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Non-Financial Instruments Supporting New Firm Formation as an Element of Local Public Policies on Entrepreneurship

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Abstract

The aim of the paper is to determine the scope of use of non-financial entrepreneurship support instruments by local government units (LGUs) in Poland, taking into account generic categories of communes. It will also check the spatial relationships between the use of non-financial instruments by communes and the new firms' birth in their area. For this purpose, a study was designed based on the Global Entrepreneurship Monitor (GEM) sample, consisting of 896 Polish communes (i.e., over 35% of all LGUs). In order to carry out such large and spatially distributed research, an original questionnaire was constructed. The CATI method was used for its implementation. No research has been carried out so far in Poland on the diagnosis of entrepreneurship support instruments by communes with such a wide profile and on such a large and internally and spatially diversified sample. The research showed a relationship between the scope of entrepreneurship support instruments and the type of commune. The instruments implemented by rural communes were of a different nature than those used by urban, urban-rural communes and cities with county rights. The demonstrated differences, however, were not the result of the adaptation of instruments to the type of commune but the result of the conviction about the efficiency of a given form of support. The research also made it possible to identify clusters of communes with high and low entrepreneurship. The communes where the newest firms were established were located in regions of communes with high entrepreneurship.

Keywords: entrepreneurship support instruments, local government unit (LGU), spatial autocorrelation

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Introduction

The issue of local public policies supporting entrepreneurship is known in economic literature (e.g., Bania and Dahlke 2014; Derlukiewicz et al. 2021; Hajdys 2018; Macháček 2017; Mickiewicz et al. 2021). Due to the fact that local governments units (LGUs) in Poland have the greatest statutory possibilities to support new firm formation, research on this issue usually focuses on communes (Adamowicz and Machla 2016; Pawlik and Dziekański 2021). At the same time, it is important to point out that studies reveal a bigger concentration of research work around financial instruments supporting entrepreneurship (Danisewicz and Ongena 2020; Filip and Pitera 2019; Kogut-Jaworska 2017; Poniatowicz and Wyszkowska 2014) than around non-financial ones (Filipiak 2009; Skica, Rodzinka, and Ociepa-Kicińska 2021; Strojny and Prusak 2015). As a result, the knowledge about the scope of application of non-financial instruments, as well as their diversity across communes in Poland, is not exhaustive (Flieger 2013; Inglot-Brzęk and Skica 2017).

The conducted research usually focuses independently on rural (Korsgaard, Müller, and Tanvig 2015; Pondel 2017; Popławski 2013; Wright McCullough 2012), urban-rural (Szopiński and

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Grzybek 2018) or municipal LGUs (Adamczyk and Dawidowicz 2017; Jędrzejczak-Gas, Barska, and Wyrwa 2017; Westlund et al. 2014). This approach not only makes it impossible to compare the policies applied by different types of communes but also limits the possibility of developing a set of instruments tailored to each of the categories of communes separately (Inglot-Brzęk and Skica 2017). The approach used in the article is a response to the incomplete analysis of non-financial instruments of entrepreneurship support used by communes (Vaillant and Lafuente 2007).

The aim of this paper is to investigate the scope of communes' application of non-financial instruments to support entrepreneurship. These instruments are often (unnecessarily) diluted in discussions about stimulating new firm formation by LGUs. As a result, they have not been fully researched and described (Kaliszczak 2012). This study compares different types of communes in order to check whether the use of non-financial tools to support entrepreneurship differs depending on the type of commune (Zbierowski, Dzyuma-Zaremba, and Harasym 2016). Lastly, the research assumes checking the spatial relationships between the use of non-financial instruments by communes and the rate of new firm establishment in their area.

1 Literature review on communal instruments for supporting entrepreneurship in Poland

The background for the research undertaken in the introduction indicates that the division of communal instruments for stimulating entrepreneurship should include two groups: financial instruments and non-financial instruments. The first group can be divided into income and expenditure instruments (Partridge et al. 2020; Skica, Bem, and Żygadło 2013), while the second consists of strategic, organizational and promotional instruments, including other solutions focused on creating an entrepreneurship climate (Katimertzopoulos and Vlados 2017; Skica and Harasym 2017).

Three groups are distinguished among the income instruments. These include fiscal policy instruments (including tax preferences) (Poliak 2016), instruments related to the sale or commissioning of municipal property, and pricing instruments related to the prices of communal services (Sokolov 2018). However, the effectiveness of using financial instruments is debatable. Firstly, as part of their stimulating activities, local governments focus mainly on tax preferences, which are not effective on their own (Satoła 2014). Moreover, according to Filipiak (2016), the application of fiscal preferences in Poland differs spatially. They are most often used by local governments in south-eastern Poland (the Lubelskie Voivodship — i.e., a less developed part of the country) and least often by municipalities in south-western Poland (the Śląskie Voivodship — i.e., a much more developed region of Poland). This fact is extremely important when it comes to assessing the effectiveness of income instruments based on fiscal titles. Despite their use, the dynamics of establishing new companies in areas with a lower level of entrepreneurship does not show an upward trend (Skica and Rodzinka 2021).

Expenditure instruments include public aid (e.g., sureties and guarantees provided by local government units) and investment expenditure focused on the technical infrastructure necessary for economic activity (Guo and Cheng 2018). This group is aided by the expenses supporting business environment institutions (Andersson and Henrekson 2015), as well as the expenses for financing information activities (Kogut-Jaworska 2008). Research shows that a well-aligned and well-targeted spending policy stimulates the creation of new firms (Gabe 2001). Grodzka (2008) directly indicates that expenditure instruments turn out to be more effective in supporting economic initiatives than income instruments. The effectiveness of investment expenditure in stimulating entrepreneurship is also emphasized by Perska (2014), and Pomianek and Cegiełka (2015). Kogut-Jaworska (2008) directly adds that for its effectiveness, the policy of supporting entrepreneurship should focus on investment expenditures. This position is also confirmed by Filip and Pitera (2019), showing that the level of entrepreneurship increases with an increase in investment outlays.

A separate group are non-financial instruments. These embrace strategic solutions, including spatial planning focused on economic activity and the creation of local entrepreneurial zones (Fritsch and Wyrwich 2017), as well as organizational instruments, such as a fast administrative path or the appointment of a person responsible for investor services (Su Dinh and Mai 2017). This group

also includes promotional instruments, both program-related (i.e., competitiveness strategies and promotional activities as well as organization of fairs/exhibitions) and other economic events (Hofer and Welter 2011) such as ad hoc—e.g., patronage over development projects, disseminating information about the potential and offer of business support. The last group consists of instruments for creating a climate for entrepreneurship (Kaliszczak 2012; Motoyama 2020).

The review of the literature leads to several important conclusions. Previous research strongly proves that local governments focus on creating conditions for the establishment and development of enterprises through their use of financial instruments (Rodzinka 2020). At the same time, little is written about non-financial forms of entrepreneurship support (Chomiak-Orsa and Flieger 2018), and, in particular, their effectiveness (Sašić 2015). It is interesting that local governments located in the west of Poland focus more on non-financial instruments (being aware that they are not tools that have a stronger impact on entrepreneurship than various forms of non-financial support), while local governments in the south and east prefer financial forms of support. Considering the objectively lower level of development in the eastern part of Poland (Harasym, Pater, and Skica 2018) and the disparities in development potential in the western and eastern parts of the country, it is not rational for eastern local governments to rely mainly on financial instruments. In addition to the fact that (as has already been shown) their use does not exponentially translate into the creation of new companies, their poor calibration may even have a negative effect on the local government budgets (Bykov and Zimmermann 2018). Unfortunately, the observation of local government budget policies does not inspire optimism in this regard. Successively repeated studies (in 2015 and then in 2019) prove the consolidation of trends in forms of support for entrepreneurship rather than its reorientation in response to the low effectiveness of the launched forms of support (Skica 2020).

Moreover, the effectiveness of local government policies supporting entrepreneurship is a function of skillfully combining instruments (financial and non-financial) not only with the supported economic activity but also with the requirements of the commune (cf. Churski et al. 2020), its location and potential. Awareness of this fact is crucial to eliminate such problems as ineffective copying of the policies of other communes, the conviction about the effectiveness of the imitation of local development models, the conviction about the universal effectiveness of support instruments, and the assumption of the comparability of the level of development of communities belonging to the same generic category. Meanwhile, the transposition of empirical findings into the practice of local government units is highly unsatisfactory. This is best evidenced by the fact that the vast majority of local governments do not verify the effectiveness of their development policies in any way, nor do they examine the budgetary consequences of their implementation.[1]

2 Data and methodology

This article focuses on non-financial instruments as a method of supporting entrepreneurship. These instruments can be divided into two groups. The first relates to the strategic instruments (see table 1, Part no. 1, on next page), while the second group of the instruments reflects the cooperation of local governments with entrepreneurs (see table 1, Part no. 2, on next page).

The research was carried out between June and October 2019. The selection of LGUs for the research sample was a two-stage process: in the first stage purposive sampling was used and the authors accepted 735 communes participating in the Polish edition of the Global Entrepreneurship Monitor (GEM) research project in 2015. In the second stage, dependent sampling was applied, selecting 347 municipalities from a base of all municipalities in Poland in such a way as to ensure that the sample had the same structure as the actual structure of municipalities in Poland, by type of municipality. Taking into account the analysis of the situation and the possibility of effective application, proportionate stratified sampling was selected. This choice was determined mainly by the fact that it ensures high efficiency of sample selection. Dependent sampling was used (i.e., without replacement). The communes were surveyed using the CAWI/CATI methods. The CATI method was

1. See: "Wspieranie przedsiębiorczości przez gminy." KAP.430.018.2017, Nr ewid. 201/2017/P/17/004/KAP. Supporting entrepreneurship by communes—information about inspection results, NIK, Departament Administracji Publicznej, available at https://www.nik.gov.pl/plik/id,17394,vp,19963.pdf.

Table 1. Non-financial entrepreneurship support instruments at the disposal of LGUs[a]

Part no. 1. Strategic instruments	
1	Possession of development strategy, study of spatial development conditions or other documents programming local economic development
2	Possession of a zoning plan:
	2A Possession of a zoning plan
	2B Area covered by the zoning plan
	2C Area covered by the zoning plan for business purposes
	2D Equipping new investment areas with network infrastructure for running a business
Part no. 2. Instruments of cooperation with entrepreneurs	
3	Involvement in organization of trainings for taking up and running a business
4	Commune located service points offering legal, financial and accounting advice
5	Provision of communal services by private firms
6	Implementation of investments based on public-private partnership (PPP)
7	Participation of entrepreneurs in the process of creating strategic documents
8	Informing residents and entrepreneurs about sources of financing for business activities
	8A Communal websites
	8B Brochures available at the office/advertisements in media
	8C Meetings organized with those concerned
	8D Organizing or supporting trainings on funds applying
9	Economic organizations functioning in the commune
	9A Chambers of commerce
	9B Craft chambers
	9C Fraternity of various crafts
	9E Employers organizations
	9F Regional or local development agencies
	9G Industrial parks, technology incubators
	9H Association or foundation supporting entrepreneurs

[a] The instruments indicated in the table shaded in grey will not be analyzed in the article due to the large number of missing answers about their use or non-use in the surveyed communes.

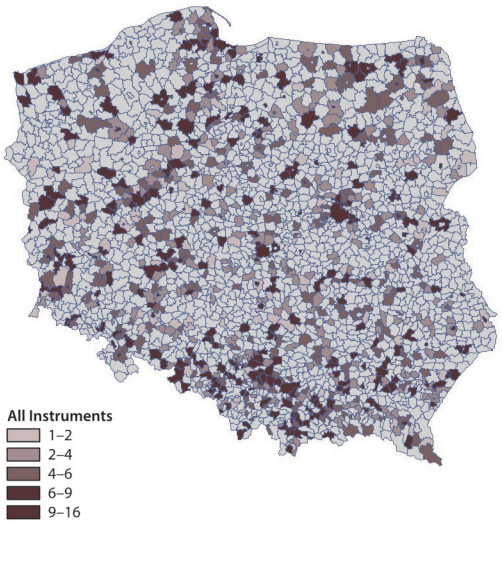
a supplement to the CAWI method for all the communes from the pool of 735 that did not return correctly completed questionnaires (352 communes in total). It was also the basic tool for examining the randomly selected communes (347 communes). 513 questionnaires were completed using the CATI method, 84 refusals were recorded, and contact with 102 entities could not be established. As a result, the survey was conducted among 896 local government units, which covered over 36% of the entire population. In accordance with the adopted assumptions, the structure of the surveyed units was consistent with the structure of the general population (by type of commune). Currently, there are 302 urban communes (11.88%), 662 urban-rural communes (26.03%), 1513 rural communes (59.50%) and 66 cities with county rights (2.60%). The structure of the communes, which was the subject of the research, was as follows: urban communes 14.14%, urban-rural communes 24.41%, rural communes 59.57%, and cities with county rights 1.88%. Despite the fact that some of the units accepted for the study came from a deliberate selection, by drawing an appropriate number of communes from particular types, an appropriate structure and size of the sample was ensured, and thus it can be assumed that the research was representative.

The questionnaire form made it possible to ask 21 questions regarding the use of non-financial instruments to support entrepreneurship. Due to missing responses, the maximum number of the instruments indicated by the surveyed communes was 16. In table 1, the instruments that were not selected by the surveyed communes (i.e., not used to support entrepreneurship) are marked in grey. The number of indications concerning the applied ones was thus in the range from 1 to 16 and showed exhaustively the business support policy applied by the communes. Map 1 shows a graphic illustration of the communes participating in the study as well as the number of non-financial instruments they declared.

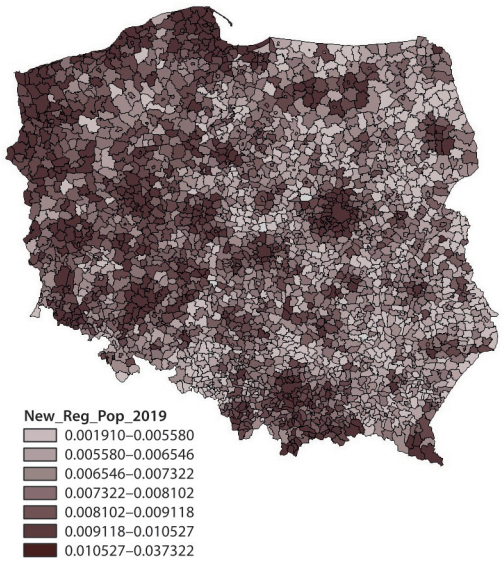
The set of the instruments presented in table 1 show an added value. Several factors determine this statement. First of all, the classification is comprehensive and accurately organizes the instruments of entrepreneurship support available for LGUs. Secondly, the classification of the instruments used for supporting new firm formation instrumentalizes the non-financial sphere of LGU activity that can strengthen entrepreneurship. Thirdly, research on stimulating entrepreneurship by local public policies is often limited to an analysis focused only on single instruments or possibly one group of support instruments. This approach, although less demanding, makes it impossible to verify differences in the use of instruments classified into different groups by individual generic categories of the communes. The following study not only breaks the limitations described above but also significantly expands the interpretative layer of the source material used.

In the survey conducted in 2019, LGUs were asked about their approach to non-financial instruments in supporting entrepreneurship. The study did not only refer to 2019 but also to previous years. In line with this, it was assumed that entrepreneurship in 2019 may be a result of the support policies implemented by the communes. Hence, while map 1 shows the instrumentalization of support used by LGUs (both in 2019 and in previous years), map 2 presents its effects. Map 2 illustrates the entrepreneurship index for Polish communes. The indicator was calculated by dividing the number of the firms registered in 2019 in each commune by the number of its inhabitants.

The presented approach is in line with the research objective and makes it possible both to examine the scope of the communes' use of non-financial instruments to support entrepreneurship and to identify the spatial distribution of the communes that use non-financial forms of entrepreneurship support. Taking into account the intensity of their use (the number of the instruments used by local authorities) makes it possible to examine whether the researched entrepreneurship index has higher values among the communes using a bigger number of non-financial instruments.



Map 1. The number of non-financial instruments for entrepreneurship support used by LGUs



Map 2. New firms registrations related to the number of LGUs residents

3 Research results and discussion

3.1 The use of non-financial instruments and the type of commune

The study on the use of entrepreneurship support instruments was carried out in the period between August and October 2019. 896 communes took part in the research. Most of them were rural communes, followed by urban-rural communes, as well as urban communes and cities with county rights. This structure of the research sample was consistent with the structure of communes in Poland. The exact distribution of the communes in the research sample is presented in the chart below.

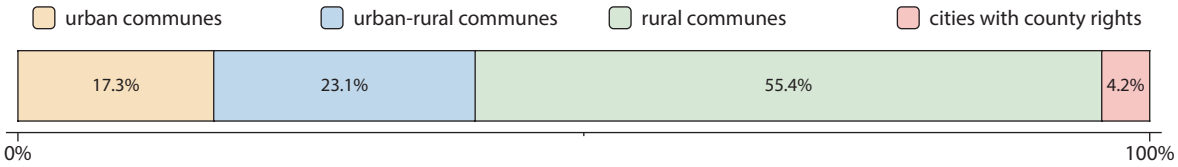


Figure 1. Structure of the sample by type of local government unit

This part of the article analyzes differences between the type of commune and individual non-financial entrepreneurship support instruments. The analysis of the diversity omitted missing answers and the "I don't know" indication. The aim was to show the differences between the communes in which the instrument was used and those in which it was not used. In order to capture the diversity of support instruments, the chi-square and Cramer's V coefficients were calculated (the occurrence of support instruments and the type of local government units are variables presented on nominal scales). The chi-square test concerns the independence of the variables. If $p < 0.05$, there is a relationship between variables and the difference is statistically significant. (We reject the null hypothesis.) If $p > 0.05$, there is no relationship between the studied variables and the difference is not statistically significant. (There are no reasons to reject the null hypothesis.) The Cramer's V factor measures the strength of the relationship between variables. When rejecting the null hypothesis, we first look at approximate significance. The Cramer's V coefficient value ranges from 0 to 1; the higher its value, the greater the strength of the relationship between the features.

First, the relationship between the possession of a zoning plan and the type of commune was analyzed. Results showed that almost 82% of all the communes possessed such a document. Cities with county rights are in first place in terms of this analysis, because each of the cities with county rights examined had such a plan. Urban communes are slightly worse, as nine out of ten had a zoning plan. Urban-rural communes are very close to the average for all the communes, and the situation is not much worse in rural communes.

Statistics show that there is a relationship between the nature of the commune and possessing a zoning plan; however, the relationship is weak. This means that factors other than the commune's generic category determine whether or not it possesses a zoning plan. They include endogenous factors—i.e., the potential for entrepreneurship, predisposition to capital absorption and individual competitive advantages. In the next step, the methods of analyzing how the communes inform residents and entrepreneurs about available funding opportunities (e.g., from EU sources) were scrutinized.

The analysis showed that most often residents and entrepreneurs are informed about available forms of support via websites. This communication channel was indicated by over 90% of communes, and most often it is used by county cities (100%) and urban communes. The obtained result should be considered predictable. Cities are entrepreneurship-focused centers. Respectively, it is important that the convergence effect is characteristic of them, which is identified by a slow increase in the number of newly established business entities relative to neighboring communes (surrounding urban communes). Another important non-financial instrument that may affect the level of entrepreneurship is the involvement of the commune in the organization of trainings in taking up and running a business.

Trainings in taking up and running a business were organized in almost every third commune. The percentage of the communes that declared the organization of this type of training was only smaller in the case of rural communes. What is more, the analysis showed that there is a relationship between the character of the commune and the organization of trainings in taking up and running a business. Once again, this confirms that it is factors other than the type of commune that decide about the application of this type of support. It can therefore be assumed that, while certain categories—e.g., cities with county status, are predisposed to use a wide range of instruments, it does not preclude their use by smaller self-governments, including rural communes. In effect, the factors justifying their use are the local development conditions of LGUs and the conditions for the growth of entrepreneurship.

Table 2. Possession of a zoning plan (%)

Answer variant	Total	Urban commune	Urban-rural commune	Rural commune	City with county rights
Yes	81.8	89.0	82.1	78.0	100.0
No	15.4	9.0	14.0	19.2	0.0
I don't know	2.8	1.9	3.9	2.8	0.0
Total	100.0	100.0	100.0	100.0	100.0
Chi-square tests					
		Value	**df**	**Asymptotic significance (two-sided)**	
Pearson's chi-square		20.450[a]	6	0.002	
Likelihood ratio		27.601	6	< 0.001	
Symmetric measures					
		Value		**Approximate significance**	
	Phi	0.151		0.002	
	Cramer's V	0.107		0.002	
Number of valid observations		896			

[a] 16.7% of cells (2) have an expected number of less than 5; the minimum expected number is 1.06.

Table 3. Tools used to inform residents and entrepreneurs about the sources of financing business activities (%)

Answer variant	Total	Urban commune	Urban-rural commune	Rural commune	City with county rights
Communal websites	94.0	95.5	91.8	94.0	100.0
Brochures available at the office/ advertisements in media	63.6	71.0	70.5	56.7	86.8
Meetings organized with those concerned	58.9	66.5	64.7	51.8	89.5
Organizing or supporting trainings on funds applying	34.4	42.6	37.7	27.2	76.3

Table 4. Involvement in the organization of trainings in setting up and running a business (%)

Answer variant	Total	Urban commune	Urban-rural commune	Rural commune	City with county rights
Yes	29.9	42.6	33.3	21.6	68.4
No	61.6	50.3	56.5	70.8	15.8
I don't know	8.5	7.1	10.1	7.7	15.8
Total	100.0	100.0	100.0	100.0	100.0
Chi-square tests					
		Value	**df**	**Asymptotic significance (two-sided)**	
Pearson's chi-square		67.086[a]	6	< 0.001	
Likelihood ratio		67.222	6	< 0.001	
Symmetric measures					
		Value		**Approximate significance**	
	Phi	0.274		< 0.001	
	Cramer's V	0.193		< 0.001	
Number of valid observations		896			

[a] 8.3% of cells (1) have an expected number less than 5; the minimum expected number is 3.22.

The respondents also reflected on whether the economic organizations listed in the questionnaire operated in their communes (see table 5). The research shows that associations or foundations supporting entrepreneurs most often operate in the communes (this is the case in almost 30% of them), while the communities of various crafts operate more often than in every fifth. Only one commune in six can boast of having regional or local development agencies operating within them. Very large differences in this area are shown in the cross-section of the commune by category. In the case of cities with county rights and urban communes, the respondents declared the functioning of the above-mentioned economic organizations much more often than in other categories of generic communes. Once again, this proves that non-financial support instruments are the domain of large communes.

Another question asked to the respondents concerned the existence of business service points offering legal advice, as well as financial, accounting or consulting services in the commune (see table 6). The study showed that in the case of one third of the examined communes, the mentioned types of service points were located in the commune. The largest number of points of this type can be found in cities with county rights and in urban communes. What is more, the analysis with the chi-square test and symmetrical measures showed that there is a relationship between

Table 5. Economic organizations functioning in the commune (%)

Answer variant	Total	Urban commune	Urban-rural commune	Rural commune	City with county rights
Chambers of commerce	14.3	39.4	13.0	2.8	68.4
Craft chambers	11.6	31.0	9.7	2.6	60.5
Fraternity of various crafts	22.9	60.0	27.1	5.0	81.6
Employers organizations	14.3	38.1	13.5	3.8	57.9
Regional or local development agencies	15.5	39.4	15.9	4.0	65.8
Associations or foundations supporting entrepreneurship	29.6	57.4	26.1	18.5	78.9
Industrial and technological parks, business incubators	12.2	32.3	11.6	2.0	65.8

Table 6. Commune-located service points offering legal, financial and accounting advice (%)

Answer variant	Total	Urban commune	Urban-rural commune	Rural commune	City with county rights
Yes	33.9	57.4	44.0	19.4	73.7
No	56.0	36.8	38.6	72.4	15.8
I don't know	10.0	5.8	17.4	8.3	10.5
Total	100.0	100.0	100.0	100.0	100.0
Chi-square tests					
		Value	**df**	**Asymptotic significance (two-sided)**	
Pearson's chi-square		151.635[a]	6	< 0.001	
Likelihood ratio		151.766	6	< 0.001	
Symmetric measures					
		Value		**Approximate significance**	
	Phi	0.411		< 0.001	
	Cramer's V	0.291		< 0.001	
Number of valid observations		896			

[a] 8.3% cells (1) have an expected number less than 5; the minimum expected number is 3.82.

the character of the commune and the location of service points for entrepreneurs offering legal, financial and accounting advice.

Each representative of the commune could also comment on the provision of municipal services by private companies in the commune (see table 7). Communal outsourcing is a very dynamically growing sphere of economic activity, and more and more communes are trying to convert public service management towards the use of solutions optimizing the delivery of public services. Thus, a new market area and a new platform for entrepreneurship development are created.

Table 7. Provision of communal services by private firms (%)

Answer variant	Total	Urban commune	Urban-rural commune	Rural commune	City with county rights
Yes	57.9	60.0	54.1	57.9	71.1
No	36.5	33.5	39.6	37.7	15.8
I don't know	5.6	6.5	6.3	4.4	13.2
Total	100.0	100.0	100.0	100.0	100.0
Chi-square tests					
		Value	**df**	**Asymptotic significance (two-sided)**	
Pearson's chi-square		12.817[a]	6	0.046	
Likelihood ratio		12.942	6	0.044	
Symmetric measures					
		Value		**Approximate significance**	
Phi		0.120		0.046	
Cramer's V		0.085		0.046	
Number of valid observations		896			

[a] 8.3% cells (1) have an expected number of less than 5; the minimum expected number is 2.12.

Less than 60% of the communes stated that private companies provided communal services in their territory. There is little variation here considering the type of commune. The least likely positive answer was given by representatives of urban-rural communes, with most responses from cities with county rights. The analysis of the chi-square test and symmetrical measures showed that there is a relationship between the character of the commune and the provision of municipal services by private companies. The commune category by type is therefore not a sufficient explanation for the use of outsourcing of municipal services.

Communes undertaking cooperation with entrepreneurs in the field of investment may implement it, among others, in the form of public-private partnership (PPP) (see table 8 on next page). Do they do this? This question was asked to the respondents. Only slightly more than 30% percent of the surveyed communes admitted that they cooperated with enterprises in the form of public-private partnership. Urban and urban-rural communes are particularly active in this respect. Based on the analysis, a relationship between the type of commune and the implementation of investments in the form of public-private partnership was noticed although this relationship is weak. The obtained results confirm the results of the observation of local government practice related to the application of the Act regulating public-private partnership. The provisions regarding PPP have been designed in such a way that they favor larger communes with sufficiently high capacity to absorb funds conditioning their involvement in investment projects financed according to the PPP formula.

A commune's participation in shaping the level of entrepreneurship can also be assessed by the participation of entrepreneurs from the commune in the process of creating strategic documents (see table 9 on next page). Slightly more than half of the surveyed communes admitted that entrepreneurs from the commune participated in the process of creating strategic documents. Most often they were invited to take part in this type of activity in cities with county rights and in urban communes. Statistical analysis showed that there is a relationship between the character of

Table 8. Implementation of investments in the form of public-private partnerships (PPP) (%)

Answer variant	Total	Urban commune	Urban-rural commune	Rural commune	City with county rights
Yes	31.4	45.2	34.3	25.8	31.6
No	55.9	44.5	52.7	61.9	42.1
I don't know	12.7	10.3	13.0	12.3	26.3
Total	100.0	100.0	100.0	100.0	100.0
Chi-square tests					
		Value	**df**	**Asymptotic significance (two-sided)**	
Pearson's chi-square		29.633[a]	6	< 0.001	
Likelihood ratio		27.826	6	< 0.001	
Symmetric measures					
		Value		**Approximate significance**	
	Phi	0.182		< 0.001	
	Cramer's V	0.129		< 0.001	
Number of valid observations		896			

[a] 8.3% cells (1) have an expected number of less than 5; the minimum expected number is 4.83.

Table 9. Participation of entrepreneurs in the process of creating strategic documents (%)

Answer variant	Total	Urban commune	Urban-rural commune	Rural commune	City with county rights
Yes	52.3	61.9	53.6	47.6	68.4
No	25.7	21.9	21.3	30.2	5.3
I don't know	22.0	16.1	25.1	22.2	26.3
Total	100.0	100.0	100.0	100.0	100.0
Chi-square tests					
		Value	**df**	**Asymptotic significance (two-sided)**	
Pearson's chi-square		23.108[a]	6	0.001	
Likelihood ratio		25.973	6	< 0.001	
Symmetric measures					
		Value		**Approximate significance**	
	Phi	0.161		0.001	
	Cramer's V	0.114		0.001	
Number of valid observations		896			

[a] 0.0% cells (0) have an expected number of less than 5; the minimum expected number is 8.35.

the commune and the participation of entrepreneurs from the commune in the process of creating strategic documents. This fact indicates that the decision to invite entrepreneurs to participate in this type of activity is not dictated by factors such as the commune category. It is the result of individual policies of public authorities at the local government level and the conviction about the mutual benefits of such cooperation.

Within the communes, there can also be various types of institutions supporting the creation and development of enterprises (see table 10). They may arise automatically as a manifestation of the activity of the citizens living in the commune, but the commune itself may also participate in the process of their creation. This was the next question asked to the respondents and assessed in the present article. Based on the analysis, it can be concluded that communes participate most

Table 10. Participation of the commune in the appointment of business support institutions (%)

Answer variant	Total	Urban commune	Urban-rural commune	Rural commune	City with county rights
Credit guarantee fund	4.0	9.0	3.4	1.4	21.1
Business incubator	7.4	14.8	5.3	2.6	50.0
Investor service center	8.4	19.4	6.3	2.0	57.9
Local development agency	6.7	14.8	5.8	2.0	39.5
Loan fund	3.5	6.5	2.9	1.4	21.1
Entrepreneurship support center	7.6	19.4	5.3	1.8	47.4
Industrial park	5.2	9.0	6.3	1.0	39.5
Technological park	4.8	11.0	2.9	1.0	39.5
Business information center	5.1	11.6	2.4	0.8	50.0
Association or foundation supporting entrepreneurs	13.8	23.2	10.6	10.7	34.2

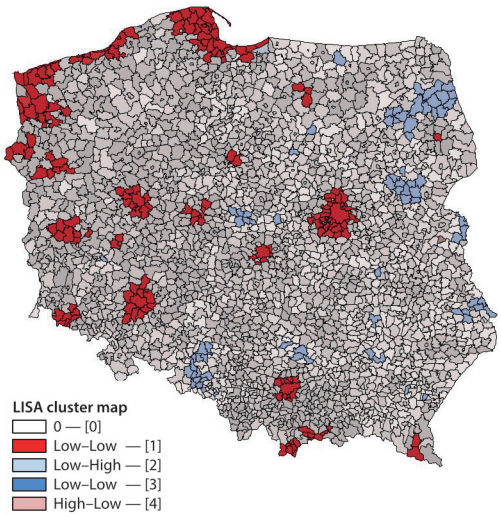
actively in establishing associations or foundations supporting entrepreneurs, investor service centers and entrepreneurship support centers. Relatively more often, their creation was supported in cities with county rights and urban communes.

3.2 Spatial patterns in the policy of supporting entrepreneurship

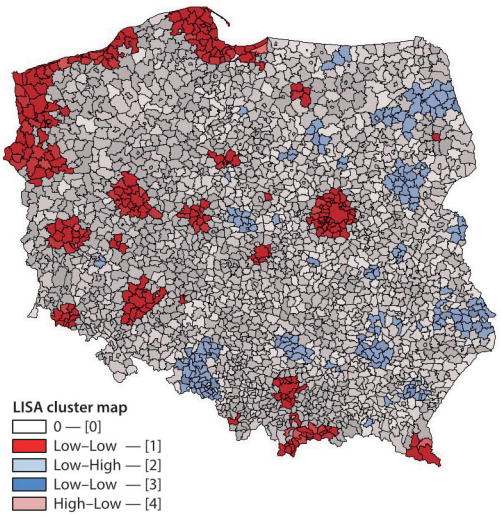
In the next stage of the research, a spatial analysis was performed, based on global Moran's I statistics and local Moran's *I* statistics (Moran 1948), as well as local Getis and Ord *Gi* and *Gi** statistics (Ord and Getis 1995). While global Moran's *I* statistics determines global spatial autocorrelation, local Moran's I statistics determines local spatial autocorrelation. It also describes the similarity of a spatial unit to its neighbors and examines the statistical significance of this relationship using the LISA (Local Indicators of Spatial Association) analysis. Local Getis and Ord *Gi* statistics makes it possible to detect the local concentration of high and low values in neighboring objects and examines the statistical significance of this relationship. Local Getis and Ord *Gi** statistics is a twin statistic to *Gi*. It is distinguished by the fact that the object for which the test is performed also takes part in the analysis. In the matrix of weights, therefore, a neighborhood with itself is defined for it, the so-called eigenvalue (i.e., the values on the diagonal are greater than 0).

Based on global and local Moran's I statistics as well as local Getis and Ord *Gi* and *Gi** statistics, a map of clusters of communes with a similar level of the entrepreneurship index was developed. The analysis examined whether the higher rate of entrepreneurship among the communes depends on their geographical location. An analysis based on global Moran's *I* statistics showed the existence of a positive spatial autocorrelation in terms of the entrepreneurship index among the communes. The communes located close to each other form clusters characterized by a similar level of entrepreneurship (see Appendix: table A1, figure A1). The communes where many new companies were registered in the audited year are located in close proximity to communes with a high level of entrepreneurship. High entrepreneurship clusters are formed around large cities and areas characterized by historically specific specializations or located close to the western borders of Poland. Positive spatial autocorrelation also occurs in communes with low entrepreneurship. The communes geographically distant from the leading communes in terms of the entrepreneurship index form clusters of communes with a low level of entrepreneurship.

Based on local Moran's *I* statistics, respectively with unsmoothed (see map 3 on next page, and Appendix: table A2, figure A2) and smoothed variable (see map 4, and Appendix: table A3, figure A3) illustrating entrepreneurship, as well as local Getis and Ord *Gi* statistics (see map 5, and Appendix: table A4) and *Gi** statistics (see map 6, and Appendix: table A5), clusters of communes with a high and low level of entrepreneurship were identified.



Map 3. Local Moran *I* statistics for new firm registrations in 2019 per capita for unsmoothed variable

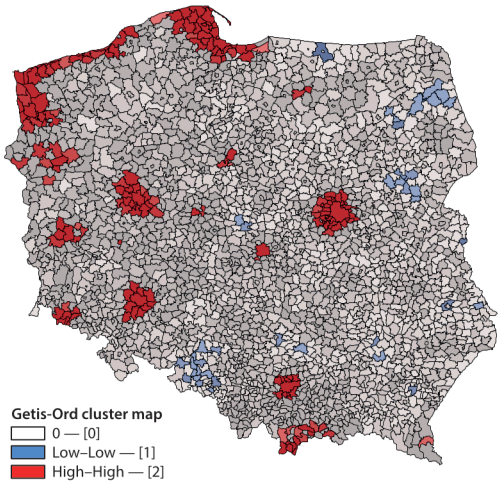


Map 4. Local Moran *I* statistics for new firm registrations in 2019 per capita for smoothed variable

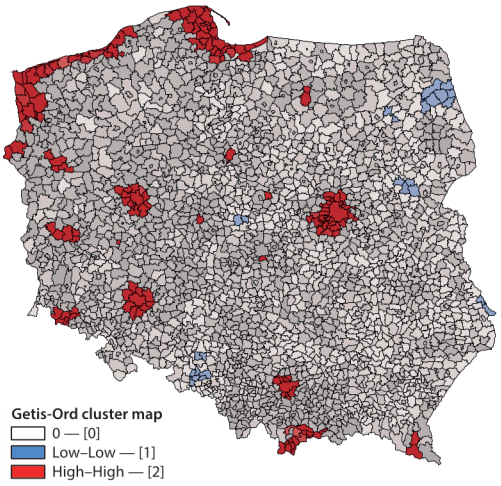
The combination of information from figures A2 and A3, and the significance of local Moran's *I* statistics presents spatial regimes (see maps 4 and 5). These include High-High (statistically significant high-valued objects surrounded by high-valued objects) and Low-Low (statistically significant low-valued objects surrounded by other low-valued objects). Local Moran's *I* statistics (with one exception) showed neither statistically significant Low-High objects (i.e., low-value objects surrounded by high-value objects) nor High-Low objects (i.e., high-value objects surrounded by other low-value objects).

Next, the local Getis and Ord *Gi* and *Gi** statistics were analyzed, enabling the identification of the local concentration of high and low values in neighboring objects. Maps 5 and 6 show both spatial regimes (i.e., High-High and Low-Low), confirming the findings from local Moran's *I* statistics.

The study made it possible to locate high entrepreneurship clusters and clusters of low entrepreneurship communes. The conducted spatial analysis proved the existence of a positive autocorrelation in terms of the entrepreneurship index among Polish communes. The communes that are characterized by higher entrepreneurship (i.e., large cities / agglomerations such as Warszawa, Kraków, Poznań, as well as communes neighboring with Germany) form clusters of high entrepreneurship (High-High combinations). The communes that stand out in terms of the value



Map 5. Getis and Ord *Gi* local statistics for new firm registrations in 2019 per capita unsmoothed variable



Map 6. Getis and Ord *Gi** local statistics for new firm registrations in 2019 per capita for smoothed variable

of the entrepreneurship index form clusters characterized by lower entrepreneurship (Low-Low combinations). The research showed that in the cross-section of Polish communes (within the identified clusters), the effect of "spilling" of entrepreneurship is visible (which should be considered positive). At the same time, however, the maps of the clusters indicate the existence of disproportions between Eastern and Western Poland in terms of the level of entrepreneurship. Most of the high entrepreneurship clusters are located in the more developed, western part of the country. Eastern Poland is dominated by clusters of communes with low entrepreneurship.

High entrepreneurship clusters in Poland follow an interesting key. They are located in attractive tourist areas, close to the border with Germany and in the immediate vicinity of large cities. The first group consists of communes located in the immediate vicinity of the Baltic Sea (the northern part of the country), close to the Tatry Mountains, as well as the Bieszczady Mountains and the Solińskie Lake (located in the south-eastern part of Poland). The positive impact on the level of entrepreneurship of the border with Germany is particularly visible in the north-western part of the country. In turn, large cities affecting the neighboring communes are mainly Bydgoszcz and Rzeszów (16 instruments), Warsaw, Gdańsk and Łódź (15 instruments), Gdynia, Zielona Góra, Wrocław, Poznań, Kraków (14 instruments), Gorzów Wielkopolski (13 instruments), as well as Szczecin and Jelenia Góra (9 instruments).

Clusters with a low level of entrepreneurship are formed by the communes located in the vicinity of Opole, in the southern part of the Lubelskie Voivodship and in the northern part of the Podlaskie Voivodship. The results of the research indicated that among the surveyed communes, the average number of instruments supporting entrepreneurship was 5.75 (out of 21 available). Among the examined communes from the Opolskie Voivodship, the average number of instruments used was 5.72, and among the communes from the Lubelskie Voivodship it was 5.47. The communes from the Podlaskie Voivodship used the lowest number of non-financial instruments among all the voivodships (on average, only 4.27). The results indicate that in these voivodships the number of instruments used was below the average for the nationwide sample, which may justify the formation of low entrepreneurship clusters in these voivodships.

Conclusion

It is challenging to find research dedicated only to non-financial entrepreneurship support instruments in economic literature. Most often, the authors focus on financial instruments, analyzing non-financial ones only in isolated cases.

In the literature, the importance of strategic and planning documents is highlighted as a determinant of the investment attractiveness of Polish communes. The authors pay attention to the strategic approach, according to which a commune should have a development vision based on the specific potential of the territorial unit.[2] The results of the research presented in this study indicate that the majority (almost 82%) of communes in Poland have a zoning plan that informs potential investors about the allocation of specific lands and about current and future land use. It is particularly important to have such a document in the case of more urbanized communes, which is confirmed by the results of the research, since all cities with county rights and 89% of communes have this type of plan. Some others point out the significance of information instruments as a very important group of tools related to the development of entrepreneurship. In the functioning of local structures, economic information is intended for entrepreneurs and investors, thus becoming an important element in the development of local government systems.

The results of the research presented in this article indicate that most often when implementing information policy, the local authorities use the communal websites, brochures available at the office,

2. See: "Instytucje otoczenia biznesu działające na rzecz rozwoju przedsiębiorczości na obszarach wiejskich — diagnoza, kierunki, rekomendacje" [Business environment institutions working for the development of entrepreneurship in rural areas — diagnosis, directions, recommendations]. Evaluation by Paweł Chmieliński, Marcin Gospodarowicz, Adam Wasilewski, and Marian Oliński, Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej, Państwowy Instytut Badawczy, Warszawa, 2015, available at https://www.gov.pl/attachment/ba4ee776-f335-43ec-8043-e6dd3b6dbe7a.

announcements in the media, meetings with stakeholders, as well as meetings and information trainings. Such trainings are organized by approximately 30% of the communes surveyed.

The importance of business environment institutions in shaping entrepreneurship is also underlined in the literature on the subject. Such institutions support the development of entrepreneurship in a general sense. In addition, they organize promotions and trainings for small and medium enterprises, paying attention to the special role of technology transfer centers, industrial and technology parks, business support centers, training and consulting facilities—e.g., business clubs, as well as chambers of commerce (Mempel-Śnieżyk 2014). The research presented by the authors of the article also indicates the role of economic organizations operating in the communes. The most important ones are associations or foundations supporting entrepreneurs, fraternities of various crafts, regional or local development agencies, and employers' organizations which operated in the largest percentage of the communes surveyed. Communes are aware of the importance of the existence of these institutions and they relatively often participate in their establishment. LGUs most often participate in establishing associations and foundations supporting entrepreneurship, investor service centers, entrepreneurship support centers and business incubators.

Research published in 2015 shows that among the participants in workshops and public consultations on development strategies, the percentage of entrepreneurs does not exceed 5%–10%.[3] It may suggest that cooperation between the local governments and entrepreneurs is very low. However, the research results presented in this study show that in more than half of all the communes, entrepreneurs participated in the process of creating strategic documents. Comparison of both studies proves that entrepreneurs' involvement in the process of preparing local strategic documents is increasing (which is highly desirable). Analyzing this fact from the perspective of a type of commune shows that entrepreneurs in cities with county rights and urban communes are particularly active.

In addition to the topics discussed above, the present study also raised several other very important issues related to increasing the level of entrepreneurship. The first was obtaining information on the location of service points for entrepreneurs offering legal, financial and accounting advice etc. Such points can significantly influence the commune residents' decisions to establish and run a business. As research shows, the financial awareness of Poles is at a relatively low level and every citizen encounters the complexities of the legal provisions of conducting business several times. These circumstances discourage the residents of communes from taking the risk of conducting business. The location of service points for entrepreneurs offering legal, financial and accounting advice can significantly reduce the fears of future entrepreneurs and thus increase the level of entrepreneurship in the communes. The results indicate that every third surveyed commune has points of this type in its territory. In the case of cities with county rights the percentage having such points was almost three quarters.

The provision of municipal services by private companies increases competition and thus enforces pro-efficiency measures. The research results have clearly shown that the vast majority of the communes (almost 58%) promote such a solution in their area. The situation of the surveyed communes looks slightly worse if the implementation of investments in the form of public-private partnership is taken into account. Urban communes are particularly active in this matter—over 45% of the local government units indicated the use of such solutions.

The research results show that the location of the communes that use the biggest number of non-financial instruments for entrepreneurship support coincides with the location of high entrepreneurship clusters. The largest cities are in the lead here, as they use the largest number of such instruments. This may determine the effectiveness of public policies aimed at supporting the formation of new firms in their area (as opposed to commonly used and widely criticized financial instruments). Moreover, through spill-overs, positive effects are transferred to the neighboring communes, creating high entrepreneurship clusters.

However, less clear-cut conclusions can be drawn in the case of low-entrepreneurship clusters. On the one hand, the communes located on the eastern wall use few non-financial instruments supporting entrepreneurship, which may go hand in hand with the low dynamics of new registrations and

3. See: "Instytucje otoczenia biznesu…," op. cit.

explain the emergence of low entrepreneurship clusters. On the other hand, there are exceptions to this rule. There are many communes in the Opolskie Voivodship that use a relatively large number of instruments supporting entrepreneurship, and yet the level of new registrations per capita in 2019 was very low there. This means that the mere fact of using instruments to support entrepreneurship does not constitute a sufficient stimulus for new registrations, and the creation of clusters of low and high entrepreneurship turns out to be also due to other factors.

The first of such factors is historical. Poland was divided into three quarters of influence (Austria, Germany and Russia), some of which, especially the one lying west of the Vistula River, then under German influence, developed much faster than others. In these areas, traditions of entrepreneurship were born and grew into the social fabric. Despite the passage of time and launching programs, allocating public funds and implementing strategies to compensate for development disproportions, it was not possible to eliminate the differences in the dynamics of economic development, and lower dynamics of entrepreneurship are dominant in the eastern part of the country (historically subject to Russian influence).

Not without significance for the dynamics of creating new firms are large and thriving urban centers, constituting the axis around which, due to good infrastructure and facilities for entrepreneurship, as well as staff, business partners and more academic centers (compared to peripheral and provincial locations), firms are established. Clusters of high entrepreneurship are also created in tourist communes, in which operating entities and emerging companies concentrate around the HoReCa industry. This applies to both coastal municipalities and those located in the mountains. Another factor contributing to the development of entrepreneurship is trade exchange. Due to the fact that Germany is the most important partner in trade, many new firms are created in border communes, regardless of the spectrum of support instruments used.

On the basis of the research carried out, several conclusions are drawn. The use of non-financial instruments supporting entrepreneurship strengthens the effects achieved by the communes due to the endogenous factors describing them (i.e., the location rent, the historically higher level of development, or the infrastructure potential appropriate for cities). Although these instruments cannot be a substitute for the above-mentioned factors determining the formation of new firms, it does not mean that their use is not justified. On the contrary, involvement in non-financial forms of entrepreneurship support is justified by the facts quoted above. However, it is important to be aware that the effects achieved through them are not as important as in the case of communes with other values for business than just pro-entrepreneurial public policies.

Appendix

Table A1. Global Moran I statistics for new firm registrations in 2019 per capita (entrepreneurship)

Significance level	0.05000
Matrix of spatial weights	Queen—immediate neighborhood
Number of objects	2,477
Moran's I	**0.500774**
Expected I	−0.000403
Under the assumption of normality	
Variance I	0.000155
z statistics	40.243825
p value	< 0.000001
Under the assumption of randomness	
Variance I	0.000154
z Statistics	40.327161
p value	< 0.000001

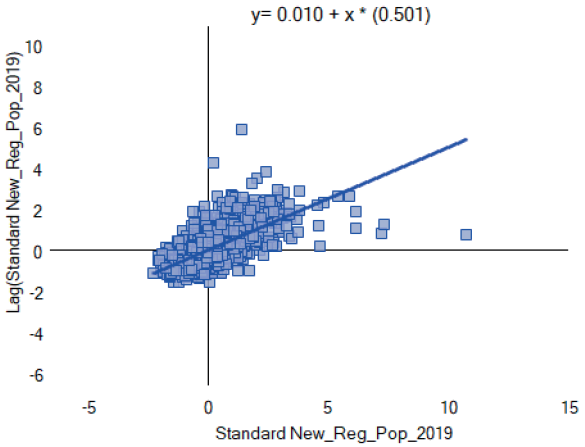


Figure A1. Scatterplot of Global Moran I statistics

Table A2. Local Moran I statistics for new firm registrations in 2019 per capita (entrepreneurship)—unsmoothed variable

Significance level	0.050000
Improved significance level (Bonferroni)	0.008784
Average number of neighbors	5.692370
Matrix of spatial weights	Queen—immediate neighborhood
Number of objects	2,477
Average Ii	0.500572
Standard deviation Ii	1.163341
Number (High-High 1)	192
Number (Low-Low 3)	76
Number (Low-High 2)	1
Number (High-Low 4)	1

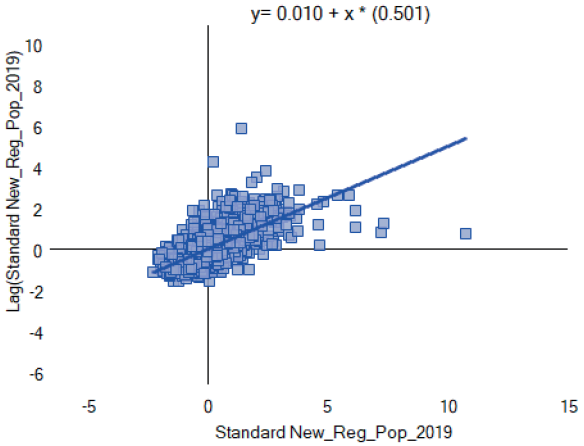


Figure A2. Scatterplot of Local Moran I statistics (unsmoothed variable)

Table A3. Local Moran I statistics for new firm registrations in 2019 per capita (entrepreneurship)—smoothed variable

Significance level	0.050000
Improved significance level (Bonferroni)	0.008784
Average number of neighbors	5.692370
Matrix of spatial weights	Queen—immediate neighborhood
Number of objects	2,477
Variable smoothing	Locally weighted average
Average Ii	0.788481
Standard deviation Ii	1.622106
Number (High-High 1)	269
Number (Low-Low 3)	185
Number (Low-High 2)	0
Number (High-Low 4)	0

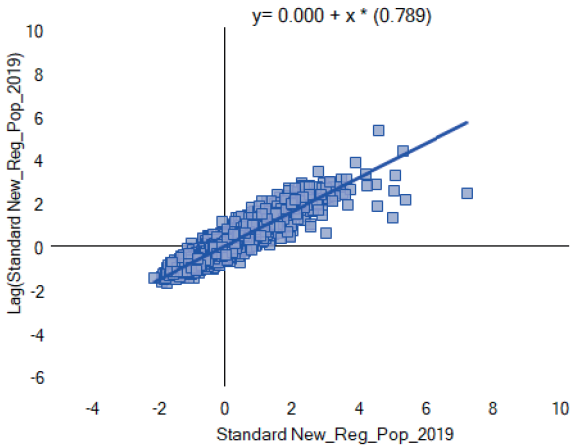


Figure A3. Scatterplot of Local Moran I statistics (smoothed variable)

Table A4. Getis and Ord *Gi* local statistics for new firm registrations in 2019 per capita (entrepreneurship) — unsmoothed variable

Significance level	0.050000
Improved significance level (Bonferroni)	0.008784
Average number of neighbors	5.692370
Matrix of spatial weights	Queen — immediate neighborhood
Number of objects	2,477
Average *Gi*	0.000405
Standard deviation *Gi*	0.000100
Number (Low-Low 1)	40
Number (High-High 2)	186

Table A5. Getis and Ord *Gi** local statistics for new firm registrations in 2019 per capita (entrepreneurship) — smoothed variable

Significance level	0.050000
Improved significance level (Bonferroni)	0.008784
Average number of neighbors	5.692370
Matrix of spatial weights	Queen — immediate neighborhood
Number of objects	2,477
Variable smoothing	Locally weighted average
Value of own potential	1
Average *Gi**	0.000807
Standard deviation *Gi**	0.000196
Number (Low-Low 1)	25
Number (High-High 2)	168

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