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**Special Demographic Zone in Poland – in search
for the gist of the phenomenon**

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Abstract

Aim/purpose – The objective of this paper is to identify the gist of the *Special Demographic Zone* phenomenon by analyzing the changes in the demographic structure of the EU population at country and regional level.

Design/methodology/approach – We have applied the Boolean keyword and subject term searches of scholarly articles published in EBSCO and EMERALD databases, as well as in Google Scholar, between 2006 and 2016, inclusive. The key words used in the analysis were: *Special Demographic Zone* and *Special Demographic Zones*. This systematic literature review enabled us to identify 15 scientific articles connected directly with the topic in question.

Findings – We found that there are 3 strategies employed by the local and regional self-governments to tackle the demographic challenges. We present them as a 3A model, representing strategies: *to acknowledge*, *to adapt* and *to (counter) act*. We perceive the *Special Demographic Zone*, defined as a policy tool, as a specific case of an *act strategy*.

Research implications/limitations – The main implication of the research is that there are already tools and mechanism ready to be utilized by the self-governments in order to tackle demographic challenges, which contribute to the local and regional sustainable development. The recommendation for local authorities is to determine which policy direction (as presented in the 3A model) should be embarked on in a given territory in order to maximize the sustainable effect of undertaken actions.

Originality/value/contribution – The originality of this work lies in the development of a theoretical 3A model of self-government's policy reactions to the encountered demographic challenges and in the conceptualization of a *Special Demographic Zone* as a special case of an act policy strategy within the broad framework of regional socio-economic policy. Furthermore, the article draws on up-to-date statistical data.

Keywords: special demographic zone, demographic policy, depopulation, ageing society.

JEL Classification: H11, J10, J18; J68, O21.

1. Introduction

Notwithstanding the fact that ageing Europe is the sole continent whose society, as a whole, undergoes an ongoing depopulation process, the European Union (EU) is still expected to increase the number of its population by 2% until 2030 [Eurostat 2016]. However, at regional and local taxonomic levels of the UE-28 the consequences of both before mentioned demographic processes – namely population ageing and population decline – are distributed unequally, leading to the substantial differences in the demographic situation of particular areas within the EU. In view of the fact that the number, structure, and quality of population on a given territory constitute prerequisite for any development strategy and the precondition for sustainable local and regional growth [Rauziński & Szczygielski 2014; Szczygielski 2015], the changes in demographic characteristics at different levels of taxonomic analysis call for a tailored socio-economic policy at consecutive levels with the ultimate goal of alleviating the negative effects of both negative demographic processes. Thus, European and national policies require flexibility to allow regional and local implementation [OECD 2013].

In the Polish context, there are also substantial regional differences in the population structure and dynamics to be noticed. There are some mesoregions and microregions in an urgent need for extraordinary political intervention. Nevertheless, the long-term demographic projections clearly show that almost all Polish regions and municipalities will have to embark on strategies to face depopulation problem, and all of them will face the population ageing problem.

In 2012 one of 16 Polish voivodeships (NUTS-2 level regions in Poland) – namely Opolskie voivodeship – embarked on special policy programme, called *Special Demographic Zone*, which has been set up in order to fight against savage region's population demise, and to take measures to countervail the ageing process. *Special Demographic Zone* is to be perceived as a complex development and socio-economic policy programme that aims at alleviating the negative effect of both demographic processes in question.

The objective of this paper is to place the concept of the *Special Demographic Zone* established in the Polish Opolskie mesoregion in the broad context of local and regional strategies of tackling demographic challenges that have been already applied in other declining and (or) ageing areas worldwide. In particular, it is in our interest to build a theoretical bridge between the consequences

of ageing and depopulation processes and challenges stemming from the need to create sustainable local and regional economies.

We would like to note that, if not specified otherwise, all statistical data quoted in this paper were sourced from the Eurostat database [Eurostat 2016].

In the *Literature review* section we present a review of international literature that covers: importance of demographic issue in EU-28 member states, context, details and causes of demographic issue at country and regional level in Poland. In *Methods* section we describe our approach toward research sample selection and Boolean keyword and subject term research performed between 1st – 30th of September 2016. In *Research findings* section we provide synthesis of research performed presented in form of typology of strategies implemented to tackle negative trends at different regional levels. Our paper concludes with implications of the study for the economic and research practice.

2. Literature review

2.1. Demography as a strategic policy issue at country level in the EU-28

Population ageing, due to successively increasing life expectancy of individuals, is the major demographic threat to be tackled throughout the EU-28 member states. However, there are some countries (and regions) within the EU equally threatened by the depopulation process and its negative consequences. Demographic issue stimulates debate on impact of income and consumption taxes, subsidies and other fiscal instruments on fertility patterns [Kudla 2013]. Is in the centre of The second demographic transition, which commencement in the Western EU member states is dated from the 1960s, is predominantly characterized by the changes in the demographic family model, i.e. the decline in the number of marriages and fertility rates, the postponement of the average age of first childbirth and marriage, the increase in the number of divorces, single households and alternative forms of relationships (e.g., cohabitation or living-apart-together relationship types). This socio-demographic process has been accompanied and enhanced by the changes in the economic family model, i.e. the increase of the number of families in which both spouses or partners are working full-time and contribute to the family budget in monetary terms. Those processes have cultural, structural and institutional backgrounds. At macroeconomic level they result in decreasing population mainly due to fertility rates below replacement levels [OECD 2013].

In 2015 the average median age of an EU-28 citizen amounted to 42.4 years. Only in five EU member states this indicator did not reach the level of 40 years (namely in: Ireland, Cyprus, Slovakia, Luxembourg, and Poland), whereas in the EU-28 countries of statistically oldest demographic structure like Germany or Italy this indicator has already amounted to 45.9 and 45.1 years, respectively. At the same time in five member states (besides Italy and Germany, also in Greece, Portugal, and Bulgaria) more than 20% of country's population belonged to the 65+ age bracket while the respective average figure for the EU-28 amounted to 18.9%. Between 2010 and 2015 in no EU-28 member state a share of the elderly of 65+ together with an old dependency ratio decreased in the total population. The highest increase in the old dependency ratio (defined as the population of 65+ to the population of 15-64 years) was recorded in Italy (33.7%) with the EU-28 average increase of 28.8%.

Moreover, the Eurostat demographic projections estimate the increase in the total number of people in the age bracket of 65+ to 150 million by 2050, with their approximate share in the total number of EU citizens in so called 'main scenario' accounting for 29%. Notwithstanding the fact that the projections differ in reference to the estimated share of the elderly in the future European population (mainly due to diversified assumptions on birth rates), still the percentage of people in the post-productive age in the total EU population will undoubtedly increase significantly in the coming 25 years. In subject literature, if the share of the elderly (defined as 65+) amounts to more than 30% of total population in a given area, it is referred to as '*demographic point of no return*'. This means that with having no endogenous capacity for further survival, the area needs to embark on substantial immigration process to attract young, exogenous inhabitants [Casavola, ed. 2014].

Furthermore, according to Eurostat, by 2030 half of the current EU-28 member states are expected to decrease the number of their inhabitants. Countries like Lithuania, Latvia or Bulgaria are to shrink by at least 10% (respectively by 24.1%, 17.7%, and 10%), as compared to 2015. By 2050 the number of EU-28 countries which are estimated to suffer from the population loss remains stable, but with more countries to experience deeper population demise. Besides aforementioned examples, also countries like: Greece, Estonia, Portugal, and Slovakia are expected to shrink by more than 10% within the next 35 years. The spread of population loss among those countries ranges from 10.1% in case of Slovakia to 34.2% in case of Lithuania (by 2050, as compared to 2015). However, in absolute figures the greatest population loss is estimated in case of: Germany (6 mn), Poland (3.7 mn), Romania (1.9 mn), Greece (1.8 mn) and Portugal (1.5 mn).

On the other hand, there are countries to gain significant number of inhabitants by 2050, both in absolute and relative terms. In absolute terms the greatest population gains are to be expected in the United Kingdom (an inflow of 12.5 mn people; an increase of 19.4% as compared to 2015), France (an inflow 8.1 mn people; an increase of 12.3% as compared to 2015), and Italy (an inflow of 6.1 mn people; an increase of 10% as compared to 2015). In relative terms, in Luxembourg (an increase of 86.8% as compared to 2015; an inflow of 0.5 mn people), Belgium (an increase of 30.2% as compared to 2015; an inflow of 3.4 mn people), and Sweden (an increase of 28% as compared to 2015; an inflow of 2.7 mn people). In vast majority of those countries there are positive trends to be expected both in terms of crude rate of natural change per 1 000 persons (e.g., Luxembourg: +3.7; France: +3; United Kingdom: +2.7; Sweden: +2.4) and in terms of crude rate of net migration per 1 000 persons (e.g., Luxembourg: +19.6; Sweden: +8.1; United Kingdom: +6.1, Belgium: +6.1).

The statistical data show that whereas the process of society ageing within the EU is inevitable due to increasing life expectancy and predominant fertility rates below replacement threshold, the process of depopulation is far more diversified at country and regional level. The causes of population decline in a given territory are often complex, and may also substantially differ at various regions and at various taxonomic levels [Martinez-Fernandez & Weyman 2012]. However, in the EU context the population decline of some countries and regions is a prevailing result of both phenomena: sub-replacement fertility rates and net migration loss (both internal and external).

The demographic challenges shortly characterized above result in an increasing priority of demography-related aspect of socio-economic and development policy-making. In many EU-28 member states and regions demography is to become a strategic issue and precondition for further local and regional development.

2.2. Demography as a strategic policy issue at country and regional level in Poland

Poland's population is still relatively young in comparison to the total population of EU-28. In 2015 the median average age in Poland amounted to 39.6 years and the share of Polish population in the age bracket of 65+ accounted for 15.4%, which in both cases is far below the EU-28 average (42.4 and 18.9%, respectively). However, the fertility rates in Poland remain very low. In 2014 the average fertility rate in EU-28 amounted to 1.58 whereas in Poland the respec-

tive figure was 1.32 (alike in Spain). In the EU-28 lower fertility rates were recorded only in Portugal (1.23 est.), Greece (1.3) and Cyprus (1.31). Furthermore, Poland is among EU-28 member states with negative crude rate of net migration. At the same time life expectancy in Poland has increased substantially. In 2014 the average life duration at the age of 65 amounted to 15.9 years for Polish men and to 20.2 for Polish women. The respective figures in 1995 were only 12.9 and 16.6 years.

Thus, the projected unfavorable demographic situation of Poland became a subject for concern for policy makers and one of the key strategic socio-economic challenges for Poland to be faced in the coming decades [Boni, ed. 2009].

Figure 1. Voivodeships (NUTS-2 mesoregions) in Poland as of 2016



However, the situation of Polish mesoregions remains diversified in terms of projected demographic trends on population ageing and population decline, what pictures their various socio-economic position and historical background. Figure 1 depicts the territorial location of 16 Polish voivodeships which represent the EU NUTS-2 mesoregions and Table 1 presents the Polish and English equivalents of their names together with some basic information on a given voivodeship.

Table 1. Basic information on Polish voivodeships as of 2016

ID	Voivodeship name (Polish)	Voivodeship name (English)	Capital city	No. of inhabitants (2015)	No. of inhabitants (2030 est.)	Change (in %)
1.	Łódzkie	Lodz	Lodz	2 493 603	2 306 378	-7.5%
2.	Mazowieckie	Masovia	Warszawa	5 349 114	5 418 305	1.3%
3.	Małopolskie	Lesser Poland	Krakow	3 372 618	3 403 103	0.9%
4.	Śląskie	Silesia	Katowice	4 570 849	4 245 178	-7.1%
5.	Lubelskie	Lublin	Lublin	2 139 726	1 995 751	-6.7%
6.	Podkarpackie	Subcarpatia	Rzeszow	2 127 657	2 067 683	-2.8%
7.	Podlaskie	Podlasie	Bialystok	1 188 800	1 121 839	-5.6%
8.	Świętokrzyskie	Holy Cross	Kielce	1 257 179	1 157 417	-7.9%
9.	Lubuskie	Lubus	Gorzow Wlk. Zielona Gora	1 018 075	979 702	-3.8%
10.	Wielkopolskie	Greater Poland	Poznan	3 475 323	3 470 875	-0.1%
11.	Zachodniopomorskie	West Pomerania	Szczecin	1 710 482	1 634 836	-4.4%
12.	Dolnośląskie	Lower Silesia	Wroclaw	2 904 207	2 773 441	-4.5%
13.	Opolskie	Opole	Opole	996 011	902 020	-9.4%
14.	Kujawsko-pomorskie	Kuyavia-Pomerania	Bydgoszcz Torun	2 086 210	2 003 901	-3.9%
15.	Pomorskie	Pomerania	Gdansk	2 307 710	2 334 012	1.1%
16.	Warmińsko-mazurskie	Warmia-Masuria	Olsztyn	1 439 675	1 370 632	-4.8%

Source: Own elaboration on a basis of BDL GUS [2016] (est. as of 2014).

In 2015 the rate of natural increase (RNI) per 1000 inhabitants among Polish NUTS-2 regions ranged from -3.6% in Lodzkie to +1.5% in Pomorskie voivodeship. The highest demographic dependency ratio (measured as the total number of people of non-productive age to the number of people in productive age bracket) was recorded in Lodzkie (35.6%), Swietokrzyskie (33.9%), and Slaskie (33%) voivodeships, as compared to the country average of 31.4%. Simultaneously, in 2014 all Polish NUTS-2 regions recorded negative external migration ratios with Slaskie, Dolnoslaskie, and Opolskie voivodeships suffering mostly from the population loss in absolute terms.

According to the Central Statistical Office of Poland (GUS), by 2030 the total population of Poland will decrease by 3.3%, and by 2050 by the total of 11.7%, as compared to the actual population of 2015 [BDL GUS 2016]. This means that between 2015 and 2050 the country is expected to lose almost 4.5 million citizens, which represents the figure higher than the current population of Croatia. By 2030 the most savage population loss is predicted for Opolskie (-9.4%), Swietokrzyskie (-7.9%), Lodzkie (-7.5%), and Slaskie (-7.1%) voivodeships. In this time span only three Polish voivodeships (i.e., Mazowieckie, Pomorskie and Malopolskie) are expected not to lose the total number of their inhabitants. However, by 2050 the population decrease is to be expected in all Polish mesoregions with Opolskie voivodeship taking the undesired

lead with the population loss of more than 25%, as compared to their population of 2015.

At the same time, in 2015 the average percentage of Poles in productive age amounted to 62.4%, ranging from 61.4% in Mazowieckie to 63.8% in Opolskie voivodeship. The highest share of citizens in pre-productive age was recorded in Pomorskie (19.4%), and the lowest in Opolskie voivodeship (16%), with the country average of 18%. Consequently, the average share of people in post-productive age accounted for 19.6% in total Poland with the highest number recorded in Lodzkie (21.8%), and the lowest in Warminsko-Mazurskie voivodeship (17.7%). By 2050 the number of productive age population in Poland is supposed to range from 54.9% in Swietokrzyskie to 57.1% in Malopolskie voivodeship, the share of pre-productive age population from 12.2% in Opolskie to 16.4% in Pomorskie voivodeship and the share of post-productive age population, consequently, from 26.8% in Pomorskie to 32.5% in Opolskie voivodeship.

Thus, the before mentioned statistical estimations leave no doubt that the situation at mesoregional level in Poland will be altering in the future due to the underlying ageing and depopulation processes. However, the differences in the demographic situation of regions are even more clearly visible if the analysis is decomposed to the lower taxonomic levels.

According to the GUS statistical projections at the NUTS-4 level (represented in Poland by 380 poviats), by 2030 as many as 17.1% of microregions in question is expected to diminish the number of their inhabitants by more than 10%. There is no voivodeship not to be represented in this population. Furthermore, by 2050 almost one in four of poviats is to decrease the number of their citizens by more than 25%.

On the other hand, there are 17 poviats (which represent 0.4% of all NUTS-4 Polish regions) expected to increase the number of their inhabitants by more than 10% by 2030. Predominately, those microregions are located in the vicinity of large cities and their population net gains illustrate the ongoing process of suburbanization. Examples of those poviats include: Piaseczynski, Legionowski and Grodziski poviats in Mazowieckie voivodeship, Poznanski poviat in wielkopolskie voivodeship, Wroclawski poviat in Dolnoslaskie voivodeship, Gdanski poviat in Pomorskie voivodeship, and Krakowski poviat in Malopolskie voivodeship. By 2050 Wroclawski poviat is estimated to increase the number of their inhabitants by 57.4% (to more than 211 000), Gdanski by 54.4% (to more than 168 000), and Poznanski by 51.5% (to more than 550 000), as compared to 2015.

The current imbalances in the demographic structure at micro level can be illustrated by the comparison of the demographic structure of Kartuski poviat located in Pomorskie voivodeship and Hajnowski poviat located in Podlaskie

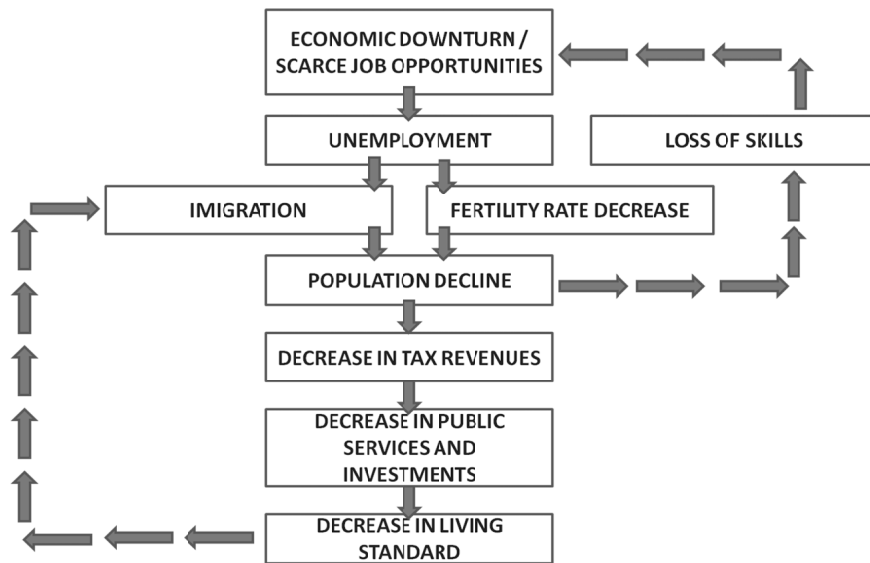
voivodeship. In 2015 the demographic structure of Kartuski powiat has been composed of: 20.8% of population in pre-productive age; 59.1% of population in productive age, and the remaining 20.1% of population in post productive age. Whereas in Hajnowski powiat the respective figures accounted for: 8.7%, 48.4%, and 42.9%, respectively. Thus, the demographic imbalances, especially at micro and local levels, are perceived as a key factor imposing detrimental effect on sustainable economic growth of Poland [Popek 2014].

2.3. Sources of population decline in the Polish regions

As already mentioned, the sources of population shrinkage in a given area are complex and multifaceted, but in the majority of EU cases the population demise of regions is often a result of both phenomena overlapping: sub-replacement fertility rates and net migration loss.

Likewise, there are also multifaceted reasons for the ongoing depopulation process of Polish regions taking place at the beginning of the 21st century. The described above European dynamics in the form of society ageing and low fertility rates are accelerated by the local and specific dynamics. At the European level it can be referred to socio-political and lifestyle changes, economic and environmental changes (for instance steaming from the deindustrialization and desurbanization processes), and externally imposed changes for political or historical reasons [Martinez-Fernandez & Weyman 2012]. However, in the Polish context, the predominant reason for shrinking of certain Polish regions is due to their underlining economic nature: the restructuring of industrial areas, the decline of agricultural sector of the economy, and difficulties in the transition to the knowledge-based economy.

From the purely statistical point of view, the regional depopulation is the result of negative rate of natural change and (or) negative net migration rate. However, both – the decrease in the fertility rates and the negative net migration rate – have their roots in the faulty labor market, scarce job opportunities, or economic downturn. The consequences of depopulation have, in turn, quantity, quality, and structural aspects, which are depicted in the Figure 2.

Figure 2. Sources of population demise in regional economies

Source: Own elaboration based on: Weyman & Martinez-Fernandez [2012].

According to Figure 2, the depopulating areas are affected by three interdependent cycles. First, there is a decline in economic performance (due to e.g. economic downturn or industry collapse), which results in raising unemployment levels. The high level of unemployment leads to the decrease in personal and family revenues and perspectives, what can lead to the postponement or abandoning of procreation and family plans. Simultaneously, it impels people to embark on the search for employment possibilities in the overseas areas, what leads to outmigration. Both phenomena contribute to the region's population decline. From the budgetary point of view of local authorities population shrinkage equals the decrease in the money inflow to the local budget. This decrease translates into further necessary cuts in public services and investments. As a consequence, the negligence in infrastructural investments and public services (especially in health care and education) results in the deterioration of standard of living of local society. This may be followed by further external migration flows. In the light of a fact that the outmigration drains predominately young and well-educated part of the society, the population loss is followed by the loss of skills, which inevitably translates into further economic downturn or crisis situation due to e.g. decrease in labor productivity. This means that the decline in local (or regional) economy is both the cause and the effect of a shrinking number of inhabitants.

3. Methods

In order to achieve the articles' goal of identifying the context and the gist of the *Special Demographic Zone* phenomenon we performed the Boolean keyword and subject term searches of scholarly articles published in EBSCO and EMERALD databases, as well as in Google Scholar, between 2006 and 2016, inclusive. The key words we used in the analysis were: Special Demographic Zone and Special Demographic Zones. We have also used the Polish equivalents of those phrases in our search (i.e., *Specjalna Strefa Demograficzna*, *Specjalne Strefy Demograficzne*). As we were looking for exact examples of special demographic zones phenomena, therefore neither commas, nor "or" search operator had been used. Our research had been conducted between 1st – 30th of September 2016.

This systematic literature review enabled us to identify 15 scientific articles and one OECD report entitled *Demographic transition and an ageing society: Implications for local labour markets in Poland* [OECD 2013], connected directly with the topic in question. The identified articles were published, for instance, in: "Journal of Spatial and Organizational Dynamics", "International Migration", "Quaestiones Geographicae", "Studia Ekonomiczne", "Problemy Polityki Społecznej. Studia i Dyskusje", "Społeczeństwo i Ekonomia", "Rocznik Andragogiczny".

It has to be underlined, that all of the identified scientific papers have been published in the Google Scholar. No article has been found in the EBSCO or EMERALD databases. Results of our Boolean search are presented in Table 2.

Table 2. Distribution of scientific articles in the searched databases.

DATABASE	EBSCO	EMERALD	GOOGLE SCHOLAR
Number of articles	0	0	15

Source: Own elaboration based on desk research.

The majority of identified articles referred directly to the *Special Demographic Zone* policy programme established in the Opolskie voivodeship. A few of those papers dealt with the detailed description of the background and idea behind the creation of the *Special Demographic Zone* in this particular mesoregion [e.g., Goleński 2015], and the remaining papers concerned vertical socio-economic policy issues with reference to the Opolskie *Special Demographic Zone* case study. Those issues included certain aspects of regional labor market structure and dynamics, students' migrations, educational systems, the elderly or

rural areas. There were also articles identified that referred to the general notion of the *Special Demographic Zone* with no indication of the Opolskie example. Those papers concerned the analyses of demographic situation of other Polish regions with reference to the general idea of establishing the *Special Demographic Zone* as an equalization programme [e.g., Baran 2012; Jaroszewska 2014].

The carried out desk research clearly showed that the concept of the *Special Demographic Zone* is scarcely known outside Poland. In the light of the literature review we made an assumption that the underlying phenomenon must be known and described in the international literature but classified under different phrasing. In fact, in the subject literature there are several definitions which came along with the phenomenon of the depopulation, as for example: shrinking areas, declining areas, depopulating areas, inner areas [Kotilainen, Eisto & Vatanen 2012; Pallagst 2012; Casavola, ed. 2014]. Those terms are often used to indicate the process of a considerable and constant population loss and are used interchangeably [Ubareviciene, van Ham & Burneika 2016].

4. Research findings

4.1. Strategies to tackle negative demographic trends at different regional levels: 3A model

Negative demographic trends are among the most critical threats for local and regional development. Therefore, self-governments need to take them into account while developing and implementing local and regional strategies. Regional perspective on demographic challenges plays also a role of a rationale behind governmental intervention at regional or local level. Analyses of many described in the subject literature cases of regions – Polish, European as well as American, Japanese or Australian ones – allowed us to identify three main strategies undertaken by the local or regional authorities in order to deal with the projected demographic changes. It has to be pointed out that in the 20th and 21st century the depopulation processes at regional level took place in different countries under specific circumstances and that all strategies are contemporarily present in the management practice. It has to be noted that both reactive (*to acknowledge*) and active strategies (*to adapt, to act*) are to be distinguished. We shortly characterize those strategies below.

4.1.1. Strategy to acknowledge

The most basic and reactive strategy undertaken by the local or regional authorities in the view of demographic change is to acknowledge and monitor the demographic trends in a given territory, including the examination of the characteristics and dynamics of the local or regional demographic structure. This means that the (local, regional, or state) government recognizes (notices and admits) the demographic changes and its possible implications. However, still other areas of social and economic policy take precedence in terms of strategic planning and resource allocation.

At a country level we can quote here an example of the Slovak Republic, which is reported to underutilize its potential of local planning and to implement poor priority setting in the light of an undergoing depopulation processes of the country [Bucek & Bleha 2012].

Although there is a scarce research on this topic, it may be assumed that at the micro and local level of the Polish self-authority (poviats, gminas) also this type of strategy prevails. The research conducted in 2011 among over 700 Polish municipalities showed that in the 2011-2014 programming period the issues of supporting families and public transport, which are crucial for fighting population demise at a local level, were of low priority for local authorities, unlike e.g. environmental investment and waste management [OECD 2013].

4.1.2. Strategy to adapt

Far more active strategy undertaken by the local and regional authorities in the light of population shrinkage and population ageing is to adapt to the ongoing and forecasted demographic changes. This means that the self-governments accommodate, adjust, and remodel their policy and development strategies to meet challenges streaming from the demographic changes and geared towards right-sizing of their investments. This involves far more active attitudes and the implementation of rebalancing solutions, often innovative, in different local and regional strategic policy areas. Although the governmental responses are often still fragmented, they aim at reducing the economic and social costs of population shrinkage. Policy areas which are often altered due to the considerations of demographic aspects often include the educational curricula, health care systems, and social infrastructure. For instance, having taken account of the ageing process of local population, the local authorities plan for the development of telemedicine and the provision of facilities for long-term care; or, having taken

account of the shrinking labor force, the local authorities enable schools to implement training courses suitable for local market requirements to keep the youth at the local labor market and to prevent outmigration.

Especially, examples of some shrinking industrial US cities (e.g., Pittsburgh, Youngstown) and Eastern German cities (e.g., Grossraschen, Leipzig) clearly show that the downsizing paradigm, under some circumstances, is often the best strategy to tackle demographic change and that the local government's role in the process may be to prepare declining areas for the consequences of demographic change, and to exploit on shrinkage opportunities.

American cities in question have been in decline since 1950s. Although many regeneration strategies based on the growth paradigm have been applied since that time, they proved to be costly and ineffective. The same refers to some Western European regions [Ubareviciene, van Ham & Burneika 2016].

Nowadays the focus is put on paving the way to create smaller cities in terms of number of citizens. The main idea behind it is to concentrate on quality of life, the downsizing and maintenance of social infrastructure, and on the growth of certain innovative and green industries. This strategy is also referred to as *urban conversion* or *smart shrinking* [Pallagst 2012]. Those strategies require multilayer co-operation (public-private, central-supraregional-regional) and creative solutions [Wiechmann & Volkman 2012]. The creative solutions are especially needed in shrinking industry districts dominated previously by mining or outdated manufacturing. They require creativity in terms of economic policy directions, e.g. the introduction of innovative industries such as biotechnology, renewable energy, or ICT. Among identified regeneration strategies many regions decided to go for white or silver economy, e.g. Nordrhein-Westfalen region in Germany or Gelderland region in the Netherlands [Klimczuk 2015] or for low-carbon and green tourism, e.g. El Bierzo local region in Spain or prefecture-level city Datong in China [Martinez-Fernandez & Weyman 2012]. Also many Finnish cities, which had been undergoing the depopulation process since 1970s due to declining forestry industry, have decided to embark on bio energy and tourism industries [Kotilainen, Eisto & Vatanen 2012]. It has to be pointed out that this type of creative strategy have been already applied also in the Polish declining city of Walbrzych, located in Dolnoslaskie voivodeship. This post-industrial city, previously highly dependent on the mining industry with very poor publicity of the most repulsive city in Poland, basing on their uniqueness, decided to build its image as a creative city in order to attract the creative sector [Stryjakiewicz, Jaroszewska & Ciesiołka 2012].

4.1.3. Strategy to (counter) act

The other strategy employed by the local or regional authorities in order to deal with the population decline is to focus on strategic actions aimed at influencing the demographic structure of the local or regional society by basing on a growth paradigm. This requires shaping (or managing) demographic variables. In particular, this strategy translates into undertaking actions which should have positive influence on the birth rates and migration processes in the region. The main idea behind this way of thinking is that without taking extraordinary measures in some areas a vicious circle of marginality will be triggered, as referred to the Myrdal's *cumulative causation* phenomenon.

Bearing in mind that the demographic variables are interdependent with the underpinning social and economic situation of a given territory, and that the notions of economic growth, employment, investment attractiveness, quality of life, innovation development, social and technical infrastructure, social services and social inclusion, ecological threats are interrelated and interdependent [Gołęński 2015], it is important to underline that the act strategy also involves actions targeted directly at the situation on the labor market (employment levels, education system) and social infrastructure.

One of the examples of adoption of this strategy at a country level in the EU is Italy, in which the least developed and marginalized areas of the country (so called *inner areas*) were defined as areas located more than 20 minutes away from urban centres offering access to essential services of predefined quality and type (secondary education, health care, and railway transportation system). It has been assumed that the access to health, education, and mobility are preconditions for the local development. Moreover, the city size and distance to cities are important factors in explaining the pattern of area demise [Ubareviciene, van Ham & Burneika 2016]. Although no demographic criteria have been applied to define *inner areas*, it turned out that those areas were facing very savage depopulation and ageing processes, in comparison to the rest of the country. Thus, the reversal of those processes has become the centre of strategy for *inner areas* and the ultimate goal of the strategy was defined as to reverse the depopulation of *inner areas* and to reinforce their demographic structure. To achieve these goal two major economic policy areas were applied, namely the improvement of personal service accessibility and the triggering of local development projects. The examples of some Italian *inner areas* show that the adoption of good practices may result in positive changes in the local population structure and its trends. Those results are to be achieved through tailored regional demographic and economic policy [Casavola, ed. 2014].

This resource-consuming strategy requires cooperation at different policy levels and across many policy agendas. In the process, the linkages are both horizontal and vertical [OECD 2013]. Moreover, there is an acute need to engage higher taxonomic levels of authority to approach and counteract the negative effects of population shrinkage in a given area [Buhnik 2012], with the inclusion of the central government and, often, international organizations (e.g. EU). The lesson learned from the Japanese experiences in the depopulating areas is that there is also a need to support local community's stability and preserve intergenerational mix. On the basis of the experience of OECD shrinking regions the following seven strategic policy recommendations, in light of demographic change, have been put in place: to implement sustainable planning models which encompass the depopulation phenomenon; to address low fertility through family friendly policies (access to childcare and employment patterns which enable to reconcile work and family life); to develop policies facilitating the employability of elderly (incl. entrepreneurship); to develop silver economy; to increase productivity; to integrate migrants into the labor market; and, finally, to assure suitability of public finances of local areas in the light of population and infrastructure ageing [Martinez-Fernandez & Weyman 2012].

4.2. *Special Demographic Zone* in Opolskie voivodeship as a Polish example of an act strategy towards demographic challenges

As already mentioned, *Special Demographic Zone* is a policy programme introduced in the Opolskie voivodeship (Figure 1 and Table 1), the smallest of the Polish NUTS-2 regions in terms of the population number and, at the same time, one of which is to be undergoing the most severe demographic turbulences in the coming future. Despite region's population ageing and low fertility rates, the demographic processes in the region are very specific due to its atypical for Poland ethnic structure (with substantial German minority) and rich history of foreign migration, what constitutes the greatest obstacle for the local and regional policy [Rauziński & Szczygielski 2014]. Indeed, the migration process is highly determined not only by the institutional constraints, individual's characteristics, and stage in the family life-cycle, but also by the established migration networks [Ubareviciene, van Ham & Burneika 2016]. The region suffers from unprecedented outmigration being a result of both its geolocation in the vicinity of the German border and the fast growth of the metropolitan areas of Wrocław in the Dolnoslaskie voivodeship.

The creation of the *Special Demographic Zone* has been announced in December 2012. The assumptions of the Opole Province Development Strategy formed the starting point for the drawing up the programme. It has been formally established by the adoption of the resolution by the Board of the Opole Province (No. 5503/2014 of 16 September 2014) and its programming period covers the years 2014 to 2020, inclusive [Goleński 2015].

Special Demographic Zone is to be perceived as an integrated and holistic method of managing demographic factors applied in order to counteract unfavorable demographic trends and to foster local and regional development. The main goal of the *Special Demographic Zone* is to counteract the decline of population and leverage on the potential of region's ageing population [Goleński 2015]. In the subject literature *Special Demographic Zone* is referred to as innovative social project or social experiment [Rauziński & Szczygielski 2014; Goleński 2015], as a concept of management of region in the frame of depopulation process, in which many stakeholders are involved, including local government, business, social, and religious organizations [Szczygielski 2015]. The program is incorporated into the sustainable growth agenda, as it refers to attaining both economic and social goals and it has a long-term perspective.

The program's positive influence of the region's demographic potential it be achieved through both qualitative and quantitative instruments. The program of the zone encompasses four strategic, thematic packages, focused on: the enhancement of the attractiveness of the local labor market and the creation of entrepreneurship incentives (*Package I: Work means a safe family*), the adaptation of the educational curricula to the needs of the local labor market (*Package II: Education and the Labour Market*), the increase of accessibility of nurseries and kindergartens to facilitate the reconciliation of work and family life (*Package III: Nursery and kindergarten care*) and the social inclusion of the elderly and the provision of the adequate public services for this group of citizens (*Package IV: Golden autumn*).

It has to be pointed out that the notion of the *Special Demographic Zone* directly draws on the phrasing and definition of the *Special Economic Zone*, which is widely used and established in the subject literature and refers to the certain area of a country in which there are more liberal laws established to boost economic activity and attract businesses (especially foreign direct investments) to set up within the zone borders. Those laws encompass special financial incentives, tax exemptions or tax reductions. According to the operationalization of the definition of the *Special Economic Zone* adopted by the World Bank, the term refers to a "demarcated geographic areas contained within a country's national boundaries where the rules of business are different from those that pre-

vail in the national territory. These differential rules principally deal with investment conditions, international trade and customs, taxation, and the regulatory environment” [Farole & Akinici, eds. 2011, pp. 2-3]. In the same manner *Special Demographic Zone*, as an analogous policy tool, concerns demarcated geographic area contained within a country’s national boundaries where the rules of various sector policies (incl. family, youth, elderly, development policy) aimed at fighting against demographical challenges are different from those that prevail in the national territory. In this manner it is to be perceived as a particular way of applying the counteract strategy against region’s depopulation, as described in the previous part of this paper.

5. Conclusions

Scientific discussion on the topic of the *Special Demographic Zone* is dominated by the Polish authors who refer directly to the *Special Demographic Zone* established in the Opolskie voivodeship in Poland. However, the research area connected with the *Special Demographic Zone* phenomenon is far more complex, as tailored socio-economic policies, incl. demographic policy instruments, have been in place in many depopulating areas (on local, regional, or country level) around the world.

With the increasing importance of demographic negative trends, which underlie local and regional development (incl. human resources potential for entrepreneurship), it is to be expected that these area of research will gain momentum.

We have identified three main strategies which are employed by the local or regional self-governments in order to tackle depopulation and society ageing processes. They constitute the 3A model. The most basic strategy is to acknowledge the undergoing demographic processes in the region and monitor them with priority given to other areas of policy-making. The two identified active strategies are based on the contradictory assumptions on the policy paradigm of growth vs. downsizing. The latter translates into so called *smart shrinking*, the first one, on the contrary, translates into taking action to prevent population decline of the region.

We argue that the concept of the *Special Demographic Zone*, as defined in this paper, is to be perceived as one of the active strategies employed by the local or regional self-government in order to counteract depopulation and negative consequences of population ageing.

Performed study enabled us to reflect on special demographic zone phenomenon as one of the most active types of 3 universal strategies for counteract-

ing depopulation. A special demographic zone phenomenon is understood as complex development and socio-economic programme we recommend its further research, incl. evaluation of its implementation outcomes and impact in regions. Due to narrowed timeframe and scope of databases used in our Boolean search we propose to consider application of longer search period and wider scope of databases in further research works.

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