European Research Studies Journal
Volume XXVIII, Issue 1, 2025

pp. 265-287

Investment Attractiveness of Small Towns in Poland - Assessment of Available Labor Resources

Submitted 22/12/24, 1st revision 04/01/25, 2nd revision 20/01/25, accepted 15/02/25

Karolina Józefowicz[1]

Abstract:

Purpose: *The study aims to determine the level of investment attractiveness of small towns in Poland in terms of labour resources.*
Design/Methodology/Approach: *The study spanned over period 2017-2019, and relied on the Hellwig method which allowed to structure a synthetic metric for small towns and order them linearly. The research covered 705 small towns in Poland. Quantitative data retrieved from the Local Data Bank of the Central Statistical Office was used in structuring the metric.*
Findings: *It was proved that from the perspective of investors small towns in Poland are diverse areas in terms of labour resources and the size of small urban centres has no influence on their attractiveness. Spatial analysis conducted as part of the research showed, i.a., that the most attractive labour resources were found in small towns in the central part of the country (the Wielkopolskie and Mazowieckie voivodships).*
Practical Implications: *The above studies may provide some guidance for local governments and public aid managers in Poland. This allows to draw an important conclusion on future measures to be taken in small towns. If they are supposed to fully perform their key functions, a dedicated development policy for the smallest Polish towns must be put in place. This is of particular importance in view of the situation of small towns in Eastern Poland and of small towns located far away from large cities.*
Originality/Value: *The results of the analysis and theoretical considerations in the article complement previous research in the field of small towns.*

Keywords: *Small towns, investment attractiveness, labour market, Hellwig method.*

JEL codes: *O18, R12.*

Paper type: *Research article.*

Acknowledgement: *This work was supported by the Poznań University of Life Sciences under the research program "First grant" No. 8/2023.*
The publication was financed by the Polish Minister of Science and Higher Education as part of the Strategy of the Poznan University of Life Sciences for 2024-2026 in the field of improving scientific research and development work in priority research areas.

[1]*PhD., Faculty of Economics, Poznań University of Life Sciences, Poland,*
e-mail: karolina.jozefowicz@up.poznan.pl;

1. Introduction

The growing importance of towns is one of the processes that characterise the modern world (Polése, 2005; Śleszyński *et al.,* 2017; Lewandowska *et al.,* 2020). Towns are considered to be major forces of socio-economic development, providing opportunities to conduct economic activity on a global scale (Hamdouch, Demazière and Banovac, 2017). The broad spectrum of opportunities and increased demand for investment in towns has made them attractive to investors (Correia *et al.,* 2020). In turn, according to Sinkienė and Kromalcas (2010), growing competition due to the changing urban hierarchy has led to the emergence of a new approach ("town-entrepreneur").

According to Wagner and Growe (2021), in recent years there has been increased interest in research and publishing activities concerning small towns. However, their achievements are insufficient and small urban centres are still overshadowed by large cities and metropolises, they are underestimated and marginalised (Servillo *et al.,* 2017; Kaufmann and Meili, 2019; Filipović *et al.,* 2016) (in the article, small towns are considered to be towns with a population of max. 20,000 inhabitants).

Small towns have formed the backbone of Polish settlement since the Middle Ages (Szymańska and Grzelak-Kostulska, 2005). The period after World War II was the time of stagnation or regression of development of small urban centres (known as Small Town Crisis), which consequences are still easily identifiable. Thanks to the political transformation in the 1990s, opportunities for the development of small towns were created in Poland (transition to a free market economy, socio-economic transformations, increased interest in urban functions) (Szymańska and Grzelak-Kostulska, 2005; Konecka-Szydłowska and Maćkowiak, 2016).

However, many unfavourable changes were also constantly noticed in the development of small towns. The ongoing deterioration or stagnation of infrastructure in small urban centres was associated with the decline in the population, limited access to social infrastructure, business migration, unemployment and other negative phenomena (Sztando, 2020).

The related changes in the functioning of small towns, which have been observed since the middle of the 20th century, were the subject of interest of many scientists in Poland (e.g., Szymańska and Grzelak-Kostulska, 2005; Korcelli-Olejniczak, 2020; Heffner and Solga, 2006).

Economic activity is an important factor with regard to the development of small towns (Domański *et al.,* 2009). According to Nurseiytova and Assanova (2020), the activation of the investment process is a decisive factor of development that leads to an increase in the investment attractiveness of small towns and results in the development effect through the creation of an economic base which, in turn, contributes to the improvement of the socio-economic condition of small urban

centres. Therefore, investment attractiveness determines the development of towns (Mamonov *et al.*, 2019).

2. Literature Review

2.1 Investment Attractiveness of an Area - A Review of Academic Literature

Territorial attractiveness is an important element in terms of the restructuring of the economic structure (Gdairia and Sellaouti, 2017; Azouaoui and Lahlou, 2021) and regional or local development (Obolenskaya and Simonova, 2021; Servillo *et al.*, 2012). It is extensively used by policy-makers and researchers (Bruneckienė *et al.*, 2016; Brahim, 2020), which can be justified by the accelerated mobility and movement of resources, people and capital (Mainet and Edouard, 2017). The concept of investment attractiveness is related to meeting the expectations of investors in the sphere of locational advantages.

Tabel 1. *Investment attractiveness of an area*

Author	*Definition*	*Area of research*
in Polish literature on the subject		
Zarębski (2012), p. 170	includes several factors relevant from the point of view of planned investments and economic activities	*Investment attractiveness of a territory*
Sikorska-Wolak et al. (2020), p. 174	a set of advantages of a given location (country, region) over others, as some areas are characterised by relatively more favourable conditions for investment activities than others	
Barej (2011), p. 8	the ability to induce investment by offering a combination of location benefits that are achievable in the course of conducting business activities	*Investment attractiveness of towns*
Burzynska et al. (2019), p. 172	a set of factors that make an area stand out from others and offer more business benefits to potential investors than other regions	
Raczyk et al. (2010), p. 6	the ability to attract an investor by offering a combination of location benefits that are achievable in the course of conducting business activities	
in international literature on the subject		
Skupskyi (2018), p. 308	an integral indicator which is calculated with the use of a certain range of criteria (formal and informal ones), parameters and characteristic features of a regional socio-economic system which define the expediency of investing the capital in an investment object, to satisfy investor's financial, productive, organisational and other needs or interests to a relevant extent	*Investment attractiveness of a territory*
Harroussi, Chakor (2019), p.	the ability of a geographical area to attract people and skills and to have firms set up while offering	

45	those actors optimal conditions for locating themselves in that geographical space	
Brahim (2020)	the ability of a territory to meet the needs and demands of investors in a better way than other territories competing to attract a given project	
Rolik (2013), p. 563	a set of features allowing a potential investor to assess to what extent a particular investment object is more attractive than others, intending to invest the available funds	
Krupka, Bachinskiy (2014), p. 120	an aggregate of objective and subjective terms, external and internal factors which promote or hinder the process of investing of facilities in the economy of the country on macro-, meso-, and microlevels	
Windhyastiti et al. (2021), p. 162	a type of lure that is targeted at attracting a businessman to a special location	*Investment attractiveness of towns*
Emelianovich et al. (2018), p. 4	a set of processes and factors that determine the investment behaviour of investment entities	
Khrulkov et al. (2020), p. 95	a total score (summarised score) consisting of factors selected for the analysis of the studied objects, affecting the final decision of the investor (group of investors) with regards to investing in the specific project	

Source: *The author's elaboration based on cited literature.*

Based on the conducted review of academic literature (Table 1), it can be concluded that investment attractiveness reflects a set of characteristics of an area that represent its socio-economic system. On the one hand, there is no uniform definition of investment attractiveness.

On the other hand, based on the cited academic literature, Table 1, it can be concluded that there is a certain conceptual uniformity that relates to the focus on the main groups of factors having an impact on investment attractiveness of a territory.

While according to the general definition investment attractiveness is recognised as several factors important from the point of view of potential investments and conducting business activities (Raszkowski, 2013), looking at the term in view of the listed factors indicates that many elements influence the assessment of a location on the part of potential investors, which are not related directly to economic activities, such as culture or social infrastructure.

Investment attractiveness has been the subject of numerous analyses of both quantitative and qualitative nature, in the context of:

- voivodships, region/regions, e.g., Borowicz *et al.* (2016), Emelianovich, Kulyagina, and Kolozhvari (2018), Kharlamova (2014), Godlewska-Majkowska *et al.* (2014), Simkiv and Krupin (2016), Moskovkin *et al.* (2020),

- municipalities, e.g., Lizinska *et al.* (2011), Świdyńska and De Jesus (2020),
- cities (the largest ones), e.g., Kozera (2021), Dziemianowicz (2005), Świdyńska (2018),
- rural areas, e.g., Godlewska-Majkowska (2012), Kozera *et al.* (2021), Kozera-Kowalska and Uglis (2020), Yatsenko (2016), Zarębski (2012).

Although there have been many scientific studies aimed at assessment of investment attractiveness, there is no comprehensive analysis of the discussed phenomenon in the contemporary literature (Snieska and Zykiene, 2015). The above does not change the fact that the attractiveness of a location, depending on the assumed entity, is an important issue from the point of view of development and generating growth.

Vaishar *et al.* (2015) claimed that small towns are not miniature representations of big cities, but they are important centres for the local and supra-local environment in the spheres related to the labour market, social infrastructure, services or social interactions when perceived from the point of view of rural areas, in which they are located. From that perspective, it should be stated that their importance is clear.

Small urban centres, referred to as "rural growth centres" or "local development centres", are key centres in the context of changes occurring in the local environment. Those small towns, with their economic and social conditions, have an impact on the surrounding environment, while they are also to some extent responsible for the phenomena that take place in the immediate surroundings.

The above concerns, i.a., migration of their population (of working age) to larger cities due to the limitations of the labour market in rural areas and small towns, which in the long run is the reason for the observed process of depopulation and ageing of the society (e.g., in Poland).

Therefore, investment attractiveness of small towns is an extremely interesting and important issue. Small urban centres, being attractive locations for investors, in turn become attractive towns for their inhabitants and the surrounding areas with opportunities offered in the labour market.

At the same time, small towns that are attractive for investors are places characterised with a good level of development in the general context, because by attracting investments they in turn show that they guarantee satisfactory technical infrastructure, institutional and financial capital or a favourable geographical location.

2.2 Factors that Affect Investment Attractiveness of Towns

The attractiveness of a territory is associated with the ability to attract different types of resources and entities. In each case, the criteria for the assessment of attractiveness are related to the offer of various factors.

Table 2. *Factors of city investment attractiveness*

Author	Factors that affect investment attractiveness of a territory
Factors that affect investment attractiveness of an area	
Yurzina, Shalanov, Kosinskiy (2020), p. 4	economic standing, state of the social sphere, environment costs
Factors that affect investment attractiveness of regions	
Harroussi, Chakor (2019), p. 50	economic dimension, socio-cultural dimension, political dimension
Mustafakulov (2017), p. 443	natural-geographic capacity, labour capacity, production capacity, innovative capacity, institutional capacity, infrastructure capacity, financial capacity, consumption capacity, touristic capacity
Rashkowski (2013), p. 119-120	economic, socio-cultural, political and administration quality, technological and innovative, natural image
Factors that affect investment attractiveness of towns	
Snieska and Zykiene (2015), p. 50	static factors: geographical location, natural resources; variable factors: quality of the living environment, physical infrastructure, demographics, employment, profitability of the business sector, availability of educational infrastructure, sense of community, availability of social and health services
Mamonov et al. (2019)	functional and spatial factors, territorial, technical and regional progress, ecology, historical and cultural significance
Sinkienė, Kromalcas (2010), p. 151	accessibility, affordable land prices, local taxes and legal requirements, sufficient quantity and quality of labour force supply, market size, city status, living environment and quality of public services
Braun (2008), p. 56	location, built environment, labour force, existing and new customers, suppliers, finance, partners
Van den Berg et al. (2006), p. 487	availability of space, land prices, tax rates and other legal regulations, the quality and quantity of the labour supply, the presence of other establishments (suppliers and customers), the market demand, the status of a location, the quality of the living environment and the presence and quality of services in the close vicinity
Factors that affect investment attractiveness of rural areas	
Chemerys, Krupin (2015), p. 630	natural and resource potential, spatial and geographic location
Factors that affect investment attractiveness of municipalities	
Swidynska, De Jesus (2020), Godlewska-Majkowska (2018)	labour resources, technical infrastructure, social infrastructure, administration, market

Source: *The author's elaboration based on cited literature.*

In the scientific literature the authors identify numerous elements that are considered attractive to investors. Regardless of the research being focused on a given area, similar groups of factors that determine investment attractiveness are presented. The above is due to the fact that the indicated factors make it possible to design a model to assess the level of investment attractiveness of a given territorial unit.

That model should facilitate incorporation of characterstics that are typical depending on the type of research, reflecting specific conditions that contribute to the attractiveness of the area. The lack of a universal list of factors that influence investment attractiveness of regions, towns or rural areas, as rightly pointed out by Raszkowski (2013) or Braun (2010), results from the fact that the identified factors depend on the type of investor and conducted business activity.

Based on the above-mentioned factors listed by numerous scientists, it can be concluded that the condition of the factors should be both stable and flexible in the long run. Stability of factors is related to achieving and maintaining a certain level of development, while flexibility refers to the ability to adapt to changes within the framework of existing demand. As the difference in the level of investment attractiveness of regions, towns or rural areas results from the unevenness of their socio-economic development (Skupskyi *et al.*, 2018), the flexible nature of factors constitutes an additional element that differentiates those areas.

The factors that determine investment attractiveness of towns are groups of benefits gained in the course of conducting business activity. According to Mroczek et al. (2019), along with globalisation that took place in the 1980s, there were changes in the identification of location factors and investment attractiveness. A decline in the importance of cost factors was noticed (e.g., transport costs, taxes) in favour of human capital factors (e.g., creativity, knowledge), rich resources of which are accumulated in large urban centres (Krugman, 1995). The conducted meta-analysis (Table 2) of the factors contributing to investment attractiveness of an area proved their evaluation.

2.3 Labour Resources as an Element Determining Investment Attractiveness of Small Towns

Attracting investment to towns is one of the basic aspects in the development of towns in Poland. The above is often compared to the ability to attract new residents, which is also considered to be a factor contributing to the development of urban areas. There is a correlation between the two aforementioned elements. While choosing the location of their investments, investors, who consider a large group of factors, also take into account available labour resources. In turn, economic activity located within a given town is one of the factors that attract potential residents.

Labour resources constitute an important endogenous potential. The observed demographic changes (e.g., dropping fertility rates, migration of the working-age

population) contribute to the transformation of labour resources. Since the 1990s an increase in the number of small towns has been observed in Poland, which among other things results from the processes of disintegration of large centres or a well-developed settlement network (Konecka-Szydłowska, 2012).

Therefore, it could be assumed that the above-mentioned changes could bring economic benefits for small urban centres. In reality, however, the potential of small towns in that sphere is incomparable to the potential of medium-sized and large cities.

However, in terms of the size of small towns and their spatial distribution (small towns constitute 75% of towns in Poland), their significance in the context of local, regional or even national development is particularly important. Therefore, small towns are centres of great significance, i.a., from the local perspective.

Hence, labour resources in small towns are both an interesting and important category, both for research and the development of that type of urban centres. It is recognised that the future of small towns is determined among other things by the competitiveness of served economic functions. The performance of those functions is possible thanks to the existing labour resources.

Therefore, a fundamental research question was proposed: What is the level of investment attractiveness of labour resources in small towns in Poland? The aim of this paper is to assess the level of investment attractiveness of labour resources of small towns.

3. Methodology, Material and Methods

The purpose of this study was to determine the level of investment attractiveness of small towns in Poland in terms of labour resources.

In pursuit of the primary objective, various research tasks were formulated:

- *to assess the relationship between the size of a small town and the level of investment attractiveness of labor resources,*
- *there was spatial variation in the level of investment attractiveness of labour resources in small towns.*

The main disadvantage restricting potential quantitative research in the context of socio-economic phenomena taking place in small towns is the limited set of diagnostic variables found in national statistical databases.

Consequently, the selection of features facilitating assessment of investment attractiveness of small towns is a complicated operation and the results of the research are of a limited scope.

The assessment of investment attractiveness consists in the use of different sets of indicators determined by the authors mentioned in the previous sections of the article. In their research, the scientists distinguished various areas, or microenvironments of investment attractiveness, within which they selected variables for its assessment and evaluation with regards to selected territorial units.

The review of the scientific literature indicated that the individual groups of factors found in the models proposed by many authors constitute elements that are accumulated at the measurement stage and, as a result, the outcomes of the study related to investment attractiveness of the assessed area are obtained in general terms.

Therefore, in this study it was decided to focus on one of the segments that influence investment attractiveness of small urban centres, namely labour resources.

The main justification for that approach is the availability of data in the database of Statistics Poland, being the main source of data used for quantitative research in Poland.

Labour resources are an essential component of investment attractiveness that requires an individual approach. Labour resources are generally assessed in the context of employed and unemployed persons. The potential of labour resources is significantly influenced by demographic processes, both in the medium and long term. Hence, the use of that characteristic in the conducted study is justified.

The research area comprised Polish small towns with municipal rights in the analysed period, i.e. 705 small urban centres (in the administrative system, 115 small towns constitute an urban municipality, while the other towns are urban-rural municipalities). Small towns are defined as urban centres, when their population is below 20,000 inhabitants.

The conducted analysis was static in nature, the time range covered the period from 2017 to 2019, which was averaged for the purpose of this study. Due to the indirect and direct economic shocks that Poland has experienced since 2020 (COVID-19), the study period was limited to 2019. Investment attractiveness of small urban centres in terms of available labour resources was evaluated using Hellwig's synthetic indicator of development.

The indicator enables the assessment of socio-economic phenomena and the ordering of objects under study. The values of Hellwig's synthetic indicator generally range from 0 to 1. From the point of view of the phenomenon under study, the highest possible values are an advantageous situation, as they prove investment attractiveness of small towns in terms of their labour resources.

The stages in the construction of a synthetic characteristic with the use of Hellwig's method are as follows:

Stage 1: Selection of simple characteristics

Variables in Table 3 were selected to conduct the analysis. The choice of variables was based on the substantive premises and statistics. Since the set of diagnostic features may have contained variables that duplicated information, their statistical verification was performed. The above was done with the use of the coefficient of variation and Pearson's linear correlation.

Table 3. *Diagnostic characteristics used to create Hellwig's synthetic indicator of investment attractiveness*

No.	Diagnostic characteristic	Nature of the variable	Coefficient of variation (%)
x1	Total migration balance per 1000 inhabitants	S	163.35
x2	Share of pre-working age population in total population (%)	S	11.63
x3	Population of non-working age per 100 persons of working age	D	7.87
x4	Number of employed persons per 100 persons of working age	S	54.24
x5	Share of persons registered as unemployed in the population of working age (%)	D	87.58
x6	Share of unemployed persons under the age of 30 in the total number of unemployed persons (%)	D	25.68
x7	Real growth per 1000 inhabitants	S	134.38
x8	Share of mobile persons of working age in the population of working age (%)	S	3.29
x9	Employed persons per 1000 inhabitants	S	53.38
x10	Registered persons per 1000 inhabitants	S	39.23

Note: *(S- stimulant; D- destimulant)*
Source: *The author's elaboration based on Statistics Poland data.*

The coefficient of variation (v) made it possible to eliminate characteristics of low variability ($v \leq 10$), i.e. x3 and x8. The other characteristics were subjected to correlation analysis to eliminate diagnostic variables excessively correlated with each other (diagonal elements of the R^{-1} matrix significantly exceed the value of 10).

During this phase of statistical verification, trait x9 was removed from the set. As a result, seven features were used in the assessment: x1, x2, x4, x5, x6, x7 and x10.

Stage 2: Normalisation of simple characteristics

-for the stimulant:

$$z_{ij} = \frac{x_{ij} - \min_i\{x_{ij}\}}{\max_i\{x_{ij}\} - \min_i\{x_{ij}\}} \quad (1)$$

-for the destimulant:

$$z_{ij} = \frac{\max_i\{x_{ij}\} - x_{ij}}{\max_i\{x_{ij}\} - \min_i\{x_{ij}\}} \quad (2)$$

Where x_{ij} (i= 1, 2, …, n, j=1, 2, …, m) - the value of the j-th simple characteristic in a small town with the number i; $\max_i\{x_{ij}\}$ - the maximum value of the j-th characteristic; $\min_i\{x_{ij}\}$- the minimum value of the j-th characteristic.

Stage 3: Determination of the value of a synthetic characteristic with the use of the non-pattern method

$$q_i^{(2)} = \sqrt{\frac{\sum_{j=1}^{m}(z_{ij} - z_{0j})^2}{m}} \quad (3)$$

where (i = 1, 2, ..., n),

z_{0j} - normalised value of the j-th feature for the reference unit; z = (z_{01}, z_{02}, ...,z_{0m}); in the study, the value was 1 in the case of each characteristic (z_{oj} = 1).

The determined values made it possible to calculate Hellwig's indicator of development.

$$\tilde{q}_i = 1 - \frac{q_i^{(2)}}{q_0} \quad (4)$$

where:

$$q_0 = \bar{q}_0 + 2s_0, \quad \bar{q}_0 = \frac{\sum_{i=1}^{n} q_i^{(2)}}{n}, \quad s_0 = \sqrt{\frac{\sum_{i=1}^{n}\left(q_i^{(2)} - \bar{q}_0\right)^2}{n}} \quad (5)$$

Stage 4: The order of the partial values of the indicator was created by dividing small urban centres into four classes using the arithmetic mean $(\bar{q})$ *and the standard deviation* (s_0) *(Wysocki and Lira, 2007).*

- Class I: ($\tilde{q}_i \geq \bar{q} + s_q$ (small towns with a very high level of investment attractiveness of labour resources),

- Class II: $\bar{q} + s_q > \tilde{q}_i \geq \bar{q}$ (small towns with a high level of investment attractiveness of labour resources),
- Class III: $\bar{q} > \tilde{q}_i \geq \bar{q} - s_q$ (small towns of a medium level of investment attractiveness of labour resources),
- Class IV: ($\tilde{q}_i \leq \bar{q} - s_q$ (small towns with a low level of investment attractiveness of labour resources).

4. Research Results and Discussion

According to the presented research, in the assessed period almost a half of small towns in Poland were areas of labour resources attractive from the point of view of investment.

A total of 81 small towns (over 10% of the assessed towns) were the most attractive centres for investors in terms of labour resources (Class I), while 230 small urban centres (1/3 of small towns) were in the class characterised by a high level of this characteristic (Class II) (Table 4). The group where labour resources were identified as the least attractive for investors consisted of 11 towns (the value of the indicator was below 0 in the case of 4 towns).

In small towns a significant variation in the magnitude of the analyzed phenomenon was observed (the coefficient of variation was 50%). Furthermore, there was a significant gap between the maximum and minimum values of the measure in the studied cities (the maximum value was 0.6388 and the minimum value was -0.0385).

The set of small towns was dominated by a weak positive asymmetry, with an asymmetry coefficient of 0.04. This indicates a slight predominance of cities with a measure value below the median.

Table 4. *Characteristics of small towns in terms of investment attractiveness of labour resources*

Typological class	Values of the metric	Level of investment attractiveness of labour resources	Number of small towns	%
I	above 0.2121	*high*	81	11.5
II	0.1414 to 0.2121	*medium-high*	230	32.6
III	0.0706 to 0.1414	*medium-low*	313	44.4
IV	below 0.0706	*low*	81	11.5

Source: *The author's study.*

There is no clear correlation between the ordered values of Hellwig's indicator and the size of small towns (Table 5). Moreover, in the class of small towns

characterised by a very high level of investment attractiveness of labour resources (Class I), the highest values of the indicator were recorded for small towns, with a population of up to 15,000 inhabitants.

Table 5. *Distribution of small towns by values of the indicator*

Specification	Number of towns	Values of indicator			
		I	II	III	IV
up to 5,000 inhabitants	337	33	110	146	48
5-10,000 inhabitants	186	22	64	82	18
10-15,000 inhabitants	100	14	34	38	14
15-20,000 inhabitants	82	14	31	26	11
Total number of towns	705	83	239	292	91
Specification	Number of towns (=100%)	Percentage of small towns (%)			
Up to 5,000 inhabitants	337	9.8	32.6	43.3	14.2
5-10,000 inhabitants	186	11.8	34.4	44.1	9.7
10-15,000 inhabitants	100	14.0	34.0	38.0	14.0
15-20,000 inhabitants	82	17.1	37.8	31.7	13.4

Source: *The author's study.*

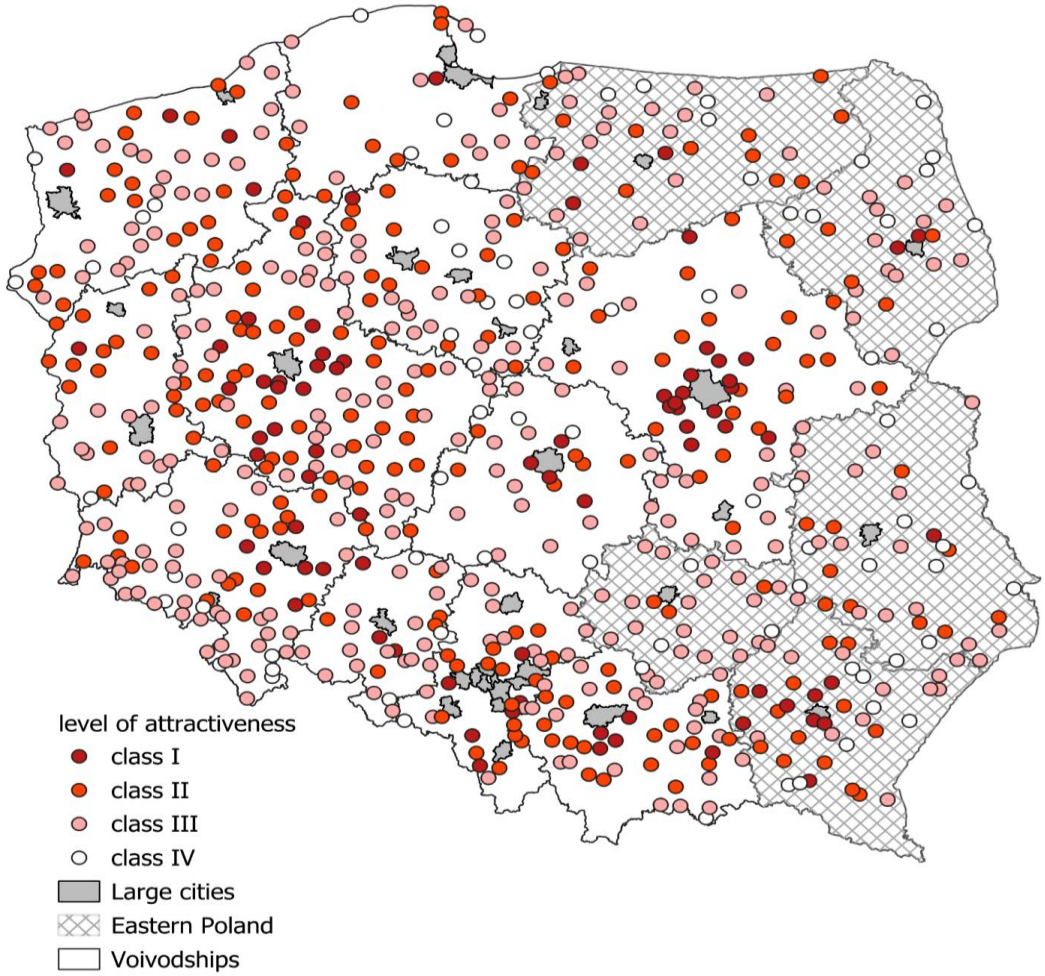
Regardless of the size class of a town, most of the assessed small urban centres were concentrated in Class II and III of the level of investment attractiveness of labour resources (32.6% and 44.5%).

Taking into account the level of the phenomenon under study, nearly half of the towns in each class were small towns, with a population of up to 5,000 inhabitants. However, the above is due to the fact that the towns of that size constituted the largest number of towns in the set of assessed units. Within each size class of towns (with the exception of towns with up to 5,000 residents), small urban centres of Class IV constituted the smallest group.

The regional variation in the investment attractiveness of labour resources in small towns resulted in significant variations in the measure across the surveyed cities (Figure 1). One of the primary observations is the advantageous location of small towns in close proximity to large cities. Small towns located far from the largest urban centres were ranked in Classes III and IV, and were therefore less attractive for the labour market.

The level of attractiveness achieved is justified, considering that for many years there has been an outflow of population from areas situated far from urban regional centres. Subsequently, the directions of population migration are centred around large cities and suburban regions.

***Figure 1**. Regional variation in investment attractiveness of labour resources in small towns in Poland*



***Source:** The author's study.*

According to studies by Hadyński *et al.* (2021), population migration is associated with population growth in Poland's largest agglomerations. An area where an influx of population is observed is a development impulse that creates numerous benefits in the sphere of the market and economic activity, among other things.

However, the benefits for one party come at the expense of the other, such as the loss of human capital and shrinkage of areas that feed the local economy. The issue of population outflow is of considerable magnitude in an area experiencing population decline. The outflowing population consists of young people and potential parents, which has a bundle of socioeconomic consequences for the place (Józefowicz, 2020).

Another observation was the low level of attractiveness in small towns of Eastern Poland (Figure 1). This region of the country is distinguished by a lower level of socio-economic development, rendering it less appealing for investment. The utilisation of labour resources is a crucial element in the advancement of these areas, as it plays a crucial role in the process of transformation. In this case, the location near large cities did not clearly imply greater investment attractiveness of labour resources in small towns.

Sobala-Gwosdz (2023) identifies a new dimension of the country's spatial differentiation, which finds its source in the distance and links in transport access to markets in the EU countries. This factor divides Poland's space into the southwestern portion more accessible to the EU core and the less accessible northeastern portion ("Slanted Poland"). Based on the research conducted, it can be discerned that the indicated pattern exhibits consistency.

The degree of investment attractiveness of labour resources developed significantly more favorably in numerous small towns situated in the northwestern belt to the southern part of the country. However, this was correlated with the functioning of the urban environment of very large cities.

It is also important to consider the attractiveness of labour resources in small towns near the border, especially in the southwestern part of the country (near the border with the Czech Republic), where the average level of investment attractiveness of labour resources prevailed (Class III and IV). In those towns there is a significant population outflow and negative population growth.

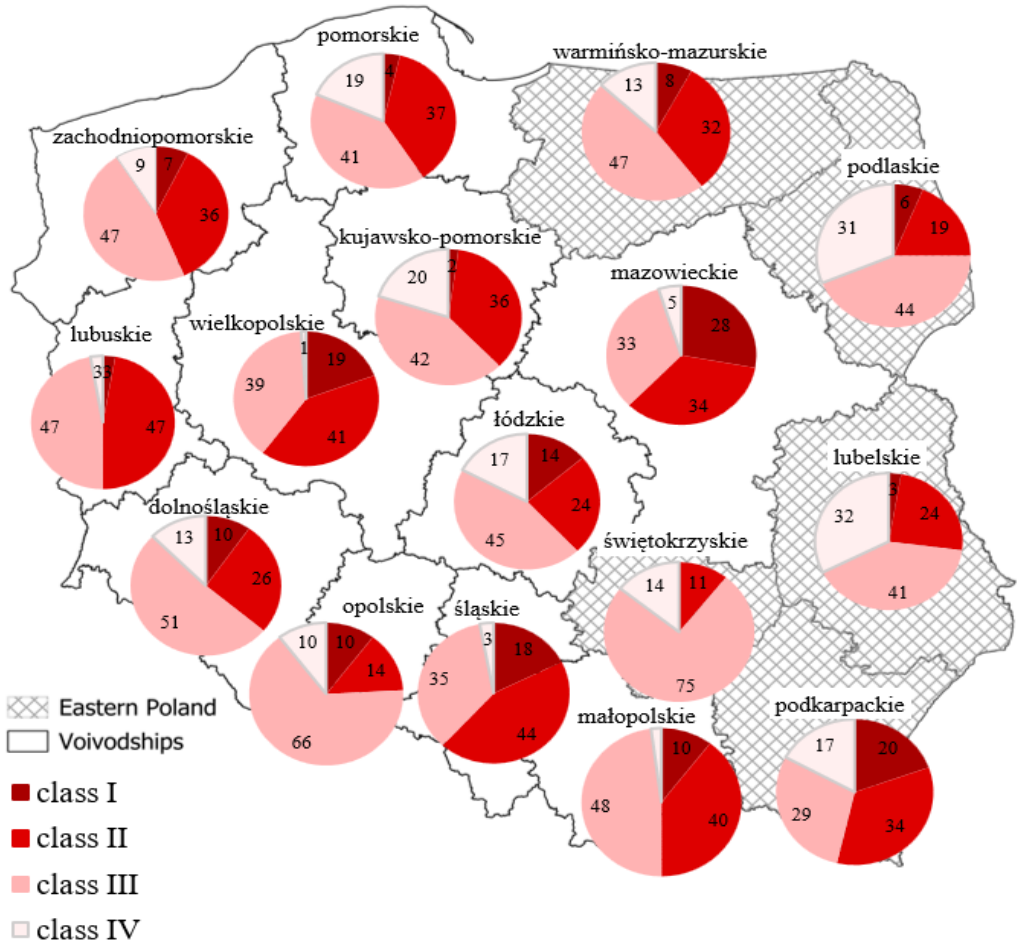
The conducted study, despite its focus on labour resources, is consistent with the research conducted e.g., by Godlewska-Majkowska (2018), who examined the investment appeal of municipalities in Poland, taking into account economic, cultural, or infrastructure factors.

The results indicated an unfavorable situation in the eastern part of the country. Attention was also given to areas situated within agglomerations. In this particular instance, the location in proximity to significant urban centres was of great significance.

According to Bertaud (2014), without a functioning labour market, there is no city. This in turn requires labour resources to operate adequately. It is characteristic of the largest cities, which are regional centres and are considered growth poles (Sobala-Gwosdz, 2024), or the most productive cities (Antczak *et al.*, 2023).

Rural areas and smaller towns situated in close proximity to large cities complement urban regional centres. Consequently, municipalities situated in such a location exhibit more favourable conditions in terms of the analysed labour resources in relation to more remote areas.

Figure 2. *Classification of small towns by voivodship (% of towns in a given class)*



Source: *The author's study.*

It can be assumed that small towns of the Mazowieckie and Wielkopolskie Voivodeships were the centres most attractive for investment in terms of labour resources (Figure 2). Nearly 70% of the small urban centres in these provinces were characterised by a very high or high level of this characteristic. Over half of towns surveyed were classified as Class I and II in the southern regions of the country, specifically in the Śląskie, Małopolskie and Podkarpackie Voivodeships.

It should be noted that the good standing of small towns located in the Śląskie voivodeship may have been due to their location in the area of the Upper Silesian conurbation, the most heavily urbanised region of the country. In other surveyed towns within the province, the number of centres in Class I and II was not as significant.

In this regard, there were voivodeships that shared a similar ratio of small towns classified into groups with good (class I and II) and poor (class III and IV) levels of investment attractiveness of labour resources. These can include small towns in the provinces in the north of Poland (the Zachodniopomorskie, Pomorskie, and Warmińsko-Mazurskie voivodships).

Small towns located in the Świętokrzyskie, Podlaskie, Opolskie and Lubelskie voivodships were towns of the lowest level of investment attractiveness in terms of their labour resources. In the case of small urban centres located within the area of these voivodships, the share of towns with a medium (Class III) and poor (Class IV) level of investment attractiveness of labour resources was significantly larger (in those voivodships the cumulative percentage of towns in Classes III and IV exceeded 70%).

It is worth adding that only in the case of the Świętokrzyskie Voivodship the proposed classification did not identify small towns with a very high level of this characteristic. In turn, in the Małopolskie Voivodship there were no small urban centres allocated to Class IV (the poorest one in the context of the conducted research).

Figure 2 indicates differentiation in the classes of the level of investment attractiveness of labour resources in small towns located in individual voivodships. There were different proportions of small towns located in the neighbouring voivodships with regards to the percentage of towns assigned to only one of the classes. The exception was small urban centres in the Pomorskie and Kujawsko-Pomorskie voivodships, in the case of which the proportions of towns allocated to different classes were similar.

Regional differentiation focused on the level of investment attractiveness of labour resources in small towns in each voivodship revealed significant differences between small towns in the voivodships of Eastern Poland. This indicates that, while overall in this part of the country the attractiveness of labour resources is lower compared to other small towns, some small towns in Eastern Poland may be losing out on the overall results. This refers to small towns in the Podkarpackie Voivodships.

However, small towns in that voivodship, thanks to a more advantageous level of attractiveness of their labour resources, lead to an overestimation of the the results for Eastern Poland.

5. Conclusion

The level of investment attractiveness of a town influences the overall assessment of its attractiveness (Bruneckienė *et al.,* 2016; Correia *et al.,* 2020). Hence, investment attractiveness is a key element in the context of development of not only those towns, but also entire rural areas or regions. According to McDonald and Bailly

(2017), investors evaluate the investment attractiveness of a town "by estimating the probability of return or profit and they are attracted to towns that offer them the best combination of scale, risk and return."

Towns, by providing investment opportunities, create a profile for investors. The profile consists of a combination of factors not limited to the economic base, but including a range of socio-economic characteristics of the town. These factors include also labour resources, which are considered the most important factor in terms of investment attractiveness.

Small towns in Poland were diversified areas in terms of investment attractiveness of their labour resources. No correlation was observed between the size of a small town and the level of its attractiveness. The spatial approach to the assessment of small towns in the distinguished classes depending on voivodships showed that the most favourable situation in the context of the discussed phenomenon was found in small urban centres of the Mazowieckie and Wielkopolskie voivodships, in the case of which investment attractiveness of labour resources was clearly better than in small towns located in the other voivodships.

The indication of the less favorable situation circumstance in small towns of Eastern Poland, as presented in the literature on the subject, was confirmed, exhibiting varying patterns across individual voivodships.

References:

Azouaoui, H., Lahlou, A. 2021. The organization of the territory in network and dynamic territorial attractiveness of companies: Case of the region of Rabat-Salé-Kenitra. International Journal of Accounting, Finance, Auditing, Management and Economics, (2), pp. 194-213. doi:10.5281/zenodo.4641502.

Bank Danych Lokalnych, Główny Urząd Statystyczny (https://bdl.stat.gov.pl/bdl/start).

Barej, E. 2011. Znaczenie wydatków majątkowych w budowaniu konkurencyjności miast (na przykładzie wybranych miast województwa zachodniopomorskiego). Folia Pomeranae Universitatis Technologiae Stetinensis, 65, pp. 7-16.

Bertaud, A. 2014. Cities as labor markets. Marron Institute on Cities and the Urban Environment. New York University.

Borowicz, A., Kostyra, M., Dzierżanowski, M., Szultka, S., Wandałowski, M. 2016. Atrakcyjność inwestycyjna województw i podregionów Polski 2016. Gdańsk: Instytut Badań nad Gospodarką Rynkową/Fundacja Konrada Adenauera w Polsce.

Brahim, E. 2020. Advanced regionalization, attractiveness and regional distribution of investments in Morocco. International Journal of Advanced Research in Innovation, Management & Social Sciences (4). https://eursed.org/wp-content/uploads/2021/01/Volume4-Issue4-EL-MAJIDI-EL-MAJIDI.pdf.

Braun, E. 2008. City marketing: towards to an integrated approach. Rotterdam: Erasmus Research Institute of Management, Erasmus University Rotterdam.

Bruneckienė, J., Zykienė, I., Stankevičius, V. 2016. Critical analysis of city attractiveness factors in Lithuania – Poland cross-border regions: the viewpoints of businessmen

and youth. Journal of Geography, Politics and Society, (2), pp. 45-58. doi:10.4467/24512249JG.16.012.5457.

Burzyńska, D., Jabłońska, M., Bartosik, G. 2019. Analiza trendów atrakcyjności inwestycyjnej polskich miast na prawach powiatu w latach 2010 i 2017. Studia Prawno-Ekonomiczne, CXIII, pp. 171-188. doi:https://doi.org/10.26485/SPE/2019/113/10.

Chemerys, V., Krupin, V. 2015. Economic zoning as the basis for development of infrastructural support for regional agricultural markets in Ukraine: theoretical approach. Journal of Agribusiness and Rural Development, (38), pp. 627-634. doi:10.17306/JARD.2015.66.

Correia, J., Ferreira, F., Meidutė-Kavaliauskienė, I., Pereira, L., Zopounidis, C., Correira, R. 2020. Factors influencing urban investment attractiveness. International Journal of Strategic Property Management: An FCM-SD approach, (4), pp. 237-250. doi:10.3846/ijspm.2020.12384.

Domański, B., Gwosdz, K., Sobala-Gwosdz, A. 2009. Inwestycje zagraniczne na obszarach wiejskich i w małych miastach Polski Południowo-Wschodniej. In: Z. Górka, A. Zborowski, Człowiek i Rolnictwo (pp. 267-279). Kraków: Instytut Geografii i Gospodarki Przestrzennej Uniwersytetu Jagiellońskiego.

Dziemianowicz, W. 2005. Ranking atrakcyjności inwestycyjnej miast Polski - refleksje po czterech edycjach badań. Prace i Studia Geograficzne, 35, pp. 109-127.

Emelianovich, A., Kulyagina, E., Kolozhvari, Y. 2018. Approaches in assessing the investment attractiveness of small towns of Russia. MATEC Web of Conferences, 212, pp. 1-8. doi:10.1051/matecconf/201821208020.

Filipović, M., Kokotović Kanazir, V., Drobnjaković, M. 2016. Small towns in Serbia – the "bridge" between the urban and the rural. European Countryside, (4), pp. 462-480. doi:10.1515/euco-2016-0031.

Gdairia, A., Sellaouti, F. 2017. Foreign direct investment attractiness policy: empirical study applied to Tunisian territory. Business Studies Journal, (1).

Godlewska-Majkowska, H. 2012. Potencjał inwestycyjny obszarów wiejskich Polski. Kwartalnik Nauk o Przedsiębiorstwie, 23(2), pp. 5-29. https://econjournals.sgh.waw.pl/KNoP/article/view/2002.

Godlewska-Majkowska, H. 2018. Investment attractiveness of Polish municipalities in relation to local entrepreneurship. Olsztyn Economic Journal, (2), pp. 103-122. https://doi.org/10.31648/oej.2764.

Godlewska-Majkowska, H., Komor, A., Zarębski, P., Czernecki, M., Typa, M. 2014. Regional investment attractiveness. Warsaw, Polish Information.

Hadyński, J., Genstwa, N., Józefowicz, K. 2021. Migration processes to rural areas in Polish metropolises. Annals of the Polish Association of Agricultural and Agribusiness Economists, XXIII(3), pp. 20-31. https://doi.org/10.5604/01.3001.0015.2895.

Hamdouch, A., Demazière, C., Banovac, K. 2017. The socio-economic profiles of small and medium-sized towns: insights from European case studies. Tijdschrift voor Economische en Sociale Geografie, (4), pp. 456-471. https://doi.org/10.1111/tesg.12254.

Harroussi, B.E., Chakor, A. 2019. The attractive territory: contribution on the territorial posutioning and the innovative theoretical and historical models. European Scientific Journal, (10), pp. 43-61. doi:10.19044/esj.2019.v15n10p43.

Heffner, K., Solga, B. 2006. Lokalne centra rozwoju obszarów wiejskich - znaczenie i powiązania małych miast. Studia Obszarów Wiejskich, 11: Rola małych miast w

rozwoju obszarów wiejskich, pp. 25-38. https://rcin.org.pl/igipz/Content/632/Wa51_3482_r2006-t11_SOW.pdf#page=27.

Józefowicz, K. 2020. Atrakcyjność migracyjna miast i obszarów wiejskich województwa wielkopolskiego. Space – Society – Economy, (31), pp. 213-227.

Kaufmann, D., Meili, R. 2019. Leaves in the wind? Local policies of small and medium-sized towns in metropolitan regions. European Planning Studies, (1), pp. 21-41. https://doi.org/10.1080/09654313.2018.1535576.

Kharlamova, G. 2014. Investment attractiveness of Ukrainian regions: rating assessment and marketing promotion. Journal of International Studies, (1), p. 9-26. doi:10.14254/2071-8330.2014/7-1/1.

Khrulkov, A., Mityagin, S., Repkin, A. 2020. Multi-factor approach to investment attractiveness assessment of urban spaces. Procedia Computer Science, pp. 94-102. doi:10.1016/j.procs.2020.11.011.

Konecka-Szydłowska, B. 2012. Zróżnicowanie regionalnych systemów osadniczych w aspekcie małych miast. In: D. Ilnicki, K. Janc (Eds.), Badanie regionalnych i lokalnych struktur funkcjonalno-przestrzennych. Rozprawy Naukowe Instytutu Geografii i Rozwoju Regionalnego 29 (pp. 75-86). Wrocław: Uniwersytet Wrocławski.

Konecka-Szydłowska, B., Maćkowiak, H. 2016. Zróżnicowanie funkcjonalne miast województwa wielkopolskiego. Rozwój Regionalny i Polityka Regionalna, (36), pp. 39-56. https://pressto.amu.edu.pl/index.php/rrpr/article/view/8549/8422.

Korcelli-Olejniczak, E. 2020. Funkcjonalne różnicowanie małych miast północno-wschodniej Polski w warunkach depopulacji. Przegląd Geograficzny, (2), pp. 191-212. https://doi.org/10.7163/PrzG.2020.2.2.

Kozera, A. 2021. Investment activity of large cities - regional centres in Poland. European Research Studies Journal, (1), pp. 220-247.

Kozera, A., Dworakowska-Raj, M., Standar, A. 2021. Role of local investments in creating rural development in Poland. Energies, (6), p. 1748. doi:https://doi.org/10.3390/en14061748.

Kozera-Kowalska, M., Uglis, J. 2020. Spatial diversity of the attractiveness of rural communes for enterprise development in Poland. Annals PAAAE, (2), pp. 88-98. doi:10.5604/01.3001.0014.1552.

Krugman, P. 1995. Development, Geography and Economic Theory. Cambridge, Massachusetts, London: The MIT Press.

Krupka, Y., Bachinskiy, V. 2014. Estimation of investment attractiveness for enterprises in Ukraine. The Małopolska School of Economics in Tarnów Research Papers Collection, (2), pp. 117-125.

Lewandowska, A., Chodkowska-Miszczuk, J., Rogatka, K. 2020. Development of renewable energy sources in big cities in Poland in the context of urban policy. In: M. Wróbel, M. Jewiarz, A. Szlęk, Renewable Energy Sources: Engineering, Technology, Innovation. Springer Proceedings in Energy (pp. 907-918). Cham: Springer. doi:https://doi.org/10.1007/978-3-030-13888-2_87.

Lizińska, W., Marks-Bielska, R., Kisiel, R. 2011. Atrakcyjność inwestycyjna gmin i znaczenie w jej kształtowaniu preferencji specjalnej strefy ekonomicznej. Roczniki Nauk Rolniczych, 98(3), pp. 191-204.

Mainet, H., Edouard, J.C. 2017. Quality of life and attractiveness issues in SMSTs: innovative or commonplace policies? In: A. Hamdouch, T. Nyseth et al., Creative approaches to planning and local development. Critical perspectives. Insights from

Small and Medium-Sized Towns in Europe (pp. 234-248). London: Routledge Publisher.

Mamonov, K., Nesterenko, S., Radzinskaya, Y., Palamar, A. 2019. The method for assessing the urban land investment attractiveness. Geodesy and Cartography, (2), pp. 321-328. doi:10.24425/gac.2019.128467.

Mamonov, K., Nesterenko, S., Radzinskaya, Y., Dolia, O. 2019. City lands investment attractiveness calculation. Geodesy and Cartography, (1), pp. 211-223. doi:https://doi.org/10.24425/gac.2019.126097.

McDonald, R., Bailly, A. 2017. What investors want: a guide for cities. How should cities engage investors and developers? London: Centre for Cities.

Moskovkin, V., Munenge, S., Sadovski, M. 2020. Matrix representation of the graph describing temporary transitions of the states of investment attractiveness of the Russian regions: on the example of regions of the central federal district of the Russian Federation. Advances in Economics, Business and Management Research, pp. 35-38.

Mroczek, A., Kwaśny, J., Ulbrych, M. 2019. The potential of selected Polish cities for attracting advanced business processes. Studia Miejskie, 36, pp. 57-70. doi:10.25167/sm.996.

Mustafakulov, S. 2017. Investment attractiveness of regions: methodic aspects of the definition and classification of impacting factors. European Scientific Journal,(10), pp. 433-449. doi:10.19044/esj.2017.v13n10p433.

Nurseiytova, G., Assanova, G. 2020. Opportunities for increasing investment attractiveness of small towns. News of National Academy of Sciences of the Republic of Kazakhstan, (331), pp. 294-301. doi:10.32014/2020.2224-5294.95.

Obolenskaya, A., Simonova, I. 2021. Territory attractiveness index IVAOS. SHS Web of Conf., 01030. https://doi.org/10.1051/shsconf/20219401030.

Polése, M. 2005. Cities and national economic growth: a reappraisal. Urban Studies, (8), pp. 1429-1451. doi:10.1080=00420980500150839.

Raczyk, A., Dołzbłasz, S., Leśniak-Johann, M., Stawicka, M., Kwieciński, L., Wróblewski, M. 2010. Analiza atrakcyjności inwestycyjnej regionu wświetle współczesnych trendów. Wrocław: Urząd Marszałkowski Województwa Dolnośląskiego.

Raszkowski, A. 2013. Selected aspects of investment attractiveness of regions. ACC Journal, (2), pp. 116-127. https://dspace.tul.cz/handle/15240/21035.

Rolik, Y. 2013. A Complex Approach to Evaluating the Innovation Strategy of a Company to Determine its Investment Attractiveness. Procedia - Social and Behavioral Sciences, pp. 562-571. doi:10.1016/j.sbspro.2013.10.526.

Servillo, L., Atkinson, R., Hamdouch, A. (2017). Small and medium-sized towns in Europe: conceptual, methodological and policy issues. Tijdschrift voor Economische en Sociale Geografie, (4), pp. 365-379. Accessed from https://doi.org/10.1111/tesg.12252

Servillo, L., Atkinson, R., Russo, A.P. 2012. Territorial attractiveness in EU urban and spatial policy: a critical review and future research agenda. European Urban and Regional Studies, (4), pp. 1-17. doi:10.1177/0969776411430289.

Sikorska-Wolak, I., Zawadka, J., Krzyżanowska, K. 2020. The investment attractiveness of regions as one of entrepreneurship development factors/Atrakcyjność inwestycyjna regionów jako jeden z czynników rozwoju przedsiębiorczości. Economic and Regional Studies, (2), pp. 170-183. https://doi.org/10.2478/ers-2020-0012.

Simkiv, L., Krupin, V. 2016. Investment activity in the Ukraine: national and regional dimensions. Zeszyty Naukowe Wydziału Nauk Ekonomicznych Politechniki Koszalińskiej, (20), pp. 249-263.

Sinkienė, J., Kromalcas, S. 2010. Concept, directions and practice of city attractiveness improvement. Public Policy and Administration, (31), pp. 147-154.

Skupskyi, R., Zubkov, R., Shapovalova, I. 2018. Evaluation of investment attractiveness of a region as a guarantee for leadership in the territorial socio-economic development. Advances in Social Science, Education and Humanities Research, pp. 305-313.

Snieska, V., Zykiene, I. 2015. City attractiveness for investment: characteristics and underlying factors. Procedia - Social and Behavioral Sciences, pp. 48-54. doi:10.1016/j.sbspro.2015.11.402.

Sobala-Gwosdz, A. 2023. Wyzwania, trendy i procesy rozwoju gospodarczego. Identyfikacja biegunów wzrostu i ośrodków równoważenia rozwoju w Polsce, Badania Obserwatorium Polityki Miejskiej, Instytut Rozwoju Miast i Regionów, Warszawa–Kraków.

Sobala-Gwosdz, A. 2024. Baza ekonomiczna miast i ich obszarów funkcjonalnych, Badania Obserwatorium Polityki Miejskiej,Instytut Rozwoju Miast i Regionów, Warszawa–Kraków.

Sztando, A. 2020. Will small towns benefit? Expected COVID-19 pandemic-induced changes in supralocal relationships of Polish small towns and planned responses in the supralocal perspective of their local development strategic governance. Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, (10), pp. 118-147. doi:10.15611/pn.2020.10.09.

Szymańska, D., Grzelak-Kostulska, E. 2005. Małe miasta w Polsce - zmiany ludnościowe i funkcjonalne w drugiej połowie XX wieku. Prace Naukowe/Akademia Ekonomiczna w Katowicach, Małe miasta a rozwój lokalny i regionalny, pp. 59-90. Accessed from: http://repozytorium.umk.pl/handle/item/545.

Śleszyński, P., Wiśniewski, R., Węcławowicz, G., Degórski, M., Degórska, B. 2017. Zmiany społeczno-gospodarcze, ludnościowe i przyrodnicze: uwarunkowania i procesy. In: P. Śleszyński, A. Bierzyński, D. Cerić, A. Ciechański, B. Degórska, M. Degórski, R. Wiśniewski, Analiza sytuacji rozwojowej miast, w tym charakterystyka miast średnich tracących funkcje społeczno-gospodarcze (pp. 48-107). Warszawa: PAN.

Świdyńska, N. 2018. The attractiveness for investments of urban municipalities in the Warmińsko-Mazurskie Voivodship. Baromentr Regionalny, 16(2), pp. 71-80.

Świdyńska, N., De Jesus, I.M. 2020. Determinants of potential investment attractiveness of a commune. Olsztyn Economic Journal, (2), pp. 129-140. doi:10.31648/oej.5836.

Vaishar, A., Šťastná, M., Stonawská, K. 2015. Small towns – engines of rural development in the South-Moravian Region (Czechia): an analysis of the demographic development. Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, (4), pp. 1395-1405. doi:10.11118/actaun201563041395.

Van den Berg, L., Van de Meer, J., Oligaar, A. 2006. The attractive city: catalyst of sustainable urban development. XVI congreso de Estudios Vascos: Garapen Iraunkorra-IT (pp. 485-491). Bilbao: Donostia: Eusko Ikaskuntza.

Wagner, M., Growe, A. 2021. Research on small and medium-sized cities: framing a new field of inquiry. World, (2), pp. 105-126.

Windhyastiti, I., Hidayatullah, S., Khouroh, U. 2021. Investment attractiveness rating and factors affecting. Accounting, pp. 161-166. doi:10.5267/j.ac.2020.10.001.

Wysocki, F., Lira, J. 2007. Statystyka opisowa. Poznań: Wydawnictwo Akademii Rolniczej im. Augusta Cieszkowskiego w Poznaniu.

Yatsenko, O. 2016. Methodical bases of rating of investment appeal of Ukraine rural areas. Ukrainian Food Journal, (2), pp. 387-396.

Yurzina, T., Shalanov, N., Kosinskiy, P. 2020. Assessment and promotion of social responsibility of business in the development of rural areas of the mining region. E3S Web of Conferences, pp. 1-8. doi:10.1051/e3sconf/202017404057.

Zarębski, P. 2012. Atrakcyjność inwestycyjna obszarów wiejskich w Polsce. Zeszyty Naukowe SGGW w Warszawie. Problemy Rolnictwa Światowego, 12(27)(4), pp. 169-178. http://agro.icm.edu.pl/agro/element/bwmeta1.element.agro-544aa347-2a5d-4a6e-8a6a-02ec75471c3f/c/Zarebski_P.pdf.

Zheltenkov, A., Syuzeva, O., Vasilyeva, E., Sapozhnikova, E. 2017. Development of investment infrastructure as the factor of the increase in investment attractiveness of the region. IOP Conference Series: Earth and Environmental Science. doi:10.1088/1755-1315/90/1/012122.