
The Social Transformation of Large Housing Estates in Poland at the Turn of the 21st Century*

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Abstract: Large housing estates make up an essential portion of the housing stock in the urban structure of Polish cities. It was expected that large housing estates in Poland might experience social decline in the 1990s, but several research projects conducted in the estates did not identify any increase in social degradation. This article examines the social structure of the residents of large housing estates in Poland and identifies the main trends in current social changes. The time frame of ongoing transformations in the social structure was set around the turn of the 21st century. This analysis is based on Polish 1988 and 2002 National Census data, the Polish PESEL population database (2011), and the author's survey data (2010–2012). Research was conducted in seven housing estates in five Polish cities or towns (Poznań, Kraków, Tarnów, Dzierżoniów, and Żyrardów) and focused on analysing the sizes and types of households and their economic situation and the social structure of the estates. Results showed that large housing estates continue to have a heterogeneous social structure and to resist social deprivation processes. Depending on the period when a particular estate was built it is possible to observe distinctive features of housing estates, such as social structure renewal in housing estates from the 1950s and 1960s, residential ageing in those from the 1970s, and the risk of an exodus of young residents from estates from the 1980s. Those shared problems may soon become decisive for the future development of large estates.

Keywords: large housing estates, neighbourhood change, socio-spatial change, mixed heterogeneous neighbourhood, post-socialist city

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Introduction

Large housing estates were erected as multi-family building complexes and became basic components of the urban spatial structure in the second half of the 20th century in Central and Eastern Europe. Since that time they have come to occupy an essential place in the literature devoted to research on housing and urban issues and have become an area of interest to urban sociologists and social geographers. It was estimated that large housing estates in the year 2000 made up about 35% of the whole residential housing stock in Poland [Rębowska 2000]. During the 1990s a large housing estate in a Polish city was defined as an area subjected to fast social degradation processes. Because of its size and the density of apartments, the block complex provides good conditions for individualisation and anonymity and, as such, is an environment that breeds social pathologies [Jałowicki 1986: 48]. The degradation of housing estates could have a serious impact on local urban policy and lead to the development of social deprivation areas. On the other hand, some large housing estates are regarded very positively by city dwellers, and the prices of flats in multi-family projects indicate that such properties remain attractive places of residence. Polish studies have shown that this type of housing is characterised by good technical infrastructure and by high housing standards and quality of life indicators [Zborowski 2005].

This article draws on Chmielewski's definition of a housing estate as a structural housing development composed of a group of residential buildings and associated functions, service facilities and green areas that forms a territorial and spatial composition complex and offers basic community services (nursery, kindergarten, school, playgrounds etc.), within walking distance [Chmielewski 2001]. It is necessary to add to that definition that large housing estates are the apartment complexes that were erected between the end of the Second World War and the 1990s.

The goal of the study is to present the social structure of the residents of large housing estates and identify the main trends of change. This article explores the following research questions: (1) How did the demographic and social structures of the large housing estates in Poland change during the transformation period? (2) What are the potential trends of social development in Polish large housing estates?

Research on large housing estates: theoretical background

Research on large housing estates is essentially dominated by a conception of the life cycle that stresses that each estate undergoes several similar stages of development. Birch and Bourne note that we can distinguish five main stages in a housing estate's life cycle: construction, development and intense use, transition period, and slow degradation, and a shift to the final stage—either shrinking and decline or rehabilitation [Birch 1971; Bourne 1981]. This way of thinking

with respect to research on housing estate households is reflected in the research by Myers [1990], who presented the filtering theory, According to which every housing estate struggles with the natural ageing of its housing stock, which involves not only the physical degradation of the materials, but also a turnover of residents in connection with an outflow of people who attain a higher social status into newly constructed houses and of poorer tenants either moving out and into older stock or staying in their deteriorating flats. Filtration is a process in which the value and status of a flat continue to drop over the period of the flat's use. The filtration theory emphasises market forces and indicates the main cause of change (e.g. the construction of new flats is the engine of residential mobility). As for large housing estates, residential mobility and housing market forces were identified as essential factors that shaped estate communities. New estate buildings contribute to the outflow of affluent households, while the less affluent households are 'trapped' due to their economic constraints [Musterd and van Kempen 2007].

We can infer from research reports on European housing estates that the demographic and social changes that have occurred in the past twenty years in many Western European countries considerably contributed to the aggravation of social problems occurring in large housing estates [van Kempen and Musterd 1991; Murie Knorr-Siedow and van Kempen 2003]. Beckhoven, Bolt, and van Kempen [2009] stated that social and institutional aspects and the position of an estate in the local and regional housing market are more important than physical characteristic per se.

The changes occurring in housing estates may also be explained by external conditions and current macro-social and economic processes. The situation within a neighbourhood is influenced by demographic changes, economic changes, governmental interventions, and the site or location [Grigsby et al. 1987]. Grigsby et al. explain the estate's life cycle through changes in household structure, including some residents' moving to other locations, which is associated with the process of some people becoming more affluent and then seeking to change their place of residence. External factors that influence a large housing estate's life cycle include demographic changes (e.g. an increase in the number of small households or a decrease in the size of families), economic changes, interventions from local or regional authorities, and the benefits associated with the estate's location. An essential role is also played by the housing stock's ownership structure. Estates that are primarily made up of privately owned flats (condominiums) are subject to natural market mechanisms and the decisions made by residents can be explained by Grigsby's theory. However, we need to emphasise that his theory is applicable to American and, to some extent, European estates, specifically to those located in Central and Eastern European countries, where owned flats dominate. The theory does not fit estates that are prevalently made up of council housing, which is the case of many Western European estates [Beckhoven, Bolt and van Kempen 2009].

Research on housing estates and the transformations they are undergoing in post-socialist cities is quite extensive. Research on residential satisfaction was conducted during the 1980s and 1990s. Surveys of estates in Prague, in the Czech Republic, provided information on both the positive and negative aspects of estates in the eyes of residents and with respect to the housing estate environment [Musil 1985]. Important Polish studies on large housing estates include the work by Szczepański, which focused on residential satisfaction and neighbourhood bonds in Silesia [Szczepański 1991].

In view of the transformation processes occurring in Central and Eastern Europe, research on housing estates has largely concentrated on demographic changes, social stability, residential satisfaction, and residential mobility. The demographic aspects have been taken into account in studies of large housing estates in post-socialist countries primarily in the context of the ageing of estates. The process of ageing of large housing estates was analysed in some comparative studies on European cities [Filius and van Kempen 2005; Dekker et al. 2011] and on some Central and Eastern European cities [Kabisch and Grossmann 2013; Temelová and Slezáková 2014]. The ageing of estates relates to the time when estates were built and to the fact that estates flats were mainly assigned to young families [Kährlik and Tammaru 2010; Temelová et al. 2011; Kabisch and Grossmann 2013].

Other important factors that have added to residential ageing include the marked residential stability of the original occupants and the gradual outflow of young inhabitants, which means that many estates households have entered a later stage in the family-life cycle (the 'empty nest' phase) [Szafránska 2015a] and the earlier dominance of family households has given way to a dominance of older, relatively small households [Grossmann, Kabisch and Kabisch 2015]. The residential ageing process has also been analysed in terms of the satisfaction with the place of residence expressed by elderly residents, who constitute an essential group who display a high degree of residential satisfaction, as they are both satisfied with their housing conditions and have an attachment to the area they live in, which includes a network of highly valued social contacts [Filius and van Kempen 2005]. The elderly represent a relatively attached and stable segment of housing-estate populations and they are potentially important agents of local community building [Temelová and Slezáková 2014]. The changes occurring in the households' social structures can also contribute to the improvement of housing conditions, a point that was highlighted in the surveys of housing estates conducted in Bucharest, where a large proportion of the elderly lived in relatively spacious flats as a result of demographic processes: at some point their children had moved out [Gentile and Marcińczak 2014].

When analysing the social situation of large housing estates in post-socialist countries, it is possible to find large discrepancies in estate characteristics: from estates with severe social problems, such as Petržalka in Bratislava [Divinsky 2004], to estates that enjoy a high status in the housing market, such as Ursynów in Warsaw [Węclawowicz et al. 2005]. However, most studies of large post-

socialist housing estates have highlighted the maintenance of heterogeneity of residents and the relatively high social stability of large housing estates, findings that were reflected in surveys conducted in Tallinn [Kährik and Tammaru 2010], Leipzig [Kabisch and Grossmann 2013], Łódź [Marcinićzak and Sagan 2011; Szafrńska 2010; 2014], Kraków [Zborowski 2005], and Prague [Temelová et al. 2011], along with St Petersburg, Budapest, Sofia, Leipzig, and Vilnius [Brade, Herfert and Wiest 2012].

In view of their relative social stability and relatively low household mobility [Kovács and Herfert 2012; Herfert, Neugebauer and Smigiel 2013], large housing estates in Central and Eastern European countries are less exposed to social degradation processes than those in Western Europe [Grossmann, Kabisch and Kabisch 2015; Marcinićzak 2012]. It is also important that large housing estates in Central and Eastern Europe remain attractive to young households [Brade et al. 2011; Grossmann and Haase 2011]. What is more, social heterogeneity contributes to the maintenance of good social contacts [Musterd 2008].

Large housing estates have also been analysed in terms of the changes resulting from the evolution of the estate's life cycle [Hirt and Stanilov 2007; Gentile and Sjöberg 2010; Temelová et al. 2011; Temelová and Slezáková 2014]. Some studies have described the possible future directions of estate development in the Czech Republic [Špaček 2012; Šimáček et al. 2015] or others have discussed the prospects for high-rise estates in Slovakia [Divinsky 2004] and Slovenia [Dimitrovska Andrews and Cernic Mali 2004].

Research on housing estates has also dealt with the problem of the spatial distribution of social groups and the phenomenon of social segregation in cities. The phenomenon of social segregation is not observed in Polish cities on a scale comparable to that in the cities of North America or Western Europe [Węclawowicz 2007]. However, studies conducted since the 1980s have indicated the existence of essential socio-demographic differences that developed in the context of the transformations associated with the implementation of the large-panel building system [Węclawowicz 1993; Zborowski 2005].

In the Polish literature on the subject, large housing estate research has most often concerned case studies in big cities. For example, research on the socio-economic structure of the inhabitants of high-rise building estates has been conducted in Warsaw [Coudroy de Lille 2001; Węclawowicz et al. 2005], Wrocław [Borowik 2003], Szczecin [Wojtkuń 2004], Kraków [Zborowski 2005], and Łódź [Szafrńska 2014; Janiszewska, Klima and Rochmińska 2010, 2011].

Research on the quality of life in the housing estates in Łódź, Poland, indicated a high or average proportion of residents as satisfied with their housing conditions. They frequently cited feeling comfortable and having nice neighbours as the advantages of living in a block of flats [Janiszewska, Klima and Rochmińska 2011]. Similar research conducted in Warsaw concluded that the respondents were most satisfied with the estates' green areas, access to public services, neighbours, and playgrounds for kids [Węclawowicz et al. 2005]. The

comparative studies of the residential conditions carried out for various types of housing in Gdańsk demonstrated that the residents of large-panel buildings were least satisfied with their place of residence compared to the residents of other types of housing structures in Gdańsk. However, it is important to note that the former residents mentioned the location of their estate within the city and social relations as advantageous [Rzyski and Mędrzycka 2010]. The factors that were found to reduce the quality of life in large housing estates in Poland included the low standard of flats, dysfunctional rooms in large-panel buildings, and the shortage of parking spaces and garages [Zborowski, Dej and Gorczyca 2009].

Papers on large housing estates in Poland have concentrated more on specific estates in a selected city, while there is a lack of comparative studies involving several cities and of research on housing estates during the period of transformation. Empirical works indicate the continuing social heterogeneity of large housing estates in Poland [Zborowski 2005] and the relatively high social status of estate residents [Szafrńska 2010; Węclawowicz et al. 2005].

Studies of the estates in Tychy [Szczepański 1991] and Poznań [Kotus 2007] were some of the first ever studies of social ties in large housing estates. The issues of residential ageing in place and attachment to the place of residence were described in a study by Niezabitowski [2010], whose interviews conducted in an estate in Katowice indicated the attachment of senior citizens to their place of residence. The resident respondents justified their feelings by the fact that 'receiving a flat' (since flats were assigned by administrative decisions in socialist Poland) was considered a personal success. They cherished emotional memories from their childhood or youth. They had also become used to their place of residence and felt rooted there [Niezabitowski 2010].

The conditions of the development of large housing estates in Poland

Spatial conditions

Large housing estates constitute an essential part of the housing stock in Poland. It is estimated that nearly 8 million people live in large housing estates [Węclawowicz 2007]. Large-panel blocks of flats exist in cities and towns of various sizes. As noted by Rębowska, the largest number of such blocks can be found in medium-sized towns, with a population between 20 000 and 50 000 people, and in cities with more than 100 000 residents. The smallest shares of estate blocks were built in small towns with fewer than 5000 of residents [Rębowska 2000].

We can distinguish two stages in the development of Polish housing estates. The first stage occurred in 1945–1960: blocks of flats or tenement houses were constructed using traditional building methods, but they were quite uniform in standard. The second stage, in 1961–1989, was the period of housing-estate construction using industrial methods. The city space started to be dominated by

large, multi-staircase buildings made of large panels. By 1989 the government had approved a strict housing policy and strict flat standards in Poland in the country's 'urban planning standards' [Zaniewska et al. 2008]. Consequently, the current housing conditions are directly related to the date of construction of the particular housing estate and the guidelines applicable at the time. Subsequent updated standards limited the possibility to freely determine flat space and defined the sizes of flats or units, which also caused a deterioration of residential standards [Zaniewska et al. 2008].

Research on large housing estates has also drawn attention to erratic designs and poor workmanship and to the fact that an emphasis was put on the number of completed flats and not the final standard of the estate as a whole and of its infrastructure [Szczepański 1991]. Currently, infrastructural problems suffered by the estates include primarily the poor technical quality of large-panel buildings, inflexible design systems, substandard floor plans (small rooms, kitchens without windows, or dysfunctional bathrooms), and small floor area, causing difficulties in efficient space management.

The transformations occurring in large housing estates since the beginning of their construction have revealed both common benefits and problems associated with their operation. A housing estate's good location within the city is a considerable asset. The majority of estates provide easy access to the city centre [Janiszewska, Klima and Rochmińska 2011; Rzyski and Mędrzycka 2010]. Good public transportation infrastructure is usually mentioned as one of the basic advantages of estates. The spatial distribution of the blocks of flats is also important for the residents, including especially the building's spacing [Chmielewski and Mirecka 2007]. Large housing estates are characterised by abundant green areas owing to the preservation of open spaces between the blocks.

The limited availability of public and commercial services was one of the difficulties that existed in the early years of housing estate operation. However, that situation improved greatly with time, as a result of the construction of services centres on the available estate land. Initially, commercial facilities were considered to be less essential than the flats themselves and that is why the commercial services were developed long after the flats had been completed. The surveys conducted in large housing estates in the 1980s and early 1990s, for example in Szczecin [Wojtkuń 2004] and Tychy [Szczepański 1991], identified serious underinvestment in the majority of the estates as regards commerce and services infrastructure. It should be noted, however, that the situation has definitely improved since the estates originated and community services are now generally available. Currently, that aspect is one of the great advantages of living in large housing estates. Szmytkowska [2004] pointed out interesting functional transformations, especially in the development of retail services, affecting particular zones of the block estates. Originally, the estates were constructed in suburban greenfields, where there was available land with wide open spaces that are now filled by super- or hypermarkets. It is also possible to observe better management of the

estates' open markets, with the construction of canopies and glass structures, halls and malls, with multiple stands. Therefore, the quality of the services has increased in addition to the improvement of the appearance of the block estates.

A shortage of parking spaces is one of the difficulties encountered in large housing estates, a problem that is partly connected to the changing planning standards imposed at various times in estate construction [Basista 2001]. Growing numbers of cars, intense traffic, and the shortage of space and garage structures are daily headaches for estate managers [Zborowski, Dej and Gorczyca 2009]. A shortage of parking spaces is apparent at all housing estates. Car parks are disproportionate to the needs of those who live in multi-family buildings. The removal of large car parks to sites outside the estates requires residents to make long walks to reach them. Some people still park their cars as close to their homes as possible and occupy excluded areas, in most cases the lawns around the buildings. As a result, the nuisances of noise and car exhaust are a source of conflict between car owners and other residents [Chmielewski and Mirecka 2007].

Social conditions

The ageing of residents has become a considerable issue in large housing estates. Depending on the period of the estate's construction, those highly affected by this process are the estates constructed in the 1960s. The research conducted in Central and Eastern Europe, devoted to an analysis of complete housing estates, indicated that the occupationally active age group of people aged 19–65 years still dominates among estate residents [van Kempen et al. 2006].

The perception of each large housing estate by other city residents is extremely important. An estate's poor image may considerably hinder its further development. This is proved by the results of estate perception surveys conducted in Tychy by Szczepański [1991]. This particular research concerned the Regina housing complex in Tychy completed in the 1970s. The survey results there concluded that the district was perceived negatively by both residents and workers in the estate's administration. The respondents' critical opinions were associated with the feeling of social deprivation and threats posed by thieves and hooligans. The respondents also mentioned the disorder in urban planning and the poor public-space management [Szczepański 1991].

The housing estates' socio-economic situation depends to a large extent on the residents' attitudes towards the place. As Kotus has noted, social ties are very important in shaping estate communities. Residents are aware of the development and existence of an integrated community in the place or in the estate in which they live. Communities have also developed under the influence of such estate institutions as nurseries, kindergartens, primary schools, and cultural centres [Kotus 2007]. Schools have served as essential facilities for the integration and inspiration of neighbourhood communities in block estates. Schools are usually

well equipped with sports and recreation facilities and are located in the central parts of the estates, with easy and streamlined access. Presently, regular infrastructure and service businesses, technical facilities, vast common open areas, greenery, and social heterogeneity place large housing estates quite high in the ranking of well operating neighbourhood communities. However, owing to generational turnover and the retirement of the original residents, there is the risk that neighbourhood bonds could grow weaker [Kotus 2007].

The transformation that involved the privatisation of flats is an essential factor that influenced the development of large housing estates in Poland. From the 1990s flats previously owned by the housing cooperatives could be sold to current tenants willing to buy them [Szafrńska 2015a]. Thus, in 2011, there were about 6.8 million owned flats and another 2.3 million owned flats with limited property rights, while 3.4 million flats continued to be occupied by tenants [NSP 2011]. As Szafrńska has stated, the extensive privatisation of cooperative flats became a factor that held back residents' migration trends and contributed to people developing strong bonds to their flat and estate and to solid residential stability [Szafrńska 2015b].

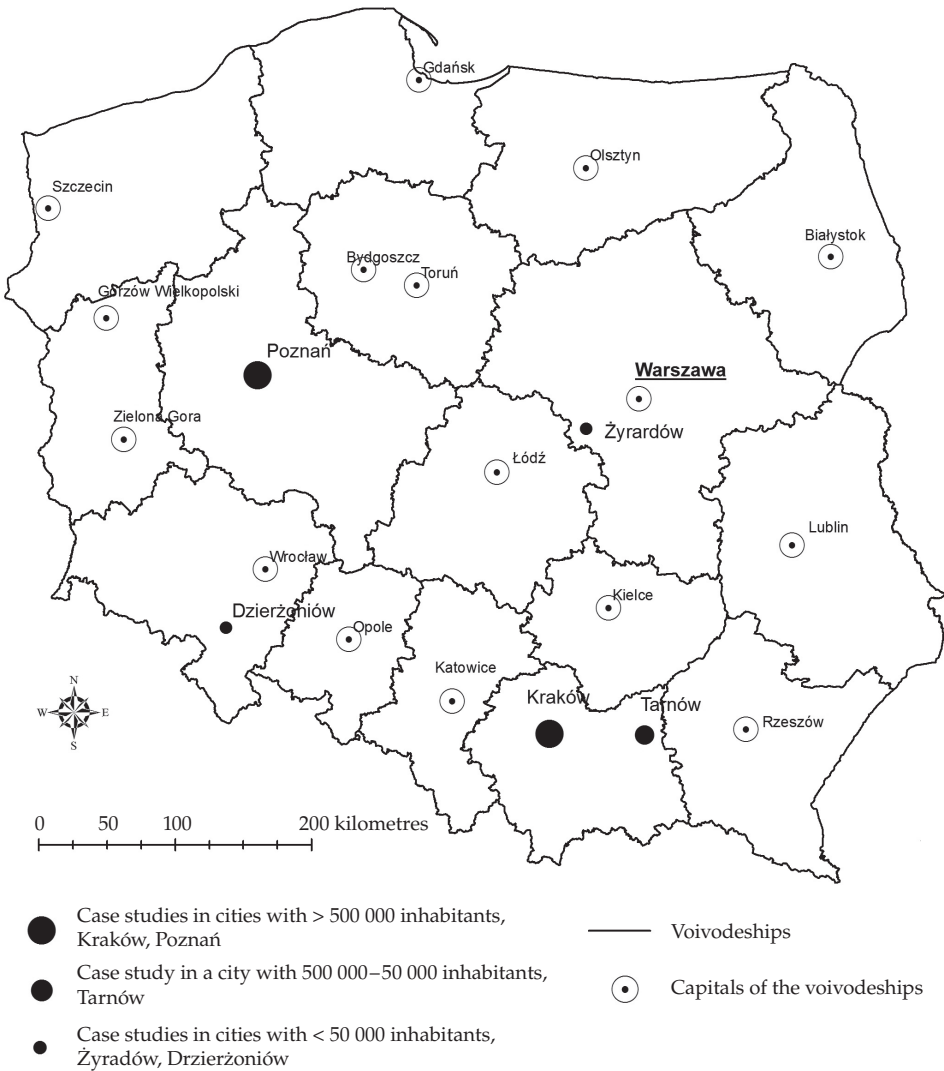
Data and methods

The changes occurring in large housing estates were selected for research on the basis of an analysis of seven estates located in five Polish cities. The choice of the cities for our research was made in reference to the following criteria: the estate's size, functionality, and development conditions in historical and geographic contexts (Figure 1).

The selected estates are quite diverse with respect to their location within the city or town, their size, period of development, and construction technology (bricks or large panels) (Table 1). In Poznań, the Zwycięstwa Estate, part of the Winogrady complex, and the Orła Białego Estate, belonging to the Rataje complex, were selected. In Kraków, research was conducted in the northern district of the city: the Prądnik Czerwony Estate, as well as the Hutnicze Estate, belonging to the 'old district' of Nowa Huta. In Tarnów, surveys were conducted at the PZA (Nitrogen Fertilizer Company Workers) Estate, situated in the Mościce District. As for Dzierżoniów and Żyrardów, research was conducted in neighbouring estate complexes: the Jasne, Błękitne, and Różane Estates in Dzierżoniów and the Północ (North) and Wschód (East) Estates in Żyrardów. The oldest of the estates studied, the Hutnicze and the PZA Estates, are the smallest with respect to population.

The analysis of the demographic and social structure of the large housing estates' residents involved certain difficulties in obtaining proper statistical data referring to the cities' districts. Demographic analysis was conducted on the basis of data from the population records of the given estates collected in the 1988 and

Figure 1. Case studies



2002 National Censuses (obtained from the Central Office of Statistics), and 2002 and 2011 data on the gender and age structure of the studied estates' permanent residents, based on the PESEL database (also called the Common Electronic System of the Population Register). The decision was made to use the Polish PESEL population database in the data analysis, because the quality of the data on the persons recorded in the government population registers is practically the same

Table 1. Description of the studied housing estates

Cities and their housing estates	Period of construction	Number of			% of surveyed households in the estate	Ownership tenure of the surveyed households in the estate %	
		Flats 2011	Residents 2011	Surveys used in the study		Owned flats and owned, with limited property rights	Leased flats
Poznań – Orla Białego	1980–1990	3 258	9 200	197	6.0	88.1	10.9
Poznań – Zwycięstwa	1970–1980	3 449	7 464	199	5.8	81.1	15.8
Kraków – Prądnik Czerwony	1970–1980	3 685	8 395	217	5.9	93.1	6.0
Kraków – Hutnicze	1945–1970	1 200	1 912	91	7.6	69.7	10.1
Tarnów – PZA	1945–1970	1 200	2 490	93	7.8	92.4	5.4
Dzierżoniów – Jasne, Błękitne, Różane	1970–1980	3 588	10 007	305	8.5	94.6	2.8
Żyrardów – Północ, Wschód	1980–1990	3 233	7 939	203	6.3	96.6	2.5

Source: Author's calculations based on interviews with housing cooperatives (period of construction, number of flats), questionnaires (ownership tenure), and the PESEL database at the Polish Ministry of Internal Affairs (number of residents 2011).

as that of the 2011 census data, while the accuracy is increased by the inclusion of the respondents' addresses. Social transformations were traced in reference to the 1988 and 2002 National Census data. However, the current social structure was analysed on the basis of our own survey results. To ensure representative polling, the number of questionnaire surveys was diversified depending on the size of an estate. The aim was to obtain 100–300 completed questionnaires in each estate to cover 5–10% of households (Table 1). In our study, 1305 questionnaires were used, covering approximately 7% of all the households in each estate. Polling was conducted in 2010–2012. The intention was to obtain at least one complete questionnaire in a block of flats to ensure the sample's even distribution. Polling was carried out using the 'door-to-door' method. The questions were addressed to a household representative. Some questions concerned only the respondent and others referred to the whole household.

To identify the social changes occurring in the selected large housing estates, the demographic structure, size, and type of the household was analysed along with educational and occupational data.

The make-up of the socio-economic structure of the estates was studied using the linear regression method. The multiple linear regression model refers to the correlation between the duration of residence and socio-economic factors. The period of residence was a dependent variable, while the independent dummy variables were grouped into six categories: demographic factors, type of household, education, economic activity, socio-professional status, and income level. The socio-demographic variables were adopted on the basis of age, in reference to residents aged 65+, and household type: single household, 2+0 household, single parent, other, and nuclear families. The social status of the residents was examined on the basis of education, within three categories: tertiary, secondary, or elementary/basic vocational. Economic status was selected on the basis of economic activity (active vs non-active), as well as the occupational structure, subdivided into: managers and professionals, technicians, clerks and service workers, skilled workers, unskilled workers, other (that group also included working persons or temporarily unemployed ones who refused to answer the question about occupation). Income level is key in the conditions of a market economy and it determines whether one can move out or has to remain in the current place of residence. For this reason, the average monthly income per resident, declared by the resident, was selected as the last variable category of more than 2000 Polish zlotys (equivalent to approximately 500 euros/person). In view of the fact that owned flats (condominiums) constituted more than 80% of the respondents' housing stock, the ownership status was not studied further.

The pollsters also tested the durability of the existing social structure in reference to habitual residence (social bonds) and potential mobility plans. Studying previous and current changes occurring in the demographic and social structures of the estate's residents was essential for understanding possible trends of further development in the respective apartment complexes.

Figure 2. Case study estates: Tarnów – PZA (top left), Kraków – Hutnicze (top right), Poznań – Orła Białego (bottom left), Dzierżoniów – Jasne, Błękitne, Różane (middle right), Poznań – Zwycięstwa (bottom right)



Photo: Author.

The demographic and social transformations of large housing estates: results

Demographic structure

The demographic structure of housing estates did not change much in 2002–2011. If we consider the rates of the population changes in 2002–2011, three estates (Północ and Wschód in Żyrardów, Prądnik Czerwony in Kraków, and Orła Białego in Poznań) recorded relative drops in the numbers of their residents (by approximately 5 percentage points) in relation to the average population fluctuation.

Table 2. Index of recorded population changes in the studied estates in 2002–2011, based on the PESEL database (2002 = 100)

Cities and their housing estates	2002–2011		
	2002	2011	Index 2002/2011
Poznań City, Total	577 117	553 564	95.9
Poznań – Orła Białego	9 700	9 200	94.8
Poznań – Zwycięstwa	7 682	7 464	97.2
Kraków City, Total	757 547	759 137	100.2
Kraków – Prądnik Czerwony	8 666	8 395	96.9
Kraków – Hutnicze	1 767	1 912	108.2
Tarnów Town, Total	119 564	113 593	95.0
Tarnów – PZA	2 450	2 490	101.6
Dzierżoniów Town, Total	35 327	34 838	98.6
Dzierżoniów – Jasne, Błękitne, Różane	10 121	10 007	98.9
Żyrardów Town, Total	41 548	41 526	99.9
Żyrardów – Północ, Wschód	8 327	7 939	95.3

Source: Calculations based on the PESEL database of the Polish Ministry of Internal Affairs (2002, 2011) and on municipal data from the Central Office of Statistics (2002, 2011); <https://bdl.stat.gov.pl>.

tuations recorded in the particular cities. These estates are quite new. They were constructed in the 1970s and 1980s, with fairly dense development. The remaining estates witnessed relative increases of population in comparison to the respective rates of urban population increase. The estates constructed in the 1970s (Zwycięstwa in Poznań and Jasne, Błękitne, and Różane in Dzierżoniów) displayed a low rate of population increase, below 2 percentage points. However, the older estates were characterised by the population increase rates ranging above 5 percentage points (Table 2). It is important to note that the data analysed did not include persons who were not officially recorded at the specific addresses. That large group includes, for example, college students and graduates leasing private rooms or flats in university cities.

The pronounced increase in the number of elderly people in all the estates was another common feature. The majority of the areas studied were characterised by a large proportion of people of productive age. This can be correlated with the estate construction period. Estates completed in a similar period have a similar demographic profile. The oldest estates (from the 1950s and 1960s): the Hutnicze of Kraków and the PZA of Tarnów are characterised by the high-

Table 3. The population of large housing estates by age groups in 2011

Cities and their housing estates	Age groups			
	0–18	19–44	45–64	> 65
	%			
Poznań – Orła Białego	15.9	40.5	35.1	8.5
Poznań – Zwycięstwa	14.3	36.9	30.4	18.4
Kraków – Prądnik Czerwony	14.7	37.4	31.2	16.7
Kraków – Hutnicze	13.6	36.0	28.5	21.9
Tarnów – PZA	13.4	32.9	29.4	24.3
Dzierżoniów – Jasne, Błękitne, Różane	13.8	34.5	31.1	20.6
Żyrardów – Północ, Wschód	17.7	38.6	35.7	8.0

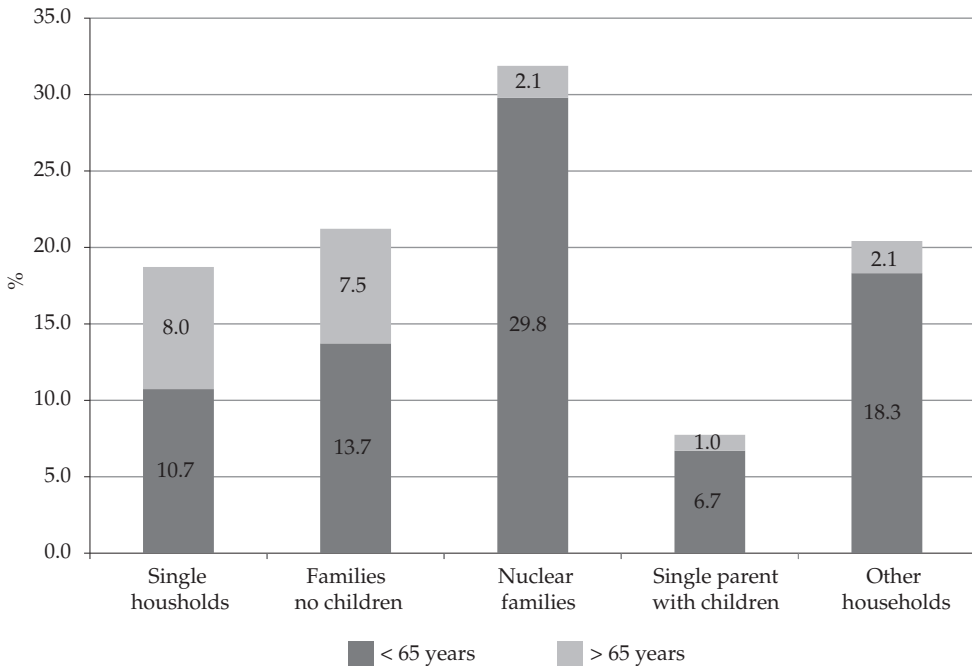
Source: Calculations based on the PESEL database of the Polish Ministry of Internal Affairs (2011).

est proportions of people aged 65+ (Table 3). The rate of population changes in 2002–2011 may, however, suggest a slow renewal of the demographic structure of the residents of those estates and the arrival of people belonging to younger age groups, i.e. 19–44 years of age. The estates that were constructed in the 1970s – Jasne, Błękitne, and Różane (Dzierżoniów), Zwycięstwa (Poznań), and Prądnik Czerwony (Kraków)—exhibited the largest shares of residents in the 19–44 age group in 2011. The considerable share of 20% of residents being of retirement age was also a distinct feature of the three estates in Dzierżoniów and the Zwycięstwa Estate in Poznań. The estates that were developed in the latest period, 1980–1990, had the youngest age structure. Young people (aged up to 44 years) made up more than half of the residents and the share of the senior citizens was not yet greater than 10%.

Social structure

As regards household structure, attention was paid in the analysis to the diversity of household sizes in the studied period. In 1988, 3- and 4-person households dominated (Table 4). A large number of single-person households was a characteristic feature of all the estates in 2002, with drops in the proportions of 3- and 4-person households. In 1988–2002, an increase in the number of households was recorded despite a general decrease in population in the majority of housing estates. That increase was caused by the shrinking of 3- and 4 person households to single and 2-person households. The share of 3- and 4-person households dropped in the housing estates by 20 percentage points. The changes in the aver-

Figure 3. Types of households in the studied housing estates



Source: Based on the author's 2010–2012 surveys.

Note: Specified age refers to the respondent, usually the head of the family.

age sizes and types of households were associated with the transformations of family models and a number of other demographic phenomena connected with the first and second demographic transitions that affected cities and towns, including especially the town centre zones and large housing estate zones in Poland [Zborowski and Dej 2009], as well as in other Central and Eastern European countries [Kabish and Grossmann 2013; Kovács and Herfert 2012].

Household surveys indicated the highest proportion of households were 2- and 3-person households. The largest number of single-person households was in the Hutnicze Estate in Kraków (29%) and in the three Dzierżoniów estates (25%), while in the remaining estates they represented 13–15% of households. The respondents' declarations showed that the domination of single-person households was not high in comparison to the 2002 census data. However, the 'door-to-door' survey method may be one of the reasons for this effect because it is harder to find singles at home. The increase in the number of single- and 2-person households was also revealed by other studies conducted in Łódź, where the highest rate of single-person households was observed in the oldest estates

Table 4. The proportional size structure of the households of the recorded residents of the studied estates in 1988 and 2002 and the figures reported by the respondents

Specification and sources of data	Households			
	1-person	2-person	3- and 4-person	5-person or more
	%			
Official number of residents: 1988 Census	17.6	21.2	50.1	11.1
Official number of residents: 2002 Census	34.2	30.0	28.3	7.5
Survey data	17.8	28.9	45.7	7.6

Source: Calculations based on census data (1988, 2002) and the author's surveys (2010–2012 questionnaires).

and those completed in the 1970s [Szafrńska 2010], or in Kraków where older estates are dominated by the households inhabited by two persons [Zborowski and Dej 2009].

The author's analysis of the types of estate households (Fig. 3) indicated the largest proportion were traditional nuclear families, i.e. parents with children (31.8%). Married couples without children also made up a considerable proportion (21.2%). Childless married couples included a high proportion of senior citizens (7.5%) in the 'empty nest' stage of life. Similar findings of a relatively high rate of couples without children were reported in the Warsaw estates [Węclawowicz et al. 2005]. Single-person households accounted for nearly one-fifth of estate households. A high proportion of single elderly citizens' households (occupied by widows or widowers) is a characteristic feature of large housing estates [see also Szafrńska 2010]. The lowest proportion was recorded among single parents with children (7.7%). The research also indicated a considerable proportion of other types of households (20.4%), including, for example, flats jointly leased by college students or friends, households run by the persons living in partnerships (cohabitation), three-generation households, and households made up of relatives, such as siblings or grandparents with their grandchildren. The estates in cities displayed the occurrence of a large number of flats jointly occupied by unrelated persons (e.g. friends), creating non-family households. An inflow of college students and graduates has been observed in Polish university cities such as Kraków [Zborowski 2005] and Łódź [Szafrńska 2014].

The educational structure of the residents changed considerably in the studied estates (Table 5). People with secondary education made up more than one-third of the residents in 1988 and nearly one-half of the number in 2011. A regular

Table 5. Educational structure of the studied estates' population in 1988 and 2002

Specification and sources of data	Education				
	Tertiary	Secondary	Basic vocational	Complete primary	Incomplete primary and none
	%				
Official number of residents: 1988 Census	16.8	35.2	21.0	25.7	1.3
Official number of residents: 2002 Census	16.7	42.9	16.5	19.6	4.3
Survey data	32.4	48.2	13.5	5.9	0.0

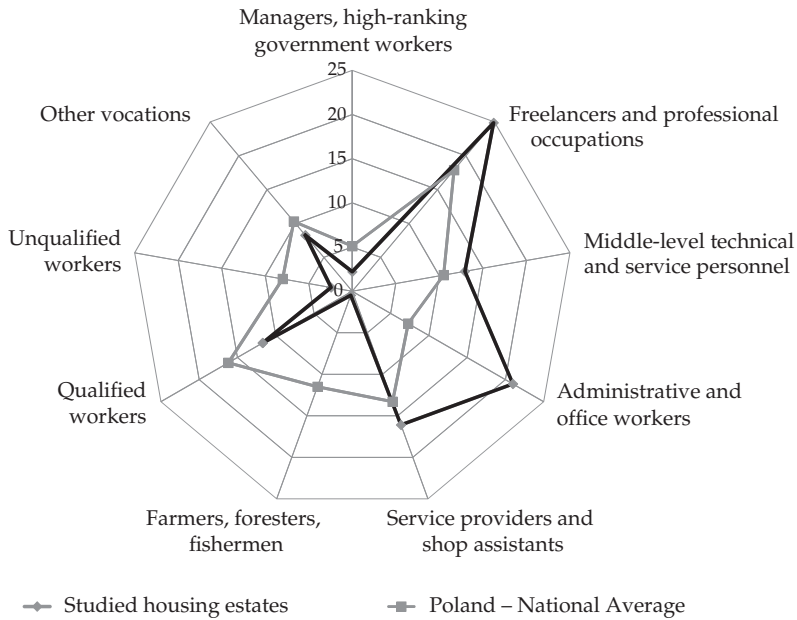
Source: Calculations based on census data (1988, 2002) and author's surveys (2010–2012 questionnaires).

drop in the number of people with basic vocational and primary-school education was noticeable in the studied estates. Survey data also indicated the improvement of education level indicators. The general increase of the proportion of people with tertiary education in 2011 resulted mainly from the educational boom in recent years and the schooling of the students living in the studied estates. In the case of the corporation-owned PZA and Hutnicze Estates, as well as those located in small towns, a high proportion of the residents with secondary professional, secondary vocational, and basic vocational education was maintained. In the remaining estates, the social structure was dominated by people with tertiary education.

In the professional structure of the estate residents, the largest proportion was represented by freelancers and professional occupations, accounting for 24.8% of all working persons in total (Fig. 4). In comparison to the *Social Diagnosis 2011*¹ research project, the proportion of people employed freelancers and professional occupations was 7 percentage points higher than the average national figures. The proportion of administrative (public servants) and office workers was also quite high in the estates (21%), and that indicator was 14 percentage points

¹ Social Diagnosis is a research project jointly undertaken by the members of the Council for Social Monitoring. It provides a diagnosis of the conditions and quality of life of Poles as they report it. The project is a panel study. Households and their occupants aged 16 and over are surveyed with two different questionnaires. The questionnaires provide data, for example, on household structure and living conditions, as well as the demographic and social characteristics of individuals. In 2011–2012, 386 households were examined [Panek, Czapiński and Kotowska 2011].

Figure 4. Occupational structure of the respondents from the surveyed housing estates



Source: The estate data are from the author’s 2010–2012 surveys; the national data are based on P. Białowolski et al. [2011].

higher than the national average. Service providers and shop assistants made up a large share of the economically active population (16%). The presence of a large proportion of residents working in the administrative and services sectors was associated with the natural tendency towards dynamic development in the services sector in urban areas. The areas under study were constantly characterised by a high social mix, as indicated by the fact that the estates were inhabited by both managers and blue-collar workers.

Potential longevity of the existing social structure

The heterogeneity of the estates’ social structure may result from the conditions associated with the development of local communities since the origin of the estates, as well as the practical lack of choice of residential location owing to the administrative system used to allocate flats [Basista 2001]. For this reason, it is necessary to study to what extent the existing social structures are rooted. The longevity of a social structure was determined on the basis of the length of residence in a block of flats and residential mobility/stability.

Figure 5. The length of residence of the respondents living in the studied housing estates



Source: Based on the author's 2010-2012 surveys.

The longest period of residence was observed in the Dzierżoniów estates (Fig. 5), which had the largest share of residents who had been residing in the estate for more than 30 years. The majority of respondents who had been living in their estates for 20-30 years were in blocks that had been erected in the late 1970s, i.e. the Zwycięstwa and Prądnik Czerwony Estates. Nearly 40% of the persons who had moved into an estate in the past 11-20 years were living in the Orla Białego Estate. It was interesting that residents who moved into an estate in the last decade were found in the newest estate, the Orla Białego, but also in Hutnicze, which is one of the two oldest estates studied. The surveys conducted in the Hutnicze Estate indicated a small proportion of the people living there had been there since the estate's origin and a large proportion (27%) had moved in in the past five years. This could be a sign of the renewal of the social structure of that estate and the arrival of a new generation of residents. Length of residence depended on the date of the estate's origin, but also on the size of the city. Large cities are characterised by high mobility and a rapid turnover of estate populations, as indicated by the high proportion of residents of estates in such cities who were found to have moved in within the last decade.

Table 6. The result of the multiple linear regression analysis of the duration of residence using the series of independent variables (dependent variable: duration of residence, N = 1305)

Independent variable	Unstandardised coefficients		Standardised coefficient
	B	Std. Deviation	Beta
Demographic variables (age < 65 years)			
Seniors (age 65+)	0.596**	0.089**	0.210**
Type of households (nuclear Family)			
Single nousehold	0.015	0.093	0.005
2+0 household	0.123	0.088	0.043
Single parent	-0.055	0.120	-0.013
Other household	0.085	0.092	0.029
Education (primary and basic vocational)			
Secondary	-0.167*	0.081*	-0.071*
Tertiary (university-degree level)	-0.489**	0.096**	-0.193**
Economic activity (inactive)			
Employed	0.193	0.122	0.081
Socio-professional status (unskilled workers)			
Managers and professionals	-0.975**	0.159**	-0.256**
Technicians	-1.020**	0.185**	-0.252**
Clerks and service workers	-0.788**	0.155**	-0.218**
Skilled workers	0.157	0.200	0.026
Other	-0.950**	0.102**	-0.331**
Net monthly household income per capita			
(Income < 2000 Polish zlotys)			
income > 2000 Polish zlotys	0.010	0.084	0.003
Constant	3.045**	0.092**	
R ²			0.300
F value			33.028**
Degrees of freedom			14

Source: Calculations based on the author's surveys (2010–2012 questionnaires).

Note: Significance: * p -value < 0.01; ** 0.01 < p -value ≤ 0.05.

Table 6 presents the results of the regression analysis of the correlation between the length of residence and the socio-economic factors of the studied estates. The explanatory power of the estimated equation is not very high (with an R^2 of 0.3, but the equation's significance is 0.00). However, it is important to state that regression analysis based on micro-level data generally yields rather low R^2 values [Lii 2000]. The results of the analysis indicate interesting differences with respect to the variables analysed. The essential factors influencing the durability of residence at an estate were the age, education, and socio-professional status of the residents. Age was also an essential predictor of the duration of residence, which was suggested by the aforementioned problem of residential ageing in place observed in large housing estates. The analysis also took into account the variable relating to the types of households. Using 1988 and 2002 National Census data, it was predicted that the residential duration shares of single- and 2-person households would increase with time. However, the variables relating to the types of households were not statistically significant, which could be explained by the great diversity of estate households, including both single- and 2-person elderly households (in the empty-nest stage of life), along with the presence of households owned by young people: singles or 2+0 families (see Figure 2).

Essential differences in the duration of residence were associated with the residents' education and professional status. The values of the education indicators were negative, which demonstrated that lower education was correlated with long duration of residence. This could be caused either by the fact that less educated persons remained in the estates, or by persons with tertiary education and students moving in to live in large housing estates. The growing proportion of residents with secondary (in 1988–2002), and tertiary education (2002–2010), see Table 5, explained the phenomenon of the arrival of well-educated people in the recent decade.

The most essential predictors of residential duration involved the variable determining the socio-professional status of the residents. It was interesting to see that the indicators had negative values not only in the managers and professionals group, but also in the groups of technicians and clerks and service workers. This could be explained by the transformation occurring in the professional structure of the residents observed in older corporate housing estates and the arrival of new residents in older estates. Employment and income levels did not essentially affect residential duration. Other factors such as creditworthiness, employment stability, and housing prices in the real estate market were not taken into consideration owing to a lack of data, but they could be of importance for explaining the variations.

Since housing estates are still characterised by a heterogenic social structure, it was interesting to observe the residents' mobility plans in order to understand the current transformation trends. It is possible to infer from the survey research that the majority of the estate residents were not planning to leave their flats in the near future. In the survey 66% of the respondents declared that they were

Table 7. Respondents' mobility (residents' plans to move out within the next 3 years) in relation to education, professional activity, and residential duration by chi-square test (N = 1305)

Variable	Planning to move to another town	Planning to move to another district of the city	Would like to move out, but do not plan to currently	No plans to move out because the place of residence is suitable	Total
Plans regarding moving out (%)	3	5	26	66	100
Education¹ (% in each educational category)					
Primary or basic vocational	2.0	0.4	20.1	77.5	100
Secondary	4.2	2.4	25.6	67.7	100
Tertiary (university-degree level)	4.7	3.0	25.4	66.9	100
Economic activity² (% in each economic activity category)					
Employed	7.5	4.8	33.5	54.3	100
Not employed	2.8	1.5	19.2	76.5	100
Duration of residence³ (% in each duration of residence category)					
< 10 years	5.7	6.0	34.8	53.4	100
10–20 years	5.1	3.1	33.1	58.8	100
20–30 years	5.6	2.3	22.8	69.3	100
> 30 years	2.9	0.5	13.4	83.2	100
Estate's period of origin⁴ (% in each length of existence category)					
1945–1970	2.8	3.4	20.1	73.7	100
1970	4.5	2.5	21.3	71.6	100
1980–1990	6.1	3.6	35.0	55.3	100

Source: Based on the author's 2010–2012 surveys.

¹ Education: Pearson chi-square 36.56; $df = 9$; p -value < 0.001.

² Economic activity: Pearson chi-square 73.17; $df = 3$; p -value < 0.001.

³ Duration of residence: Pearson chi-square 89.97; $df = 9$; p -value < 0.001.

⁴ Estate's period of origin: Pearson chi-square 36.53; $df = 6$; p -value < 0.001.

not planning to move out because their place of residence was suitable for them. Slightly more than one-quarter of the respondents indicated their willingness to move out of the estate, but that they were not planning to, which meant that, once their financial situation improved or family situation changed, those residents would tend to leave the estate. The intention to move out was expressed by less than 8% of the residents, while 5% declared that they would consider another city district or estate, and 3% another city. Willingness to move out was studied by using the chi-square test with the variables education, economic activity, the duration of residence, and the time of the establishment of the estate (Table 7).

There is a link between education and residential mobility. Residents with primary or basic vocational education are the least likely to move. Among the residents who stated they would like to move out, but were not planning to do so for the time being, most of them were people with secondary education (Table 7). A moderate link was observed in the group of people with tertiary education, who planned to move to another town or city district. Stronger dependencies were observed in the analysis of migration plans in relation to employment. The economic activity of the employed caused a stronger willingness to move out: people who were working were inclined to a willingness to move out of the estate (33%), while those who were not employed were characterised by lower residential mobility and a stronger preference to remain in their current place of residence (76%). The duration of residence also influenced whether or not a person planned to or was willing to move. The residents who had moved into an estate in the recent decade were the most inclined to move out. The residents who had lived for more than 30 years in the estate were more willing to remain in their place of residence (83%). The time at which the estate was built was also associated with residential mobility. The strongest link to plans to move out was observed in the estates that were built in the 1980s (6% and 3%). The estates constructed in the 1970s and 1980s were less at risk of an outflow of residents (72% and 74% of residents at these estates did not want to move out).

Discussion and conclusion

The demographic and social structure

The purpose of this paper was to examine the social structure of selected Polish housing estates while examining the trends of changes occurring in the social development of large estates. In reference to the first research question ('How did the demographic and social structures of large housing estates change during the transformation process?'), the socio-demographic analyses did not show any dramatic changes in the social structure, although it was possible to observe processes associated with residential ageing.

Certain patterns could be observed in the development of the Polish estates that were consistent with Grigsby's estate life-cycle theory [Grigsby et al. 1987].

The observed drop in the population size of the estates was not associated with depopulation but with the fact that the estate households had entered a new state in the family-life cycle. Demographic changes, including especially the changing family model and the increase in single-person and 'empty-nest' households, were the main factors shaping the present-day changes in the estates' social structure. The current demographic and social processes are similar to the general trends that are shaping the development of European cities and towns—namely, a decrease in the number of persons in a household (and an increase in the number of single-person households) and in the share of complete families, offset by the increasing number of 'empty-nest' families and childless couples.

The specific changes observed in the housing estates can also be explained by a shrinking of or change in the social structure of households. Several decades ago, such estates were mostly inhabited by multi-person families, while currently they are predominantly occupied by smaller households [Grossmann, Kabisch and Kabisch 2015]. The large number of single- and 2-person households is the natural result of the increase in the number of people living alone, widows and widowers, and 'empty-nest' married couples, and the decrease in the number of traditional large families. Large households (with four or more persons) tend to be found rather in large estates that are located in large cities: Poznań and Kraków (Figure 3). Quite often, however, these are non-family households composed of individuals who share and jointly lease a flat, such as college students or graduates. This study also revealed the existence of the 'studentification' process noted elsewhere by Szafrńska [2015a] and Zborowski [2005]. The share of incomplete families (i.e. one parent with a child or children) is rather small. The relatively small share of incomplete families distinguishes Polish housing estates from many large Western European estates. The large proportion of incomplete families, mostly single mothers on social welfare, is often indicated as one of the social problems of Western European estates [Wassenberg 2011].

Population ageing is the most significant demographic problem of the Polish estates. A reflection of the residential ageing of large housing estates is the large proportion of residents aged 65+. Statistical analyses confirmed attachment to the place of residence and a limited willingness to move out among those aged 65+. Consequently, residential ageing in place will become an increasingly significant issue for estate life in the future. In large housing estates, ageing is the result of limited residential mobility, and, for that reason, the period in which an estate originated is significant for the development of an estate community. The results of the analysis confirmed the conclusions of research conducted in the post-socialist housing estates by other authors [Kabisch and Grossmann 2013; Temelová et al. 2011], who found that the ageing process was the result of the distribution of flats to people in a selected age group when the estate was built. The ageing of the communities in the housing estates means that the infrastructure needs to be adjusted to the needs of the elderly—for example, by installing access lifts in five-storey buildings or remodelling public services.

The growing share of residents with secondary and tertiary education refutes the claims that large housing estates have started to yield to degradation processes that lead to the rapid abandonment of the estates by well-educated and well-off persons. Similar findings of an increase in the proportion of residents with tertiary education were observed in studies of large housing estates in Łódź (where the educational level of estate residents slightly increased in relation to the city average) [Szafrńska 2012].

The job structure of the working respondents indicated a considerable diversity of occupations and positions. However, we were still able to observe a large share of residents in professional occupations.

The high education levels of the residents and the diversity of the occupational structure proved that the studied estates were complex in these respects. The large proportions of professionals, specialists, public servants, and office workers living in housing estates are a factor indicating the good social and occupational condition of the residents. The large proportion of employed persons and the similarly large proportion of persons employed in high- and mid-level service sectors distinguish the Polish estates from those in Western Europe [van Kempen et al. 2006]. The diverse socio-economic structure of the residents, their attachment to the area, and the low residential mobility indicate that large housing estates in Poland are not currently experiencing social decline. Those estates continue to have a medium social status of residence (similar findings have been indicated by Szafrńska [2015a] and Marcińczak and Sagan [2011]).

The analysis of the stability of the current social structure in the estates did not reveal any social decline either. The large share of senior citizens indicated that flats located in large housing estates were mostly occupied by the original tenants. No major outflow of the population from the estates studied was observed, although basic differences in residential durability were associated with the residents' education and professional status.

The small proportion of residents who would be willing to leave their current place of residence is a distinguishing feature that of large housing estates and one that relates in particular to residents who moved into the estates more than twenty years ago. Similar results were obtained in research on large housing estates conducted in selected Central and Eastern European countries [Hertfert, Neugebauer and Smigiel 2013; Temelová and Slezáková 2014; Temelová et al. 2011; Kährlik and Tammaru 2010].

Trends in the development of large housing estates

The trends described in this article indicated that the period in which an estate was constructed is a basic factor that affects the present-day situation of large housing estates in Poland. In reference to the nature of the current transformations, the analyses of large estates correctly identified types of social structures that are associated with the periods in which individual estates originated.

The housing estates constructed up until the 1970s are currently distinguished by the fact that they are experiencing a slight population increase and a process of demographic and social structure renewal. The 1945–1970 housing estates are still partly occupied by the original tenants or flat owners, but the demographic data suggest that a good proportion of residents are from the younger generations, i.e. the children of the first tenants or younger people who bought the flats from the original tenants. Most blocks of flats were made of brick in that period, which allows for easier conversions to meet the needs of the new residents. The residents of estates built in the 1950s and 1960s indicate no plans to move to other city districts. If rehabilitation projects are introduced in these estates, there is a good chance that the flats will continue to be of good value in the real-estate market in the near future. As long as flat prices stay high in large cities, the flats from the period under discussion may remain attractive on the market for single- and 2-person households.

The communities in housing estates built in the 1970s are currently characterised by a large proportion of pensioners among residents. Research projects conducted in Czech housing estates revealed that long-term residence in flats since the estates were built gives many of the estates a distinctive character and has a positive influence on community ties [Špaček 2012]. The elderly represent a relatively attached and stable segment of housing estate populations, so they are important agents of local community building [see, e.g., Temelová and Slezáková 2014; Filius and van Kempen 2005]. Consequently, older housing estates, characterised by strong social cohesion, seem to be perceived in a positive light.

The housing estates developed in the 1980s were moved into 25–30 years ago and the process of population ageing is not yet conspicuous in these estates, although residents aged 45+ make up a large proportion of the residents in these estate communities. The younger demographic structure results in the presence of a diverse array of household types there, more so compared to the other estates, and a larger share of nuclear families. As the correlation analysis revealed (Table 7), the factors that push people out of the estates include having resided in the estate for a short period, a person's place of employment, and having tertiary education. A considerable proportion of residents in the 1980s estates were identified as susceptible to high mobility given their age. It is thus possible to expect outflows of particular groups of residents in the future, followed by social decline.

The study of long-term residence showed that the existing social structures remain stable. The analysis of the durability of residence and potential migration plans on the part of residents did not identify any considerable social exchange. The results of the research in the Polish estates, as well as other Central and Eastern European estates, confirmed that the level of residential mobility in large housing estates in post-socialist cities is relatively low and probably will not increase significantly in the near future [Kovács and Herfert 2012]. Owing to a shortage of flats and the low mobility of residents in large estates, multi-family blocks of flats will continue to constitute an essential part of the housing stock.

Consequently, what is required is that policies be formulated that are designed to improve housing standards and take care of the residents' quality of life. Similar development trends indicate that it will be possible to adjust ongoing stock rehabilitation programmes to apply to apartment complexes originating in different construction periods.

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