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THE INFLUENCE OF MIGRATIONS ON THE SUBURBS OF LARGE CITIES IN POLAND

WPŁYW MIGRACJI NA KSZTAŁTOWANIE SIĘ STREF PODMIEJSKICH DUŻYCH MIAST W POLSCE

Nr DOI: 10.25167/sm2017.028.08 s. 121-147

ABSTRACT: The article discusses the problem of growing depopulation of large cities in Poland, resulting from demographic changes and migrations, in particular. The author focuses on the process of moving away from cities, and the main goal is to show the influence such migrations exert on Polish suburbs. In addition, the article elaborates on possible evaluations of the phenomenon of urban depopulation: Is it to be seen as something negative or neutral? The research to date has shown that the urbanization of Poland (i.e., the percentage of Poles living in urban areas) has been decreasing in recent years. Researchers, interested in this phenomenon, conclude that it is a clear symptom of suburbanization.

KEY WORDS: depopulation, migrations, suburbs, suburbanization

ABSTRAKT: W artykule podjęto problem narastających procesów depopulacyjnych w dużych polskich miastach jako skutek zmian demograficznych, ze szczególnym uwzględnieniem zjawisk migracyjnych. Skoncentrowano się na przemieszczeniach z dużych miast, a za cel przyjęto ukazanie wpływu migracji na kształtowanie się strefy podmiejskiej. W artykule postawiono także pytanie badawcze, czy miasta depopulacyjne to zjawisko negatywne czy neutralne. Jak pokazują badania, urbanizacja w Polsce, mierzona udziałem ludności miejskiej, w ostatnich latach wykazuje spadek, a badacze tego zjawiska stwierdzają, że jest to wyraźny przejaw suburbanizacji terenów podmiejskich.

SŁOWA KLUCZOWE: depopulacja, migracje, strefa podmiejska, suburbanizacja

Introduction

Nowadays, the majority of European countries, including Poland, are experiencing demographic regression. This has numerous grave consequences

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for the functioning of their economies, including problems of social insurance systems, shortage of labour force and threats to the stability of public finances. It is in large cities where the demographic regression is particularly visible, and the phenomenon has attracted the attention of many scholars. Hardly any region in Poland is free from this trend, and the Polish State Statistics Office GUS forecasts its continuation. This is confirmed by the results obtained by I. Kantor-Pietraga (2013), who notes that most large and middle-sized cities in Poland experienced a population decrease between 1990 and 2012. Uncontrolled sprawling of cities, in turn, may cause numerous economic and social problems, such as rising costs of public services, problems of logistic nature and environmental pollution.

The goal of this article is to show the influence migrations have on the development of suburban areas of large cities

According to M. Maciejuk (2015), the urbanization of Poland defined as the percentage of Poles inhabiting urban areas decreased from 61.8% in 1990 to 60.4% in 2013. Maciejuk points out that it is a clear symptom of suburbanization. The process of settlement in neighbouring rural areas is observable both around large and middle-sized cities. In recent years, cities have become surrounded by housing estates and shopping malls.

The term 'suburb' comes from Latin *suburbium* and is used to describe residential areas located on the outskirts of cities. Although the definition seems clear, in practice it is quite difficult to delineate the suburbs of any given city. As noted by K. Dziewoński (1987), a suburb must constitute an area that is in some way distinct from the neighbouring ones, both urban and rural. He points out that defining the outer boundary of the suburbs as the maximum commuting distance to the neighbouring city is very problematic and imprecise, and it would require an additional assumption of how far/how long people can actually commute.

S. Liszewski (1987) elaborates on the reasons for the emergence of suburbs and their characteristics. He also clearly states that 'suburbs' is a geographic term that still lacks a complete and unambiguous definition. For example, L. Straszewicz (1980) and B. Barbier (1980) believe that only large cities with over 100,000 or even 500,000 inhabitants possess suburbs, whereas B. Malisz expresses the opinion that each city has got its own backstage (suburbs). The latter view is confirmed by W. Rakowski (1983), who points out that such an area surrounds every town and city with more than 10,000 inhabitants that does not lie within the reach of larger conurbations. S. Liszewski (1987) states that suburbs may be delineated beyond doubt as areas inhabited by everyday commuters, which is reflected by the term 'day urban system' (Potrykowska 1981). However, both K. Dziewoński (1987), referred to above, and A. Jelonek (1983) believe that some everyday commuters in fact live further from the city than the reach of its suburbs, and research on other everyday relations of

Table 1

Stages in the development of suburbs according to J. Jakóbczyk-Gryszkiewicz (1998)

Stage	Period	Boundaries	Population	Functions	Main-characteristics
Preindustrial	From ancient times to 18th/19th c.	A few kilometres away from the city boundaries	Limited mobility	Basic - food production, community building, crafts, services, leisure	Rural character
Industrial and technical revolution	18th/19th c. to mid-20th c.	Sprawling cities causing changes of boundaries	Rapid growth of mobility: commuting, migrations to cities, increasing population density	Industrial, community building, services, communication	City spreading to rural areas
Technical and services resolution	Mid-20th c. to end of 20th c.	Continuous changes of boundaries, spreading of suburbs	Growth of commuting to work in the city, frequent migrations from the city to its suburbs, increasing population concentration	Further development of non-agricultural functions, particularly communication, leisure, community building, services, housing	
Postindustrial	End of 20th c. to beginning of 21st c.	Stabilization of city boundaries, spreading of suburbs	Limitation of commuting, migrations to the suburbs by technopole employees and seniors	Development of technopoles, growing role of housing and services, reduction of agriculture	Housing and services in areas of insular character

Source: Jakóbczyk-Gryszkiewicz J. (1998).

suburban dwellers with the city is difficult to conduct (Straszewicz, Liszewski, Pączka, 1970). S. Liszewski (1987) shares W. Rakowski's (1983) view that the delineation of the suburbs should also be based on typical migration patterns, including migrations both from the suburbs to the city and the other way round. The two opposing trends are characteristic of different social groups and lead to partial exchange of the population. Suburbs constitute an attractive migration destination for city dwellers who perceive moving away from the city in order to live in a healthier and more comfortable environment of the suburbs as a sign of social advancement.

E. Gonda-Soroczyńska (2009) is another author who believes that suburbs are difficult to define unequivocally. She notes that recently many new housing estates have appeared just outside the administrative boundaries of cities, and their classification seems particularly problematic. She wonders whether they should be described as a continuation of the city, a rural area, or perhaps even a different, completely new entity.

J. Jakóbczyk-Gryszkiewicz (1998) brings a valuable input to this discussion, presenting the subsequent stages in the development of suburbs, and emphasizing the crucial role migrations play in the process. She also describes the boundaries of suburbs in different historical periods (see Table 1).

The phenomenon of depopulation of urban areas and moving to the suburbs has attracted a lot of scholarly attention. Some researchers see it as a very negative development and strike a note of alarm, whereas others take a more descriptive approach. Authors such as Kantor-Pietraga I. (2013), Kantor-Pietraga I., Krzysztofik R. (2011), Kantor-Pietraga I., Krzysztofik R., Runge J. (2011, 2012a, 2012b, 2012c), Krzysztofik R., Runge J., Kantor-Pietraga I., Spórna T. (2011), Krzysztofik R., Kantor-Pietraga I., Runge A., Spórna T. (2017) Maciejuk M. (2015), Zuzńska-Żyśko E. (2016), Szukalski P. (2014), Smętkowski M., Jałowicki B. (2009) Bański J. (2008), Dziewoński K. (1987), Gonda-Soroczyńska E. (2009), Hopfer A., Żróbek S., Żróbek R. (1987), Jakóbczyk-Gryszkiewicz J. (1998), Koter M. (1985), Krzysztofik R., Kantor-Pietraga I., Runge A., Spórna T. (2017), Liszewski S. (1987), Rajman J. (1997), Słodczyk J., Klimek R. (2006), Staszewska S. (2012, 2013), Straszewicz L. (1985), Zaremba P. (1962), Zawadzki L. (1979), Śleszyński P. (2006), Zborowski A., Soja M., Łobodzińska A. (2012), Zborowski A., Raźniak P. (2013), Harańczyk A. (2015) Szymańska D., Biegańska J. (2011) Winiarczyk-Raźniak A., Raźniak P. (2012), Raźniak P. (2013, 2014), Raźniak P., Grochal M. (2014) can be mentioned in this context.

Research methodology and scope

Depopulation mainly results from:

- a population decrease due to natural causes,

- economic crises and loss of jobs,
- suburbanization and spatial reorganization of populations.

On the basis of a comprehensive analysis of the evolution of cities in developed countries, nowadays it is possible to determine that all modern conurbations undergo subsequent changes resulting from the urban life cycle described by L.H. Klaassen and W.T. Paelinck (1979). This cycle consists of the following stages:

Initial urbanization – the city centre attracts more new inhabitants than the suburbs.

II. Suburbanization – the suburbs attract more new inhabitants than the city centre (which may be accompanied by the emergence of slums, e.g. in Latin America).

De-urbanization – city dwellers move to the suburbs, and the city centre becomes primarily the place where one works.

IV. Re-urbanization – the influx of new inhabitants to the city centre causes the return of its former importance.

Such changes are observable in all conurbations, but particularly in large cities.

At the moment, Polish cities are at the second stage – they undergo suburbanization. What causes serious problems to researchers is the delineation of the suburbanization zone. According to E. Zuzńska-Żyśko (2016), suburbs include smaller towns and housing estates, they spread further and further away from large cities and include some areas that are very distant. She points out that for various Polish conurbations the influence zones may differ considerably as to their size. She refers, among others, to T. Markowski and T. Marszał (2006), who propose to include an area within 30-40 km from the city centre. M. Smętkowski, B. Jałowiecki and G. Gorzelak (2009), in turn, suggest the maximum distance of 50 km from the city centre to include a municipality in this city's suburbs, arguing that this is a distance that requires a one-hour journey by car. They further mention the distance of 35 km based on the 'operational principle' for dividing municipalities. On the basis of the development of Łódź and its suburbs, S. Liszewski (2010) proposes the maximum radius of 50 km, additionally mentioning the distances of 20 km and 30 km from the city centre as internal boundaries. B. Jałowiecki (2005) settles on the distance of 50 km.

As explained by I. Sagan (2013), an analysis of demographic changes is necessary to determine the results of the decrease in urban populations. Referring to A. Zborowski et al. (2012), she points out that depopulation has been particularly visible in postindustrial cities and centres of large conurbations. Industrial cities have lost some of their inhabitants following the transformation of the economy from the industrial mode to the services mode. In large conurbations, on the other hand, depopulation results mainly from

suburbanization. Sagan argues that in order to evaluate this phenomenon properly we have to consider the migration balance. If this balance is positive, it shows that in spite of shrinking cities the region as a whole does not lose its human and demographic resources, simply undergoing the process of spatial relocation. Consequently, it may be concluded that a large migration influx (combined with a smaller outflow) is a factor that should play the key role in delineating the reach of the suburbs. Migrations are seen in a similar light by J. Jakóbczyk-Gryszkiewicz (1998).

Having studied various means and criteria that can help us determine the reach of the suburbs, e.g. A. Hopfer, S. Żróbek, R. Żróbek (1987), and being aware of the criticism which some of the suggested factors have met with, the author of this article would like to propose his own method that should be feasible for large cities. This method is based on two criteria:

- According to the concepts of L.H. Klaassen and W.T. Paelinck (1979), the former criterion consists in identifying areas with large migration influxes, as this is a characteristic feature of the suburbanization zone. The analysis will cover municipalities with a positive migration balance, which is calculated as the population influx for every 1000 inhabitants and considered in terms of an average yearly value for the decade of 2006-2016.

- The latter criterion is the spatial distance from the central city, which, in accordance with the views expressed by numerous scholars, such as M. Smętowski, B. Jałowicki, G. Gorzelak (2009b), T. Markowski, T. Marszał (2006), S. Liszewski (2010) and B. Jałowicki (2005), has been determined as 35 km. For Warsaw, both the radii of 35 km and 50 km are taken into consideration.

The above criteria enable us to delineate the suburbs of the largest cities in Poland, and these suburbs will be analyzed in terms of population changes considered separately for the central city and for its suburbs, and jointly for the both of the areas. The migration destinations for inhabitants of the central city within the period of 2006-2016 will also be shown. Consequently, the main goal of this study is to describe the influence of migration influxes on population changes in the suburbs of large cities.

Results

On the basis of available data for the period of 2006-2016, a map of average yearly migration rates was prepared (Figure 1), showing which areas should be perceived as the suburbs of large cities. The analysis covers the period of 2006-2016 due to availability of the most recent databases. The analysis will cover five cities possessing over 500,000 inhabitants and Tricity (Gdańsk + Gdynia + Sopot): Warsaw with 1,753,000 inhabitants, Cracow with 765,000 inhabitants, Łódź with 696,000 inhabitants, Wrocław with 637,000 inhabitants,

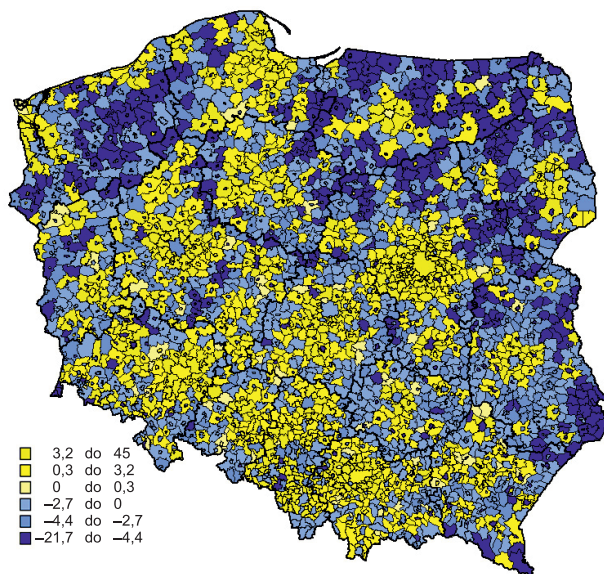


Figure 1. Average yearly migration balance for 1000 inhabitants in the years 2006-2016

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

Poznań with 540,000 inhabitants and Tricity with 748,000 inhabitants. The Katowice Conurbation falls outside the scope of this analysis, as it is an exceptionally complex region when it comes to population changes that requires separate research, as carried out, among others, by Kantor-Pietraga I., (2013), Kantor-Pietraga I., Krzysztofik R., (2011), Kantor-Pietraga I., Krzysztofik R., Runge J., (2011a, 2012, 2012b, 2012c), Krzysztofik R., Runge J., Kantor-Pietraga I., Spórna T., (2011b), Zuzńska-Żyśko E., (2016). A conurbation is understood here as a polycentric urban area comprising several neighbouring cities, none of which clearly dominates over others.

Cracow

On the basis of positive migration balances and the maximum distance of 35 km from the city centre, the suburbs of Cracow have been delineated (Figure 2). They include 67 municipalities. The analysis of population changes reveals positive migration balances for both Cracow itself and its suburbs. Since 2006, Cracow has gained 4,800 new inhabitants, and its suburbs – 65,000 (see Table 2).

During the decade under analysis, 66,000 people moved away from Cracow. Almost 43,000 of them moved to the suburbs of Cracow, which accounts for 65% of migrations. The remaining 23,000 also mainly settled in municipalities around Cracow, although at a greater distance (see Figure 3). In total, in the

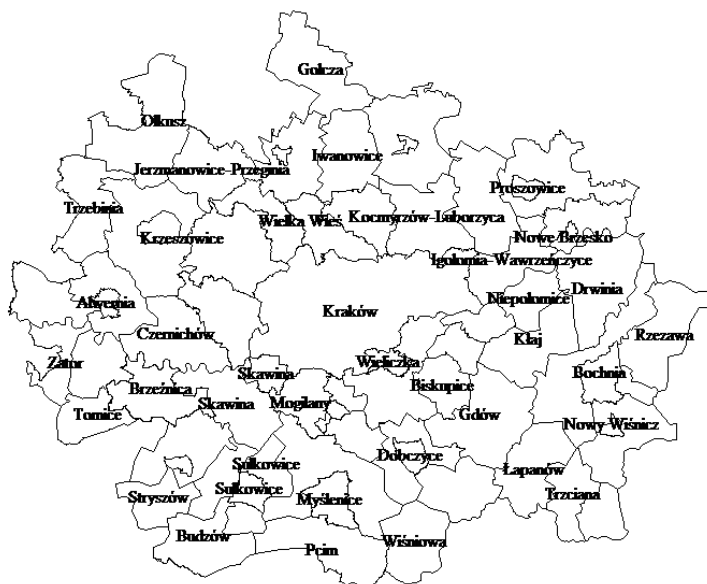


Figure 2. The suburbs of Cracow under analysis

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.



Figure 3. Total outflow from Cracow in the years 2006-2016 (in persons)

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

Table 2

Population changes in Cracow and its suburbs in the years 2006-2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change in population
Kraków	756267	756583	754624	755000	757740	759137	758334	758992	761873	761069	765320	4802
Suburban-area	693891	699001	702988	709384	722973	735062	740890	745851	750288	754474	759524	65633
In total	1450158	1455584	1457612	1464384	1480713	1494199	1499224	1504843	1512161	1515543	1524844	74686

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS

years 2006-2016 the biggest number of inhabitants of Cracow (4,500) moved to Zielonka, north of Cracow. Zielonka is a very dynamic municipality, in 2016 it came first in the ranking of the best local governments of the *Rzeczpospolita* (a newspaper of nationwide circulation). Large migration influxes in the suburbs of Cracow are also observable for Wieliczka, Zabierzów and Kocmyrzów-Luborzyca.

The population growth in the suburbs of Cracow was caused by two factors: migrations and the positive birth rate. The former is considerably more important, accounting for almost 45,000 new inhabitants, whereas the latter accounts for about 14,000.

Wrocław

The suburbs of Wrocław consist of 52 municipalities (see Figure 4). At present, they count over 500,000 inhabitants, and during the decade under analysis this number rose by more than 50,000. At the same time, Wrocław itself only gained slightly over 3,000 new inhabitants (Table 3).

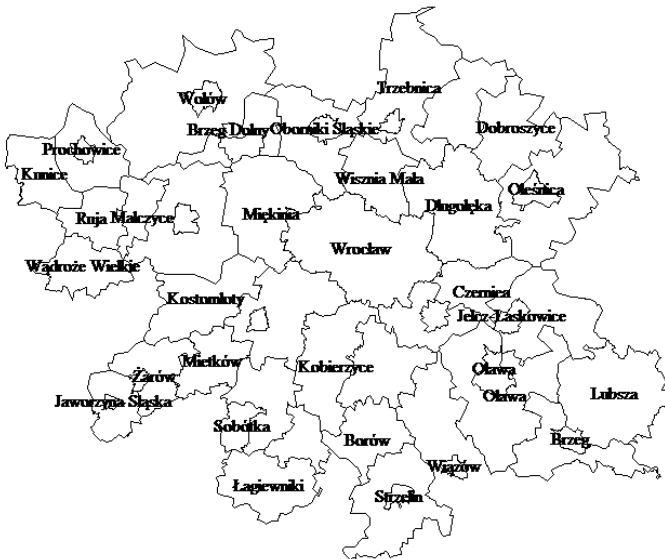


Figure 4. The suburbs of Wrocław under analysis

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS

In the decade between 2006-2016, over 40,000 inhabitants of Wrocław moved to its suburbs, which accounts for 58% of migrations from Wrocław. Długołęka, a municipality situated to the north-east of the city, attracted the biggest number of new inhabitants – 6,500 (see Figure 5). Other municipalities, namely

Table 3

Population changes in Wrocław and its suburbs in the years 2006-2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change in population
Wrocław	634630	632930	632162	632146	630691	631235	631188	632067	634487	635759	637683	3053
Suburban-area	500655	504174	507826	512017	528790	533422	537600	542121	545764	549360	553677	53022
In total	1135285	1137104	1139988	1144163	1159481	1164657	1168788	1174188	1180251	1185119	1191360	56075

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

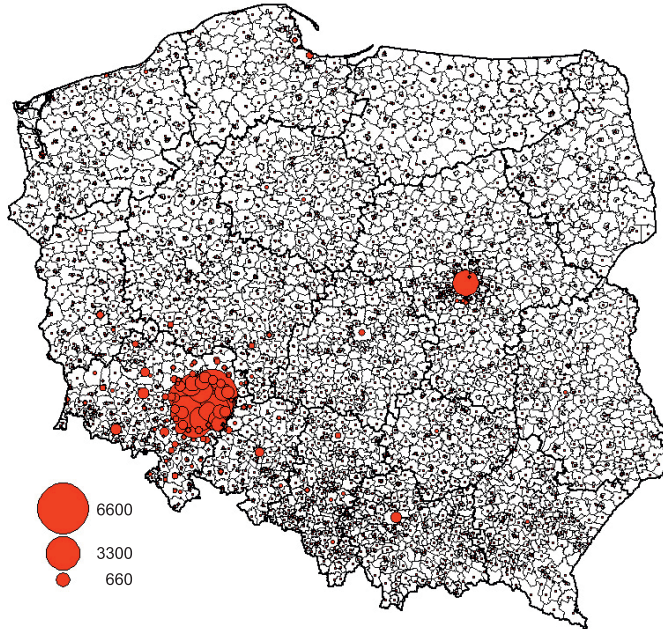


Figure 5. Total outflow from Wrocław in the years 2006-2016 (in persons)

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

Kobierzyce, Czernica, Siechnice, Miękinia, Kąty Wrocławskie, were also frequently chosen as migration destinations. During the period under analysis, migrations clearly constituted the main factor contributing to the positive demographic balance of the suburbs. The total migration balance amounts to over 42,000, and the positive birth rate - to only 5,600.

Łódź

The demographic condition of Łódź and its suburbs must be evaluated as clearly negative. The suburbs consist of 61 municipalities, and in the years 2006-2016 they gained only 18,000 new inhabitants (see Figure 6, Table 4). At the same time, Łódź lost 63,000 inhabitants.

During the period under analysis, almost 53,000 inhabitants moved away from Łódź (see Figure 7). 33,000 of them moved to the suburbs of Łódź, which accounts for 62% of migrations. A considerable number of inhabitants of Łódź (3,600) migrated to Warsaw. Among the suburbs of Łódź, Zgierz enjoyed the biggest popularity, attracting 3,200 inhabitants of Łódź. More than 2,000 moved from Łódź to Aleksandrów Łódzki and Adrespol. On the whole, during the

decade under analysis the suburbs of Łódź were characterized by a high negative birth rate of 14,000.



Figure 6. The suburbs of Łódź under analysis

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.



Figure 7. Total outflow from Łódź in the years 2006-2016 (in persons)

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

Table 4

Population changes in Łódź and its suburbs in the years 2006-2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change in population
Łódź	760251	753192	747152	742387	730633	725055	718960	711332	706004	700982	696503	-63748
Suburban-area	589618	590120	590120	592068	598938	607311	607659	608029	608229	607761	607544	17926
In total	1349869	1343312	1337272	1334455	1329571	1323266	1326619	1319361	1314233	1308743	1304047	-45822

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

Table 5

Population changes in Poznań and its suburbs in the years 2006-2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change in population
Poznań	564951	560932	557264	554221	555614	553564	550742	548028	545680	542348	540372	-24579
Suburban-area	647514	657446	667214	676970	693917	703175	711703	720330	728038	736365	745685	98171
In total	1212465	1218378	1224478	1231191	1249531	1256739	1262445	1268358	1273718	1278713	1286057	73592

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

Poznań

The suburbs of Poznań under analysis consist of 60 municipalities and have 745,000 inhabitants (see Figure 8, Table 5). In the years 2006-2016, the suburbs



Figure 8. The suburbs of Poznań under analysis

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.



Figure 9. Total outflow from Poznań in the years 2006-2016 (in persons)

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

gained more than 98,000 new inhabitants. Poznań itself, in contrast, has lost over 24,000 inhabitants. However, thanks to the situation in the suburbs, the total demographic balance of the city and its suburbs is positive and amounts to over 73,000.

In the years 2006-2016, over 64,000 inhabitants moved from Poznań to its suburbs, which accounts for 78% of the outflow (see Figure 9). The biggest number, i.e. more than 7,000, migrated to Komorniki, and Dopiewo was the second most popular municipality, attracting more than 6,000. Over 4,000 inhabitants of Poznań chose the municipalities of Luboń, Kórnik, Rokietnica as their migration destinations. The migration balance for the suburbs is clearly positive in the period under analysis, with migrations accounting for over 70,000 new inhabitants, and the positive birth rate – for 30,000.

Tricity

The suburbs of Tricity consist of 34 municipalities inhabited by almost 600,000 people (see Figure 10, Table 6). In the years 2006-2016, the suburbs gained 88,000 new inhabitants. However, Gdynia and Sopot experienced



Figure 10. The suburbs of Tricity under analysis

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

Table 6
Population changes in Tricity and its suburbs in the years 2006-2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change in population
Gdańsk	456658	455717	455581	456591	460509	460517	460427	461531	461489	462249	463754	7096
Gdynia	251844	250242	249257	247859	249461	248939	248726	248042	247820	247478	246991	-4853
Sopot	39624	39154	38821	38460	38858	38584	38217	37903	37654	37231	36849	-2775
Suburban-area	507339	516341	524191	532996	552573	560725	567836	574995	581733	588034	595498	88159
In total	1255465	1261454	1267850	1275906	1301401	1308765	1315206	1322471	1328696	1334992	1343092	87627

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

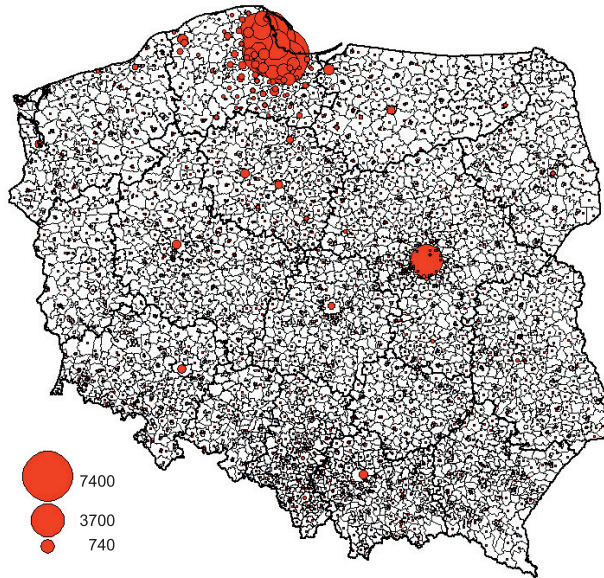


Figure 11. Total outflow from Tricity in the years 2006-2016 (in persons)

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

depopulation and they lost over 7,000 inhabitants – a similar number was gained by Gdańsk.

During the period under analysis, almost 50,000 inhabitants moved from Tricity to its suburbs, which accounts for 54% of the total outflow (see Figure 11). The most popular migration destinations were the municipalities of Żukowo and Pruszcz Gdański (over 6,000). More than 5,000 inhabitants of Tricity moved to Rumia, and more than 3,000 – to Kosakowo, Kolbudy, Wejherowo and Reda. The demographic balance of the suburbs is positive due to migrations (contributing over 50,000 new inhabitants) as well as the positive birth rate (over 30,000).

Warsaw

Considering the size of Warsaw, according to M. Smętkowski, B. Jałowiecki and G. Gorzelak (2009), its metropolitan area should be analyzed taking into account both the radii of 35 km and 50 km. The suburbs inside the smaller radius of 35 km consist of 91 municipalities and are inhabited by 1.3 million people (see Figure 12, Table 7). In the years 2006-2016 the suburbs gained over 150,000 new inhabitants. At the same time, Warsaw itself experienced the population growth of 51,000. On the whole, this accounts for a metropolitan

Table 7

Population changes in Warsaw and its suburbs in the years 2006-2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change of population
Warszawa	1702139	1706624	1709781	1714446	1700112	1708491	1715517	1724404	1735442	1744351	1753977	51838
Suburban-area	1173367	1189646	1203716	1218920	1248513	1263731	1277176	1289921	1301902	1313589	1325072	151705
In total	2875506	2896270	2913497	2933366	2948625	2972222	2992693	3014325	3037344	3057940	3079049	203543

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.



Figure 12. The suburbs of Warsaw under analysis, 35 km
Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

area possessing over 3 million inhabitants. If the bigger radius of 50 km is taken into consideration, the suburbs are inhabited by 1.6 million people and the whole metropolitan area of Warsaw – by over 3.3 million (see Figure 13, Table 8).



Figure 13. The suburbs of Warsaw under analysis, 50 km
Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

Table 8

Population changes in Warsaw and its suburbs in the years 2006-2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change of population
Warszawa	1702139	1706624	1709781	1714446	1700112	1708491	1715517	1724404	1735442	1744351	1753977	51838
Suburban area	1448911	1466051	1480663	1496524	1529781	1545208	1559193	1571930	1575067	1586997	1598812	149901
In total	3151050	3172675	3190444	3210970	3229893	3253699	3274710	3296334	3310509	3331348	3352789	201739

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

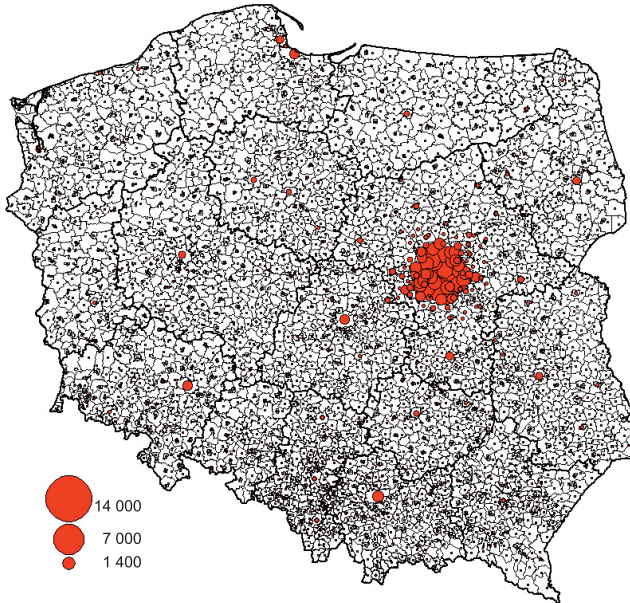


Figure 14. Total outflow from Warsaw in the years 2006-2016(in persons)

Source: Prepared by the author on the basis of data from the Polish State Statistics Office GUS.

In the years 2006-2016, over 102,000 people migrated from Warsaw to its suburbs (within the radius of 35 km), which accounts for as much as 70% of the total outflow (see Figure 14). These suburbs are characterized by the high positive migration rate of over 120,000 and the positive birth rate of about 30,000. During the period under analysis, the biggest numbers of inhabitants of Warsaw migrated to Piaseczno town (5,700), the rural municipality of Piaseczno (5,400), and Marki (5,200). Other popular migration destinations are Ząbki, Lesznowola (over 4,000 each) as well as Pruszków, Stare Babice and Legionowo (over 3,000 each).

Discussion of the results

P. Szukalski (2014) forecasts that within the next 35 years the great majority of cities that play the role of province capitals will face population decreases. Only Warsaw and Rzeszów are expected to maintain their present population levels. To support his view, Szukalski quotes data provided by the State Statistics Office GUS (see Table 9).

At the same time, Szukalski points out that the Polish province capitals will not join 'shrinking cities', i.e. cities where the depopulation rate is very rapid. Referring to a demographic forecast, he argues that by 2050 two province

Table 9

Populations of province capitals in the years 2014-2050

City	2014	2020	2030	2040	2050
Warsaw	1728664	1748046	1755502	1752184	1768418
Cracow	759275	759220	749307	728035	710464
Łódź	705249	668406	606824	542732	484845
Wrocław	631201	625538	611359	591353	577658
Poznań	544984	526063	488226	443721	402076
Gdańsk	461139	457819	447260	431650	418892

Source: Szukalski P. (2014).

capitals, namely Poznań and Łódź, will have lost their status of cities with over half a million inhabitants (in 2028 and 2048, respectively). However, these developments will run parallel to the continuous process of suburbanization. This is why nowadays cities, including the largest ones, are often perceived in terms of metropolitan areas. Szukalski gives the example of Poznań, whose population is decreasing, but at the same time the rural district surrounding Poznań is expected to have a steady population growth from 359,600 in 2014 to 534,600 in 2050. Consequently, the total population of the Poznań metropolitan area is expected to show a slight growth from 904,600 to 936,700. Szukalski's work confirms the results obtained by the author of this study.

The fact that a city and its suburbs constitute a single entity is mentioned by many authors. L. Straszewicz (1980), for example, believes that the suburbs start where the high-density housing of the city ends. It is quite common among scholars to see a city and its suburbs as a whole, and this means that there is no clear boundary between one and the other. On the other hand, administrative boundaries of cities do exist, and, according to Polish statistics, anything beyond these boundaries is a rural area. Such boundaries, however, are very arbitrary and often fail to be reflected in the actual appearance of the area in question. Straszewicz emphasizes that underestimating this problem may lead to a number of errors or, at least, misunderstandings.

In a later work, the same author (Liszewski 1987) concludes that a description of modern suburbs should not disregard the ever more popular view that they constitute one and the same entity together with the city, sharing the same spatial and functional characteristics mentioned by Maik (1980) and Regulski (1981).

A diagnosis of problems concerning urban and suburban development in Poland was attempted, among others, by M. Smetkowski, B. Jałowiecki and G. Gorzelak (2009). They distinguish between two types of municipalities: ones that are included in the metropolitan core and ones located in the neighbourhood of the metropolitan centre, which can potentially become parts of it in the

future. The authors discuss a few selected metropolitan areas and they point out that in 2006 about 27% of the population of Poland inhabited the total area of only 20,000 km². They also refer to migration processes in the areas under analysis, confirming the results obtained by the author of this study. They state that the largest influx of new inhabitants is observable for the Warsaw metropolitan area, but also the metropolitan areas of Poznań, Wrocław, Tricity and Cracow experience positive balances. The Łódź metropolitan area shows the same trend, but at a considerably lower rate.

At the Congress of Polish Geographers (17-21 June 2015), P. Śleszyński provided numerous examples of delineated functional entities, i.e. cities together with their suburbs. He talked about the delineation of 18 Urban Functional Areas in order to facilitate the management of social and economic systems as well as the infrastructure. The scope of such areas should be possibly small to limit the spreading of housing and to improve their cohesion in terms of settlement and transport.

Also R. Krzysztofik, I. Kantor-Pietraga, A. Runge and T. Spórna (2017) discuss the suburbs of the largest Polish cities and emphasize the role of migrations in their development.

I. Sagan (2013) focuses on the social dimension and the consequences of urban depopulation. She points out that depopulation is reflected in faster aging and feminization of city populations, moreover, it leads to cities losing the well-educated, the active and the resourceful, the creative and the innovative. She also emphasizes that analyses of internal migrations within metropolitan areas show that outflows from cities are accompanied by influxes to the suburbs, where new housing offers much better living standards.

The analysis of migration influxes to the suburbs of large cities carried out in this study clearly shows that at least 50% of migrants moving away from a large city choose the suburbs of the same city as their destination. This trend is the most evident for Poznań with 78%, and the least – for Tricity with 54%. It correlates with the size of the suburbs, as the suburbs of Poznań with 745,000 inhabitants are the second-largest in Poland after the suburbs of Warsaw, and the suburbs of Tricity belong to the smaller ones with 588,000 inhabitants. Except for the suburbs of Łódź, all the suburbs under analysis have small but positive birth rates and high positive migration balances. It is an important finding that if cities and their suburbs are treated as single entities, every municipal area under analysis, with the exception of Łódź, experienced a population growth between 2006 and 2016. The municipal area of Łódź constitutes a special case, as the excessive population outflow observable in the city is not outnumbered by the influx of new inhabitants to the suburbs of Łódź.

Hereby, the author presents only an initial study on connections between cities and their suburbs, showing that, in some cases, up to nearly $\frac{3}{4}$ of those

leaving cities move to the suburbs of the same cities, while maintaining their jobs in the city after they have moved.

Summary

Coming back to the main research question of this study, it can be concluded that many Polish cities are experiencing depopulation, but this should not be seen as a reversal of the urbanization process. The ongoing changes in population structures are a fully natural phenomenon, comparable to the loss of jobs in the industry accompanied by the creation of new jobs in the service sector, or to the transformation of the countryside into cityscapes. The emergence of new suburbs is not a result of a crisis of cities that become abandoned by their inhabitants, and in particular by the young. It is rather a natural process reflecting the common desire for higher living standards and well-being: people spending their whole working days in the city wish to relax after work in more comfortable surroundings.

Thanks to freedom of choice as it comes to housing, we are able to seek more privacy and safety in the suburbs. Moving to the suburbs is also facilitated by the overall growth in prosperity and the availability of loans. However, the general low awareness of the negative effects of this process can be a danger. It may lead to chaos in planning and irrationality of spatial outlays. Suburban areas may lack balance between buildings and technical infrastructure, and offer too little in terms of local services. Consequently, this can lead to disruption of the spatial order and disrespect for the rules of sustainable development, as well as to degradation of cityscapes through the appearance of ugly new buildings. Other dangers include excessive reduction of agricultural land and forests and also increased environmental pollution.

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