Differences in Economic Competitiveness between Small Towns in Poland

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Abstract:

Purpose: *The purpose of this paper is to assess the economic competitiveness of small Polish towns.*

Design/Methodology/Approach: *The study spanned over four periods (2004-2006, 2011-2013, 2017-2019, 2020-2021), and relied on the TOPSIS method which allowed to structure a synthetic metric for small towns and order them linearly. Quantitative data retrieved from the Local Data Bank of the Central Statistical Office were used in structuring the metric.*

Findings: *While small towns witnessed an improvement in economic competitiveness, they also became more heterogeneous in that respect. The study found differences between regions, including small towns from the eastern part of Poland being poorly competitive compared to their peers from other parts the country.*

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: *Small towns should improve their competitive position, but without increasing their economic scale beyond a certain size that is within the limits of environmental feasibility.*

Keywords: *Urban competitiveness, small towns, economic competitiveness, TOPSIS method.*

JEL codes: *O18, R12, R51.*

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1. Introduction

Urbanization is considered one of the most significant trends in the world's economic development, which is advancing all the time. In 1970, cities were home to 37% of the global population; that ratio grew to 53% by 2000. According to UN forecasts, urban dwellers will account for 68% of the world's population by 2050 (Paliulis and Cincikaite, 2013; Bîrgovan *et al.,* 2022).

Compared to other continents, Europe has a remarkably dense network of small towns (Horeczki and Egyed, 2021) which differ in levels of socioeconomic development. In 2021, Poland had 954 registered cities inhabited by over 22 million people (60% of the country's population). This includes 740 small towns which accounted for 78% of the total number of cities, 22% of the urban population and 13% of the Polish population.

Small towns are defined as those with a population of up to 20,000 (Podogrodzka, 2013; Runge, 2013), and form an essential part of the Polish settlement system. They are the primary link between larger urban centers and rural areas, acting as hinterlands for rural areas. They are local centers offering jobs as well as education, healthcare, cultural and other services to both the rural population and their own residents (Heffner, 2016; de Noronha *et al.,* 2013). Hence, small towns are halfway between rural and urban areas; whether flourishing or floundering, they have an impact on the development on their surroundings.

2. Literature Review

2.1 From Business Competitiveness to Urban Competitiveness

Competitiveness is a commonly used term, and is viewed as a natural law of modern economy. It is believed to have emerged as a separate topic in early 1900s when a study was conducted in the U.S. to compare the economic standing of enterprises (due to the relationship between being competitive and maintaining efficiency) (Borowiecki and Siuta-Tokarska, 2015; Lee and Karpova, 2018).

However, it captured more interest in the 1980s (Podlińska, 2015; Ketels, 2016; Martin and Simmie, 2008) when a discussion was started on national competitiveness (in the context of a country's capacity to maintain prosperity). Since that time, a regional dimension has been added to that concept (territorial competitiveness) (Wosiek, 2016), making it one of the fundamental issues of local economic development (Krakowiak-Bal, 2019; Brenner and Wachsmuth, 2012).

Territorial competitiveness makes a direct reference to the meso level and means "the capacity of a town or region to generate high and growing revenues, and to enhance the standards of living for the residents" (Mitrică *et al.,* 2021). Hence, it is a component of competitiveness at a higher (e.g., macro) aggregation level while also

being impacted by lower aggregation (e.g., micro) levels. This is because the competitiveness of territorial units is partly the consequence of measures taken by competitive economic operators (Szczech-Pietkiewicz, 2019).

Today, city level competitiveness is a natural process driven by globalization, information technologies and structural change (Martin, 2005; Metaxas, 2010). Indeed, cities involved in economic globalization have become an area viewed through the prism of economic growth factors (Camacho, 2020). Scientific literatures provide a number of different definitions of urban competitiveness.

Storper (1997, p. 20) considers that it is "the ability of an (urban) economy to attract and maintain firms with stable or rising market shares in an activity while maintaining or increasing standards of living for those who participate in it." D'Arcy and Keogh (1999, p. 917) define urban competitiveness as "the ability of a city to leverage or create a comparative advantage and, thus, to generate sustainable economic growth at a faster rate than their competitors."

Pengfei and Qinghu (2006, p. 2) on the other hand, regard it is "the ability of a city to attract resources, develop products and services, control the market, effectively drive wealth and ensure prosperity for the residents in the competition and development process to a greater extent than their rivals." Zawada and Kuriat (2015, p. 148) argue that urban competitiveness is "the ability of a city to adapt to changing conditions with a view to maintain or improve their position relative to other cities." Łaźniewska (2010, p. 276) reports that it is "ability to generate relatively high incomes and employment levels."

While the above definitions refer to the whole socioeconomic urban system, they focus on one of the categories that build the urban fabric. According to Metaxas (2010), rather than being restricted solely to enterprises active in a city, urban competitiveness should reflect the whole reality of an urban economy and its capability to operate. This is because cities are not just an economic operator but a comprehensive socioeconomic system underpinning the urban environment, and economic activity is only one of its segments (Jiang and Shen, 2010).

Various factors influence the competitiveness of cities. The World Bank (2015) counts among the factors affecting urban competitiveness: institutions and regulations, infrastructure and land, skills and innovation and enterprise support and finance. Those categories try to encompass the suite of policies and interventions available to city governments.

Webster and Miller (2000), in their theoretical discussion of urban competitiveness, gave four main categories of determinants of competitiveness: economic structure, territorial endowment, human resources and institutional milieu. Kresl (1999; 2013), who has been analyzing urban competitiveness for many years, divides competitiveness factors into two groups (economic and strategic determinants).

Among the economic factors he includes, factors of production, location, infrastructure, economic structure, and urban amenities. Strategic factors, on the other hand, include: governmental effectiveness, urban strategy, public-private sector cooperation, institutional flexibility.

Mega (2010) in a study on the competitiveness and attractiveness of cities, indicates that factors such as the macroeconomic and institutional environment, microeconomic performance, openness to trade and investment, labor market flexibility, level of education and training, ability to create innovation, adequacy of technical and digital in-frastructure are responsible for the competitiveness of cities.

The cited examples of the factors affecting urban competitiveness mainly concern the largest cities. Through the determinants indicated, the importance of the largest cities to the economy is emphasized. Other factors can be distinguished when the study covers cities in a country. Mendoza *et al.* (2009) who examined the competitiveness of cities in Mexico, presented four main components of factors, urban-environmental, economic, socio-demographic and institutional.

Jiang and Shen (2000), who analyzed the competitiveness of cities in China, indicated three main groups of factors, economic, social and environmental. The same determinants were identified by Shan (2003). Sinkiene (2009), in his model of urban competitiveness in Lithuania, divided competitiveness factors into internal (human, institutional, physical and economic) and external (political-legal, social-cultural, economic, technological, natural-ecological and historical).

The competitiveness factors that have been presented on a national scale, on the one hand, very general, but on the other hand, they represent available resources. It is also important to note that they represent the main categories, to which the authors usually add sub-categories. Only at this stage do they propose a comprehensive set of indicators. This action is justified because limiting oneself to the main components provides an opportunity for other researchers to use the model in their research.

In the light of past research, Storper (1997), Łaźniewska (2010) and D'Arcy and Keogh (2006) place emphasis on the economic dimension of competitiveness. In a developed econo-my, the importance of cities as main centers of economic activity is something obvious (Greene *et al.,* 2007). Cities can compete for residents, entrepreneurs, tourists, external resources (Dziemianowicz, 2021), investors or customers (users of urban services).

Each of these dimensions has certain assumptions as to economic goals. Bearing in mind that territorial units at various levels of aggregation (i.e., regions, cities, rural areas) should compete and develop in a sustainable manner, the concept of sustainable development should be taken into account in the current definition of socio-economic phenomena and processes.

Therefore, the economic competitiveness of cities (whether big or small) reflects their capacity to create conditions for economic activity and to improve their economic situation without causing environmental problems.

3. Small Towns in the Country's Socioeconomic Framework

Cities play an important role in the regional socioeconomic system (Fauzer *et al.,* 2021; Zawada, 2014; Domański and Noworól, 2010) and in the proper functioning of the economy (Barej, 2011) (as they represent the basic place where national income is generated) (Dembicka-Niemiec, 2017). Due to progressing urbanization, cities are viewed as subjects of economic analyses (Szczech-Pietkiewicz, 2019).

According to Prus *et al.* (2021), in today's economy, the spatial polarization of development is mostly witnessed between cities (big cities, regional growth centers) and remote areas. As shown by current trends, large agglomerations have the capacity to strengthen the socioeconomic potential (Szarek-Iwaniuk, 2019). It is however justified to place focus on big cities and metropolises for reasons which include their greater productivity or faster rates of economic growth (Bogdański, 2021; Mitra and Nagar, 2018; Zdanowska *et al.,* 2020).

In addition to challenging the EU's polycentric vision of urban areas (Egyed and Rácz, 2020), this can lead to widening the development gap between big and small cities. Indeed, small remote towns and midsized cities are believed to be the worst affected by the ongoing changes (Śleszyński, 2021).

Socioeconomic processes which took place in Poland after World War 2 and in the late 1990s/early 2000s essentially redefined the structure of small towns. Many urban development drivers and functions (including being an economic operator) were taken over by big cities, making it challenging for small towns to survive. The changes currently taking place in the space of small towns are due to economic and socio-demographic problems (Jaszczak *et al.,* 2021).

Konecka-Szydłowska (2016) highlighted some new development conditions for small towns which may trigger these issues at varying levels of severity. They include: today's demographic processes (society ageing, increased mobility in small towns), metropolization processes, concentration of economic activity in the suburbs of big cities, and the suburbs having a complementary function in relation to big cities.

These conditions are strictly related to the location rent, which in this case means being located next to a big city. The development of big cities has an effect on that of their surroundings, and its consequences can be identified in remote areas.

Another key factor related to the location rent is the internal migration of people from small towns and rural areas to big cities. As those who leave small towns are

mostly working age, their outflow has a number of combined socioeconomic consequences for small towns (in the context of housing, labor markets, healthcare, education, transport and knowledge redistribution) (Rodríguez-Vignoli and Rowe, 2018). This erodes the position of small towns as a good place to live. Also, for potential investors, the decline in labor resources is a weakness that affects the choice of a location for their business.

According to the relevant literature, the economic aspect is decisive for urban development (Mamonov *et al.,* 2019). It is also a component of sustainable development and sustainable competitiveness. In today's economy, the growing importance of urban areas leads to a concentration of economic activity in big cities (Łuczyszyn and Łuczyszyn, 2018). Small towns are not as economically efficient as big ones (Yin *et al.,* 2021), and operate within an economic framework defined by the available resources.

As emphasized by Korcelli-Olejniczak (2020), the future of small towns is determined by the competitiveness of their economic functions, the viability of public institutions and the quality of life. The economic aspect of competitiveness of small towns is a category of major importance to their development opportunities and to possible improvements in the quality and standards of living for the residents. Just like cities of any size, small towns exist in a competitive environment.

Therefore, the competitiveness of small towns is a natural process engendered by competition between regions or big cities. It is also important to consider the fact that striving to increase the economic competitiveness of small towns should respect the idea of sustainable development. This means that small towns should improve their competitive position, but without increasing their economic scale beyond a certain size that is within the limits of environmental feasibility.

3.1 Purpose of this Study

The purpose of this study is to assessment of the level and diversity of economic com-petitiveness of small towns in Poland. The main goal set out above also includes answering the following research questions:

- Does economic competition of cities covered by this study vary across the territory?
- Are there any clear differences in economic competitiveness between 2020–2021 and previous years?
- Does a relationship exist between the level of economic competitiveness and the size (population) of a small town?
- Do the values of economic characteristics differ between economic competitiveness classes of small towns?

This paper provides a synthetic analysis of economic competitiveness of small

towns. It focuses on regional differences in economic competitiveness between small towns, and on how economic competitiveness depends on the size (measured as population) of a small town. Also addressed were the indicators of economic situation in each competitiveness class.

4. Methodology

4.1 Period, Subject Matter and Source Materials

This paper focuses on small towns in Poland. The analysis was carried out for 110 small towns out of a total of over 700. Each of them constitutes an urban commune (municipality with the status of a city). The reason for selecting this group is that extending the study to towns which form part of an urban-rural commune would pose some restrictions and distort the analyses.

Some statistical variables, such as incomes and expenditure at commune level and economic activity data, are often unavailable at the urban-rural commune level. This can lead to some results being biased. The selection of individual towns was therefore made taking into account key issues:

- *the availability of numerical data for the execution of the empirical component,*
- *the attainment of the status of an urban commune within the stipulated time frame,*
- *the municipality has been categorized as a small town within the established time frames.*

The selected cities were divided into four size groups as per the procedure proposed by Podogrodzka (2013) in order to better present the findings (Table 1).

Table 1. *Polish small towns having the status of urban communes grouped by size*

Size class	Years			
	2004-2006	2011-2013	2017-2019	2020-2021
population of up to 5,000	20	22	23	23
population of 5,000 to 10,000	28	25	25	27
population of 10,000 to 15,000	25	27	28	35
population of 15,000 to 20,000	37	36	34	25

Source: *Own study based on the Local Data Bank of the Central Statistical Office.*

The period covered by this study is 2004-2021. Four object years were created to enable comparing the changes over time, between 2004-2006, 2011-2013, 2017-2019 and 2020-2021. Through the identification of four periods and the appearance of breaks in the research analysis, it is clear that the transformations that have occurred in small towns during the research break of several years have occurred in terms of the level of economic competitiveness.

Empirical data from these four study periods was averaged. This can be viewed as a value-adding approach from the perspective of assessing the complex phenomenon under consideration, because many processes undergo dynamic changes in each year covered by the analysis (e.g., financial aspects). The study period was shortened (two-year average figures were used) because 2022 data was unavailable at the time of conducting this research. The defined time span and the periods included in it are not random.

The first period (2004-2006) was identified in order to assess the levels of competitiveness from the moment Poland accessed the European Union. The second period (2011-2013) corresponds to the end of the 2007-2013 RDP (Rural Development Program), which makes it reasonable to inspect the changes driven by the use of Union funds (Due to lack of data, this study did not take account of financial data relating e.g. to Union funds accessed per capita.

However, other variables used in the procedure reflect the investment support provided by the Union (e.g., the indicators of sewerage and water distribution networks per 100 km^2)). The next period, 2017-2019, presents the competitiveness of small towns before the turmoil caused by the COVID-19 pandemic. In turn, in 2020–2021 Poland was experiencing the impacts of COVID-19. The pandemic changed the way the cities operate in the socioeconomic dimension.

This study relied on numeric data retrieved from the Local Data Bank of the Central Statistical Office (GUS). It provided essential empirical data used as a basis in assessing the levels of economic competitiveness of Polish small towns having the status of urban communes.

5. Research Methodology

Classic TOPSIS (Technique for Order Preference by Similarity to an Ideal Solution), a method for structuring a synthetic metric, was used in assessing the level of economic competitiveness of Polish small towns. Yoon and Hwang developed the Technique for Order Preference by Similarity to Ideal Solution based upon the concept that the chosen alternative should have the shortest distance from the ideal solution and the farthest from the negative-ideal solution (Hwang and Yoon, 1981).

It is a template for structuring the synthetic metric which can then be used to linearly order small towns by competitiveness level, and to create classes of small towns at different levels of competitiveness (Wysocki, 2010).

TOPSIS has a wide range of applications; it was used in analyzing such topics as the development level of selected territorial units, e.g. districts (Łuczak and Wysocki, 2012), cities (Xiajing and Junjie, 2011; Abafat *et al.,* 2013) and regions (Poledníková, 2014), or the condition of the dairy sector (Wysocki, 2008). The

typological analyses of economic competitiveness levels of Polish small towns were carried out in the following steps (Hwang and Yoon, 1981; Wysocki, 2008):

Step 1: Selecting the simple characteristics of small towns' competitiveness levels. In this study, simple characteristics were selected based on formal, substantive and statistical criteria. At this stage, they were selected and ordered by categories which comprise the economic competitiveness of small towns.

The selection of simple characteristics was based on a review of literatures focusing on both a theoretical and an empirical approach to the territorial units' economic development and competitiveness while also analyzing their general socioeconomic situation (Zarębski, 2012; Bogdański and Janusz, 2022; Nesticò *et al.,* 2020; Guo *et al.,* 2015; Mally *et al.,* 2022; Gwosdz *et al.,* 2019; Dönmez and Atalan, 2019; Gwiaździńska *et al.,* 2022; Churski *et al.,* 2021; Mroczek, 2022) (Table 2).

In selecting the simple characteristics, attention was paid to essential categories that need to be taken into account when analyzing the economic competitiveness of territorial units. Entrepreneurship, as a component of the economic realm, plays a major role in local and regional development because it is viewed as the foundation of economic development (Banasiak, 2013). It is a key category in the context of the city's attractiveness to potential residents and of its local environment.

Tourism is believed to be a driver of urban development and a panacea for economic problems (Matei and Caraba, 2010), especially in areas with valuable natural resources. The economic aspect of the impacts of tourism on small town competitiveness and development is manifested in socioeconomic activities oriented on tourist services (Pilichowska and Glądała, 2021). In the competitiveness process, technical infrastructure is one of the builders of economic activity, and a determinant of its scope, structure and spatial distribution. The quality of infrastructure can be decisive for whether or not a small town is attractive.

Financial resources lay the grounds for the operation of territorial units and condition the performance of their statutory tasks (Pawlik, 2018). Their financial situation tells whether they are capable of ensuring financial security, and is therefore indicative of their capacity to carry out administrative tasks and address investment needs (Dziekański and Prus, 2020).

Employment is taken into account in regional and urban competitiveness models and, just like productivity, is among the major builders of economic structure and key drivers of improvements to the residents' standards of living.

Table 2. *Diagnostic variables proposed to be used in measuring the economic competitiveness of Polish small towns*

No.	Category	Diagnostic variables	Nature of variables	Weights of variables

X_1	entrepreneurship	operators entered to the REGON register per 10,000 population	S	0.0359
X_2		percentage of foreign-invested commercial companies in the total number of economic operators	S	0.0449
X_3		economic operators with more than 49 employees per 10,000 population	S	0.0837
X_4		share of economic operators active in the agriculture, forestry, hunting and fisheries sectors in the total number of economic operators	D	0.0872
X_5	tourism	density of the accommodation network: number of beds per square km	S	0.0503
X_6		accommodation facilities per 100 km^2	S	0.0514
X_7	technical infrastructure	water distribution network per 100 km^2	S	0.1047
X_8		sewerage network per 100 km^2	S	0.0958
X_9		gas distribution network per 100 km^2	S	0.1032
X_{10}		per-capita budgetary expenditure on transport at commune level (PLN)	S	0.0677
X_{11}	finance	own income per capita	S	0.0332
X_{12}		share of investment expenditure in total expenditure	S	0.0708
X_{13}		personal and corporate income tax per PLN 1 of agricultural tax	S	0.0481
X_{14}		per-capita budgetary revenue at commune level derived from personal and corporate income taxes (PLN)	S	0.0534
X_{15}	employment	economic activity ratio: number of working people per 100 working-age population	S	0.0696

Legend: *S: stimulant (a statistical characteristic whose growth is indicative of growth in the level of the complex phenomenon considered), D: inhibitor (a statistical characteristic whose growth is indicative of a decline in the level of the complex phenomenon considered).*
Source: *Own study.*

An important part of selecting the simple characteristics to be covered by the study is to assess their variation and correlation with one another. It is necessary to remove the ones at very low levels of variation (with a coefficient of variation below 10%) and those highly correlated with other simple characteristics (values largely above 10). Before proceeding to further steps, a statistical verification was carried out, and did not remove any of the simple characteristics (Wysocki, 2010).

Step 2: Normalization of simple characteristics.
As indicated by Hwang and Yoon (1981), Wysocki (2010), this step consists in unifying the simple characteristics, making them mutually comparable, eliminating non-positive values and replacing different ranges of variability of particular characteristics with a constant range. This study relied on an approach based on linear normalization, referred to as zero unitarization.

Hence, the values of simple characteristics were normalized using the following formulas (Wysocki, 2010):

for variables with a stimulating effect:

$$z_{ij} = \frac{x_{ij} - \min_i\{x_{ij}\}}{\max_i\{x_{ij}\} - \min_i\{x_{ij}\}} \tag{1}$$

for variables with an inhibiting effect:

$$z_{ij} = \frac{\max_i\{x_{ij}\} - x_{ij}}{\max_i\{x_{ij}\} - \min_i\{x_{ij}\}} \tag{2}$$

The normalization of simple characteristics was performed for a total of two periods under analysis (referred to as object-years) based on average values of simple characteristics recorded in these periods. This was done in order to ensure comparability of results between the periods and to capture the development trend affecting the phenomenon process under consideration.

Step 3: Defining the system of weights for the characteristics and creating a weighted normalized decision matrix.
The importance of characteristics can be determined by assigning weight coefficients W = (w1, w2, ..., w_K) to them based on the CRITIC method (Criteria Importance Through Intercriteria Correlation) (Konopka, 2021). Weight coefficients are defined based on the standard deviation of each normalized characteristic ($s_j(z)$) and correlation coefficients between the characteristics *(r_{kj}),* as per the formula below:

$$w_j = \frac{c_j}{\sum_{j=1}^{n} c_j} \tag{3}$$

where: $c_j = s_j(z) \sum_{k=1}^{n}\left(1 - r_{kj}\right)$

Next, the normalized values of characteristics were multiplied by weight coefficients of importance of simple characteristics:

$$z_{ij}^* = z_{ij}\, w_j \tag{4}$$

Step 4: Determining the coordinates of ideal units for normalized characteristics. The positive ideal (A+) solution and the negative ideal solution (A-) as per the following formulas:

$$A^+ = (\max_i(z_{i1}^*), \max_i(z_{i2}^*), \dots, \max_i(z_{iK}^*)) = (z_1^+, z_2^+, \dots, z_K^+) \tag{5}$$

$$A^- = (\min_i(z_{i1}^*), \min_i(z_{i2}^*), \dots, \min_i(z_{iK}^*)) = (z_1^-, z_2^-, \dots, z_K^-) \tag{6}$$

Step 5: Calculating the Euclidean distances of each object (small town) under consideration from the positive and negative ideal competitiveness:

$$d_i^+ = \sqrt{\sum_{k=1}^{K}(z_{ik}^* - z_K^+)^2} \tag{7}$$

$$d_i^- = \sqrt{\sum_{k=1}^{K}(z_{ik}^* - z_K^-)^2}, \tag{8}$$

where: i= 1, 2, …, N.

Step 6: Using TOPSIS to calculate the value of the synthetic characteristics of small towns competitiveness in Poland:

$$S_i = \frac{d_i^-}{d_i^+ + d_i^-} \tag{9}$$

with $0 \le S_i \le 1$, where i = 1, 2, …, N.

The values of the synthetic metric calculated using TOPSIS vary in the range of 0 to 1. The closer the town to the ideal unit (development model), the more distant it is from the negative ideal solution, and the greater the value of its synthetic metric. At the same time, it indicates a higher competitiveness level of the town concerned.

Step 7: Based on the values of the synthetic metric, the small towns covered by this study were linearly ordered by level of economic competitiveness.
Next, the study identified separate typological classes of small towns based on the arithmetic mean ($\bar{q}$) and standard deviation (s_q) calculated for the synthetic metric (Wysocki, Lira, 2007):

class 1: $S_i \ge \bar{q} + s_q$ (small towns at high levels of the phenomenon under investigation),

class 2: $\bar{q} + s_q > S_i \ge \bar{q}$ (small cities at medium-high levels of the phenomenon under investigation),

class 3: $\bar{q} > S_i \geq \bar{q} - s_q$ (small cities at medium-low levels of the phenomenon under investigation),

class 4: $S_i < \bar{q} - s_q$ (small towns at low levels of the phenomenon under investigation).

6. Research Results and Discussion

6.1 Typology of Economic Competitiveness of Small Towns

This analysis demonstrated moderate variation in levels of economic competitiveness between small Polish towns in the periods covered, as reflected by the coefficient of variation (21.53-22.5%) and the range of the synthetic metric (0.3896; 0.4306; 0.4134; 0.4879) (Table 3).

There was growth in the level of economic competitiveness of small towns, as suggested by the increase in the median value of the synthetic metric (from 0.2996 in 2004-2006 to 0.3472 in 2020-2021). The COVID-19 pandemic in 2020-2021 had a detrimental effect on the economic competitiveness of some small towns, as shown by the minimum value of the synthetic metric (dropping to 0.0905) being reached in this period.

There was moderate positive asymmetry in the levels of economic competitiveness of Polish small towns, which suggests the prevalence of units with below average values of the synthetic metric. This was particularly noticeable in 2011-2013 (A_s=0.49).

Table 3. Descriptive statistics for the evolution of economic competitiveness of small Polish towns

Specification	2004-2006	2011-2013	2017-2019	2020-2021
Min	0.0824	0.1236	0.1539	0.0905
Med	0.2996	0.3094	0.3393	0.3472
$\bar{x}$	0.3092	0.3312	0.3531	0.3593
Max	0.4720	0.5542	0.5672	0.5784
R	0.3896	0.4306	0.4134	0.4879
v_s (%)	21.71	21.53	22.02	22.51
A_s	0.31	0.49	0.22	0.26

Legend: Min.: minimum, Med.: median, $\bar{x}$: arithmetic mean, Max: maximum, R: range, v_s: coefficient of variation, A_s: skewness.
Source: Own study based on the Local Data Bank of the Central Statistical Office.

The small towns covered by this study were grouped into four typological classes based on similar levels of economic competitiveness. In 2004-2006, most towns

were at medium-low and low levels of economic competitiveness (71% of small towns were members of class 3 or 4) (Table 4).

However, an increase was witnessed in the next periods. In 2020-2021, the percentage of small towns attributed to class 1 and 2 grew to reach 22.7% and 30.9%, respectively. Nearly half (46.4%) of small towns did not move between the classes of economic competitiveness over the study period.

Table 4. *Typological classes for the levels of economic competitiveness of small Polish towns*

Typological class	Values of the metric	Competitiveness level	2004–2006		2011–2013		2017–2019		2020–2021	
			N	%	N	%	N	%	N	%
1	above 0.4150	*high*	10	9.1	14	12.7	23	20.9	25	22.7
2	0.3382 to 0.4150	*medium-high*	22	20.0	30	27.3	32	29.1	34	30.9
3	0.2614 to 0.3382	*medium-low*	58	52.7	52	47.3	45	40.9	42	38.2
4	below 0.2614	*low*	20	18.2	14	12.7	10	9.1	9	8.2

Note: *N- number of small towns in the competitiveness class.*
Source: *Own study based on the Local Data Bank of the Central Statistical Office.*

Class 1 consisted of small towns at a high level of economic competitiveness. Small towns with a synthetic measure value exceeding 0.4150 were ordered into class I. Their percentage more than doubled between 2004-2006 and 2020-2021.

Nearly all small towns covered by the analysis which reported high levels of economic competitiveness in the first benchmarking period (2004-2006) remained in that class throughout the next periods (except for Aleksandrów Kujawski, member of class 2 in 2011-2013).

The towns which upgraded to the high class of economic competitiveness were members of class 2 in the previous period, except for Skórcz which, due to a considerable increase in the value of the synthetic metric, moved from class 3 (2004-2006) to attain a high level of economic competitiveness (class 1) in 2011-2013. Towns with a population over 10,000 had a dominant share in class 1 (accounted for more than 80% of towns at high levels of economic competitiveness in each period covered by the analysis).

In class II, small towns with a synthetic measure value of 0.3382 to 0.4150. In 2020-2021, one-third of towns covered by the study were grouped in class 2, i.e., 10% more than in the first benchmarking period. In the four benchmarking periods identified, 26% of small towns under consideration maintained a medium-high level

of economic competitiveness. In turn, 64% of towns which belonged to class 2 in 2020-2021 were attributed to class 3 in 2004-2006 (Table 4).

In 2004-2006, average-high levels of competitiveness were mostly witnessed in towns with a population over 10,000 (55% of class 2 members were small towns with a population of 15,000 to 20,000). Over the successive periods, there was growth in the share of class 2 towns with a population below 10,000; in 2020-2021, they accounted for nearly half of class 2 members.

Small towns in class III had a synthetic measure value between 0.2614 and 0.3382. In the periods covered by the analysis, class 3 had the biggest share of small towns; in 2004-2006, medium-low levels of economic competitiveness were recorded in 52% of small towns under consideration, but an improvement in small town competitiveness resulted in reducing that percentage (Table 4).

The rearrangement of this class was the consequence of an upgrade in small towns previously attributed to class 4. In the periods covered by the study, small towns with a population of 5,000 to 10,000 comprised one-third of the class at medium-low levels of economic competitiveness. The percentage of towns with a population above 10,000 declined over the years.

Class IV, small towns with a measure value of less than 0.2614 were ranked. In 2004-2006, low levels of economic competitiveness (class 4) were recorded in 18% of towns covered by the study. However, that percentage had changed significantly by 2021 (going down to 8.2% in 2020-2021) (Table 4). Note that 55% of towns at low levels of competitiveness in 2020-2021 were members of class 4 in earlier periods, too.

However, it needs to be emphasized that being at a low level of economic competitiveness does not necessarily mean stagnation or decline in competitiveness. In most towns under consideration, the value of the synthetic metric grew consistently between the periods, yet not enough to make them shift to another typological class. Class 4 mostly consisted of towns with a population below 10,000 (nearly 90% in 2020-2021). In 2011-2013, 2017-2019, 2020-2021, none of the towns with a population of 15,000 to 20,000 recorded a low level of economic competitiveness.

In 2004-2006, medium-low and low levels of economic competitiveness (class 3 and 4) were witnessed in most small towns of the eastern part of the country (Figure 1), i.e., in those surrounded by rural areas where traditional farming plays a dominant role and the shift to non-agricultural activities is a sluggish process (Stanny *et al.,* 2021). Note that small towns are cities in which a varying extent of agricultural functions can be identified. A study on agricultural functions of very small towns carried out by Szmytke and Tomczak (2022) found that the highest development

degree of the agricultural function was recorded in the eastern and southern part of the country.

Obviously, this has an effect on the economic competitiveness of small towns. The level of economic competitiveness of eastern Polish towns covered by this study improved between successive periods. However, they still lagged behind their peers located in the western part of the country.

Throughout the study, small towns from northwest Poland were the most economically competitive, as already found in the first period (2004-2006). A significant improvement was also witnessed in small towns in the southwest region which clearly became more attractive to investors (Godlewska-Majkowska, 2018) (at commune level) (Figure 1).

Figure 1. *Regional differences in levels of economic competitiveness of small Polish towns in 2004-2006, 2011-2013, 2017-2019 and 2020-2021*
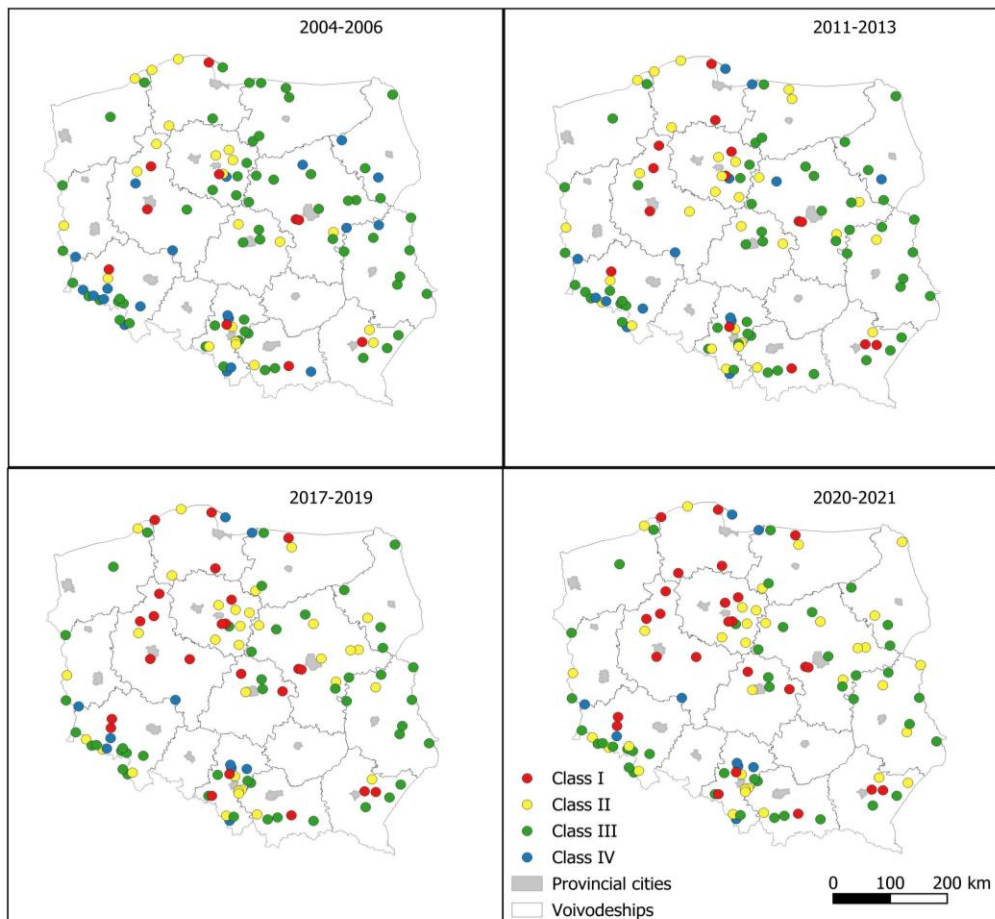
Source: *Own study based on the Local Data Bank of the Central Statistical Office.*

The regional differences in levels of economic competitiveness of small Polish towns form a consistent pattern, with a more developed western part and a weaker eastern region. These conclusions were drawn from scientific research by Bożek *et al.* (2021) and Misiewicz *et al.* (2018) who assessed the economic development (or economic governance) of Polish voivodeships.

Location is believed to be the factor behind the differences between small towns, and a criterion of classification or typology (Bański, 2022). Indeed, communes located next to big cities find themselves in a better socioeconomic situation than remote units (Figure 1). This is corroborated by a number of research projects, including the study by Bartkowiak-Bakun (2021) who analyzed the economic governance of Polish rural areas.

The scope of urban impacts on rural areas varied in function of the population's and economic potential. Another finding from research into the economic competitiveness of small towns is that in many cases, those located next to regional capital cities enjoy a better standing (Figure 1).

6.2 Economic Competitiveness vs. Size of Small Towns

The analysis of competitiveness levels in relation to the size (population) of small towns found that cities with a population above 10,000 were more economically competitive (Figure 2).

Figure 2. *Economic competitiveness levels of Polish small towns grouped by size*
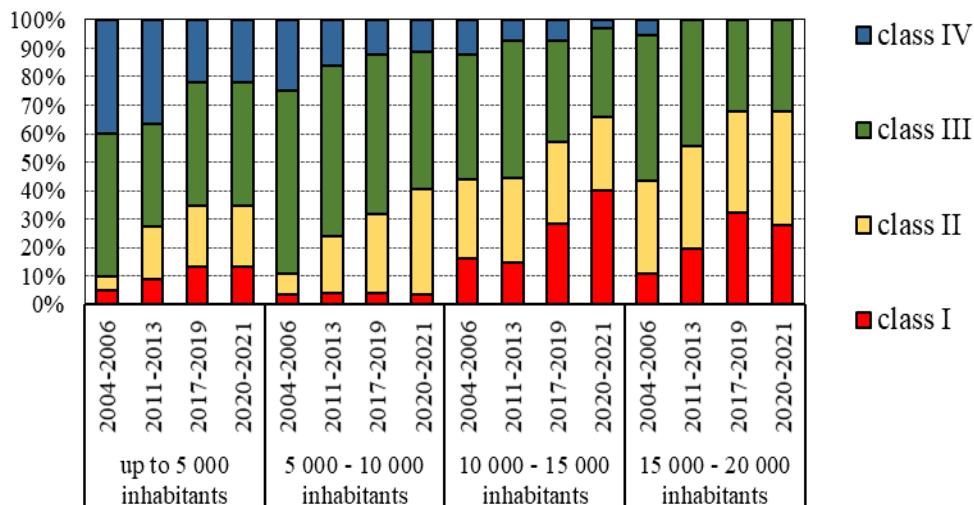
Legend: *class 1: high, class 2: medium-high, class 3: medium-low, class 4: low*
Source: *Own study based on the Local Data Bank of the Central Statistical Office.*

This was already evident in the first period of the study (2004-2006) where more than 40% of small towns of that size class were attributed to class 1 and 2 of economic competitiveness levels.

In the next periods, they improved their competitiveness: in 2017-2019, almost 70% of small towns with a population of 15,000 to 20,000 recorded high or medium-high levels of economic competitiveness (class 1 and 2). Note that none of the members of this size group was at a low level of economic competitiveness (class 4) in 2011-2013, 2017-2019 and 2020-2021.

However, it was otherwise in smaller towns (with a population below 10,000). In 2004-2006, barely 10% of them were attributed to class 1 or 2 of economic competitiveness. Nevertheless, progress was witnessed in the next periods. In the group of towns with a population of 5,000 to 10,000, the percentage of class 1 members remained constant. In turn, there was growth in the share of class 2 members (i.e., towns at medium-high levels of economic competitiveness).

6.3 The COVID-19 Pandemic vs. Competitiveness Levels of Small Polish Towns

Since 2020, territorial units have been experiencing some direct and indirect impacts of coronvirus. The COVID-19 pandemic changed the conditions in which countries, regions and cities operate. Their socioeconomic structure was disrupted (Śleszyński *et al.,* 2023), and some evident economic consequences emerged: a deterioration in the financial standing of territorial units (Klimek, 2022; Halamska and Ptak, 2022; Włodyka, 2021; Dębkowska *et al.,* 2020), and a reorientation of the labor market (Krzyścin and Socha, 2022, Dębkowska *et al.,* 2022).

While the above changes are not covered by this study, they might have impacted the levels of economic competitiveness. The effects of these changes are considered in the structure of indicators used in analyzing quantitative data. The period covered (2020-2021) reveals the quantitative consequences of these events (a result-oriented approach). As shown by the analysis of findings from this study, 24% of small towns recorded a decline in the value of the synthetic metric between the periods 2017-2019 and 2020-2021. However, only one of them moved to another competitiveness class. Of the towns which saw an increase in the value of the synthetic metric, seven progressed enough to move to a higher class of economic competitiveness.

Importantly, each of the periods covered by the analysis witnessed an increase in the percentage of towns with a declining value of the metric. Also, 8% of towns which raised their level of economic competitiveness in 2020-2021 recorded a decline in the value of the metric in 2017-2019 (compared to 2011-2013).

Conversely, over the next years, the smallest towns (with up to 5,000 residents) saw an increase in the share of cities at high and medium-high levels of economic competitiveness. Note however that in 2017-2019, the percentage of this size group

in class 1 and 2 was anyway smaller than that of towns with a population above 10,000 in 2004-2006.

The results presented in Figure 2 need to be briefly discussed in view of the findings from the last period (2020-2021) covered by the study. The percentage of class 1 members (at high levels of economic competitiveness) increased by 10% in towns with a population of 10,000 to 15,000.

However, it was not caused by improvements in economic competitiveness, but by a decline in the number of residents. Hence, in 2020-2021, some towns with a declining population moved from the 15,000–20,000 size group to become members of the group of cities with a population of 10,000 to 15,000.

A similar situation took place in class 1 members (at high levels of economic competitiveness) with a population of 15,000 to 20,000 in 2017-2019. In that period, a smaller number of them were part of class 1, because the decline in population moved them to the group with less than 10,000 resident.

As regards the latter ratio, note that it suggests the existence of medium and large businesses who reinforce the local labor market, which is of particular importance to urban areas. What matters from the perspective of improvements to economic competitiveness is the scope of non-agricultural economic activity. Small towns find themselves between rural areas and medium and big cities. Many of them are still home to agricultural activities which, as is known, are not advantageous to city budgets and do not favorably affect the incomes of households engaged in farming.

This study used the ratio of businesses active in the agriculture, forestry, hunting and fisheries sectors in the total number of economic operators, and found that towns at high levels of economic competitiveness had a minor share of farming companies (which remained at a stable level of 0.9% throughout the analysis period).

Also, the towns at the highest levels of economic competitiveness demonstrated variation in what they offered to tourists (the coefficient of variation of indicators in class 1 was extremely high). The average values of indicators were above the average levels for the total sample covered by the study, and changed considerably between the periods under investigation. This could suggest that towns which moved to class 1 in successive periods had a good tourism base.

As regards technical infrastructure, high levels of economic competitiveness of small towns were manifested in well-developed water, sewerage and gas networks (the corresponding ratios were twice as high as in the overall sample). Variation was discovered in the small towns' financial indicators. Class 1 and class 2 members had similar levels of own incomes per capita. Also, there was fluctuation in the share of investment expenditure in total expenditure (which consistently declined between successive periods).

Good entrepreneurial characteristics of small towns at high levels of economic competitiveness translated into high revenues from personal and corporate income taxes per PLN 1 of agricultural tax. Even though they declined over successive periods, they were clearly higher than the amounts recorded in members of class 2, 3 and 4 (Table 5).

Note however that class 1 towns covered by this study demonstrated extreme variation in that ratio. Also, in class 1 members, high levels of economic competitiveness were related to their residents being highly economically active. The average values of the relevant indicator were above the mean level for the overall sample.

6.4.2 Medium-high level of economic competitiveness of small towns
Towns at medium-high levels of economic competitiveness (class 2) saw an increase in the number of economic operators entered to the REGON register per 10,000 population; that ratio remained above the mean level for the overall sample throughout the analysis period (Table 5).

In turn, the number of economic operators with more than 49 employees per 10,000 population was similar to that recorded in class 1 towns. Small towns at medium-high levels of economic competitiveness demonstrated the most advantageous tourism base. Hence, class 2 was home to small towns where the tourism function plays an important role (e.g., Łeba, Darłowo).

The average values of the relevant indicators (especially in 2004-2006 and 2011-2013) were much above the mean level for members of other classes. Class 2 towns had a well-developed technical infrastructure; in the periods under investigation, it consisted of towns whose transport expenditure per capita was above the average for the overall sample.

For the towns under consideration, medium-high levels of economic competitiveness meant having a good financial standing. However, in this context note that in some class 2 towns, revenues from personal and corporate income taxes per PLN 1 of agricultural tax were below the amount recorded in class 3.

This suggests that agricultural activity plays an important role in many towns at medium-high levels of economic competitiveness, and has an impact on the amount of incomes they generate. The city of Zielonka recorded the highest value of the relevant indicator in 2017-2019, greatly raising the average level in that period.

In small towns attributed to class 2, the economic activity ratios were above the average level for the overall sample, and demonstrated medium levels of variation (v_s between 34% and 45% in the periods covered by the study).

Table 5. *Inter-class differences in values of economic situation indicators of small Polish towns grouped by level of economic competitiveness*

Indicators	Years	Competitiveness class				Total
		1	2	3	4	
operators entered to the REGON register per 10,000 population	2004–2006	1247.1	1212.5	1046.5	928.0	1076.4
	2011–2013	1234.7	1282.4	996.9	1171.2	1127.2
	2017–2019	1249.1	1465.1	1033.2	1326.7	1230.7
	2020–2021	1335.5	1540.9	1148.1	1541.6	1344.3
percentage of foreign-invested commercial companies in the total number of economic operators (%)	2004–2006	0.8	0.7	1.0	0.8	0.9
	2011–2013	0.9	0.9	1.1	0.8	1.0
	2017–2019	0.8	0.7	1.0	0.6	0.8
	2020–2021	0.6	0.8	0.7	0.5	0.7
economic operators with more than 49 employees per 10,000 population	2004–2006	12.9	11.9	8.9	6.4	9.4
	2011–2013	12.6	11.9	8.6	4.7	9.5
	2017–2019	12.8	11.0	8.3	2.8	9.5
	2020–2021	12.5	10.8	8.3	3.0	9.6
share of economic operators active in the agriculture, forestry, hunting and fisheries sectors in the total number of economic operators (%)	2004–2006	0.9	0.9	1.5	3.8	1.7
	2011–2013	0.9	1.5	1.6	3.8	1.8
	2017–2019	0.9	1.2	1.1	3.8	1.4
	2020–2021	0.9	1.2	1.1	4.0	1.3
density of the accommodation network (number of beds per square km)	2004–2006	22.8	83.9	12.7	14.8	28.3
	2011–2013	29.0	63.7	8.7	12.6	26.8
	2017–2019	40.3	46.5	9.6	11.0	26.9
	2020–2021	41.2	44.7	9.4	11.7	27.7
accommodation facilities per 100 km^2	2004–2006	17.8	68.9	20.8	21.9	30.4
	2011–2013	39.3	77.5	18.0	22.0	37.5
	2017–2019	64.8	77.3	21.2	28.8	47.3
	2020–2021	58.5	69.7	18.0	26.1	43.9
water distribution network per 100 km^2 (km/100 km^2)	2004–2006	468.1	310.2	184.5	100.1	220.1
	2011–2013	487.8	344.2	184.8	79.6	253.5
	2017–2019	487.8	344.2	184.8	79.6	253.5
	2020–2021	509.2	305.3	168.1	57.9	279.0
sewerage network per 100 km^2 (km/100 km^2)	2004–2006	443.2	256.0	127.3	78.1	172.8
	2011–2013	515.7	304.6	155.8	61.2	230.1
	2017–2019	523.1	327.8	164.9	57.1	277.4
	2020–2021	527.7	325.9	165.6	53.0	288.2
gas distribution network per 100 km^2 (km/100 km^2)	2004–2006	383.1	200.0	98.0	64.2	138.2
	2011–2013	432.0	198.7	102.2	44.8	163.2
	2017–2019	416.5	202.8	113.8	56.8	197.8
	2020–2021	429.9	212.5	124.7	54.7	215.5
per-capita budgetary expenditure on transport at commune	2004–2006	57.2	52.3	45.5	47.6	48.3
	2011–2013	60.2	71.8	56.7	70.3	63.0
	2017–2019	68.4	83.8	67.9	68.7	72.7

level (PLN/resident)	2020–2021	67.1	81.2	71.5	105.1	76.2
own income per capita (PLN/resident)	2004–2006	1268.7	1202.0	1088.3	908.6	1094.8
	2011–2013	1899.6	1920.4	1582.2	3084.8	1906.1
	2017–2019	2617.3	2794.2	2226.4	3455.8	2585.1
	2020–2021	3153.4	3435.7	2897.1	4339.0	3239.8
share of investment expenditure in total expenditure (%)	2004–2006	18.1	18.5	15.3	14.4	16.0
	2011–2013	18.9	18.8	16.0	21.0	17.8
	2017–2019	15.0	17.5	14.9	18.7	16.0
	2020–2021	14.7	15.1	13.6	11.7	14.2
personal and corporate income tax per PLN 1 of agricultural tax (PLN)	2004–2006	7179.6	381.4	882.1	343.2	1256.5
	2011–2013	2149.6	335.6	982.3	266.4	863.4
	2017–2019	3049.2	2561.6	414.0	217.6	1571.9
	2020–2021	2678.1	398.8	2204.4	148.9	1585.8
per-capita budgetary revenue at commune level derived from personal and corporate income taxes (PLN/resident)	2004–2006	650.4	368.9	322.7	243.2	347.3
	2011–2013	907.2	631.1	549.3	447.7	604.2
	2017–2019	1225.6	1021.6	830.4	813.0	967.0
	2020–2021	1365.0	1167.1	1006.4	987.6	1136.0
economic activity ratio: number of working people per 100 working-age population	2004–2006	35.8	43.4	32.9	24.6	33.8
	2011–2013	42.0	43.0	34.5	23.8	36.4
	2017–2019	50.6	48.8	35.8	22.4	41.4
	2020–2021	53.2	53.4	36.9	24.4	44.7

Legend: class 1: high level of economic competitiveness; class 2: medium-high level of economic competitiveness; class 3: medium-low level of economic competitiveness; class 4: low level of economic competitiveness

Source: *Own study based on Central Statistical Office data.*

6.4.3 Medium-low level of economic competitiveness of small towns

In class 3 small towns (at medium-low levels of economic competitiveness) covered by this study, the number of economic operators with more than 49 employees per 10,000 population did not exceed 10, which is less than in their class 1 and class 2 peers.

Class 3 was home to small towns with the highest percentage of foreign-invested commercial companies (in 2004-2006, 2011-2013 and 2017-2019) (Table 5). In this context, note that a 1% share of such businesses is above the average level for Polish rural communes. Also, that ratio greatly differed between class 3 members (with the v_s above 200% in 2004-2006 and 2011-2013).

The medium-low level of economic competitiveness was manifested in infrastructural indicators being below the average for the towns covered by this

study. It needs to be emphasized that these characteristics had the highest weight coefficients. In 2020-2021, the density of the sewerage network was 3 times smaller than in class 1.

Moreover, transport expenditure per capita was at the lowest level of all classes of economic competitiveness. Class 3 was composed of small towns with a much less extensive tourist base than in class 1 and class 2. In members of this class, the number of accommodation facilities per 100 km^2 was ca. twice smaller than the average for the cities under consideration.

Conversely, class 3 was ranked high in terms of revenues from personal and corporate income taxes per PLN 1 of agricultural tax. However, this is because the city of Zielonka (where the ratio reached its peak, e.g., nearly PLN 40,000 in 2011-2013) was member of that class in 2004-2006, 2011-2013 and 2020-2021. In the periods covered by this analysis, the average indicator of economic activity in class 3 was similar to that recorded elsewhere. The small towns did not differ much between one another in that respect (Table 5).

6.4.4 Low level of economic competitiveness of small towns

Class 4, i.e., the groups of towns at low levels of economic competitiveness, was heterogeneous in terms of entrepreneurship (Table 5). The average number of operators entered to the REGON register per 10,000 population grew over the periods under consideration. However, there was a decline in the average percentage of foreign-invested commercial companies in the total number of economic operators, and in the number of economic operators with more than 49 employees per 10,000 population.

Also, these small towns recorded the highest average percentage (4%) of economic operators active in the agriculture, forestry, hunting and fisheries sectors in the total number of economic operators. Class 4 members demonstrated growing heterogeneity in that respect (with a Vs at 41.7% and 70.9% in 2004-2006 and 2020-2021, respectively).

Furthermore, that ratio is on a clear decline trend at the countrywide level; as a comparison, the average for Poland in 2017-2019 was more than half smaller. Since class 4 included some tourism centers (e.g., Hel, Karpacz, Wisła), the indicators of the tourism base were more advantageous than in class 3 towns.

Note however that class 4 was strongly heterogeneous in that respect. Also, low levels of economic competitiveness were reflected in significantly smaller average values of infrastructural indicators. As some towns upgraded to a higher class between successive periods, there was a drop in the ratios relating to the waster distribution and sewerage networks per 100 km^2 and in the variation of characteristics (the v_s coefficient nearly halved).

Towns at low levels of economic competitiveness witnessed considerable changes in the average value of own incomes per capita. This is because the city of Krynica Morska, which recorded the highest amounts of own incomes per capita (e.g., more than PLN 12,000 in 2017-2019, i.e., twice as much as in the second-best town), was part of that class in 2011-2013, 2017-2019 and 2020-2021.

In turn, revenues derived from personal and corporate income taxes per PLN 1 of agricultural tax were much smaller in members of that class. Although this ratio varied greatly between small towns of every class of economic competitiveness, the variation in class 4 towns was at one of the lowest levels.

Finally, a low level of economic competitiveness was also manifested by small economic activity ratios (not above 25 people per 100 working-age population in the periods under analysis) (Table 5).

7. Summary and Concluding Comments

In view of regional differences in levels of economic competitiveness, small towns located in western Poland (especially in the northwest part of the country) were found to be in a better competitive position. They are surrounded by areas with a low agricultural potential and a beneficial economic potential (Prus *et al.,* 2021).

Conversely, small towns located in the eastern part of the county reported low levels of economic competitiveness. They operate in agricultural territories which are dominated by small farms with minor volumes of marketable production (Prus *et al.,* 2021), are less attractive to investors, and have a less developed infrastructure.

To a certain extent, the economic competitiveness of small Polish towns is the consequence of their being part of one of the three Partitions (Prussian, Austrian or Russian). The former Prussian Partition follows a positive and rapid development trend and has an eager market. Small towns of this part of the country recorded the highest levels of economic competitiveness.

The former Austrian Partition is on a slower growth path, which can also be seen in small towns located there. In turn, small towns in Eastern Poland were under Russian Partition, a territory characterized by low levels of socioeconomic development and a slow pace of changes. These towns demonstrated poor economic competitiveness and did not significantly evolve over the years.

Small towns (and communes in general) located in the eastern part of the country continue to be affected by these historical circumstances to this day. The differences in development between the Partitions were so big that the economy of eastern Poland still lags behind the other parts of the country despite the ongoing investments and targeted programs.

This is exacerbated by geographic conditions (their easterly location) which makes these regions clearly less attractive to investors. The above conditions are reflected on both the local (e.g., rural communes) (Zarębski, 2012; Stanny *et al.,* 2021) and regional (voivodeship) level (Bożek *et al.,* 2021).

This study is consistent with other research projects focusing on the relationship between the development of other territorial units and their location relative to big cities. Small towns located within the impact area of central cities demonstrated better economic performance than their peers located elsewhere. This kind of divergence was observed by authors such as Servillo *et al.* (2014) who reviewed the role of small towns across Europe.

Another example is the research of Hamdouch *et al.* (2017) in selected cities in Europe, who, in their study, identified "dynamic" cities, i.e. those that are growing well. Among them were numerous cases of small towns located in metropolitan regions. The "neighborhood effect" of small towns near large cities is described in Baudelle Buron's article (2021). In the article, the authors point out that this effect is also present in France.

Another instance is the study conducted by Hon *et al.* (2023), which examined the phenomenon of shrinking cities attributed to their proximity to larger cities. In contrast, in Romania, urban areas of attraction are regarded as subordinate to the center (2023). Therefore, consideration has been given not only to the location factor, but also to the necessity to adapt and adhere to the regulations established by large cities.

In the context of this study, the following question needs to be asked: can the pandemic COVID-19 affect the competitiveness and development of Polish cities and rural areas? A survey conducted by Dębkowska *et al.* (2022) in more than 200 small towns in Poland showed that in more than half of the cities surveyed, the labor market situation had deteriorated. In nearly 75% of the small towns that participated in the survey, the financial situation of individuals deteriorated.

In order to stimulate local entrepreneurship in many cities, measures were planned that would increase activity in the local labor market. The study was conducted right after the announcement of the COVID-19 pandemic. Small towns were therefore strongly affected by the pandemic from the beginning of its announcement.

This study exercised caution in interpreting the findings from measurements carried out in 2020-2021, because they do not provide grounds for concluding whether the war had an impact on the economic competitiveness of small towns. Hence, this paper only presents some inconclusive remarks. The economic competitiveness of small towns in 2020-2021 was certainly impacted by the COVID-19 pandemic.

In 2020-2021, research showed that small towns are becoming more economically

competitive. This means that cities are trying to grow based on the resources and opportunities they have. The pace of this change may be different, but it is crucial to be able to adapt to sudden events and remodel the socioeconomic structure.

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.

Both this study and the analyses carried out by other authors strengthen the view that there is need for supporting small towns and remote rural areas in order to bridge the development gap and counter the adverse trends they witness.

The development of large cities affects the economic development of the country, but this must not be at the expense of small towns. Regional policies should be more focused on areas affected by population migration to larger cities. Cities that lose residents also lose socio-economic potential. Measures that will attract and retain the population in small towns should be considered key. Another element is to attract business, especially larger companies.

This paper assessed the economic competitiveness of small Polish towns. The empirical analysis revealed regional differences in levels of economic competitiveness between small towns. Moreover, the defined study periods allowed to discover growth and changes in the phenomenon concerned taking place at different rates across the country.

It is important to note that the COVID-19 pandemic did not stop the competitiveness phenomenon in the studied cities. The level of competitiveness achieved in 2020-2021 is due to a remodeled socio-economic structure.

The analysis of competitiveness levels in relation to the size of small towns provided a basis for concluding that cities with a population of over 10,000 were more economically competitive, which was evident already from the beginning of the study period.

Even though small towns (irrespective of their size, i.e., population) were found to increase their competitiveness level, in the last period under analysis (2019-2020) the smallest ones (with a population of up to 5,000) did not even come close to what was recorded in towns with a population above 10,000 in the first period covered by the study (2004-2006).

Small towns form a heterogeneous group. This study lays grounds for identifying and discussing the success factors which drive high levels of small towns

competitiveness, including the presence of medium and large economic operators on their territory. The activity of larger companies carries multiple benefits, such as greater tax revenue to the commune budget or increased employment (more jobs for both blue and white collars).

The presence of larger businesses is of particular importance to the latter group (having in mind that young people migrate to big cities and metropolises) as they create jobs for university graduates. Also, large economic operators would somehow contribute to mitigating the outflow of people to big cities.

Still on the subject of entrepreneurship, another factor of interest is non-agricultural economic activity. While agriculture is a sector associated with rural areas, it does not mean it cannot be found elsewhere. Indeed, small towns can be home to farming businesses, although to a small degree.

The study found that in small towns at low levels of economic competitiveness, the percentage of economic operators active in the agricultural sector is much higher than that recorded in towns at higher levels.

Another thing that needs to be emphasized is the importance of the technical infrastructure. The literature has for many years highlighted its role in commune development, and this study proved it still is a factor of relevance.

The differences between classes in values of economic situation indicators of small towns (grouped by level of economic competitiveness) revealed a certain heterogeneity in each class. Namely, there is no strict relationship between the level of competitiveness and the values of indicators covered by the analysis. This can be illustrated by the example of the percentage of foreign-invested commercial companies in the total number of economic operators.

Although it was essentially negligible, it reached its peak in towns at medium-low levels of economic competitiveness (class 3). Conversely, as regards other indicators, certain patterns exist: for instance, the higher the level of economic competitiveness of a small town, the greater the ratios relating to its technical infrastructure resources.

Heterogeneity was also discovered by using the coefficient of variation in presenting the differences in indicator values between competitiveness classes. There were considerable differences between small towns in terms of entrepreneurship, tourism, infrastructure and employment. The above means that the average indicator values for particular classes of economic competitiveness should not be interpreted in a literal way.

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