpha_2 \leq \alpha_3 \leq \alpha_4$. Taking into consideration the above, we adopted the assumption that $\alpha_1 = 0,1$; $\alpha_2 = 0,2$; $\alpha_3 = 0,3$; $\alpha_4 = 0,4$.

Depending on the value of CM, we assumed the following scale of correlation:

- 1) very strong correlation, when $0,9 \leq |CM| < 1$,
- 2) strong correlation, when $0,75 \leq |CM| < 0,9$,
- 3) weak correlation, when $0,25 \leq |CM| < 0,75$,
- 4) very weak correlation, when $0 < |CM| < 0,25$,
- 5) lack of correlation, when $|CM| = 0$.

In case when the correlation coefficient for a given pair of variables in the analyzed period did not have the stable sign. CM was not established as positive and negative values would neutralize each other. In such situation we interpreted only correlation coefficients for each year separately. The analysis of the influence of independent variables on dependent ones also took into account verification of quality parameters corresponding to the instruments of supporting entrepreneurship used by communes. Similarly to quantity data – quality parameters were analyzed in relation to dependent variables describing the development of entrepreneurship. Due to the fact that in qualitative research we resign from the postulate of sample representativeness (creating possibilities of wide generalizations) and reliability (allowing us to repeat the survey using the same tool) – the choice of variables was governed by the specificity of a particular survey. The characteristics of analyzed quality parameters determined that the choice of independent variables was based on the frequency of using particular instruments of support by communes in the whole analyzed period. On these grounds the catalogues of independent quality variables

comprised the instruments which were used by at least 20 communes or which were not used by at least 20 communes.

To evaluate the influence of using the above instruments on dependent variables we used the tests for significance of differences for independent variables. These tests verified whether the differences appearing between two or more compared groups were statistically significant. In order to choose an appropriate test we used the algorithm for choosing the test of significance of differences, reflecting the type of compared characteristics, the scale of the measure, number of analyzed samples and the dependence or independence of samples. In accordance with the above algorithm, first we examined the normality of distributions for particular variables, and then we determined the measure scale of analyzed features. Then we verified two premises, namely the number of samples and their dependence or independence. As a result, the algorithm for choosing the test of significance of differences pointed to the Kolmogorov-Smirnov test.

The selected test, using the Kolmogorov λ distribution, allowed us to determine whether two (independent) samples come from population of the same distribution. The calculation process then boiled down to establishing the maximum distance between empirical distribution functions of two samples. In case when the value of test statistics was big enough for its corresponding likelihood level to drop below the established level of test significance, we rejected the hypothesis about the consistency of distribution of two groups. The selected test of significance of differences allowed us to verify the null hypothesis against the alternative hypothesis (Figure 1).

$H_0: m_N = m_S$ (means in analyzed groups are equal)

against alternative hypothesis:

$H_1: m_N \neq m_S$ (means in analyzed groups in a statistically significant way differ)

Where:

m_S – mean established for a given dependent variable in a group using a given instrument,

m_N – mean established for a given dependent variable in a group not using a given instrument.

FIGURE 1. THE HYPOTHESIS ABOUT THE CONFORMITY OF BOTH SAMPLES AGAINST THE ALTERNATIVE HYPOTHESIS

Source: Own elaboration.

The rejection of the null hypothesis H_0 for the alternative hypothesis H_1 on the significance level of 0.05 meant that there was some influence of a particular instrument on a dependent variable. The evaluation of the influence of each instrument on dependent variables was made on the basis of evaluating average values for the analyzed groups. The analysis incorporated establishing average values of dependent variables both for communes which used (\bar{x}_S) and those which did not use (\bar{x}_N) a particular instrument, and also evaluating the significance level p , at which the null hypothesis was rejected in favor of the alternative hypothesis, or when there were no grounds for rejecting the null hypothesis. The effectiveness of the instrument was confirmed by dependent variables for which there was statistically significant difference between means, proving the influ-

ence of using a particular instrument on the development of entrepreneurship in the area of the Podkarpackie province communes.

IV. THE SCOPE OF USING INFRASTRUCTURAL INSTRUMENTS BY COMMUNE SELF-GOVERNMENTS

One of the vital determinants of the development of economic initiatives are infrastructure conditions. More than 70% of communes believe that a good state of technical infrastructure is a determining factor when locating economic entities and a factor stimulating the development of entrepreneurial initiatives. Nearly 23.5% of communes claimed that the construction and/or modernization of infrastructure is also a manifestation of local authorities' activities for self-government community. The calculated correlation between the independent variable, that is the level and quality of commune infrastructure and dependent variables (describing the development of entrepreneurship) indicated the existence of a relationship between technical infrastructure and the number of economic entities. The direction of this correlation informs us that the initiatives aiming at building, developing or modernizing infrastructure are a determining factor in development of economic initiatives. This is confirmed by the calculated $CM = 0.73$. The relationship between characterized parameters remained on the same level throughout the analyzed period. This means that the indicated instrument is a stable tool of influencing the shape of the economic surroundings. A similar value of CM characterized relations between independent variable and taking up jobs and the number of people who moved into the commune. The assessed CM for the indicated variables was respectively 0.72 and 0.71. The values of CM describing the relation between the used instrument and other independent variables were on a slightly lower level, see Table 2.

TABLE 2. CM VALUES DESCRIBING THE RELATION BETWEEN THE INDEPENDENT VARIABLE (LEVEL AND QUALITY OF COMMUNE INFRASTRUCTURE) AND DEPENDENT VARIABLES (DESCRIBING THE DEVELOPMENT OF ENTREPRENEURSHIP).

No	Dependent variable	CM
1	Total number of entities of domestic economy (public and private sector entities) registered in the Polish National Business Registry (REGON)	0.73
2	Jobs taken up in the commune	0.72
3	Number of people who moved into the commune (positive balance of migration)	0.71
4	Number of people employed in the commune (employment growth)	0.7
5	Number of non-governmental organizations, public benefit organizations and business-related institutions registered in the commune	0.65
6	Number of people taking part in organized trainings or financed from the Employment Office resources aimed at professional activation of the unemployed	0.64
7	Number of people taking loans from the Employment Office for setting up their business in the commune	0.18

Source: Own elaboration.

The presented values of *CM* clearly demonstrate that technical infrastructure is not the strongest determinant shaping the business environment in a commune. Nevertheless, due to diversity of this instrument's influence, we cannot omit its influence on the development of local economic initiatives. The analysis of the scope of the influence of infrastructural conditions on the development of entrepreneurship is confirmed in the amounts of investment and in material effects of finished investments. For most communes (around 85.1%), the concept of local development, including development of entrepreneurship, is tied to investment in infrastructure. Moreover, 40% of communes believe that the entrepreneurship development mostly consists in creating environment which is conducive to business development. We should also emphasize the essential role in influencing the development of entrepreneurship played by building or making available the infrastructure for economic activity by communes. Using this form of support was the most important factor determining the growth in the number of economic entities. The significance level evaluation proved that in case of communes which build or make available infrastructure objects for economic activity compared to communes which do not use this instrument, there was a statistically significant difference in average values of dependent variables describing the growth of non-governmental organizations. A similar regularity was observed in case of another dependent variable – that is the migration balance – which shows the mobility of production factors. The instrument described influenced the employment growth but did not translate into greater interest in loans for starting economic activity or trainings organized by District Employment Agencies (Polish acronym - PUP) aiming at professional activation of the unemployed.

V. THE SCOPE OF USING LEGAL AND ORGANIZATIONAL INSTRUMENTS BY THE PODKARPACKIE COMMUNES

A special group of instruments are those constituting legal and organizational form of supporting entrepreneurship. This category is undoubtedly the richest and widest, incorporating diverse instruments. Here we could place the local law tools, organizational instruments and institutional solutions. For our discussion, of key importance here are expenditure instruments, especially the category of property expenditure. The analysis of collected material indicated very strong correlation between the application of characterized support forms and variables describing the development of entrepreneurship, see Table 3.

TABLE 3. CM VALUES DESCRIBING THE RELATION BETWEEN THE INDEPENDENT VARIABLE (INVESTMENT EXPENDITURE) AND DEPENDENT VARIABLES (DESCRIBING THE DEVELOPMENT OF ENTREPRENEURSHIP).

<i>No</i>	<i>Dependent variable</i>	<i>CM</i>
1	Number of people employed in the commune	0.97
2	Number of people who moved into the commune	0.96
3	Total number of entities of domestic economy (public and private sector entities) registered in the Polish National Business Registry (REGON)	0.96
4	Number of non-governmental organizations, public benefit organizations and business-related institutions registered in the commune	0.94
5	Jobs taken up in the commune	0.88
6	Number of people taking part in organized trainings or financed from the Employment Office resources aimed at professional activation of the unemployed	0.75

Source: Own elaboration.

The next analyzed instrument was investment expenditure on supporting new areas of production and modern technologies. The verification of the empirical material enables us to establish the existence of a very strong relation between using this instrument and the development of entrepreneurship, see Table 4.

TABLE 4. CM VALUES DESCRIBING THE RELATION BETWEEN THE INDEPENDENT VARIABLE (INVESTMENT EXPENDITURE ON SUPPORTING NEW AREAS OF PRODUCTION AND MODERN TECHNOLOGIES) AND DEPENDENT VARIABLES (DESCRIBING THE DEVELOPMENT OF ENTREPRENEURSHIP).

No	Dependent variable	CM
1	Number of people employed in the commune	0.96
2	Number of non-governmental organizations, public benefit organizations and business-related institutions registered in the commune	0.95
3	Number of people who moved into the commune	0.95
4	Total number of entities of domestic economy (public and private sector entities) registered in the Polish National Business Registry (REGON)	0.95
5	Jobs taken up in the commune	0.83
6	Number of people taking part in organized trainings or financed from the Employment Office resources aimed at professional activation of the unemployed	0.71

Source: Own elaboration.

Investment expenditure was reflected in the growth of the number of companies and the development of non-governmental organizations and business surroundings institutions. The assessment of the correlation coefficient emphasized the influence of this instrument on employment ratios and on mobility of production factors. The finally calculated CM indicated positive relation between the used support form and the growth of interest in PUP trainings aimed at professional activation of the unemployed.

Another instrument belonging to the expenditure category were communes' expenses on creating Centers of Business Support (Polish acronym - CWB). The application of the indicated instrument led to the increase of the number of people who took advantage of the loans offered by PUP to open a small business, and further the development of institutional background supporting entrepreneurial initiatives. A similar effect was caused by using, as a form of support, expenditure on creating the guaranty and loan fund. The last instrument belonging to this group was a separate unit created by JST to serve investors. The influence of this instrument was very wide, ranging from the growth in the number of economic entities registered in the commune, through increased employment and migration ratios, to the development of business environment organizations and increased interest in trainings aimed at professional activation of the unemployed.

A vital role in creating conditions for the development of entrepreneurship is played by creation of complex systems of tax preferences. A large majority of the analyzed communes (nearly 81%) confirmed that they use this form of support. The calculated CM indicated a very strong correlation between the level of investment expenditure on creating a system of tax preferences and the development of entrepreneurship on the area of the analyzed JST. With reference to the characterized instrument, we should point out that the activities initiated by communes to stabilize solutions concerning tax reliefs and exemptions play a vital part. The evaluation of the significance level indicated that the use of activities aimed at stabilizing solutions in tax policy affected the growth of the number of economic entities registered in the commune. The positive influence of this instrument was reflected in relation to two further parameters, namely the professional

activity ratio and the employment ratio. The statistically significant difference in mean values of dependent variables was also reflected in higher interest in loans provided by PUP for opening small businesses and a higher ratio of taking up work.

Another category of legal and organizational forms of supporting entrepreneurship were lower maximum rates in local taxes, classified as income instruments. Among the analyzed local taxes, only property tax and transport means tax showed influence on the development of entrepreneurship. The value of calculated *CM* enabled us to establish that there was a very weak relation between lowering the maximum rate of tax and dependent variables describing the development of entrepreneurship. This very weak influence was confirmed by low values of *CM* for both property tax ($CM = -0.47$), and transport means tax ($CM = -0.22$). The collected data allowed us to establish that the power of influence exerted by lower rates of single local taxes on the development of entrepreneurship was definitely lower than in case of creating complex systems of tax preferences, comprising, apart from lower rates, also exemptions, deferment of payments and redemption of tax dues.

According to the survey, the factors which significantly influence the decision to locate the business are organization and quality of investor service in communes. The overwhelming majority of the surveyed self-governments stated that the matters reported by entrepreneurs were mostly dealt with immediately and positively, without unnecessary delay. Such an opinion was expressed by over 80% of sampled communes. Slightly over 19% of indications concerned successful dealing with matters, although it brought some delay.

VI. THE EXTENT IN WHICH THE PODKARPACIE COMMUNES USE PROMOTIONAL INSTRUMENTS

The calculated *CM* values showed the existence of a strong relationship between the communes' expenditure on promotional activities and the dependent variables describing the development of entrepreneurship. As far as the location of economic activity is concerned, apart from infrastructure conditions, tax solutions used and the attitude of commune authorities to external capital, the aesthetics of the environment and public safety and order in the commune are important, being mostly the result of the investment expenditure of the commune on environment protection. The assessed *CM* value indicated a strong relationship between the use of this instrument and the dependent variables describing the development of entrepreneurship, see Table 5.

TABLE 5. CM VALUES DESCRIBING THE RELATION BETWEEN THE INDEPENDENT VARIABLE (EXPENDITURE ON PROMOTIONAL ACTIVITIES) AND DEPENDENT VARIABLES (DESCRIBING THE DEVELOPMENT OF ENTREPRENEURSHIP).

No	Dependent variable	CM
1	Total number of entities of domestic economy (public and private sector entities) registered in the Polish National Business Registry (REGON)	0.8
2	Jobs taken up in the commune	0.78
3	Number of people who moved into the commune	0.77
4	Number of non-governmental organizations, public benefit organizations and business-related institutions registered in the commune	0.75
5	Number of people employed in the commune	0.74
6	Number of people taking part in organized trainings or financed from the Employment Office resources aimed at professional activation of the unemployed	0.65

Source: Own elaboration.

Another form of support used by communes, belonging to a wider category of promotional instruments is the establishment of separate organizational units functioning within the office, dealing with promotion of the commune and local products, see Table 6.

TABLE 6. CM VALUES DESCRIBING THE RELATION BETWEEN THE INDEPENDENT VARIABLE (ESTABLISHMENT OF A SEPARATE ORGANIZATIONAL UNIT FUNCTIONING WITHIN THE OFFICE, DEALING WITH PROMOTION OF THE COMMUNE AND LOCAL PRODUCTS) AND DEPENDENT VARIABLES (DESCRIBING THE DEVELOPMENT OF ENTREPRENEURSHIP).

No	Dependent variable	CM
1	Number of people employed in the commune	0.96
2	Number of people who moved into the commune	0.95
3	Number of non-governmental organizations, public benefit organizations and business-related institutions registered in the commune	0.95
4	Total number of entities of domestic economy (public and private sector entities) registered in the Polish National Business Registry (REGON)	0.95
5	Jobs taken up in the commune	0.83
6	Number of people taking part in organized trainings or financed from the Employment Office resources aimed at professional activation of the unemployed	0.72

Source: Own elaboration.

Some surveyed communes confirmed that they used (as an additional instrument supporting entrepreneurship) special programs promoting the commune and its local products. Among key components of this program, communes mentioned support in entering new markets

for local companies, facilitating location in business support centers in the area of communes and helping in making contacts with local entrepreneurs.

In conclusion, we should state that promotion is an economic activity. Therefore the effectiveness of such initiatives is of vital importance. Properly chosen and implemented promotional activities may determine the decision concerning location of an investment planned by a company, and, as a result, development expansion of the commune and all entities functioning in its area.

VII. THE SYSTEMATIC PRESENTATION OF POSTULATED SOLUTIONS IN THE AREA OF ENTREPRENEURSHIP SUPPORT

The classification of proposed solutions aiming at creating conditions for effective support of entrepreneurship concentrates on five areas:

- 1) state legislature;
- 2) improving effectiveness of using available support instruments by local authorities;
- 3) possibility of creating and developing business environment institutions in local environment;
- 4) building awareness of availability of public aid for entrepreneurs;
- 5) risk related to realization of PPP projects.

This division is finished with the modeling of the influence of quantitative factors on the effectiveness of activities taken up by the Podkarpackie province commune authorities to support the development of entrepreneurship. In order to explain the influence of particular instruments of supporting economic initiatives on the development of entrepreneurship in the Podkarpackie province, we conducted estimation, verification and analysis of the following linear econometric model:

$$Y = \alpha_0 + \alpha_1 \cdot X_1 + \alpha_2 \cdot X_2 + \dots + \alpha_k \cdot X_k + \varepsilon$$

where:

Y – dependent variable,

X_1, X_2, \dots, X_k – independent variables by means of which we want to explain the analyzed variable Y ,

ε – random element which synthetically reflects all random factors influencing the analyzed variable.

Source: *Own elaboration.*

As the dependent variable we took the number of economic entities according to REGON (National Business Registry). The candidates for independent variables were the instruments of supporting entrepreneurship, with reference to which we confirmed the dependence indicating a relation between using them and the results of these actions on the development of entrepreneurship side. From the 'catalogue' of the instruments meeting the above requirement, eleven independent variables were selected. Then we conducted an estimation of the linear model parameters. To do so we used the backward stepwise method, which assumes stepwise elimination from the model built with all potential variables those which in a particular step have the least significant influence on the dependent variable. In this way we obtained the model consisting

of three independent variables, that is: variable X_2 – amount of property expenditure of communes (in thousand PLN), variable X_4 – using lower than maximum rates of property tax by communes (% lowering of the rate) and variable X_{10} – expenditure on promotional aims incurred by the commune (in thousand PLN). The model took the following form:

$$\hat{Y} = 81,13 + 0,22 X_2 - 5,92 X_4 + 10,98 X_{10}$$

(80,16)
(0,01)
(2,11)
(0,70)

Source: Own elaboration.

Next we conducted the verification of the model. It boiled down to examining three properties, that is the degree of compliance of the model with empirical data, quality of structural parameters and selected properties of remainder distribution. The analysis of adjustment of the model to empirical data has shown that it explains 99.2% of variations in the number of economic entities. On the basis of the model, relying on the interpretation of a_i coefficients, we evaluated the quantitative influence of particular explanatory variables on the total number of companies. We distinguished the following regularities:

- a) increased property expenditure of a commune by one thousand PLN causes the growth of economic entities by 0.22 (at unchanged values of other explanatory variables),
- b) lowering the property tax rate by 1% will cause the increase of 5.92 in the number of economic entities (at unchanged values of other explanatory variables),
- c) increasing commune expenditure on promotion by one thousand PLN will cause the growth of economic entities by 10.98 (at unchanged values of other explanatory variables).

We also evaluated the relative significance of the examined variables in the econometric model. The measure of relative significance of explanatory variable X_i in explaining changes of the explained variable Y is the coefficient of significance b_i defined in the following way (Nowak, 2002):

$$b_i = a_i \frac{\bar{x}_i}{\bar{y}} \quad i = 1, 2, \dots, k$$

Where:

\bar{x}_i – arithmetic mean of explanatory variable,

\bar{y} – arithmetic mean of explained variable,

a_i – value of structural parameter a_i

Source: Own elaboration.

It should be noted here that greater significance of the coefficient b_i module indicates relatively greater influence of a particular explanatory variable on the explained variable in the model (Nowak, 2002). The calculated arithmetic means of particular variables equaled:

$$\bar{y} = 1091,311 \quad , \quad \bar{x}_2 = 3946,43 \quad , \quad \bar{x}_4 = 27,951 \quad , \quad \bar{x}_{10} = 26,779$$

On the other hand, the modules of significance coefficients of other explanatory variables had the following values:

$$b_2 = 0,796, \quad b_4 = 0,150, \quad b_{10} = 0,269$$

The values of particular coefficients indicate that the amount of property expenditure of a commune has the greatest significance in describing the total number of economic entities. The weights of two other independent variables (corresponding to instruments of supporting entrepreneurship used by communes) in the analyzed model are clearly lower, with expenditure on promotion exerting more influence on stimulating economic initiatives.

VIII. CONCLUSION AND VERIFICATION OF THE ASSUMED HYPOTHESES

The analysis of the collected empirical material showed the correctness of both the assumed main hypothesis and the detailed hypotheses. It confirmed that the instruments of supporting entrepreneurship used by local governments affect the development of economic initiatives in the surveyed communes. The conducted research confirmed that the scope and type of the applied instruments depended on both the type and size of the commune, while their effectiveness mostly depended on the specificity of applied forms of support.

Municipal communes excelled in using the instruments of supporting entrepreneurship, their favorite ones being legal and organizational instruments. The calculated correlation measures and the analysis based on the significant differences tests confirmed that the instruments belonging to this group are of the greatest significance. Moreover, the research proved that in spite of more frequent use of income instruments by local government units, expenditure instruments had more influence on the development of entrepreneurship. This calls for the reorientation of the current solutions for supporting entrepreneurship and concentration on expenditure instruments.

The first hypothesis was fully confirmed by the results of the conducted research. The most frequently used instruments of stimulating economic initiatives were income instruments (creating tax preferences) – nearly 80.9% of communes pointed at this solution. However, in spite of such popularity of this solution, the calculated value of CM showed that the influence of lowered maximum rates of particular local taxes is much weaker than in case of constructing complex systems of tax preferences.

The second detailed hypothesis also proved to be true. On the basis of research results and our assumptions, we confirmed the relationship between the state and quality of technical infrastructure in a commune and dependent variables describing the development of entrepreneurship. Moreover, the verification of the direction of this relation proved that the initiatives consisting in building and modernizing infrastructure are a factor determining the development of economic initiatives.

Similarly to those two hypotheses, the third one also turned out to be true. The analysis of the empirical material confirmed the existence of a very strong relationship between the use of expenditure instruments and creation of a commune environment composed of business-related institutions and non-governmental organizations. The calculated correlation measures oscillated around the value of $CM = 0.95$, the dominant feature of this instrument being the long-term influence.

The conducted research also indicated that the use of instruments supporting entrepreneurship by local government affected the number of jobs that were taken up and the mobility of production means. We also confirmed our assumptions that most communes in the Podkarpackie province have not developed any special program for supporting entrepreneurship and concentrate their activities in this area on constructing investment and development strategies. Moreover, the verification of the collected empirical material allowed us to determine that when initiating ventures and projects aimed at supporting entrepreneurship, local governments very rarely develop separate programs concentrating on selected areas requiring support. The results we obtained thus confirmed the correctness of the fourth and the fifth hypotheses.

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INSTRUMENTI STIMULACIJE PODUZETNIŠTVA OD STRANE LOKALNIH JEDINICA UPRAVE

SAŽETAK

Ovaj rad dijagnosticira korištenje instrumenata koji podupiru poduzetništvo od strane općina u Podkarpatskoj regiji. Osnovni problem istraživanja je formuliran kako slijedi: Utječu li instrumenti potpore poduzetništva koje koristi samouprava na razvoj ekonomskih inicijativa na području istraženih općina? To smo istražili na dva polja. Prvo se usredotočuje na trenutno stanje i analizira kvalitetu i smjer radnji poduzetih od strane općinskih vlasti kako bi se podupre ekonomske inicijative te njihove rezultate. Drugo pokušava ukazati na rješenja vezana za razvoj poduzetništva i instrumente koji osiguravaju njegovu stimulaciju. Rezultati provedenog istraživanja omogućuju nam procjenu efikasnosti instrumenata potpore poduzetništvu koje koriste lokalne jedinice uprave. Glavni zaključak koji proizlazi iz istraživanja je da korištenje fiskalnih instrumenata ne čini najjači čimbenik za određivanje lokacije ekonomske aktivnosti. Ispostavlja se da je korištenje poreznih oblika potpore ovisno o ekonomskoj situaciji mnogo manje bitno od korištenja rješenja kao što su poboljšanje stanja infrastrukture, odabir lokacija za ulaganje, najam općinske imovine za ekonomsku aktivnost, stvaranje zalihe kapitala kao što su kreditni fondovi, kao i implementacija organizacijskih promjena koje streme ka boljoj efikasnosti rada uprave. Istraživanje je dokazalo dobrobiti fiskalnih preferenci ali je dokazalo i da je umjereni iznos komunalnih doprinosa značajniji čimbenik od korištenih poreznih preferenci, često povezan s trenutnom ekonomskom situacijom. Zaključci do kojih smo došli eksplicitno i negativno potvrđuju uvjerenje da je smanjenje poreznog opterećenja jedini učinkovit alat za stimulaciju poduzetništva kojeg na raspolaganju imaju jedinice lokalne uprave.

Ključne riječi: poduzetništvo, ekonomske inicijative, stimulacija, razvojne strategije, ulaganje