DEVELOPMENT CONDITIONS OF THE HEALTH RESORTS IN THE LOWER SILESIAN VOIVODESHIP. SELECTED SOCIO-DEMOGRAPHIC ASPECTS

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Purpose: the main objective of the article is to support building sustainable development of spa towns by protecting their unique resources.

Design/methodology: the theses presented in the article were verified using: critical analysis of literature, document analysis, descriptive statistical analysis.

Findings: on the basis of the article it can be concluded that demographic change is an important challenge for numerous areas of public policy, such as family, health care, labour market, social security, education and active leisure. The identified challenges and areas of their impact are part of a broader spectrum of reflection that should focus on a holistic approach to active policies, which are a key determinant of human capital – in which, as forecasts indicate, by 2050 people over sixty-five years of age may constitute 20% of the total population of Europe.

Originality: the article enriches knowledge and develops discussion on demographic changes and the resulting great contemporary challenge for environment, institutions and people creating the future of the studied areas, which may turn out to be maintaining the professional activity of the ageing population while building modern active social and labour market policies – corresponding to the economic structure of the studied areas.

Keywords: health resorts, demographic change, social policy, labour market policy.

Category of the paper: conceptual paper.

1. Introduction

The article is the result of research tasks determined by the scope of the project carried out in the Central Mining Institute entitled "Enhancing environmental management capacities for sustainable use of the natural heritage of Central European SPA towns and regions as the driver for local and regional development". The project Healing Placesis implemented under the

Interreg Central Europe programme by the international consortium of local and regional government units, development agencies and scientific units from Poland, Austria, Croatia, the Czech Republic, Slovenia, Hungary and Italy and aims to build sustainable development of SPA areas – by protecting their unique resources. Within the project, the current status of registered SPAs in partner countries & their socio-economic potential was investigated in partner countries, which has been the background for more detailed regional and local investigation. Based on this, the environmental as well as socio-economic impact on natural resources composing SPAs value is analyzed in partner regions. An important part of the project work is social and economic analysis, which enables the identification of development conditions in the examined administrative areas of the project partners' countries. In case of Poland the main area of interest are health resorts in Lower Silesian Voivodeship. The scope of analysis presented in this paper have been based on project common approach agreed by project partnership and in the case of Poland in particular led by the Institute for Regional Development (IRT) from Wroclaw.

The article aims to undertake a discussion on the development forecast of the spa functionin the context of the impact of key demographic changes in Poland and in particular demographic changes occurring in communes (gminas) in which health resorts are located.

In this light, it is worth noting that as a result of the ongoing changes and long-term forecasts, according to the experts' assessment, demographic changes will have a significant impact on the future shape of health and health prevention and care, as well as health tourism. The dynamically growing population of seniors constitutes the least active social group in Poland. The prevalence of negative consequences of the ageing process makes it necessary to search for effective ways of mitigating them. Taking into account the growing potential of this group of consumers and the increase in their number, it seems reasonable: to build specific areas of social policy in a way that would foster their activity; to create differentiated products taking into account heterogeneous preferences; to organise activity on the basis of global trends and changes in the process of demographic modernisation towards individualisation, self-realisation and human independence; to properly prepare personnel that would make it possible to break down barriers to the participation of seniors in social and economic life (Januszewska, 2017, p. 257-264).

In the coming decades, demographic trends will determine the shape of the economic model of the world and individual economies. Ageing populations, the still significant (though decreasing) number of 'young' societies and countries; migration and spontaneous urbanisation are forcing appropriate adjustments to economic policies. Countries with ageing societies – in the perspective of the next few decades – are determined to make efforts to maintain the living standards of their citizens, development of new types of services, as well as ensuring the continuity of social security systems and the sustainability of public finances. A limited supply of economically active people and changes in the demand for workers (skilled and unskilled) may result in increased global migration. Urbanisation, which creates incentives for economic

development, will at the same time increase pressure on food and water resources, and uncontrolled urbanisation may cause excessive economic and social costs (Strategy for Responsible..., 2017, p. 20).

At the same time, competences related to the concept of the so-called *silver economy*, understood as a social and economic system, which, on the one hand, is aimed at using the potential of older people in the labour market – on the other hand, takes into account their needs as consumers (Analysis of qualifications…, 2014, p. 37), are gaining importance. Along with the process of the growing importance of the silver economy, a productivity paradigm shift is underway. Developed countries, if they want to maintain their standard of living and the 2-3% annual GDP growth rate necessary for this purpose, must radically increase the productivity of their economies. The only way available is through innovation. *McKinsey Quarterly* estimates that in the United States, product and business innovation must account for, at a minimum, 70% of productivity growth (Bisson, 2019). In Western European countries, each additional euro produced must come from 100% innovation; in Japan, due to rapid labour force attrition, innovation must keep pace with the resulting decline in productivity, which means a growth effect from innovation of as much as 160% is required. This means – as a prerequisite for an effective response to the development challenges posed by demographic change – that the demand for competencies is closely linked to innovation.

In conclusion, demographic change is a significant challenge for numerous areas of public policy, such as the family, health care, the labour market, social security, education and active leisure, including in particular the growing interest and demand for health tourism (Szromek, et.al., 2012; Mainil et al., 2017).The indicated challenges and areas of their impact are part of a broader spectrum of reflection that should focus on a holistic approach to active policies, which are the key determinant shaping human capital - in which, as forecasts indicate, by 2050 people aged over sixty-five may constitute 20% of the total population of Europe. Regardlessof the social changes brought about by the transformations described above, demographic change will put enormous pressure on the pension and social security systems of the EU countries. If these processes are disregarded – as numerous studies indicate – the EU is at risk of lowering potential employment growth rates to an extremely low level of around 1% per year (Krysiak, 2007, p. 82). This prognosis clearly shapes the need to develop scenarios of demographic developments. This statement is determined, inter alia, by the fact that societies of developed countries are entering a phase in which the ratio of economically active to inactive people is shifting towards the latter group. On the basis of these determinants the demographic situation of Poland definitely places the country also in the area of dynamically ageing societies.

2. Methodology

Various methods were applied in the research, including: critical analysis of literature, development documents review, comparative and descriptive statistical analysis, including selection of main statistical indicators and scenario forecasting. The indicated research methods focused mainly on socio-demographic development conditions of selected communes of Lower Silesia voivodship – in the context of building local development strategies corresponding to contemporary challenges. The critical analysis of the literature covers numerous complementary works and focuses mainly on processes and megatrends determined by demographic changes – shaping the condition and development perspectives of the studied communes of Lower Silesian voivodship in the perspective of active social and labour market policy responding to contemporary challenges. The resulting conclusions and recommendations are aimed at strengthening the utilitarian part of the conducted analyses. The critical analysis covered both publications of a theoretical nature, as well as publications discussing research results and forecasts in numerous cognitive cross-sections. The research also made use of studies devoted to the development perspectives of the studied areas in the light of analyses of strategic documents concerning their future. These documents included, in particular, long-term development strategies of Europe, Poland and the Lower Silesian voivodeship, in various qualitative cross-sections. Apart from formal and legal issues referring to the development prospects of the areas under study – contained e.g. in the binding legal regulations – the study referred to European and national documents, which set out medium- and long-term objectives and tasks in the area of economic and social policies, especially in the context of ongoing and forecast demographic processes. Due to the main objective of the research and research assumptions, the analyses focused on factual, temporal and spatial characteristics, as well as quantitative abrupt and continuous ones.

Scenario forecasts in the perspective of demographic change focus on predicting both future internal and external development conditions in order to achieve the desired target state, i.e. the justified need to take up – as it has already been stressed in the introduction to the article – a great contemporary challenge for the environments, institutions and people creating the future of the studied areas, which may turn out to be maintaining the professional activity of the ageing population while building a modern active social policy and labour market – corresponding to the economic structure of the studied areas. While presenting the projections, it is assumed *ex ante* that the specificity of the examined area determines preferences defining organizational and systemic solutions directly related to future developmental conditions in the social and demographic dimension. It is also assumed that the current strategic and planning documents of the European, national and voivodeship level have numerous indications, recommendations and supporting premises that make it possible to draw conclusions about the target model of active social and labour market policy. It is also assumed that the ongoing

coronavirus epidemic on the territory of the Republic of Poland will acceleratein various variants – as an unfavorable circumstance – numerous elements of the assumed forecasts, especially concerning existing problems and future development of health resorts. The necessary decision to close SPAs and hotels stopped the intensive development of the SPA industry and healthtourism allover the Europe. For example, in March 2020 the total number of tourists staying at tourist accommodation facilities was lower by 65 % in Poland and by 60% in case of Lower Silesian Voivodeship, in comparison to respective month a year before (Tourism…, 2020) and many of following months have been similarly or even more difficult for health resorts.

In this paper, analyses of socio-demographic conditions focused on selected 11 statutory health resorts of the Lower Silesian Voivodship have been undertaken. Most municipalities in which health resorts are located have the same name as the health resort itself – these are health resorts communes. Three SPAs are the exceptions:

- CiepliceZdrój is located in Jelenia Góra commune,
- Przerzeczyn-Zdrój is located in the commune of Niemcza,
- Długopole-Zdrój is located in the Bystrzyca Kłodzka commune.

Additionally, within administrative borders of Świeradów-Zdrój commune, two SPA towns are located: Świeradów-Zdrój and Czerniawa-Zdrój. Therefore the analyses 11 statutory spas from Lower Silesian voivodship are located in 10 gminas (communes), according to the administrative division representing the level of gmina (LAU 2, formerly NUTS 5) presented in Table 1. Hence, the presented analysis, conducted on the basis of available statistical data coming from three sources: Statistics Poland in Warsaw (GUS)[1], statistical portal *Poland in numbers* and the European Statistical Office EUROSTAT is carried out for 10 administrative units.

Table 1.
Division of the analytical area by administrative units on the basis of statistical data of EUROSTAT and the Statistics Poland (NUTS)

No.	Analyticalarea	Administrative division	Administrative unit (gmina)	Type of administrative unit	District/ Poviat
1	Cieplice Śląskie-Zdrój	now a part of Jelenia Góra	Jelenia Góra	urban commune	Jelenia Góra
2	Czerniawa-Zdrój	now a part of Świeradów Zdrój	Świeradów Zdrój	urban commune	lubański
3	Długopole-Zdrój	village in the commune of Bydstrzyca Kłodzka	Bystrzyca Kłodzka	urban-rural commune	kłodzki
4	Duszniki-Zdrój	urban commune	Duszniki-Zdrój	urban commune	kłodzki
5	Jedlina-Zdrój	urban commune	Jedlina-Zdrój	urban commune	wałbrzyski
6	Kudowa-Zdrój	urban commune	Kudowa-Zdrój	urban commune	kłodzki

[1] Former (till April 2018) Central Statistical Office in Poland.

Cont. table 1.

7	Lądek-Zdrój	urban-rural commune	Lądek-Zdrój	urban-rural commune	kłodzki
8	Polanica-Zdrój	urban commune	Polanica-Zdrój	urban commune	kłodzki
9	Przerzeczyn Zdrój	village in the commune of Niemcza	Niemcza	urban-rural commune	dzierżoniowski
10	Szczawno-Zdrój	urban commune	Szczawno-Zdrój	urban commune	wałbrzyski
11	Świeradów-Zdrój	urban commune	Świeradów-Zdrój	urban commune	lubański

Source: Poland in figures 2019, Local Data Bank Statistics Poland, Statistical Office of the European Union EUROSTAT.

Based on the above theses and megatrends, in the analyses and research presented in the article the authors focused on the following key variables:

1. Total population.
2. Population by biological age groups.
3. Population by economic age groups.
4. Median age.
5. Natural increase.
6. Migration balance.
7. Live births.
8. Net migrationrate.
9. Age dependency ratio.
10. Demographic dynamics rate.
11. Feminisationratio.
12. Gross reproductionrate.
13. Total fertility rate (TFR).
14. Deaths (total number of deaths).
15. Deaths from cardiovascular diseases in persons aged up to 65 per 100 000 population.

3. Discussion of the results

The demographic changes that take place in any society affect almost all spheres of social and economic life. Some of the aspects are somewhat more dependent on the age structure or the number of births (such as pension system), while in other areas this dependence is less noticeable. The dependency of SPA towns development on the demographic changes is exceptionally noticable, as it can be considered from two aspects: 1) the impact of the state and development of health tourism, 2) the changes in the demographic structure of the area, conditioning its human capital.

Health tourism is defined differently by different authors (e.g. Wolski, 1978; Gaworecki, 2008; Jojczyk, 2011; Lewandowska, 2012; Krzyżanowska, 2016), but according to the report *Health tourism in the EU: a general investigation* (Mainil et al., 2017) it's a subsector of general tourism that comprises medical (Connell, 2013, 2015; Lunt et al., 2015), wellness (Johnston et al., 2011) and spa tourism (Smith, Puczkó, 2014). Therefore, health tourism, being significantly associated with improved quality of life (QOL), cannot be seen only as the domain of the elderly. Taking into account the criteria for assessing human quality of life, within which we can list such conditions as: physical well-being, including psychophysical regeneration and health recreation, nutrition, entertainment, mobility, health care, health insurance (insurance), leisure time, activities of daily living (Schalock, 1996), health tourism growth factors are also the change in lifestyle and people's greater awareness about health. At the same time, demographic aspects, especially changes in the age structure may still be crucial the development of health tourism in the future, not only from the aspect of population aging, as well as the occurrence of demographic.

Nonetheless, comparative analyses of the potential and determinants of health tourism are not the subject of the authors' investigations, who focus on the on the second aspect of the links between demographics and spa development – specific conditions determining the condition and development prospects of the Lower Silesian municipalitiesunder study in the phase of demographic change. In the period 2008-2018, the population living in the studied municipalities – with the exception of Szczawno Zdrój – systematically decreased. The largest decrease can be observed in Polanica Zdrój and Świeradów Zdrój, reaching -7,7% (534 persons) and -7,2% (326 persons) respectively (Table 2).

Table 2.
Basic demographic characteristics of the population in the analytical area in 2008-2018 by administrative unit – in alphabetical order of analytical area. Status on 31 December. Year 2008 = 100%

Analyticalarea	Administrative unit [2]	Total population										
		Years										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Cieplice Śląskie-Zdrój	Jelenia Góra	85541	85095	84298	83773	83097	82369	81640	81190	80889	80325	79686
		100	99,5	98,5	97,9	97,1	96,3	95,4	94,9	94,6	93,9	93,2
Czerniawa-Zdrój	Świeradów Zdrój	4504	4486	4531	4483	4430	4370	4304	4292	4250	4227	4178
		100	99,6	100,6	99,5	98,4	97,0	95,6	95,3	94,4	93,8	92,8
Długopole-Zdrój	Bystrzyca Kłodzka	19451	19312	19844	19794	19689	19549	19446	19340	19243	19077	18984
		100	99,3	102,0	101,8	101,2	100,5	100,0	99,4	98,9	98,1	97,6
Duszniki-Zdrój	Duszniki-Zdrój	4975	4888	5039	4 995	4977	4899	4837	4787	4745	4728	4629
		100	98,3	101,3	100,4	100,0	98,5	97,2	96,2	95,4	95,0	93,0
Jedlina-Zdrój	Jedlina-Zdrój	5085	5062	5072	5071	5033	5000	4975	4970	4930	4 887	4851
		100	99,5	99,7	99,7	99,0	98,3	97,8	97,7	97,0	96,1	95,4

[2] From January 1, 2018 there are 97 NUTS units in Poland: NUTS 1 - macro-regions (grouping provinces) – 7 units, NUTS 2 – regions (provinces or parts thereof) – 17 units, NUTS 3 – sub-regions (grouping counties) – 73 units. In addition, the NUTS Regulation requires that NUTS 3 units be subdivided into Local Administrative Units (LAU). Since 2017, in agreement with Eurostat, each Member State has indicated one level of units treated as LAU. In the case of Poland, municipalities were indicated as local administrative units.

Cont. table 2.

Kudowa-Zdrój	Kudowa-Zdrój	10137	10111	10463	10379	10350	10241	10249	10180	10085	10018	9954
		100	99,7	103,2	102,4	102,1	101,0	101,1	100,4	99,5	98,8	98,2
Lądek-Zdrój	Lądek-Zdrój	8592	8556	8858	8791	8732	8606	8540	8474	8411	8365	8276
		100	99,6	103,1	102,3	101,6	100,2	99,4	98,6	97,9	97,4	96,3
Polanica-Zdrój	Polanica-Zdrój	6891	6850	6808	6771	6706	6663	6599	6521	6486	6381	6357
		100	99,4	98,8	98,3	97,3	96,7	95,8	94,6	94,1	92,6	92,3
Przerzeczyn Zdrój	Niemcza	5912	5891	5910	5868	5805	5800	5766	5699	5611	5545	5502
		100	99,6	100,0	99,3	98,2	98,1	97,5	96,4	94,9	93,8	93,1
Szczawno-Zdrój	Szczawno-Zdrój	5586	5601	5897	5946	5882	5796	5754	5699	5692	5650	5608
		100	100,3	105,6	106,4	105,3	103,8	103,0	102,0	101,9	101,1	100,4

Source: Local Data Bank, Statistics Poland (GUS), Data aggregated in pre-defined public tables, Population state and natural movement.

The first of key variables is feminization ratio which ranged from 99 (PrzerzeczynZdrój/ Niemcza) to 119 (Polanica-Zdrój) female per 100 male (Table 3).

Table 3.
Basic demographic characteristics of the population in the analytical area by administrative unit - in alphabetical orde. Status as of 31.XII 2017 and 2018

Variable	Analyticalarea/Administrative unit									
	1	2	3	4	5	6	7	8	9	10
Median age[3]	45,6	43,1	43,5	45,1	42,9	43,4	44,9	46,3	43,1	45,8
Feminisation ratio	115/100	111/100	107/100	114/100	111/100	114/100	110/11	119/100	99/100	112/100
Feminisation ratio in 25-29 age group	98/100	110/100	96/100	89/100	93/100	91/100	97/100	100/100	101/100	86/100
Live births (year 2008 = 100%)	83,7	50	78,6	66,7	67,3	55,2	78,3	61,8	111,6	57,7
Total deaths (year 2008 = 100%)	111	136	112	142	103	92	97	97	113	158
Natural increase (year 2008 = 100%)	188	667	195	300	225	662,5	129,3	218,2	152,2	900
Total fertilityrate	1,30	1,18	1,22	1,22	1,08	1,22	1,22	1,22	1,26	1,08
Gross reproductionrate	0,64	0,60	0,59	0,59	0,48	0,59	0,59	0,59	0,62	0,48
Demographic dynamics rate[4]	0,62	0,67	0,63	0,63	0,56	0,63	0,63	0,63	0,63	0,56
Agedependency ratio	48,7	42,4	42,0	50,5	41,4	42,3	43,1	51,8	37,1	41,4
Deaths due to cardiovascular diseases in persons aged up to 65 per 100 000 population, Men/Women[5]	187,6/ 50,8	204,3/ 56	179,1/ 70,2	179,1/ 72	165,9/ 59	179,1/ 72	179,1/ 72	179,1/ 72	165,3/ 51,2	165,9/ 59

Legend: 1. Cieplice Śląskie-Zdrój/Jelenia Góra, 2. Czerniawa-Zdrój/Świeradów Zdrój, 3. Długopole-Zdrój/ Bystrzyca Kłodzka, 4. Duszniki-Zdrój, 5. Jedlina-Zdrój, 6. Kudowa-Zdrój, 7. Lądek-Zdrój, 8. Polanica-Zdrój, 9. Przerzeczyn Zdrój/Niemcza, 10. Szczawno-Zdrój.

Source: Statistics Poland Local Data Bank, stat.gov.pl; *Poland in numbers* - https://www.polskawliczbach.pl/.

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[3] As on 31st of December 2017.

[4] As in.

[5] As in.

The phenomena of gender imbalance in the population should be considered at two levels: spatial – including the urban-rural dimension, and age – particular age groups. In the first case, migration is the main factor of the gender imbalance. Their directions and structure lead to a situation of overrepresentation of women in cities and a general gender balance in rural areas. In 2019, generally in Poland there were 101 women per 100 men living in rural areas, in the case of cities – 111 female per 100 male, which reflected the share of women in the urban population at 52.7%, and in rural areas – 50,2% (Population, 2020, p. 25). However, the key issue for determining the demographic consequences of the gender imbalance is the analysis of the feminisation ratio in particular age groups. This is because it is one of the important indicators informing about the reproductive capacity of the population in a given area (Bański, 2002). In this light it is worth emphasizing that in the youngest age groups there is a natural phenomenon of male over-representation, since every year male babies predominate among the newborns. The share of boys in the number of births is approximately 0,51-0,52 (Holzer, 2003). On the other hand, since women live longer than men on average, there is a natural predominance of women in the oldest age groups. Of particular importance for the current and future demographic situation of a given area is the value of the feminization ratio in the age group characterised by the highest fertility rates (30-34) (Celińska-Janowicz, 2010, p. 21). Analyses of the indicated population structure in the studied municipalities clearly showed that in the age range of 25-29 years, the feminisation ratio in 2018 showed a serious shortage of women, ranging between 86 (Szczawno-Zdrój) and 110 female (Świeradów-Zdrój) per 100 male, compared to feminization ratio for the total population in the studied municipalities between 99 and 119 women per 100 men in the same period (Table 3).

One of consequences of the indicated shortage of women in these groups, are a drop in the number of marriages and the number of births, which in consequence deepen population ageing process. It is worth noting that over the last decade in Poland the highest fertility rate (number of live births per 1000 women) was recorded in the 25-29 age group. In recent years, there has been a phenomenon of shifting high fertility rates towards older age groups. While in 2000, nationwide, the highest number of births per 1000 women was characteristic of the 25-29 and 20-24 age groups, already in 2005, the analysed indicator had similar values for the 20-24 and 30-34 age groups – and between 1990 and 2018, the share of mothers aged 30 and over doubled, accounting for 52 percent of those who gave birth in 2018 (Coraz mniej Polaków…, 2021). This phenomenon affects both urban and rural areas, although in the latter case it occurs with some delay, so on a national scale it occurred for the first time only in 2009 (Celińska-Janowicz, 2010).

The median age of the inhabitants of the studied municipalities in 2018 ranged from 41.9 (Kudowa-Zdrój) to 46.3 (Polanica-Zdrój), so in majority of municipalities was significantly higher than the median age for the country (41.9) (Poland in numbers, 2021) (Table 3). Analyzed Lower Silesian municipalities in 2018 were areas with a predominantly young demographic population. However, this state should be considered temporary.

The ongoing process of an increasing life expectancy, intensified by the low fertility rate leads to ageing of population in studied municipalities.As the forecasts indicate, in the next two decades 50% of the described population may reach the age of 50. This process has been accompanied by a steady decline in the rate of live births, which in the years 2009-2018 in the studied communes ranged from 50% (CzerniawaZdrój/ŚwieradówZdrój) to 83.7% (CiepliceŚląskie-Zdrój/Jelenia Góra). The exception was the municipality of Przerzeczyn-Zdrój, where the analysed indicator was 111.6% in 2018. Total deaths showed two trends, a dynamic increase and a slight decrease. The increase was between 103% (Jedlina-Zdrój) and 158% (Szczawno-Zdrój). On the other hand, the decrease in dynamics occurred in three communes municipalities – out of 10 examined – and was in the range of 92% (Kudowa-Zdrój) to 97% (Polanica-Zdrój).

The described distribution of the number of live births and total deaths in 2009-2018 influenced the natural increase in the studied communes, which in the analysed period was profoundly negative and characterised only by growth dynamics. In the analysed period, the dynamic growth of the negative natural increase ranged from 152,2% (Polanica-Zdrój) to 900% (Szczawno-Zdrój) (table 3).

As a result of the described regularities in the studied communes in 2018, the fertility rate, crucial for the reproduction of the population, was at a level from 1,08 (Szczawno-Zdrój) to 1,30 (Cieplice Śląskie-Zdrój/Jelenia Góra) and was in all studied communes clearly lower than the provincial rate, which reached in the analyzed period a level of 1.36 and the national one with a level of 1,45 births/woman (table 3), which also were below the replacement of generations level of 2,1-2,15 births/woman as defined by United Nations Population Division (United Nations, 2001). Similarly to the fertility rate, also the gross reproduction rate (GRR) was evolving, which in the same period in the studied communes ranged from 0,48 (Jedlina-Zdrój and Szczawno-Zdrój) to 0,64 (Cieplice Śląskie-Zdrój/Jelenia Góra) and was also in all studied communes lower than the provincial rate by 0,03 and lower than the national one by 0,07 (table 3). It is worth noting that a coefficient of 1 is a guarantee of simple reproduction of the population, while when it takes a value above 1, there is a process of population expansion (Economic activity of the population, 2014, p. 192). The demographic dynamics rate – the ratio of the number of live births to the number of deaths – was shaped similarly in analysed municipalities (Holzer, 2003), which ranged from 0,56 (Jedlina-Zdrój and Szczawno-Zdrój) to 0,67 (Czerniawa-Zdrój/ŚwieradówZdrój) and was in all the studied municipalities lower than the value of the ratio for the province (0,67) and for the country (0,71).

Migration is another factor influencing local development. However, it should be noted that the assessment of the impact of migration on regional and local development largely depends on its nature: short-term migration is often considered beneficial to the problems of the regional labour market, especially in the context of recession and high unemployment, while long-term migration is strongly negative (Heffner, Solga, 2016). In the analysed period in the studied municipalities, a permanent negative balance of internal and foreign migration for permanent residence can be observed, although with a decreasing trend. In the analysed period 2009-2018

the migration dynamics was between -48.6% (Lądek-Zdrój) and -333.3% (Polanica-Zdrój) and -30% (Jedlina-Zdrój) and 371.4% (Kudowa-Zdrój) (Table 4).

Table 4.
Balance of internal and foreign migration for permanent residence in the analytical area in 2008-2018 by administrative unit – in alphabetical order. Status on 31 December. Year 2008 = 100%

Analytical area	Administrative unit	Years										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Cieplice Śląskie-Zdrój	Jelenia Góra	-295	-287	-218	-172	-227	-352	-240	66	-33	33	-104
		100	97,3	73,9	58,3	76,9	119,3	81,4	-22,4	11,2	-11,2	35,3
Czerniawa-Zdrój	Świeradów Zdrój	-19	-37	-23	-46	-37	-33	-18	0	-23	-11	-15
		100	194,7	121,1	242,1	194,7	173,7	94,7	0,0	121,1	57,9	78,9
Długopole-Zdrój	Bystrzyca Kłodzka	-41	-51	-39	3	-29	-66	-29	-57	-34	-73	-24
		100	124,4	95,1	-7,3	70,7	161,0	70,7	139,0	82,9	178,0	58,5
Duszniki-Zdrój	Duszniki-Zdrój	-24	-37	-14	-20	-30	-38	-39	0	-8	-18	-12
		100	154,2	58,3	83,3	125,0	158,3	162,5	0,0	33,3	75,0	50,0
Jedlina-Zdrój	Jedlina-Zdrój	20	41	25	11	-27	-23	-9	0	20	9	-6
		100	205,0	125,0	55,0	-135,0	-115,0	-45,0	0,0	100,0	45,0	-30,0
Kudowa-Zdrój	Kudowa-Zdrój	-7	-23	8	-43	8	-52	-16	0	-34	-39	-26
		100	328,6	-114,3	614,3	-114,3	742,9	228,6	0,0	485,7	557,1	371,4
Lądek-Zdrój	Lądek-Zdrój	-37	-18	-25	-30	-12	-78	-35	0	-15	3	-33
		100	48,6	67,6	81,1	32,4	210,8	94,6	0,0	40,5	-8,1	89,2
Polanica-Zdrój	Polanica-Zdrój	-9	30	0	-2	-15	-8	30	0	-3	-25	6
		100	-333,3	0,0	22,2	166,7	88,9	-333,3	0,0	33,3	277,8	-66,7
Przerzeczyn Zdrój	Niemcza	16	-16	-9	-15	8	5	-18	0	-30	-30	-22
		100	-100,0	-56,2	-93,7	50,0	31,2	-112,5	0,0	-187,5	-187,5	-137,5
Szczawno-Zdrój	Szczawno-Zdrój	29	17	24	59	-29	-40	-21	0	26	28	26
		100	58,6	82,8	203,4	-100,0	-137,9	-72,4	0,0	89,7	96,6	89,7

Source: Local Data Bank of Statistics Poland (GUS). Data aggregated in pre-defined public tables *Population and natural movement.*

Also net migration had a permanent negative tendency, which in the analysed period ranged from -4.79 (Duszniki-Zdrój) to 5.19 (Szczawno-Zdrój) and -3.97 (Przerzeczyn-Zdrój/Niemcza) to 4.63 (Szczawno-Zdrój) (Table 5).

Table5.
Net migration rate in the analytical area in 2008-2018 by administrative unit administrative unit – in alphabetical order. Status on 31 December. Year 2008 = 100%

Analytical area	Administrative unit	Years										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Cieplice Śląskie-Zdrój	Jelenia Góra	-3,46	-3,38	-2,62	-2,04	-2,70	-4,31	-2,98	0,80	-0,36	0,45	-1,29
Czerniawa-Zdrój	Świeradów Zdrój	-4,24	-8,29	-5,11	-10,27	-8,38	-7,55	-4,18	-2,30	-5,36	-2,58	-3,54
Długopole-Zdrój	Bystrzyca Kłodzka	-2,1	-2,6	-2,0	0,2	-1,5	-3,4	-1,5	0,0	-1,8	-3,8	-1,3
Duszniki-Zdrój	Duszniki-Zdrój	-4,79	-7,47	-2,78	-3,98	-6,05	-7,69	-8,01	0,00	-1,68	-3,81	-2,55
Jedlina-Zdrój	Jedlina-Zdrój	3,96	8,08	4,92	2,16	-5,35	-4,59	-1,80	0,00	4,05	1,83	-1,24
Kudowa-Zdrój	Kudowa-Zdrój	-0,69	-2,27	0,77	-4,13	0,77	-5,05	-1,56	0,00	-3,36	-3,87	-2,60
Lądek-Zdrój	Lądek-Zdrój	-4,30	-2,10	-2,81	-3,40	-1,37	-9,01	-4,08	0,00	-1,78	0,36	-3,96
Polanica-Zdrój	Polanica-Zdrój	-1,29	4,35	0,00	-0,29	-2,22	-1,20	4,51	0,00	-0,46	-3,87	0,94
Przerzeczyn Zdrój	Niemcza	2,71	-2,72	-1,52	-2,55	1,37	0,86	-3,13	0,00	-5,31	-5,38	-3,97
Szczawno-Zdrój	Szczawno-Zdrój	5,19	3,03	4,05	9,95	-4,91	-6,85	-3,64	0,00	4,58	4,92	4,63

Source: Local Data Bank of Statistics Poland (GUS). Data aggregated in pre-defined public tables *Population and natural movement.*

Due to the fact that young and educated people predominate among migrants (Heffner, Solga, 2016), this translates not only into social effects (including the problem of so-called 'euro-orphanhood', loosening of family ties, or even the need to organize psychological assistance for people from 'broken' families), but by extension into a reduction of the development potential of municipalities.

The phenomena described above have for years permanently shaped the condition and structure of the population of the studied communes. In the context of EU social policy, meeting the demographic challenges requires action in many areas, among which the following are considered key ones:

- equal opportunities and access to the labour market, including skills development and lifelong learning, as well as active support for employment, in order to increase employability, ease transitions and improve the employability of individuals,
- fair working conditions, with an adequate and reliable balance of rights and obligations between workers and employers, and between flexibility and security to facilitate job creation, take-up of jobs on offer and companies adaptability, and promoting social dialogue,
- adequate and sustainable social protection and access to high quality essential services, including childcare, health care and long-term care, in order to long-term care, in order to ensure a dignified life and protection from risks and to enable citizens to function fully in the labour market and more generally in society (Towards a European..., 2016; European Pillar of Social Rights, 2017).

In conclusion, the changes in the population structure that have taken place between 1988-2008 and 2008-2018 are indeed remarkable and in many aspects consistent with "second demographic transition" (SDT) theory, jointly formulated by R. Lesthaegheand. D.J. van de Kaa in 1986 (Van de Kaa, 1986; Sobotka, 2008). The breakthrough factors are of a cultural nature – closely related to substantial changes in values related to family and children, which include, among others: rapid acceptance of voluntary childlessness and non-family living arrangements, the spread of contraceptives, delaying the age of marriage and procreation, increase in the number of divorces and −prevalence of single-parent families (Van de Kaa, 1999). Although children and parenthood continue to be almost universally valued, it becomes a result of a carefully planned decision of a couple, resulting usually in the −decrease in the average number of children in a family (Sobotka, 2008).

The aforementioned regularities have been particularly noticed in the latest government document setting Poland's development framework, i.e. the *Strategy for Responsible Development until 2020 (with an outlook until 2030).* The Strategy clearly emphasises that, in line with global forecasts, major changes are to be expected in the current shape of the global economy and national economies. The demographic change and the resulting ageing of

societies, the decreasing number of countries characterised by demographic youth of their populations, uncontrolled migration on a huge scale and a rapid increase in the urbanisation rate cause the need for redefinition of the social and economic policy. The aim of the redefinition of the policy is to maintain the standard of living in ageing societies, to introduce new hitherto unknown services and products and the already mentioned need to maintain the effectiveness of social security models and public finances appropriate to the scale of needs. As a result of the changes taking place, the decreasing supply of labour resources and the qualitative and quantitative conditions of the demand for labour will imply a dynamic increase in the already large and global migration. It is connected with the already mentioned increase in the urbanisation rate, which in many evaluations, while favouring the economic growth, will simultaneously create growing social pressure related to satisfying nutrition needs; as a result, it may lead to tensions and uncontrolled growth of economic costs in the described area of changes. Projections – including those for Poland – indicate a broad spectrum of impacts of demographic change, which can be associated with systemic changes in labour markets and structural changes in the economic area – in effect, may lead to a deep impasse. Demographic change also means negative changes in productivity and the already mentioned increase in economic costs associated with e.g. health care and long-term care of the elderly to the benefit of a decline in investment outlays. At the same time –andthis should be particularly emphasized – demographicchange also means the development of new economic sectors, technologies and services, aimedatusing the purchasing potential of older and ageing people and satisfying their consumption, living and health needs (*silver economy*).

The indicated trends and forecasts dynamically shape the demographic structure of the population of the analysed municipalities, including the occurring major changes in economic age groups. As of 2018, the population by economic age groups was shaped by two key trends, dynamic decline and growth (year 2008 = 100%). The trend of dynamic decrease was characterised by the population of pre-productive age and was contained in the analysed period in the range from 80,3% (PrzerzeczynZdrój/Niemcza) to 98.6% (Szczawno-Zdrój). The same trend was observed in the working age population, which decreased from 81.1% (CiepliceŚląskie-Zdrój/Jelenia Góra) to 94.5% (Szczawno-Zdrój). On the other hand, the post-working age population in all the studied communes was subject to dynamic growth in the interval from 117.3% (Szczawno-Zdrój) to 147.1% (Długopole-Zdrój/Bystrzyca Kłodzka) (table 6).

Table 6.

Population by economic age groups in the analytic area - alphabetically alphabetical order.
Status as of 31.12.2018. Year 2008 = 100%

Economicage groups	AnalyticalArea/Administrative Unit									
	1	2	3	4	5	6	7	8	9	10
population in pre-productive age	9679	545	2477	550	639	1276	959	663	683	639
growth/decrease	93,9	83,2	91,0	80,5	85,0	90,0	86,7	80,7	80,3	98,6
population in workingage	47 510	2592	11 771	2749	3019	6164	5160	3804	3552	3418
growth/decrease	81,1	83,5	87,1	82,8	89,1	89,8	87,0	82,6	88,4	94,5
population in post-productive age	22 291	1046	4736	1330	1193	2514	2157	1890	1267	1551
growth/decrease	135,1	143,1	147,1	137,0	126,2	135,3	138,8	129,0	121,7	117,3

Legend: 1. Cieplice Śląskie-Zdrój/Jelenia Góra, 2. Czerniawa-Zdrój/Świeradów Zdrój, 3. Długopole-Zdrój/Bystrzyca Kłodzka, 4. Duszniki-Zdrój, 5. Jedlina-Zdrój, 6. Kudowa-Zdrój, 7. Lądek-Zdrój, 8. Polanica-Zdrój, 9. Przerzeczyn Zdrój/Niemcza, 10. Szczawno-Zdrój.

Source: Local Data Bank of Statistics Poland (GUS). Data aggregated in predefined tables available to the public. Population state and natural movement.

According to the forecasts, further significant unfavourable changes in the population by economic age groups in the studied municipalities should be expected, which may be characterised by the following processes: a high decrease in the population in two age groups, the population in the pre-working and working age, and a high increase in the population in the post-working age. This regularity is confirmed by the following forecasts. In 2018, the population in the pre-productive age group accounted for a proportion between 12.2% (CiepliceŚląskie-Zdrój/Jelenia Góra) and 15,% (Czerniawa-Zdrój/lubański), in the productive age group between 59,8% (CiepliceŚląskie-Zdrój/Jelenia Góra) and 64, 3% (Szczawno-Zdrój/lubański) and in the post-working age from 19.9% (Szczawno-Zdrój/lubański) to 26,0% (CiepliceŚląskie-Zdrój/Jelenia Góra)[6]. According to forecasts, this distribution in 2035 may be as follows: 12,3% (increase by 0,1%) to 14,7% (decrease by 0,3%), 57,5% (decrease by 2,3%) to 61,4 (decrease by 2,9%) and from 26,6% (increase by 6,7%) to 30,2% (increase by 4,2%). The analysed distribution of the population of the studied communes by economic age groups in 2050 may change further according to the following projected values: from 11,9% (0,3% decrease) to 11,6% (3,4% decrease), from 51,2% (8,6% decrease) to 54,2% (10,1% decrease) and from 34,4% (14,5% increase) to 36,9% (10,9% increase) (table 7).

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[6] In the national and European public statistics there are no forecasts for the administrative unit of the commune. Forecast data occur only for the county (poviat) in which administrative area the commune is located. Therefore, in this part of the research work, forecasts are only presented at the level of the administrative unit of the county (poviat).

Table 7.

Population forecast in economic age groups in % - in analytical area by administrative unit –
alphabetical order

Analytical area	Administrative unit	Projection area/county	Years/%								
			2018			2035			2050		
			1	2	3	1	2	3	1	2	3
Cieplice Śląskie-Zdrój	Jelenia Góra	Jelenia Góra	12,2	59,8	26,0	12,3	57,5	30,2	11,9	51,2	36,9
Czerniawa-Zdrój	Świeradów Zdrój	lubański	15,8	63,5	20,7	14,7	61,1	26,2	11,6	53,8	34,6
Długopole-Zdrój	Bystrzyca Kłodzka	kłodzki	15,1	62,7	22,2	12,4	60,3	27,3	11,7	53,8	34,5
Duszniki-Zdrój	Duszniki-Zdrój	kłodzki	15,1	62,7	22,2	12,4	60,3	27,3	11,7	53,8	34,5
Jedlina-Zdrój	Jedlina-Zdrój	wałbrzyski	15,8	64,3	19,9	12,0	61,4	26,6	11,5	54,2	34,4
Kudowa-Zdrój	Kudowa-Zdrój	kłodzki	15,1	62,7	22,2	12,4	60,3	27,3	11,7	53,8	34,5
Lądek-Zdrój	Lądek-Zdrój	kłodzki	15,1	62,7	22,2	12,4	60,3	27,3	11,7	53,8	34,5
Polanica-Zdrój	Polanica-Zdrój	kłodzki	15,1	62,7	22,2	12,4	60,3	27,3	11,7	53,8	34,5
Przerzeczyn Zdrój	Niemcza	dzierżoniowski	15,2	62,7	22,1	12,6	60,1	27,2	12,1	53,5	34,4
Szczawno-Zdrój	Szczawno-Zdrój	lubański	15,8	64,3	19,9	12,0	61,4	26,6	11,5	54,2	34,4

Source: Population forecast for the period 2014-2050, Central Statistical Office, Warsaw 2014.

The occurring and projected demographic changes clearly indicate that three age groups will be the most numerous in the structure of studied municipalities: 55-59 years, 60-64 years and 65-69 years. The most representative example for the indicated regularity among the studied municipalities is Jelenia Góra, including Cieplice Śląskie-Zdrój. Given the numbers in 2018 (nearly 25% of the total population), it can be assumed that these are the three age groups that will determine the future quantitative and qualitative structure of the population of the studied municipalities. Due to their age cross-section, they will most dynamically shape the processes occurring in the labour market. In particular those related to dynamic ageing, their professional activity and inactivity, spatial mobility (migrations) and educational mobility, quality and level of social security. In relation to the abovementioned regularity, an important factor is the age range for which a clear decrease in the population of the studied communes can be observed, i.e. the age range from 75 to 85 and more. In this context it should be noted that shifts of particular cohorts in the demographic structure of the studied communes may cause a clear and dynamic increase in the population in the age cohorts entering the retirement age – with a simultaneous decline in the population in the age cohorts characterised by demographic youth and the highest economic activity and mobility. In this context, it is worth noting that the population aged 25-49, because of its size, will be subject to a systematic decline in the labour market of the studied municipalities as a result of the lack of its simple replacement by a numerically much smaller population of the youngest people – in the age brackets 0-4, 0-5, 10-14, 15-19 and 20-24 (26% of the total population of Jelenia Góra). We illustrate this process with the example of two populations living in Jelenia Góra (figure 1).
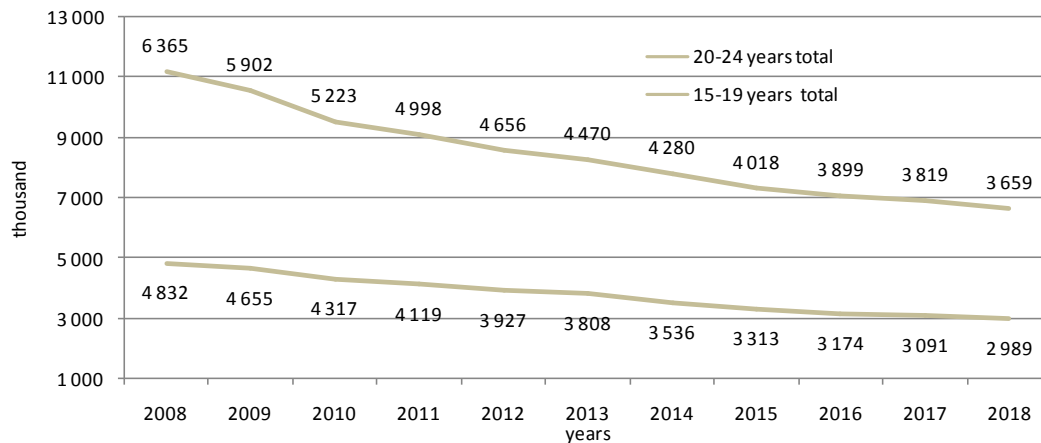
Figure 1. Population of Jelenia Góra by age groups 15-19 and 20-24. Observations for the period 2009-2018. Source: Local Data Bank, Statistics Poland (GUS), Data aggregated in pre-defined public tables, Population state and natural movement.

It should be noted that the indicated distribution of the number of inhabitants of studied municipalities by age groups will determine processes in the labour market which are a resultant of two phenomena: a decline in the population in the age of demographic youth and high educational, occupational and migration mobility, with a simultaneous clear and dynamic increase in the population in older age groups.

In terms of the term "older age groups", it is worth reflecting on the definition of ageing or obsolescence, as noted in the report on the situation of the elderly.

As noted in the *Report on the Situation of Older People in Poland*, the concepts of old age and ageing can be considered in two ways – from the individual aspect and as phenomena concerning the collective of these individuals, i.e. the society of a given region, country, part of the world (Report on the Situation, 2012, p. 15-18). In the individual aspect, ageing is a biological phenomenon constituting a human life cycle (Zych, 2004). According to another approach, ageing is perceived as a process of progressive impairment of the body's life functions and loss of adaptive capacity to environmental changes, along with an increasing probability of death (Kirkwood 1996). In general, the inevitable stage of the ageing process is a state referred to as old age. In turn, ageing, according to the definition accepted in psychogerontological literature, means a certain process and has a dynamic character, while old age as a state has a static character (Porzych, 2004). According to the life cycle theory of D.J. Levinson (Levinson, 1986), old age is one of the phases, which, however, is not homogenous and can be divided into successive periods. The life cycle theory describes changes in the psyche and behavior occurring at successive – progressive with age – stages of an individual's life. The first phase of life is the phase of learning, acquiring experiences (it includes childhood and youth).

The next phase includes adulthood, which is the period of implementation of the knowledge possessed. The last phase – old age – is the phase of regression. The individual phases may occur in different individuals at different times and it is not possible to give rigid limits to the age at which the individual ends or

The individual phases may occur in different individuals at different times and it is not possible to give rigid limits to the age at which the individual phases of the life cycle begin or end. However, the psychological concept of the life cycle – created by E. Erikson (Erikson, 2002) – divides the life of an individual into eight stages. The last stage is late adulthood and begins between the ages of 60 and 65. It should be noted that the division of the last stage of human life is changing with the lengthening of life and improvement of its quality in the community of older people.

In this light, on the basis of analyses of the population of the studied communes, this time in the cross-section of biological age groups, equally unfavourable changes will take place in the perspective of 2050, which may be characterised by the following processes: a high decline in the population in two age groups, the population aged 0-14 and 15-59, and a high increase in the population aged 60 and over. This regularity is confirmed by the following forecasts. In 2018, the population aged 0-14 accounted for a percentage ranging from 12,1% (Cieplice Śląskie-Zdrój/Jelenia Góra) to 13,3% (Szczawno-Zdrój/lubański), aged 15-59 from 58,8% (Przerzeczyn-Zdrój/dzierżoniowski) to 68, 5% (Jedlina-Zdrój/wałbrzyski) and aged 59 and over from 19,1% (Jedlina-Zdrój/wałbrzyski) to 28,5% (Przerzeczyn-Zdrój/dzierżoniowski), According to forecasts, this distribution in 2035 may be as follows: 12,3% (0,2% increase) to 10,4% (2,9% decrease), from 61,9% (3,1% decrease) to 61,9 (6,6% decrease) and from 18,3% (0,8% decrease) to 28,8% (0,3% increase). The analysed population distribution in the studied communes by biological age groups in 2050 may undergo further changes according to the following projected values: from 6,8% (decrease by 5,3%) to 9,5% (decrease by 3,7%), from 52% (a fall of 6,8%) to 52,6% (a fall of 15,9%) and from 38,2% (an increase of 19,1%) to 38,1% (an increase of 25,4%) (Table 8).

Table 8.

Population projection in biological age groups in % - in the analytical area by administrative unit – alphabetical order

Analytical area	Administrative unit	Projection area/county	Years								
			2018			2035			2050		
			1	2	3	1	2	3	1	2	3
Cieplice Śląskie-Zdrój	Jelenia Góra	Jelenia Góra	12,1	59,8	28,1	12,3	57,5	30,2	6,8	51,2	37,0
Czerniawa-Zdrój	Świeradów Zdrój	lubański	13,3	64,0	22,7	10,4	61,9	27,2	9,5	52,2	38,3
Długopole-Zdrój	Bystrzyca Kłodzka	kłodzki	12,6	67,3	20,1	10,1	60,9	28,9	9,6	52,1	38,3
Duszniki-Zdrój	Duszniki-Zdrój	kłodzki	12,6	67,3	20,1	10,1	60,9	28,9	9,6	52,1	38,3
Jedlina-Zdrój	Jedlina-Zdrój	wałbrzyski	12,4	68,5	19,1	9,8	61,9	18,3	9,2	52,6	38,2
Kudowa-Zdrój	Kudowa-Zdrój	kłodzki	12,6	67,3	20,1	10,1	60,9	28,9	9,6	52,1	38,3
Lądek-Zdrój	Lądek-Zdrój	kłodzki	12,6	67,3	20,1	10,1	60,9	28,9	9,6	52,1	38,3
Polanica-Zdrój	Polanica-Zdrój	kłodzki	12,6	67,3	20,1	10,1	60,9	28,9	9,6	52,1	38,3
Przerzeczyn Zdrój	Niemcza	dzierżoniowski	12,7	58,8	28,5	10,3	60,8	28,8	9,9	52,0	38,1
Szczawno-Zdrój	Szczawno-Zdrój	lubański	13,3	64,0	22,7	10,4	61,9	27,2	9,5	52,2	38,3

Legend: 1. Ludność w wieku 0-14 lat, 2. Ludność w wieku 15-64 lata, 3. Ludność w wieku 60 lat i więcej.

Source: Population forecast for the period 2014-2050, Central Statistical Office, Warsaw 2014.

An illustration of the outlined forecasts is presented on the example of the lubański poviat, which, according to the forecast, may experience one of the highest increases in the population aged 60 and above among the poviats with the studied communes (Figure 2).
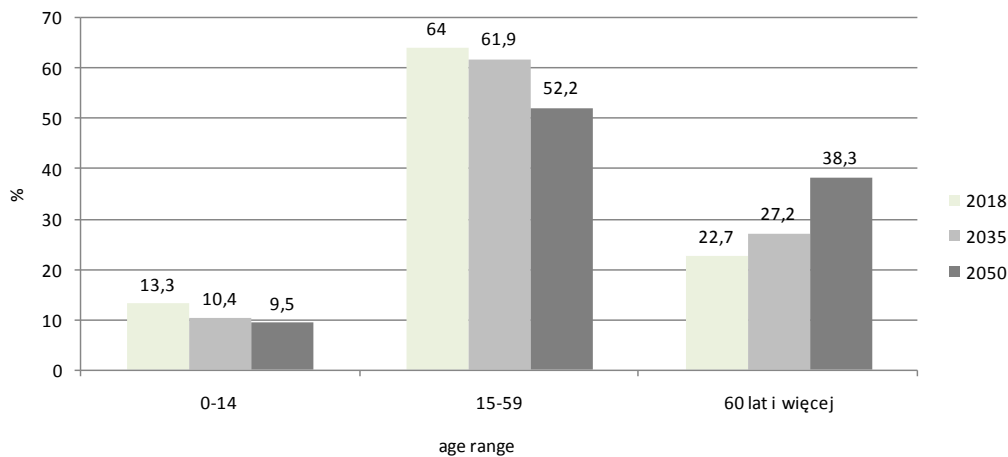

Figure 2. Population changes in biological age groups on the example of lubański district according to the state in 2018 and the forecast till 2050. Source. Own elaboration, based on Population forecast for the period 2014-2050, Central Statistical Office, Warsaw 2014.

Another important variable – describing the population structure – is the age dependency ratio – a measure of the number of dependents aged zero to 14 and over the age of 65, compared with the total population aged 15 to 64. According to the state at the end of 2018, per 100 people of working age in the studied communes there were from 48,7 (Cieplice Śląskie-Zdrój/Jelenia Góra) to 59,5 Przerzeczyn-Zdrój/dzierżoniowski) people of non-working age. The forecast clearly indicates that in the perspective of 2050 the burden of economically inactive population on the working age in the studied communes may increase to 95 and 87,6 (Table 9).

Table 9.

Projection of the age dependency ratio in the analytical area by administrative unit – alphabetical order

Analytical area	Administrative unit	Projection area/county	Years			
			2018	2025	2035	2050
Cieplice Śląskie-Zdrój	Jelenia Góra	Jelenia Góra	48,7	73,8	76	95
Czerniawa-Zdrój	Świeradów Zdrój	lubański	57,5	63,7	63,5	85,8
Długopole-Zdrój	Bystrzyca Kłodzka	kłodzki	59,4	63,6	66	86
Duszniki-Zdrój	Duszniki-Zdrój	kłodzki	59,4	63,6	66	86
Jedlina-Zdrój	Jedlina-Zdrój	wałbrzyski	57,1	62,3	62,9	84
Kudowa-Zdrój	Kudowa-Zdrój	kłodzki	59,4	63,6	66	86
Lądek-Zdrój	Lądek-Zdrój	kłodzki	59,4	63,6	66	86
Polanica-Zdrój	Polanica-Zdrój	kłodzki	59,4	63,6	66	86
Przerzeczyn Zdrój	Niemcza	dzierżoniowski	59,5	66,7	66,4	86,7
Szczawno-Zdrój	Szczawno-Zdrój	lubański	57,5	63,7	63,5	85,8

Source: own calculations based on population projections for 2014-2050, Statistics Poland (GUS). Warsaw 2014.

An illustration of the outlined forecasts is presented on the example of Jelenia Góra poviat, which, according to the forecast, may experience the highest increase in the age-dependency ratio among the studied poviats, in the area of which the studied communes are located (Figure 3).
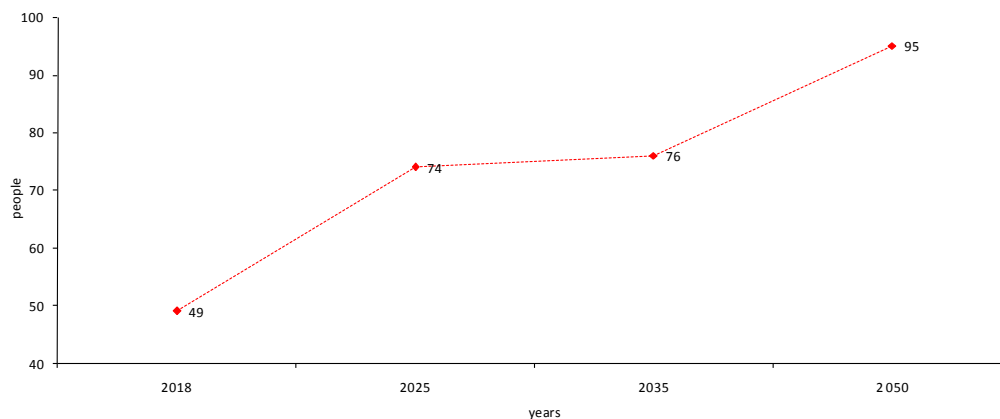

Figure 3. Changes in the age dependency ratio for Jelenia Góra according to the forecast until 2050. Source. Own elaboration, based on Population forecast for the period 2014-2050, Central Statistical Office, Warsaw 2014.

The age dependency ratio in the analysed period ranged from 48,7 (Jelenia Góra/Cieplice Śląskie-Zdrój) to 57,1 (Wałbrzyskie/Jedlina-Zdrój). In subsequent years it may increase dynamically. In the case of the studied communes, in 2025 – in the wałbrzyski district/Jedlina-Zdrój – up to 62,3 people, and in 2050 – 84, and in Jelenia Góra/CiepliceŚląskie-Zdrój – up to 73,8 and 95 respectively (Figure 4).
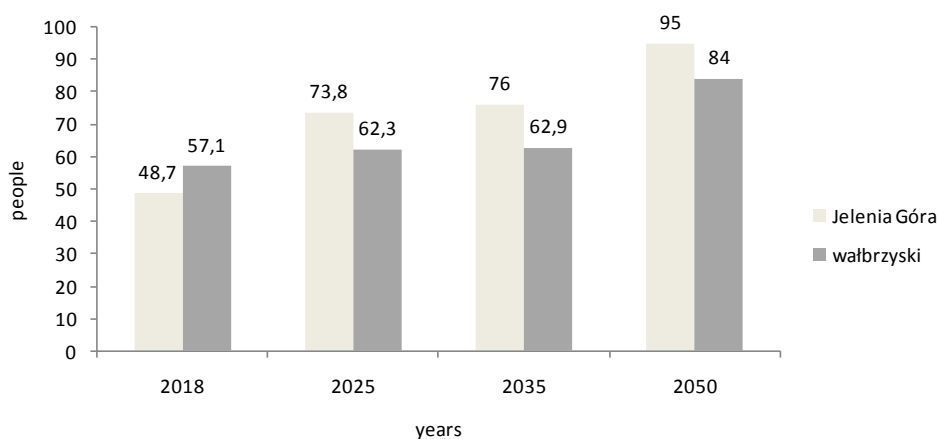
Figure 4. Changes in the age dependency ratio for the wałbrzyski poviat and Jelenia Góra according to the forecast of the Statistics Poland until 2050 and in the years 2018-2050. Source. Own elaboration, based on Population forecast for the period 2014-2050, Central Statistical Office, Warsaw 2014.

The indicated growth in dependency ratio is determined in the forecast primarily by the very high projected increase in the old-age dependency ratio, defined as the ratio of the number of elderly people (aged 65 years and over) compared with the number of people of working-age (15-64 years). In this light, it is worth noting some significant changes that have taken place in Poland in general over the second half of the 20th century – and, according to forecasts,

will continue to take place in future decades. Between 1950 and 2011, the share of the youngest economic group in the Polish population decreased from approximately 35-37% to 19%, while the share of the oldest group increased from approximately 7% to 17.5%. The population projection of the Statistics Poland (GUS) predicts further profound changes in the demographic structure by 2035 – a decrease in the share of population aged 0-17 to 15.8% and an increase in the share of population in the post-working age to 26.7%. The number of people at an advanced age – 80 and over – is expected to grow even faster. It's in line with the general European trends, as the EU old-age dependency ratio is projected to be at 57% in 2100, almost double that of 2019 (31%). Number of people aged 80 years and over projected to rise to 60.8 million in EU-27 by 2100 (EUROSTAT, 2020). It's worth noting, that in Poland – the old-age dependency ratio is projected to be highest (63%) all European countries (EUROSTAT news, 2020).

In the context of the above presented projections proper relations between the population at pre-working, working and post-working age are extremely important for the effectiveness of any pension system, which affect the development of health resort communes both in terms of the stability of income and living standards of the area's residents and because of the variation in demand for health services. The process of intensive population ageing entails many risks and has a negative impact not only on the financial situation of the pension system, but also on public finances as a whole. The growing number of people entitled to receive pension benefits is reflected in an increase in public expenditure on. Pensions account for a large and growing share of public expenditure, averaging over 10% of GDP across the European Union, and could account for up to 12.5% of GDP in 2060 (White Paper, 2014, p. 4). The continued upward trend in the number of pensioners will certainly contribute to an increase in the public deficit and debt in the future. As a consequence of the projected changes, it should be noted that the statements published by the European Commission (European Commission and Economic..., 2012) on the projected changes in the size of the burden resulting from the payment of benefits from both the first (pay-as-you-go) pillar of the pension system and those financed by private mandatory capital plans show that over the next 50 years in Poland, the total public expenditure (relative to GDP) on pension benefits may fall (from 11.8% of GDP to 9.6% of GDP), although it is still expected to be unbalanced over the entire 50-year horizon (European Commission and Economic..., 2012, p. 107).

In the context of these phenomena, it should be noted that from the point of view of social policy one of the most important demographic determinants is the structure of the population by age. As E. Trafiałek (2006) points out, modern civilisation guarantees increasingly longer average life expectancy. This is accompanied by an increase in the number of elderly people and a simultaneous decrease in natural growth. As a result, on a global scale the model of the so-called inverted demographic pyramid is becoming established (Orczyk, 2005, p. 41), which is characterised e.g. in the social sphere by the lack of replacement of generations on the labour market and gives rise to the problem of securing decent conditions for those retiring from

professional activity. On the other hand, in terms of economic effects, it causes the so-called emptying of labour markets (Strzelecki, 2010). Hence the postulate of L. Frąckiewicz, which states that the economic, social, medical and cultural consequences of demographic ageing include various spheres of behaviour, needs, trends, creating a vast catalogue of tasks the implementation of which requires launching appropriate entities and instruments of social policy, is still valid (Frąckiewicz, 2003, p. 11). This process requires, first of all, the development of a catalogue of priority tasks, resolving the main issues caused by the changing demographic structure in global, regional and local dimensions (Trafiałek, 2006, p. 252-258). One of the first tasks in this area is the international integration of activities in the construction and implementation of a new model of economic functioning and a new model of saving and investing. In this respect, the main goal is to provide adequate income and care for old people. This is critical to ensuring dignity and quality of life. It is also important from the health tourism development point of view, as in the case of low incomes of working-age people, especially those aged 50+ and those in retirement age, it is impossible to expect an increase in the volume of demand for spa services financed by patients' funds (Szromek et. al., 2012).

3. Conclusions

On the basis of the analyses and research carried out, it may be concluded that in the analysed administrative areas of Lower Silesia – in the part relating to the stream of labour supply – a dynamic process of ageing of labour resources is clearly visible. On the basis of the above conclusion it seems justified to subordinate the policies implemented in the studied administrative areas to the indicated process. Taking into account the currently implemented and planned policies aimed at successful social and economic development of the analysed areas – it seems that they should primarily focus on such phenomena as:

- imbalance in feminisation ratio,
- serious shortage of women in the age range of 20-29 (the age of the highest matrimonial activity) and high predominance of women in the oldest age groups,
- significant decline in the number of births,
- negative natural growth,
- extremely low fertility rate,
- extremely low gross reproduction rate,
- low rate of demographic dynamism,
- dynamically growing old-age dependency ratio.

As a result of the processes taking place in the age structure – determined by the abovementioned phenomena – in the examined areas further dynamic stratification of the streams of labour demand and labour supply should be expected. The stratification will be first

of all implied by a clear increase in the population of those entering retirement age (economic inactivity) with a simultaneous decrease in the population of those characterised by demographic youth and the highest economic activity and mobility. The key source of these unfavorable tendencies is – already mentioned above – lack of simple substitution of labour resources at the age of the highest economic activity by numerically significantly smaller population of the youngest people.

As a result of the aforementioned processes, a significant increase in the economically inactive population should be expected in the analysed areas. This is confirmed by the forecasts of the Statistics Poland, which unambiguously indicate that in the perspective of 2050, the level of dependency ratio e.g. in Jelenia Góra may increase from 49 in 2018 to an extremely high number of 95 people in 2050 (Prognoza ludności...). The source shaping the indicated forecasts most intensively will be, the dynamic growth of the population in post-working age, i.e. people aged 60/65 and more. This process, in turn, will result in a very high rate of population ageing in the old age group, i.e. in the oldest categories, aged 75 and more (Prognoza ludności...).

In addition, it should be noted that the indirectly indicated changes and projected trends are consolidated by the negative migration balance emptying the labour market in the most active age groups of labour resources (Miłaszewicz, 2016, pp. 109-120) and a very high share of men in deaths of people aged up to 65 due to cardiovascular diseases – more than three times higher than among women (Jelenia Góra in numbers, 2021).

All the changes, processes and forecasts indicate that in order to reduce the stratification in the studied areas, which is the main source of structural mismatch, it is necessary to take action to build the future shape of urban policy – especially in relation to old age.

In this context, the studied communes may be recommended to undertake the following activities:

- developing guidelines for local programmes preparing municipal and district policies on the phenomenon of old age,
- giving public employment services a leading role in the preparation of thematic proposals for social and professional activation of seniors,
- development of proposals for measures to strengthen the participation of seniors in local decision-making shaping the present and future of the municipalities and districts under review (Senior Citizens' Town Council, etc.),
- preparation of guidelines for a programme of intergenerational integration,
- particularly based on the diversity management method and reducing the intergenerational information gap,
- attempting to develop an educational programme outlining the economic and social consequences of the demographic depression,
- developing a package of measures specifically aimed at women senior citizens,
- prioritising education and health in measures to promote the social and professional activity of senior citizens.

Failure to take such measures may delay preparation for the – as it seems inevitable – changes in the age structure of the population living in the study areas. As already noted, these are changes in many aspects, from changes in the consumption structure, through changes on the "production" side (labour force. GDP). and the consequences for public finance systems. As the population ages, the relationship between labour and capital changes, as does the relationship between labour supply and labour demand, which is derived from consumption demand (Börsch-Supan, 2008). The aforementioned need for the studied areas to prepare for the effects of the ageing of the population living in the studied areas will also be determined by further – as already indicated – expected effects, such as: sectoral or occupational mismatches in the labour market (for example, due to increased demand for health and social care workers, associated with an increase in the population aged 65+ and, above all, 80+), which may result from changes in the structure of consumption, labour market consequences for social security systems and the need to fill gaps in labour supply associated with a possible influx of immigrants (Janick,a 2015, p. 26).

The signaled unfavourable changes in the population structure of the studied areas due to economic activity have significant consequences for the economies of these areas and social life. Changes in the age structure of the population translate into changes in many aspects, starting with – already mentioned – changes in the consumption structure, through changes on the "production" side (labour force, GDP) and the consequences for the financial systems. With regard to the labour market, it should be clearly noted that each of these changes in the structure of the population has economic consequences. Since labour is the basic factor of production, the changes taking place in the labour market should be singled out as those which will be of key importance for the functioning of the economy, the GDP growth rate or the GDP per capita growth rate. In this respect, one should first of all mention the changes in the size of the labour force as a whole (reduction of the number of people who can take up a job) and their composition (e.g. increase of the proportion of employees in the pre-retirement age). Changes in the proportions of age groups in the population will translate into changes in the functioning of the labour market, as potential employees from different age groups will differ, e.g. in their participation rate (Bloom, 2008, pp. 17-51).

On the basis of the above conclusions it seems that the greatest contemporary challenge for the environments, institutions and people creating the future of the studied areas may be maintaining the economic activity of the ageing population with simultaneous development of modern active social and labour market policies – corresponding to the economic structure of the studied areas, in particular on the basis of their tourism assets.

In the final reflection it is worth noting that the conclusions and recommendations presented in this article on the socio-demographic determinants of development of selected communes and districts – especially in the demographic perspective – do not cover all the problems in the discussed cognitive area, which results from its wide and interdisciplinary scope. The analyses presented here may serve as a basis for further research on, first of all, the changing conditions

shaping the determinants of development of the studied areas – in the phase of global changes, improving the directions and objectives of their development and practical activities to increase the importance of project activities on the map of Lower Silesia, the country and Europe.

Acknowledgements

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