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DIFFERENCES IN THE LOCAL RESIDENTIAL REAL ESTATE MARKET IN POLAND DEPENDING ON POPULATION DENSITY

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Purpose: The aim of the article is to identify and assess the diversification of the situation in the local residential real estate market in Poland, i.e., in poviats, i.e. in poviat local government units without cities with poviat rights, depending on their population density.
Design/methodology/approach: The article identifies and assesses the diversification of the situation in the local residential real estate market in Poland, i.e., in poviats, i.e. in poviat local government units without cities with poviat rights, depending on their population density. The empirical material used in the article concerns all land poviats in Poland, i.e. poviat local government units without cities with poviat rights. The numerical data comes from the Central Statistical Office in Warsaw (Local Data Bank), and the time scope of the research covers the years 2020-2022. The collected and organised empirical material was prepared in tabular and graphic form, using the comparative analysis. Moreover, the following measures of descriptive statistics were used to analyse the data: dynamics index, mean, and coefficient of variation. Additionally, a point assessment of all diagnostic features illustrating the situation in the local residential real estate market in Poland, i.e., in separate groups of land poviats depending on their population density against the background of all land poviats, which is a new approach to the research problem discussed in the article.
Findings: The statistical data confirmed the research hypothesis put forward in the article, assuming that population density is an important factor shaping the situation in the local residential real estate market in Poland, with the situation being better in rural poviats with lower population density and the worst in rural poviats with lower population density, the highest population density.
Originality/value: The originality of the work lies in the author's approach to the analysis of the undertaken research issues and a point-by-point assessment of the situation on the local residential real estate market in Poland, i.e., in separate groups of land poviats depending on their population density compared to all land poviats. The work may be useful and is addressed primarily to central-level politicians and local government officials responsible for the conditions, opportunities, and directions of local socioeconomic development of poviat local government units, as well as to other decision-makers implementing local development policy in Poland.
Keywords: residential real estate market, land districts in Poland, population density.
Category of the paper: research paper.

1. Introduction

The issue of regional and local development in the context of socioeconomic growth and development processes is important not only for building social prosperity, but also for maintaining competitive advantages of enterprises, regional and local economies, and the national economy. This also translates into the social and political situation, as well as the development of financial flows, investments, and the settlement network. From the point of view of society and economy as well as the socioeconomic development of the country, regional and local disproportions are particularly important in this respect and are common in countries with market economies, regardless of their location, history, culture, or level of development. It should be added that the scale of these disproportions in individual countries varies, and their consequences for societies and economies are of different importance. Therefore, reducing them is a priority and a subject of interest for both the entire European Union and its individual member states (Kraska, Kot, 2021).

The real estate market is a very important field for research and considerations both in the sphere of science, business, and social and economic policy, as well as regional and local policy. Regardless of the understanding and importance of the real estate market, it is a complex and interdisciplinary area of research, often going beyond mainstream economics. The research methods used in this area and the analysis of publications indicate that the real estate market is still a current and important research area, still in the development phase (Borowska, Domańska, 2016).

The housing market is one of the major segments of the real estate market and is very important socially. Today, as housing assets, related construction, and mortgage receivables increase, in addition to purely consumer and social functions, the importance of the housing sector as a factor of economic growth and stability of the financial sector increases. However, due to the impact of the housing sector on the economy, its functioning and development are important issues in the cognitive and application aspect (Allen, Carletti, 2011; Zaremba, 2011; Grzybowska-Brzezińska, Kuberska, Wojarska, 2017).

The real estate market is in a permanent imbalance, characterized by periodic excess of demand or supply, and the basic cause of this phenomenon is related to its specific nature. As a rule, the imbalance in the real estate market has a structural basis, and consumers (households) and investors are aware that the property they want is in many cases the so-called rare good that can only be purchased at a specific time and under the conditions currently dictated by the market. It should be added that real estate can not only meet the consumption needs of, e.g., households but can also be a relatively safe form of investing their capital, which means that the residential real estate market is related to the capital market in terms of demand (Belniak, 2008).

The development of the residential real estate market depends on a number of diverse but closely related factors. These include primarily: sociodemographic, economic, legal, financial, institutional, and political conditions. These factors mean that the real estate market is subject to constant changes and the relationship between it and its environment is a feedback loop. However, the real estate market is characterised by its specificity related to its features, including the real estate of the product offered, i.e., its close connection with a specific location, its physical features, lack of substitutes, high capital intensity and durability, individual nature, and confidentiality of the transaction. All this means that we are dealing with a diversity of supply and uniqueness of individual transaction items that are unparalleled in other markets. It should be added that a given, specific environment, e.g. local, and its specific features and conditions may either favor the development of this market, limit it, or even inhibit it. It is worth paying special attention to the sociodemographic environment of the real estate market, especially in relation to the housing market. Demographic conditions play a key role in shaping the real estate market, especially at the local level (including: changes in population, population density, natural increase, migration balance, percentage of the working-age population). This regularity applies in particular to long time horizons, as demographic changes are rarely sudden. This is a favourable situation from the point of view of investment activities, because demographic trends are widely analysed, thanks to which it is possible to predict with considerable accuracy the impact of demographic factors on this market in the future. The development of the real estate market is therefore largely dependent on the current and future demographic situation (Łaszek, 2006; Belniak, 2001, 2008; Foryś, 2010; Gołąbeska, 2011; Zaremba, 2011; Kłusek, 2016; Grzybowska-Brzezińska, Kuberska, Wojarska, 2017).

A very important participant in the residential real estate market is the household, which is an economic entity, separated in the economic sense on the basis of personal property and making decisions regarding consumption and investment based on its own preferences and existing objective constraints (i.e. price and income). The basis for the development of households are decisions regarding the choice of level and field of education, the choice of place of work and residence, and how to spend the money earned. Each household strives to spend its income in such a way as to achieve the greatest possible utility from the purchased goods and services in accordance with its own preferences, and when making decisions, it is guided by both subjective factors (i.e., traditions, preferences, habits, etc.) and objective factors (i.e., the amount of wages, pensions, interest, prices, taxes, etc.). The consequences of decisions made by households are, on the one hand, a specific amount of demand for goods and services, and, on the other hand, the size and structure of supply. Therefore, households are the basic units of the sphere of consumption which, having money, material resources and the time and work of their members, finance the purchases of goods and services, produce items of consumption and services, and organize the processes of consumption and investment (Zalega, 2007; Kośny, 2013; Grzybowska, 2014; Kozera, Stanisławska, Głowicka-Wołoszyn, 2016; Bywalec, 2017, 2020; Kata, Nowak, Leszczyńska, Kowal, Sebastianka, 2021).

An important factor shaping the situation on the residential real estate market may be the financial situation of households, i.e., their financial situation and the state of their material resources, which inform about the family's wealth and largely influence the level, quality and conditions of its life. The financial situation of a household is therefore determined by both its assets and the level of income, and the impact of these two elements on the economic behaviour of households may be not only substitutive but also complementary, when low income is compensated by previously accumulated assets. In turn, the decisions that households make in the sphere of consumption depend not only on their financial situation or conditions on the market of goods and services, but also on state policy or the economic condition of the country. Through the tools that the state uses to stimulate socioeconomic growth and development and to improve the living conditions of citizens within the framework of social and economic policy, it also influences the level and structure of household consumption. This applies primarily to fiscal and monetary policy, as well as income, price, and public expenditure policy. However, not only the state's policy but also its condition, in terms of the level and pace of economic growth and development, influences the decisions of entities in the sphere of consumption. Citizens of highly developed countries generally enjoy a higher standard of living than citizens of developing countries. However, the higher the economic growth rate, the faster private consumption grows and the standard of living of citizens improves. Moreover, one of the most important processes affecting the contemporary world economy and, therefore, individual national economies is globalization. Increased flows of goods, services, labour, and capital, which are manifestations of globalisation processes, largely determine the condition of modern economies, which translates into contemporary consumption patterns. For this reason, the concept of globalisation of consumption appears in the literature on the subject, which means the spread of identical or very similar consumption patterns, i.e., the so-called homogenization of consumption on a transnational scale, as well as the creation of the so-called global consumer culture. This is manifested in the greater availability of foreign goods, which means a greater variety of goods on the domestic market, and thus great opportunities to meet the consumption needs of households. Increased competition on the domestic market also influences the behaviour of domestic producers, which often results in lower prices of goods and services. It is also worth noting that increased flows, especially of goods, services, capital, and people, contribute to the diffusion of information, ideas, and culture, which has a huge impact on changes in consumption patterns. This leads to the emergence of transnational market segments that include homogeneous groups of consumers on a transnational or even global scale. This means that a group of consumers in one country has similar preferences, properties, and characteristics as the corresponding segment in another country. In the case of the global segment, these are recipients (consumers, clients) waiting for the same (global) product all over the world, which may also be of great importance and influence the situation on the residential real estate market (Choroś-Mrozowska, Clowes, 2018; Kata, Nowak, Leszczyńska, Kowal, Sebastianka, 2021).

The analysis of the domestic housing market indicates a low state of housing resources in Poland. The housing situation in the country is one of the worst in Europe. Despite a dynamic increase in the number of apartments put into use and one of the highest gross value added generated by the construction sector, Poland is still characterised by a housing deficit. It is noted that the Polish housing policy is characterised by a tendency towards increased development in terms of quantity, while at the same time insufficient concentration on improving the quality and availability of the housing fabric. One of the main problems of the housing sector remains the insufficient stock of social housing, excluded from the "market game" and intended for less wealthy households. Currently, the main "actor" on the market remains the development sector, for which apartments remain an investment with a calculable profit rate. The result is that the overwhelming and growing number of apartments remains an investment of private capital. More and more apartments are being commoditised, but the pace of growth of the stock of affordable apartments is not sufficient. Another problem is the low diversity of forms of meeting housing needs available on the market, including the shrinking cooperative and co-housing sector, and the negligible share of senior and supported housing. Government housing programmes are addressed to households that meet specific criteria, which, in addition to financial criteria, also include the conditions of specific marital status (e.g. marriage) or having children, which excludes most Poles from social housing in the so-called "housing gap" and about 70% of citizens who do not have the creditworthiness to purchase a flat. However, these programs should be treated and assessed positively, because they contribute to improving the housing situation of at least some of the least affluent Poles. However, national housing policy appears to be social rather than social in nature. It seems to be true to say that the priority in the development of the housing fabric in Poland should be the accessible, non-market sector, developed in various forms of support and responding to the needs of the widest possible group of recipients. Young people (25-34 years old) entering the labor market are particularly vulnerable to housing exclusion and, without public housing support, are forced to live in overcrowded apartments shared with family or rented on the market. The Polish housing situation differs significantly from the housing situation in other Western European countries, where a policy is implemented that focuses on creating opportunities to meet the housing needs of a wide group of citizens through various types of instruments and forms (ownership and spatial). Moreover, the price of apartments in Poland remains a significant challenge, as it is increasing at a very fast pace, much higher than the average price increase in European Union countries. Therefore, the financial availability of housing is decreasing and the number of citizens burdened with housing costs is constantly increasing. The quality of the housing fabric in Poland also remains a problem, as it differs from that of the European Union countries. This is visible primarily in the low standard of apartments, which are characterised by significant overcrowding and a relatively small area. The sources of the difficult situation on the residential real estate market in Poland seem to be primarily: too low a share of expenditure allocated to housing development, as well as macroeconomic conditions, including high inflation and the socioeconomic situation related to the war on the eastern border of our country (Samorek, Cichocki, 2023).

In turn, the systemic causes of the condition of Polish housing include: isolated and uncoordinated action of real estate market actors, fragmentary operation of sectors directly related to housing, insufficient support or failure to use the possibilities of conducting an effective housing policy by local governments, the overwhelming share of the development industry in the market structure primary housing, and insufficient evaluation of housing programmes and policies, including at the local level, that is, poviat and municipal level (Muzioł-Węcławowicz, Nowak, 2018; Samorek, Cichocki, 2023).

2. Research aim, empirical material, and research methods

The aim of the article is to identify and assess the diversification of the situation in the local residential real estate market in Poland, i.e., in poviats, i.e. in poviat local government units without cities with poviat rights, depending on their population density.

The article hypothetically assumes that population density is an important factor shaping the situation on the local residential real estate market in Poland, and that the situation is better in rural poviats with lower population density and the worst in rural poviats with the highest population density.

The empirical material used in the article concerns all land poviats in Poland, i.e. poviat local government units without cities with poviat rights. The numerical data comes from the Central Statistical Office in Warsaw (Local Data Bank), and the time scope of the research covers the years 2020-2022. The collected and organised empirical material was prepared in tabular and graphic form, using comparative analysis. Furthermore, the following descriptive statistics were used to analyse the data: dynamics index, mean, and coefficient of variation.

To achieve the aim of the work, that is, to identify and assess the diversification of the situation in the local residential real estate market in Poland, that is, in poviats, i.e. in poviat local government units without cities with poviat rights, depending on their population density, the following diagnostic features were analysed illustrating:

- average number of residential premises sold as part of market transactions in 2020-2022 (dynamics) - stimulator;
- average value of residential premises sold as part of market transactions in 2020-2022 (dynamics) - stimulant;
- average usable area of a residential property sold as part of market transactions in 2020-2022 (m^2) - stimulant;

- average price of residential premises sold as part of market transactions in 2020-2022 (PLN) - a destimulant;
- average price per 1 m^2 of residential premises sold as part of market transactions in 2020-2022 (PLN) - a destimulant.

The article distinguishes three groups of land poviats depending on their population density, i.e.:

I. land poviats with the lowest population density (up to 70 people per 1 km^2);

II. land poviats with average population density (70 to 130 people per 1 km^2);

III. land poviats with the highest population density (130 people and more per 1 km^2).

Additionally, the article contains a point assessment of all diagnostic features illustrating the situation on the local residential real estate market in Poland, that is, in separate groups of land poviats depending on their population density against the background of all land poviats. Individual diagnostic characteristics were compared with the average for all land poviats, which was taken as 100 points, and their advantage or underweight was assessed accordingly in the designated groups of these poviats. Then all points were summed up and the average was calculated (Figure 1).

3. Results

In the territorial division of Poland, there are 314 land poviats, i.e., poviat local government units without cities with county rights, among which the largest group are land poviats with the lowest population density, i.e., up to 70 people per 1 km^2 (134 units, which is 42.7% overall). Next, this applies to the group of rural poviats with an average population density, ie 70 to 130 people per 1 km^2 (116 units, which is 36.9% of the total), while the least numerous is the group of rural poviats with the highest population density, ie 130 people and more per 1 km^2 (64 units, which is 20.4% of the total) (Table 1).

The data in Table 1 show that in rural districts in Poland, the average number of residential premises sold as part of market transactions increased in 2020-2022, with the highest number in 2021. However, there is a great variation in this respect between separate groups of land poviats, depending on their population density. The group of land poviats with the highest population density has the highest average number of residential premises sold as part of market transactions in 2020-2022 and it is clearly the lowest in the group of land poviats with the lowest population density. It should be added that, as in the case of all rural districts in Poland, also in all their groups depending on population density, the average number of residential premises sold as part of market transactions was the highest in 2021.

However, the diversity of this characteristic between individual districts in Poland in 2020-2022 is very large. This also applies to all separate groups of land poviats depending on their population density, with the greatest variation in this characteristic between individual land poviats in the years examined in the group of poviats with the highest population density (Table 1).

Table 1.
Average number of residential premises sold as part of market transactions in rural districts in Poland in 2020-2022

Specification	Years			Dynamics, year 2020 = 100
	2020	2021	2022	
Total land poviats (N = 314)				
Mean	253,0	307,6	284,2	137,7
Coefficient of variation V (%)	144,5	129,4	120,6	60,8
Land poviats with average population density (70 to 130 people per 1 km^2 – N = 116)				
Mean	153,7	180,1	177,1	132,7
Coefficient of variation V (%)	91,9	95,9	100,9	61,7
Land poviats with average population density (70 to 130 people per 1 km^2 – N = 116)				
Mean	216,8	277,3	257,6	149,3
Coefficient of variation V (%)	93,7	99,7	87,8	65,9
Land poviats with the highest population density (130 people and more per 1 km^2 – N = 64)				
Mean	526,3	629,4	556,8	127,1
Coefficient of variation V (%)	127,1	105,7	101,9	40,2

Source: Central Statistical Office in Warsaw.

In turn, the dynamics of the average number of residential premises sold as part of market transactions in the years 2020-2022 in landed poviats in Poland is large and positive, but differs in individual groups of these poviats, depending on their population density. It is definitely the highest in the group of rural poviats with average population density, and the lowest in the group of rural poviats with the highest population density. However, in the group of land poviats with the lowest population density, it is closest to the average for all land poviats in Poland (Table 1).

The variation in this characteristic between individual land poviats in Poland in 2020-2022 is large, but is the smallest in the group of land poviats with the highest population density, that is, this group of poviats is the most homogeneous in this respect (Table 1).

The data in Table 2 show that in rural districts in Poland, the average value of residential properties sold as part of market transactions increased in 2020-2022. However, there is a great variation in this respect between separate groups of land poviats, depending on their population density. The group of land poviats with the highest population density has the highest average value of residential premises sold as part of market transactions in 2020-2022, and it is clearly the lowest in the group of land poviats with the lowest population density.

The differentiation of this characteristic between individual districts in Poland in 2020-2022 is very large, and this also applies to all their groups according to population density (Table 2).

The dynamics of the average value of residential buildings sold as part of market transactions in 2020-2022 in rural districts in Poland is very high and positive. It should be noted, however, it varies in individual groups of land poviats, depending on their population density. Because it is definitely the highest in the group of rural poviats with average population density and the lowest in the group of rural poviats with the highest population density. However, in the group of land poviats with the lowest population density, it is closest to the average for all land poviats in Poland (Table 2).

In turn, the diversity of this feature between individual land poviats in Poland in 2020-2022 is large, and is the smallest in the group of land poviats with the highest population density, i.e. this group of poviats is the most homogeneous in this respect (Table 2).

Table 2.
Average value of residential premises sold as part of market transactions in rural districts in Poland in 2020-2022 (PLN)

Specification	Years			Dynamics, year 2020 = 100
	2020	2021	2022	
Total land poviats				
Mean	60 931 803,1	82 228 677,0	85 525 123,6	181,8
Coefficient of variation V (%)	203,8	179,4	165,6	69,9
Land countries with the lowest population density				
Mean	29 425 945,5	37 357 294,9	43 808 264,0	179,1
Coefficient of variation V (%)	120,4	119,3	140,1	81,3
Land countries with average population density				
Mean	44 158 616,9	65 807 311,3	69 082 650,1	195,1
Coefficient of variation V (%)	103,1	130,8	112,6	66,1
Land countries with the highest population density				
Mean	157 298 592,3	205 941 858,4	202 671 781,9	163,4
Coefficient of variation V (%)	153,3	128,5	123,4	41,0

Source: Central Statistical Office in Warsaw.

Table 3.
Average usable area of a residential premises sold as part of market transactions in rural districts in Poland in 2020-2022 (m^2)

Specification	Years			Average for years 2020-2022
	2020	2021	2022	
Total land poviats				
Mean	53,8	54,5	53,4	53,9
Coefficient of variation V (%)	14,7	13,3	13,3	11,5
Land countries with the lowest population density				
Mean	52,7	53,1	51,9	52,5
Coefficient of variation V (%)	16,7	13,1	13,3	9,8
Land countries with average population density				
Mean	53,7	54,4	53,2	53,7
Coefficient of variation V (%)	10,7	11,2	10,4	9,9
Land countries with the highest population density				
Mean	56,4	57,4	57,2	57,0
Coefficient of variation V (%)	15,7	15,2	15,2	14,7

Source: Central Statistical Office in Warsaw.

Based on the data in Table 3, it should be stated that in rural districts in Poland, the average usable area of residential premises sold as part of market transactions remains at a similar level in the years 2020-2022. There are no major differences in this respect between the designated groups of land poviats depending on their population density, and the group of land poviats with the highest population density has the largest average usable area of residential premises sold as part of market transactions in the years examined.

Additionally, it should be noted that the differentiation of this feature between individual land districts in Poland in 2020-2022 is small, and this also applies to all their groups depending on population density (Table 3).

The data in Table 4 shows that the average price of residential buildings sold as part of market transactions in rural districts in Poland increased in the years 2020-2022, and this also applies to all their groups depending on the density of the population. However, the average price of residential premises sold as part of market transactions in 2020-2022 is clearly differentiated between specific groups of land poviats depending on their population density. It is definitely the highest in the group of rural poviats with the highest population density and clearly the lowest in the group of rural poviats with the lowest population density. In turn, in the group of land poviats with an average population density, it is most similar to the average for all land poviats in Poland.

Table 4.
Average price of residential premises sold as part of market transactions in rural districts in Poland in 2020-2022 (PLN)

Specification	Years			Average for years 2020-2022
	2020	2021	2022	
Total land poviats				
Mean	193 321,6	216 630,0	247 228,0	219 059,9
Coefficient of variation V (%)	34,0	32,7	32,2	31,7
Land countries with the lowest population density				
Mean	169 483,1	187 894,9	216 488,0	191 288,7
Coefficient of variation V (%)	30,3	26,7	28,0	25,3
Land countries with average population density				
Mean	191 854,7	217 036,8	246 811,2	218 567,6
Coefficient of variation V (%)	24,2	23,6	22,5	22,3
Land countries with the highest population density				
Mean	245 892,5	276 056,8	312 345,1	278 098,1
Coefficient of variation V (%)	36,3	35,2	34,7	35,1

Source: Central Statistical Office in Warsaw.

The diversity of this feature between individual districts in Poland in 2020-2022 is quite large. However, it is the smallest in the group of land poviats with average population density, that is, this group of poviats is the most homogeneous in this respect, and then it also applies to the group of land poviats with the lowest population density (Table 4).

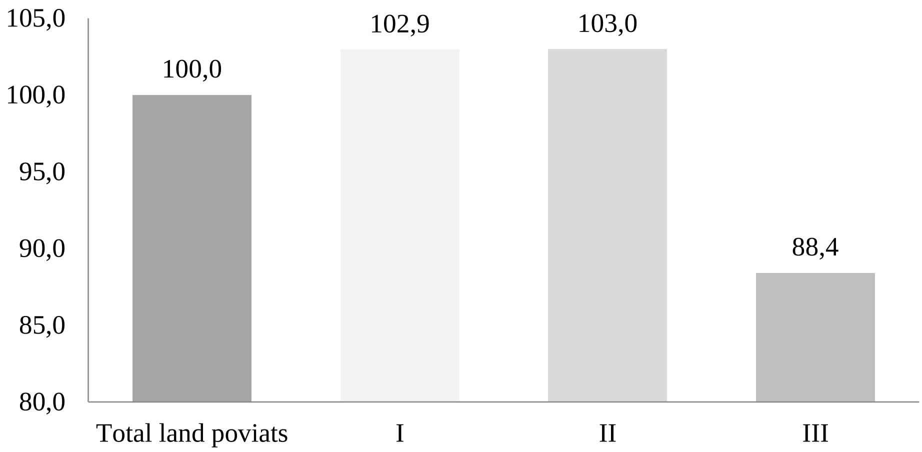
The data in Table 5 show that the average price per 1 m^2 of residential buildings sold as part of market transactions in rural districts in Poland increased in the years 2020-2022, and this also applies to all their groups depending on the density of the population. However, the average price per 1 m^2 of residential premises sold as part of market transactions in 2020-2022 is clearly differentiated between specific groups of land poviats depending on their population density. It is definitely the highest in the group of rural poviats with the highest population density and clearly the lowest in the group of rural poviats with the lowest population density. In turn, in the group of land poviats with an average population density, it is more similar to the average for all land poviats in Poland.

Table 5.
Average price per 1 m^2 of residential premises sold as part of market transactions in rural districts in Poland in 2020-2022 (PLN)

Specification	Years			Average for years 2020-2022
	2020	2021	2022	
Total land poviats				
Mean	3 564,7	3 956,0	4 595,4	4 038,7
Coefficient of variation V (%)	29,2	26,9	27,8	26,8
Land countries with the lowest population density				
Mean	3 208,2	3 555,6	4 177,2	3 647,0
Coefficient of variation V (%)	30,7	26,8	31,0	27,7
Land countries with average population density				
Mean	3 572,2	3 988,5	4 648,1	4 069,6
Coefficient of variation V (%)	21,2	20,3	21,3	19,8
Land countries with the highest population density				
Mean	4 297,6	4 735,3	5 375,4	4 802,8
Coefficient of variation V (%)	28,2	26,1	24,9	25,9

Source: Central Statistical Office in Warsaw.

However, the variation in this characteristic between individual land poviats in Poland in 2020-2022 is quite large, and is the smallest in the group of land poviats with average population density, i.e., this group of poviats is the most homogeneous in this respect (Table 5).



Explanations: I - land poviats with the lowest population density; II - land poviats with average population density; III - land poviats with the highest population density.

Figure 1. Score assessment of the situation on the local residential real estate market in Poland, i.e. in separate groups of land poviats depending on their population density compared to all land poviats (total land poviats = 100.0 points).

Source: Own study.

Figure 1 presents the results of the point assessment on the situation on the local residential real estate market in Poland, ie, in separate groups of land poviats depending on their population density compared to all land poviats. On this basis, it can be observed that the land poviats in Poland are diverse in terms of the situation in the residential real estate market. A better situation in this respect, compared to all land poviats in Poland, occurs in the group of land poviats with the average and the lowest population density, and the worst situation occurs in the group of land poviats with the highest population density.

Therefore, this confirms the research hypothesis put forward in the article, assuming that population density is an important factor shaping the situation on the local residential real estate market in Poland, and this situation is better in rural poviats with lower population density and the worst in rural poviats with the highest population density.

4. Summary and conclusions

Districts constitute a very important local residential real estate market in Poland, and at the same time worthy of in-depth and comprehensive analysis. The analysis of the collected statistical data carried out in the article shows that:

- in land poviats in Poland, the average number and value of residential premises sold as part of market transactions increased in the years 2020-2022, but there is, however, great diversity in this respect between the separate groups of these poviats depending on their population density. The group of rural poviats with the highest population density has the highest average number and value of residential premises sold as part of market transactions in the researched years, while the lowest is in the group of rural poviats with the lowest population density. However, the differentiation of this feature between individual districts in Poland in the years 2020-2022 is very large and this applies to all their groups depending on population density;
- the growth dynamics of the average number and value of residential buildings sold as part of market transactions in rural districts in Poland in 2020-2022 is successively large and very large, but differs in separate groups of these districts depending on their population density. By far the highest growth dynamics in the average number and value of residential premises sold as part of market transactions in the analysed years is recorded in the group of rural poviats with average population density and the lowest in the group of rural poviats with the highest population density. In turn, in the group of land poviats with the lowest population density, they are more similar to the average for all land poviats in Poland. However, the differentiation of this feature between individual land poviats in Poland in the years 2020-2022 is large, and it is the smallest

in the group of land poviats with the highest population density, that is, this group of poviats is the most homogeneous in this respect;
- in land poviats in Poland, the average usable area of a residential property sold as part of market transactions remains at a similar level in 2020-2022, and the differences in this characteristic between individual poviats are small, and this also applies to all their groups depending on population density, with the largest average usable area of a residential premises sold as part of market transactions in the analysed years in the group of rural poviats with the highest population density;
- the average price in total and per 1 m^2 of residential premises sold as part of market transactions in rural districts in Poland increased in 2020-2022, and this also applies to all their groups depending on population density. However, these prices are clearly differentiated between specific groups of land poviats depending on their population density. They are definitely the highest in the group of rural poviats with the highest population density and clearly the lowest in the group of rural poviats with the lowest population density. In turn, in the group of land poviats with an average population density, they are most similar to the average for all land poviats in Poland. However, the differences in these characteristics between individual land poviats in Poland in 2020-2022 are quite large, with the smallest differences in the group of land poviats with average population density, i.e., this group of poviats is the most homogeneous in this respect.

Moreover, the analysis of statistical data carried out in the article and the point assessment made in it regarding the situation on the local residential real estate market in Poland, i.e., in separate groups of land poviats depending on their population density compared to all land poviats, confirmed the research hypothesis.

Therefore, population density is an important factor shaping the situation on the local residential real estate market in Poland, and the situation is better in rural poviats with lower population density and the worst in rural poviats with the highest population density.

Therefore, a higher population density improves the economic situation in the local residential real estate market in Poland, but also results in higher prices for these properties, which is not such a positive phenomenon, especially for customers.

The results of the statistical data presented in the article provide important and up-to-date information on the situation on the local residential real estate market in Poland. It may be useful both for politicians at the central level and for local government officials, especially responsible for the conditions, opportunities, and directions of local socio-economic development of poviat local government units, as well as for other decision-makers implementing local development policy in Poland.

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