

Demographic structural changes in Poznań downtown: in the light of the processes taking place in the contemporary cities in the years 2008 and 2013

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Abstract. The aim of this paper was to identify changes in the number and age structure of inhabitants and changes in the housing stock of Poznań city in the selected years (2008 and 2013). In the first part of the paper, we describe functional and spatial transformations in contemporary cities as well as their causes. The process of suburbanization and the resulting phenomenon of "shrinking cities" is discussed. In the empirical part, on the basis of data from the registration base of the Ministry of Internal Affairs (Poland), we carried out the analysis of the demographic structure of Poznań population and of the structure of buildings in Poznań downtown.

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INTRODUCTION

The demographic changes we observe in most European Union countries, such as population ageing, the development of suburban zones, and functional and spatial transformation, pose new challenges of an unprecedented scale for local governments. In the period between the two last censuses (2002 and 2011), the balance of migration between urban and rural areas swayed in favor of the latter (for the first time in 50 years). The need arises for the integration of the central city with its neighboring communities. A common policy on public services provision must be pursued and the coordination of the spatial development of a central city and its surrounding communities is necessary.

Civilization processes have brought about changes in the functions of city centers (Tanaś, 2015). City dwellers began to move to suburbs and areas beyond city borders in order to improve their livings. This tendency has considerably influenced the process of the depopulation of the city center, which used to play a significant role in the past, e.g. it was the place of living, entertainment and trade. A decrease in the number

of inhabitants was determined by various factors (of endogenous and systemic character) and has a number of multi-criteria implications. It may be analyzed on the macroscale and locally angle. The ongoing processes of social and spatial transformations under the conditions of a decrease in the size of population (referred to as shrink smart) do not always bear negative consequences. They may also create opportunities for positive changes, such as living standards improvement due to, for example, reduced population density per unit of residential area, lower burden on the environment or better transport situation. Having in mind the aim of this paper, we shall focus on a single selected aspect of the ongoing socio-economic transformations in the center of Poznań, namely, we will discuss changes in the number and age structure of the inhabitants of Poznań in the selected period as well as changes in its housing stock.

THE CONCEPT OF SUBURBANIZATION AND THE INDICATIONS OF THIS PROCESS

The existing body of literature provides numerous definitions of suburbanization (Berg van den and others 1982; Klaassen 1988; Zagożdżon 1988; Champion 2001; Zuziak 2005). In spatial dimension suburbanisation means dynamic development and increase of intensity of the use of peripheral areas of the cities and their suburban zones where the example is so called urban sprawl. The phenomenon is visible mainly in changes in the use of the land and intensification of external areas development compared to cities, especially along the outgoing roads (Parysek 2008, 2009).

Suburbanisation phenomenon may be treated in various ways, as: urbanisation of suburban zone, population and businesses migration to the suburban zone, agglomeration development stage where we can observe faster increase of population in external zones than in the central city (and in advanced stage there is a decrease in the number of the central city population or as an urban sprawl, i.e. spontaneous, uncontrolled urbanisation of the suburban zone (Parysek 2009; Trojanek, 2010).

Suburbanisation process is connected with a number of consequences, both for communities in the suburban zone and for the central city. The consequences may be analysed in three areas:

- spatial (changes in the use of the land, analysis of transformation of the area used in e.g.: land use intensity level, directions of the land use, number of land use forms, the size of greenery and recreational areas, pushing agricultural structure to peripheral areas.
- economic (e.g. increase/decrease of communities' income, services development, unemployment decrease, creation of new job places in communities, new investment, overload of technical infrastructure),
- social (e.g. de-population of city centres, improvement of living conditions, difficulties with social assimilation between local and incoming population, intensity of social contacts, anonymity).

From the point of view of social phenomena, suburbanisation is not a favourable phenomenon. In many aspects it is, however, favourable both for some people (inhabitants of suburban zone), and for businesses (investors).

The process of suburbanization and demographic changes are some of the causes of the shrinkage of cities. The phenomenon of shrinking cities manifests itself in many forms and structures, both in the spatial and time approach (Hasse 2013). The shrinkage of cities is the process of depopulation, which results in a decrease of the attractiveness of a city as a place for life and development, and in the lack of jobs. We observe a negative birth rate and migration in pursuit for better earnings and improved living conditions. The shrinkage of cities is not only a Polish phenomenon, but it is well known in the whole world (Szajewska 2013). The term "shrinking city" was first used by scholars in 1987. Sociologists Hartmut Häußermann and

Walter Siebel first applied the expression “shrinking city” (schrumpfende Stadt) in their book titled „Neue Urbanität”. Since then, a lot of definitions of the term – which describe the characteristic features, causes and effects of this phenomenon - have appeared in literature.

THE SCOPE OF THE STUDY

A downtown is the most densely populated part of a city, offering the widest choice of facilities. It provides a variety of public services and has a mixture of residential and public utility buildings. The most characteristic part of a downtown is the city center, which constitutes the core of its spatial structure.

The downtown of Poznań (Śródmieście) is the area basically marked by the streets of the so-called 2nd transport frame, consisting of:

- in the west – S. Żeromskiego street, St. Przybyszewskiego street,
- in the south – Hetmańska street,
- in the east – the Warta river, Jana Pawła II street, Podwale street, A. Hłonda street,
- in the north – Szelałowska street, Winogrody street, Pułaskiego street and the Poznań-Szczecin railway.

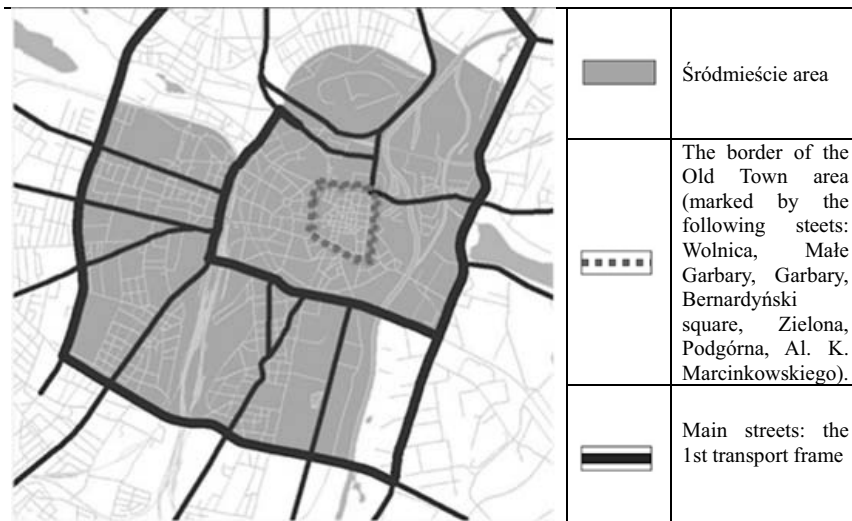


Figure 1. Poznań downtown (Śródmieście) area

The analysis of changes concerning the population of Śródmieście, including the age of its inhabitants, covered the years 2008 and 2013.

The data on which we based our deliberations come from the PESEL (Universal Electronic System for Registration of the Population) base. They have been prepared on the basis of data from the registration base of the Ministry of Internal Affairs. They include address points (buildings), in which inhabitants were registered in 2008 and 2013. This base differs from address points from the Register of Streets in Śródmieście (a register made available by the City Council of Poznań). This is partly because of the fact that the Register includes buildings of a function other than the residential one or buildings with no registered inhabitants.

The data were brought to comparability. Records concerning the number of households occurring only either in 2008 or in 2013 were removed from the data base. This means that, compared to the input base, the number of households in Śródmieście decreased by about 7,000, which accounted for approximately 14% of the overall number of households in Śródmieście as compared with 2008. Thus, the study encompassed 49,101 households in 2008 and 42,396 in 2013.

The study covered 137,208 inhabitants of Śródmieście in 2008 and 109,423 residents of this part of Poznań in 2013 (the study referred to households from the same buildings in Śródmieście).

THE DEMOGRAPHIC STRUCTURE OF THE INHABITANTS OF ŚRÓDMIEŚCIE IN 2008

In 2008, 137,208 residents were registered in Śródmieście, which accounted for 25% of the total number of the inhabitants of Poznań. The age structure of the residents of Śródmieście has been shown in Figure 3.

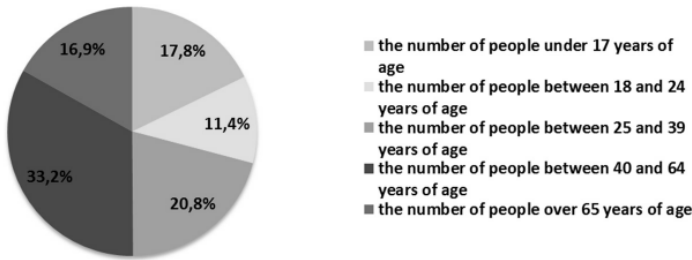


Figure 2. The age structure of the residents of Śródmieście in 2008

Source: own calculation.

As Figure 2 shows, people in the age from 40 to 64 represented the most numerous group (32.2%) among the inhabitants of Śródmieście in 2008. The second largest group (almost 21%) included people between 25 and 39 years of age. In 2008, people under 17 and those over 65 years of age constituted groups of similar size, accounting for, respectively, 17.8% and 16.9% of the total. People in the age between 18 and 24 represented the least numerous group (11.4%).

Moreover, the age structure of the inhabitants of the district of Śródmieście shows that:

- the population in the pre-productive age (0-17 years of age) accounted for 17.8% of all the inhabitants of Śródmieście
- the population in the productive age (18 – 64 years of age) constituted the largest group, representing 65.4% of the total,
- people in the post-productive age (over 65 years of age) accounted for almost 16.9% of the population of Śródmieście.

This situation has been shown in Figure 3, which presents the distribution of particular age groups of the inhabitants of Śródmieście.

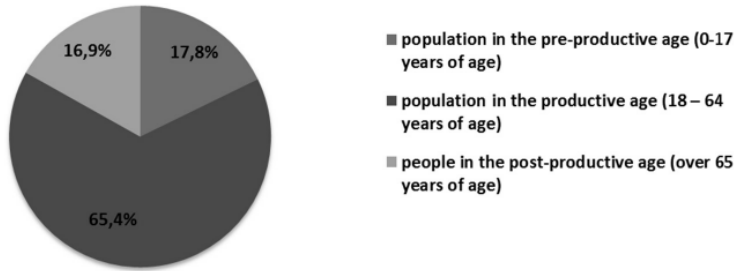


Figure 3. The distribution of age groups of the inhabitants of Śródmieście

Source: own calculation.

The next stage of the analysis allowed us to establish the structure of buildings located within the borders of Śródmieście. Figure 4 shows that the largest group of buildings, accounting for nearly a half of all buildings in the district of Śródmieście, included multi-family buildings with up to 10 households (46%). The second largest group included multi-family buildings with up to 20 households (30.3%), followed by single-family buildings (15.3%). Multi-family buildings with more than 20 households represented the smallest group (8.3%).

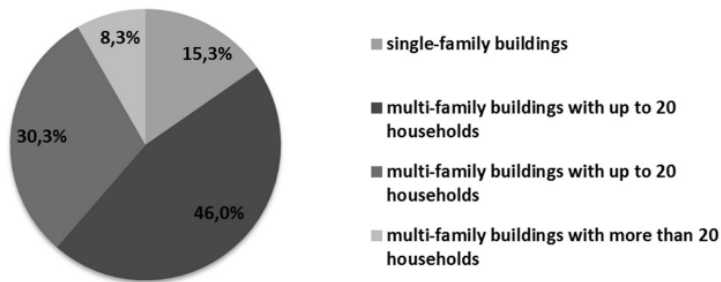


Figure 4. The structure of buildings located in Śródmieście in 2008

Source: own calculation.

The analysis of the structure of inhabitants registered in residential units in particular types of buildings shows that the number of people inhabiting (registered in) single-family buildings accounted for 2.5% of all people living in the district of Śródmieście in Poznań. 33% of the residents of Śródmieście inhabited multi-family buildings with up to 10 households, while 40% of the inhabitants of this district were registered in buildings with up to 20 households. Multi-family buildings with more than 20 residential units were inhabited by almost 25% of the population of Śródmieście. The situation is shown in Figure 5 below.

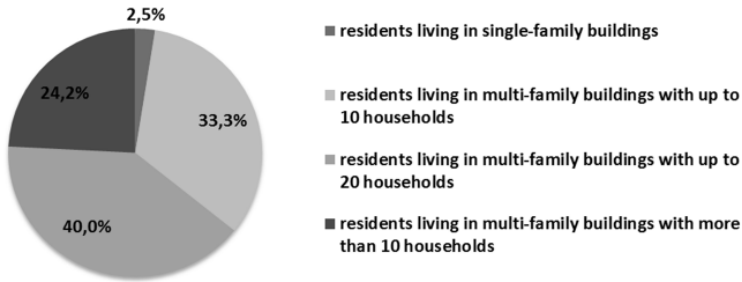


Figure 5. The percentage of population inhabiting particular types of buildings in 2008

Source: own calculation.

The analysis of the age structure of inhabitants registered in particular types of buildings shows that in 2008 people in the age group of 40-64 represented the most numerous group (34.9%) of residents of single-family houses. Other groups of inhabitants of this type of buildings in Śródmieście included people over 65 (21.5%) and people between 25 and 39 years of age (21.1%). The percentage of people under 17 years of age who inhabited single-family houses in 2008 was 12.8%, while in the case of inhabitants of between 18 and 24 years of age it was just below 10%. This situation is presented in Figure 6.

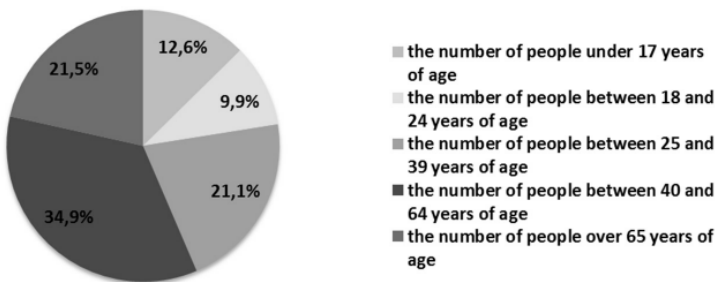


Figure 6. The age structure of the inhabitants of single-family buildings in 2008

Source: own calculation.

Figure 7 shows that among the inhabitants of multi-family buildings with up to 10 households, it was also people between 40 and 64 years of age that constituted the most numerous group (34%). People in the age of 25-39 represented the second largest group, accounting for slightly above 1/5 of the total number of all residents. The next groups of inhabitants of multi-family buildings with up to 10 households included people under 17 (18%) and those over 65 years of age (16%). People in the age between 18 and 24 constituted the smallest group (11.8%) of the inhabitants of this type of buildings in 2008.

The analysis of the age structure of inhabitants registered in particular types of buildings also shows that nearly 33% of the inhabitants of multi-family buildings with up to 20 households included people in the age group of 40 – 64. Just like it was in the case of multi-family buildings with up to 10 households, the second largest group of the residents of this type of buildings, representing above 20% of the total, included people in the age between 25 and 39. People under 17 and those over 65 years of age represented, respectively, 17.8%

and 17.7% of all inhabitants of multi-family buildings with up to 20 households. The least represented group among the residents of this type of buildings included people in the age between 18 and 24 (11.3%).

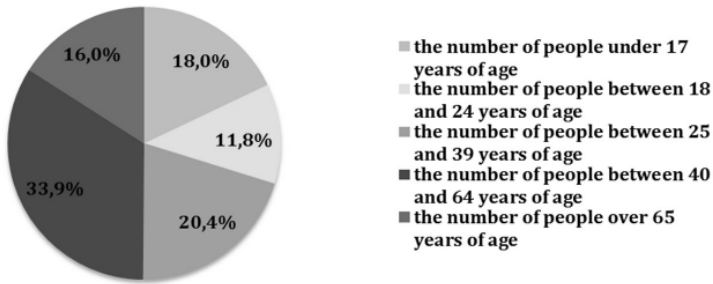


Figure 7. The age structure of the inhabitants of multi-family buildings with up to 10 households in 2008

Source: own calculation.

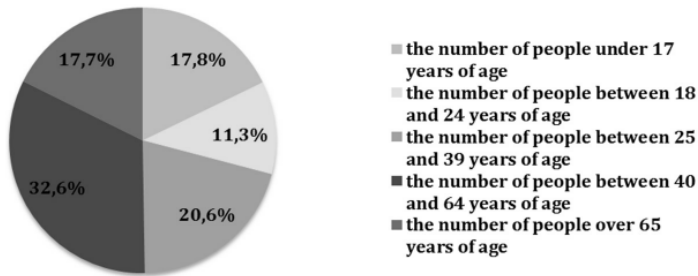


Figure 8. The age structure of the inhabitants of multi-family buildings with up to 20 households in 2008

Source: own calculation.

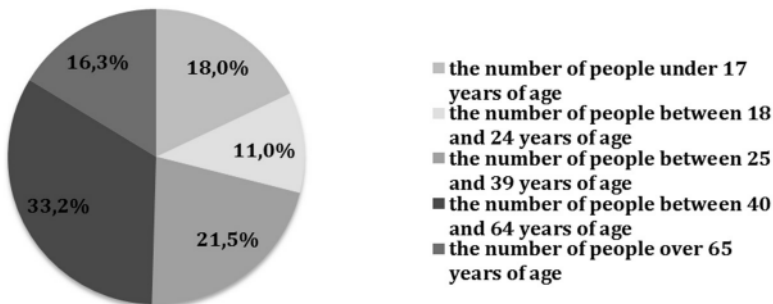


Figure 9. The age structure of the inhabitants of multi-family buildings with more than 20 households in 2008

Source: own calculation.

Figure 9, presenting the age structure of people living in multi-family buildings with more than 20 households, shows that the distribution of dwellers is similar to that of the two previously discussed types of buildings. People in the age between 40 and 64 represented the most numerous group (33.2%) among the residents of multi-family buildings with more than 20 households. The second largest group, accounting for 21.5% of the total, included people in the age group of 25-39. People under 17 and those over 65 years of age represented, respectively, 18% and 16.3% of the total number of inhabitants of such buildings. The least numerous group included people between 18 and 24 years of age (11%).

As it was mentioned earlier, in 2008, the district of Śródmieście had 137,208 registered inhabitants, which accounted for 25% of all residents of Poznań. Moreover, in 2008, the study encompassed 4,744 buildings with 49,101 residential units (the ones with registered residents), accounting for almost 21% of all apartments constituting the housing stock of Poznań. The average number of people per one apartment in Śródmieście in 2008 was 2.79 persons, which means that an apartment in this area was inhabited by 0.44 person more than an average apartment in Poznań.

THE DEMOGRAPHIC STRUCTURE OF THE INHABITANTS OF ŚRÓDMIEŚCIE IN 2013

In 2013, the study encompassed 109,423 inhabitants, which accounted for 20% of the total population of the city. The age structure of the residents of Śródmieście has been shown in Figure 10 below.

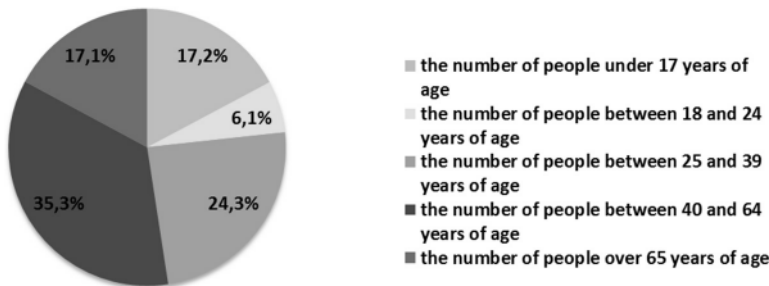


Figure 10. The age structure of the residents of Śródmieście in 2013

Source: compiled by the author.

As Figure 10 shows, people in the age from 40 to 64 represented the most numerous group (35.3%) among the inhabitants of Śródmieście in 2013. The second largest group (almost 25%) included people between 25 and 39 years of age. In 2013, people in the age under 17 and those over 65 years of age constituted groups of similar size, accounting for, respectively, 17.2% and 17.1% of the total. People in the age between 18 and 24 represented the least numerous group (6.1%).

Moreover, the age structure of the inhabitants of the district of Śródmieście shows that:

- population in the pre-productive age (0-17 years of age) accounted for 17.2% of all the inhabitants of Śródmieście
- population in the productive age (18 – 64 years of age) constituted the largest group, representing 65.7% of the total,
- people in the post-productive age (over 65 years of age) accounted for almost 17.1% of the population of Śródmieście.

This situation has been shown in Figure 11, presenting the distribution of particular age groups of the inhabitants of Śródmieście.

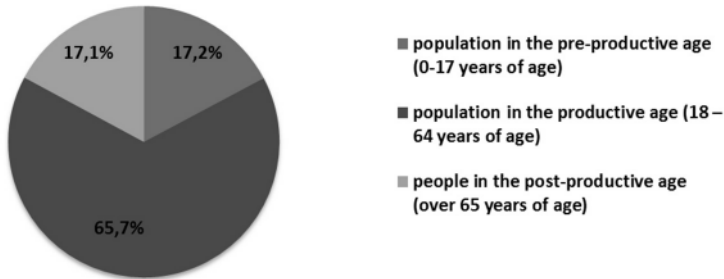


Figure 11. The distribution of age groups of the inhabitants of Śródmieście in 2013.

Source: compiled by the author.

The next stage of the analysis allowed us to establish the structure of buildings located within the borders of Śródmieście. Figure 12 shows that the largest group of buildings, accounting for nearly a half of all buildings in the district of Śródmieście in 2013, included multi-family buildings with up to 10 households (50%). The second largest group included multi-family buildings with up to 20 households (23.9%), followed by single-family buildings (19.3%). Multi-family buildings with more than 20 households represented the smallest group (6%).

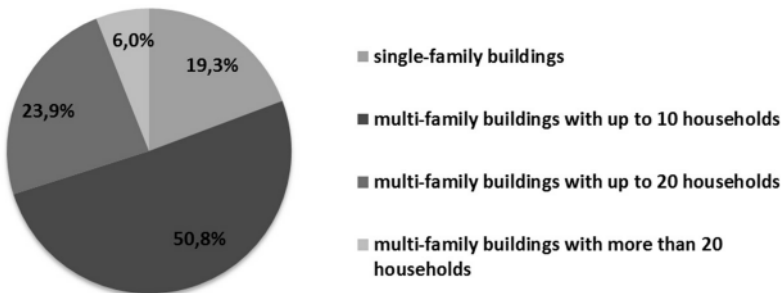


Figure 12. The structure of buildings located in Śródmieście in 2008

Source: compiled by the author.

The analysis of the structure of inhabitants registered in residential units in particular types of buildings shows that the number of people inhabiting (registered in) single-family buildings accounted for 3.6% of all people living in the district of Śródmieście in Poznań. 39% of the residents of Śródmieście inhabited multi-family buildings with up to 10 households, while 36.3% of the inhabitants of this district in 2013 were registered in buildings with up to 20 households. Multi-family buildings with more than 20 residential units were inhabited by almost 21% of the population of Śródmieście. The situation is shown in Figure 13 below.

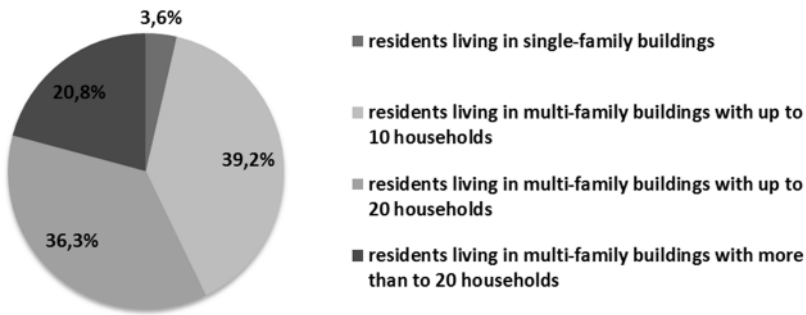


Figure 13. The percentage of population inhabiting particular types of buildings in 2013

Source: compiled by the author.

The analysis of the age structure of inhabitants registered in particular types of buildings shows that in 2013 people in the age group of 40-64 represented the most numerous group (38.4%) of residents of single-family houses. Other groups of inhabitants of this type of buildings in Śródmieście included people over 65 (23.7%) and people between 25 and 39 years of age (20.3%). The percentage of people under 17 years of age who inhabited single-family houses in 2008 was 13.1%, while in the case of inhabitants of between 18 and 24 years of age it was just below 5%. This situation is presented in Figure 14.

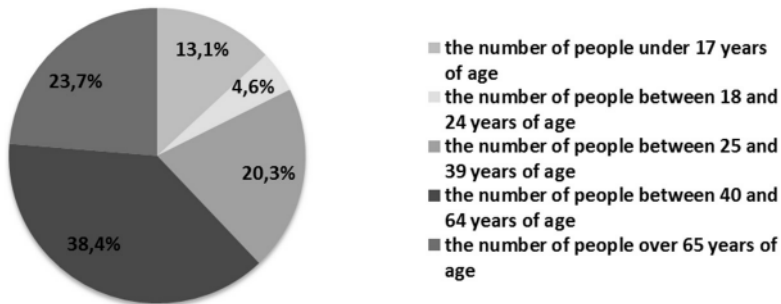


Figure 14. The age structure of the inhabitants of single-family buildings in 2013

Source: compiled by the author.

Figure 15 shows that among the inhabitants of multi-family buildings with up to 10 households, it was also people between 40 and 64 years of age that constituted the most numerous group (35%). People in the age of 25-39 represented the second largest group, accounting for nearly 25% of the total number of all residents. The next groups of inhabitants of multi-family buildings with up to 10 households included people under 17 (17.4%) and those over 65 years of age (16.2%). People in the age between 18 and 24 constituted the smallest group (6.2%) of the inhabitants of this type of buildings in 2013.

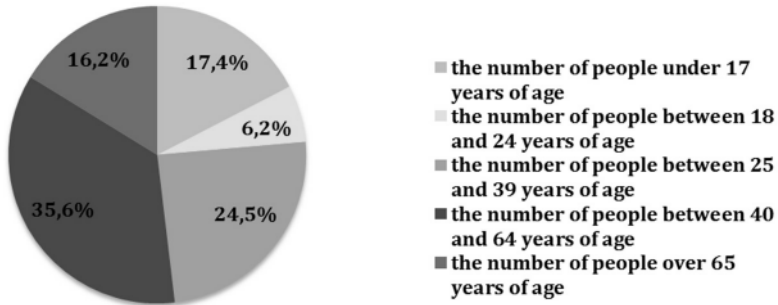


Figure 15. The age structure of the inhabitants of multi-family buildings with up to 10 households in 2013
 Source: compiled by the author.

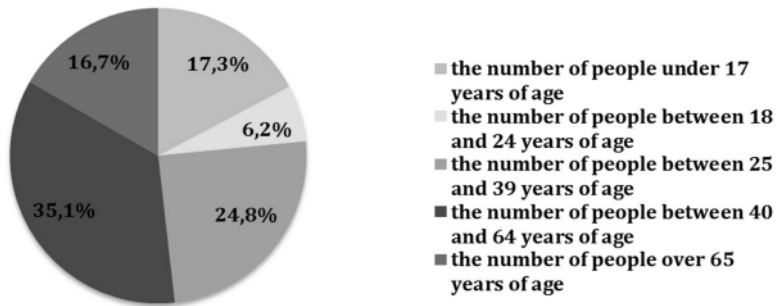


Figure 16. The age structure of the inhabitants of multi-family buildings with up to 20 households in 2013
 Source: compiled by the author.

The analysis of the age structure of inhabitants registered in particular types of buildings also shows that 35% of the inhabitants of multi-family buildings with up to 20 households included people in the age group of 40 – 64. Just like it was in the case of multi-family buildings with up to 10 households, the second largest group of the residents of this type of buildings, representing almost 25% of the total, included people in the age between 25 and 39. People under 17 and those over 65 years of age represented, respectively, 17.3% and 16.7% of all inhabitants of multi-family buildings with up to 20 households. The least represented group among the residents of this type of buildings included people in the age between 18 and 24 (6.2%).

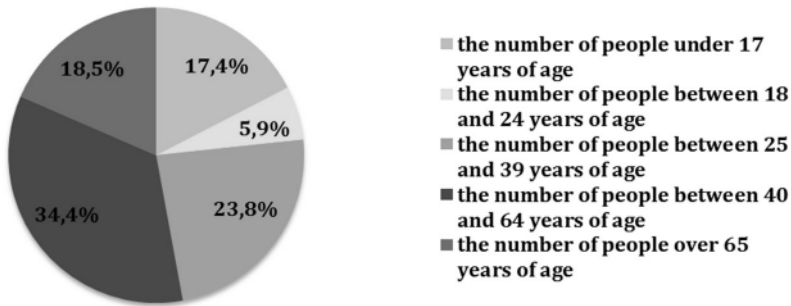


Figure 17. The age structure of the inhabitants of multi-family buildings with more than 20 households in 2013.

Source: compiled by the author.

Figure 17, presenting the age structure of people living in multi-family buildings with more than 20 households shows that the distribution of dwellers is similar to that of the two previously discussed types of buildings. People in the age between 40 and 64 represented the most numerous group (34.4%) among the residents of multi-family buildings with more than 20 households. The second largest group, accounting for 23.8% of the total, included people in the age group of 25-39. People under 17 and those over 65 years of age represented, respectively, 17.4% and 18.5% of the total number of inhabitants of such buildings. The least numerous group included people between 18 and 24 years of age (5.9%).

As it was mentioned earlier, in 2013, Śródmieście had 109,423 registered inhabitants, which accounted for 20% of all residents of Poznań. Moreover, in 2013, the study encompassed 4,744 buildings with 42,396 residential units (the ones with registered residents), accounting for almost 17.5% of all apartments constituting the housing stock of Poznań. The average number of people per one apartment in Śródmieście in 2008 was 2.58 persons, which means that an apartment in this area was inhabited by 0.3 person more than an average apartment in Poznań.

CONCLUSION

The aim of the paper was to identify changes in the number and age structure of the inhabitants of Poznań in the selected years (2008 and 2013) as well as changes in housing stock. In the light of the above (selected) data we may conclude that the percentage of the inhabitants of Śródmieście in the total number of residents of Poznań in the period from 2008 to 2013 decreased by 5.5%. Moreover, changes in the age structure are unfavorable (the highest drop in the number of citizens was seen in the age groups of 16-24 and 40-64, and among people in the pre-productive age).

What should be seen as positive phenomena are an increase in the number of people living in single-family houses, which undoubtedly reflects the improvement of living conditions, and a decrease in the number of inhabitants per one apartment.

Our study allows us to evaluate the ongoing changes, although, due to the limited scope of data, it should be treated as preliminary research of a general character. In order to provide full assessment of the processes under discussion, further thorough analyses are required.

The above deliberations are part of a discussion on the ongoing changes in the spatial distribution of functions in the city area. The shrinkage of cities is a problem which has determined the existence of a num-

ber of urban centres for over 20 years. Demographic forecasts, the economic situation and overall development trends indicate that this phenomenon will continue to affect the position of many cities in future.

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