

## Journal of Geography, Politics and Society

2022, 12(3), 38–50

<https://doi.org/10.26881/jpgs.2022.3.04>



# THE IMPACT OF DEMOGRAPHIC PROCESSES ON CHANGES IN SERVICES. AN EXAMPLE OF THE SILESIA VOIVODESHIP

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### Citation

Kłosowski F., 2022, The impact of demographic processes on changes in services. An example of the Silesian Voivodeship, *Journal of Geography, Politics and Society*, 12(3), 38–50.

### Abstract

The aim of this article is to show the impact of demographic changes on the situation in the services of the Silesian Voivodeship and its selected cities. The analysis covers the period of 1999–2019. The method of comparative analysis was applied in the study. The presented material does not allow defining the nature of this impact unambiguously. The dominant trend in the population decline in the voivodeship and in most of its cities does not automatically result in a decline in the level of the development of services. We also observe stabilization or even its increase. This also applies to those services that are addressed to people of pre-working age, i.e. the group with the largest regression in the population. However, the dynamic growth in the number of seniors results in a significant increase in the number of institutions and social programs addressed to them. Yet, there is no doubt that services addressed to the elderly do not fully meet the needs of this group of residents today, and taking into account demographic forecasts, they must show high dynamics of development in the forthcoming years.

### Key words

demography, services, demography and services, Silesian Voivodeship.

**Received:** 16 July 2022

**Accepted:** 12 September 2022

**Published:** 28 September 2022

## 1. Introduction

There is no doubt that the role of the human factor is of fundamental significance in all manifestations of socio-economic life. This applies both to the production of goods and services and to their consumption. Thus, the changes in the population, but also in its structures (especially age), have a significant impact on various manifestations of socio-economic life.

This is reflected in numerous publications showing this impact, among others, on:

- social situation (Balicki, 2010; Mastalerz-Kodzis, Pośpiech, 2016);
- social policy (Kuropka, Pisz, 2012; Gołata, Kuropka, 2015, Hryniewicz et al., 2018);
- pension system (Zieliński, 2012;; Bednarczyk, 2015, Nietupska, 2015, Maziarz, 2018);
- labor market (Sneddon Little, Triest, 2002; Klimczuk-Kochańska, 2010; Malik et al., 2012;

Józwiak, 2013; Kielkowska (ed.), 2013; Pleśniak, 2014; Bednarczyk, 2015; Skibiński, 2016; Drela, 2017);

- consumption (Bylok, 2013);
- economic development (Miles, 1999; Azomahou, Mishra, 2008; Bloom et al. 2003, Bloom et al., 2010; Choudhry, Elhorst, 2010; Banister et al., 2010, Janicka et al., 2015; Cruz, Ahmed, 2018),
- socio-economic situation (European..., 2006; Frąckiewicz (ed.), 2007; Gubernat, 2009; Chesnais, 2009; Dragan, 2011; Cloves, Choroś-Mrozowska, 2012; Hafiz et al. 2017).

There are few previous publications that would address the problem of the impact of demographic changes on such an important sector of the economy as services. The most frequently discussed issues were the impact of demographic changes on selected areas of services such as: education (Grob, Volter, 2007; Vincent-Lancrin, 2008; Mincarini, Vignoli, 2008; Rangel de Meireles Guimarães, 2013), gastronomy (Kwiatkowska, 2010), transport (Beim, Radzimski, 2009), health care (Veser, 2015; Mielczarek et al., 2018), or social services (Hryniewicz, 2000). Attempts to show this impact on the majority or all of the services were rarer (Huigan et al. 1986, Murdock et al., 2015). In order to fill this gap at least partially, the author of this study will try to define this impact on services based on the example of the Silesian Voivodeship. The choice of this sector of the economy as the research subject results from the fact that it is the largest economic sector in Europe and in Poland, gathering both the largest number of employees and generating the largest part of the GDP. Despite rapid changes in the forms of providing services (development of e-services), the human-to-human form of contact is still of fundamental importance in services, supplemented with other features of providing most services, i.e., among others, a direct contact between the service provider and the recipient (local nature), inability to store the effects of most services, or high sensitivity to changes in service needs.

In addition, the nature of the services determines the universality of the use of this sector. Services are addressed both to the whole society and to its selected groups (e.g. education). Admittedly, among all services, only a small group are those of a compulsory nature (such as compulsory education for children and youth), but a much broader scope involves those from the obligatory-subjective group whose use, although selected by an individual, but due to their fundamental importance for human functioning, is *de facto* indispensable for normal life (e.g. health care, trade, financial services). Nowadays, without trade (e.g. in food products), it is difficult to

imagine the possibility of satisfying such basic needs as food, which are necessary for human survival.

The temporal scope of the study covers the years 1999–2019, i.e. the period of operation of the Silesian Voivodeship, although due to the availability of statistical materials and their comparability, these periods may slightly differ for particular service departments. In spatial terms, the analysis will be conducted on the example of the Silesian Voivodeship, i.e. a region in which the scale of demographic changes is among the largest in Poland. It will cover both the entire voivodeship and its selected cities, i.e. those where the highest population changes (both increases and decreases) were noted.

## 2. Data and methods

In the analysis of the impact of demographic changes on services, a comparative method was applied in which the scale of changes in the demographic potential of the voivodeship and selected cities was compared with changes in services. In the demographic analysis, the main focus was on changes in the number of the population, including in terms of their age, because the number of inhabitants (consumers), through their demand, is one of the most important factors affecting services. Due to the large scope of services and the lack of comprehensive and comparable statistical data for the entire period, the analysis mainly focused on selected areas of services in which changes in the number of service facilities were mainly included. The study primarily used the Statistics Poland data provided by the Local Data Bank. The first part characterizes measures which in the most general way show the development of all services (the number of employees in services and of entities of the national economy operating in services) and which are also addressed to the entire society (e.g. health clinics, libraries, cinemas). On the other hand, the second part focuses on those services that are addressed to the age groups of the population in which the greatest changes took place after 1999 (people of pre-working age and post-working age).

## 3. Results

### 3.1. Demographic changes in the Silesian Voivodeship

Since the establishment of the Silesian Voivodeship, i.e. since 1999, a constant decrease in the population has been observed (Fig. 1), although this process began earlier, i.e. at the turn of the 1980s and 1990s (Runge, 2010; Sitek et al. 2013). In 1999–2019,

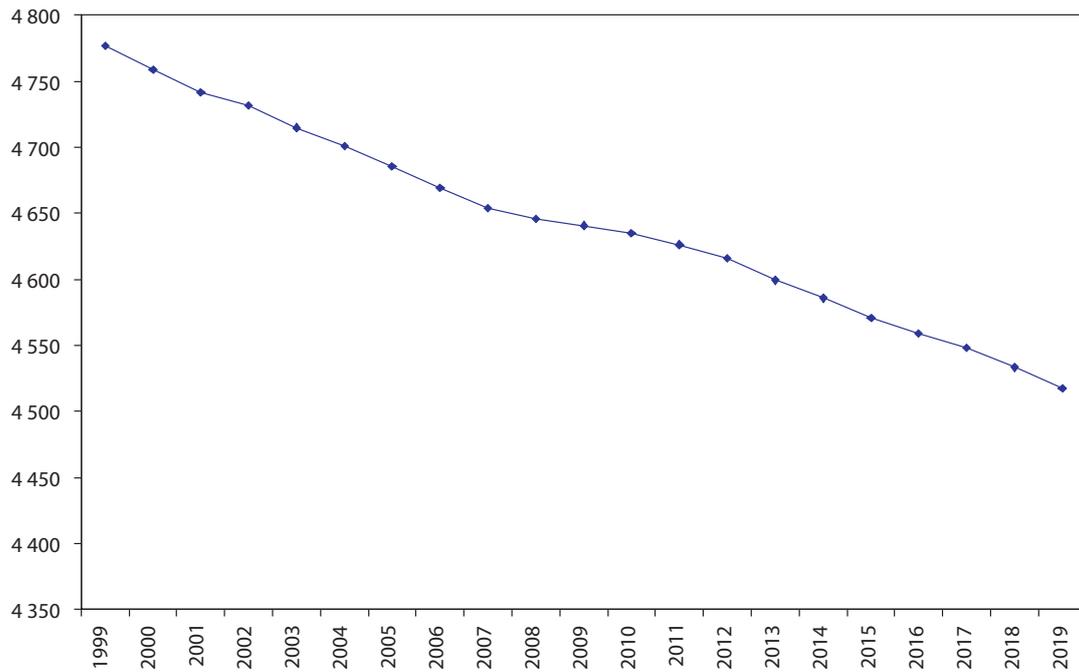


Fig. 1. Changes in the population of the Silesian Voivodeship in 1999–2019 (in thousands).

Source: Own study based on Local Data Bank Statistics Poland.

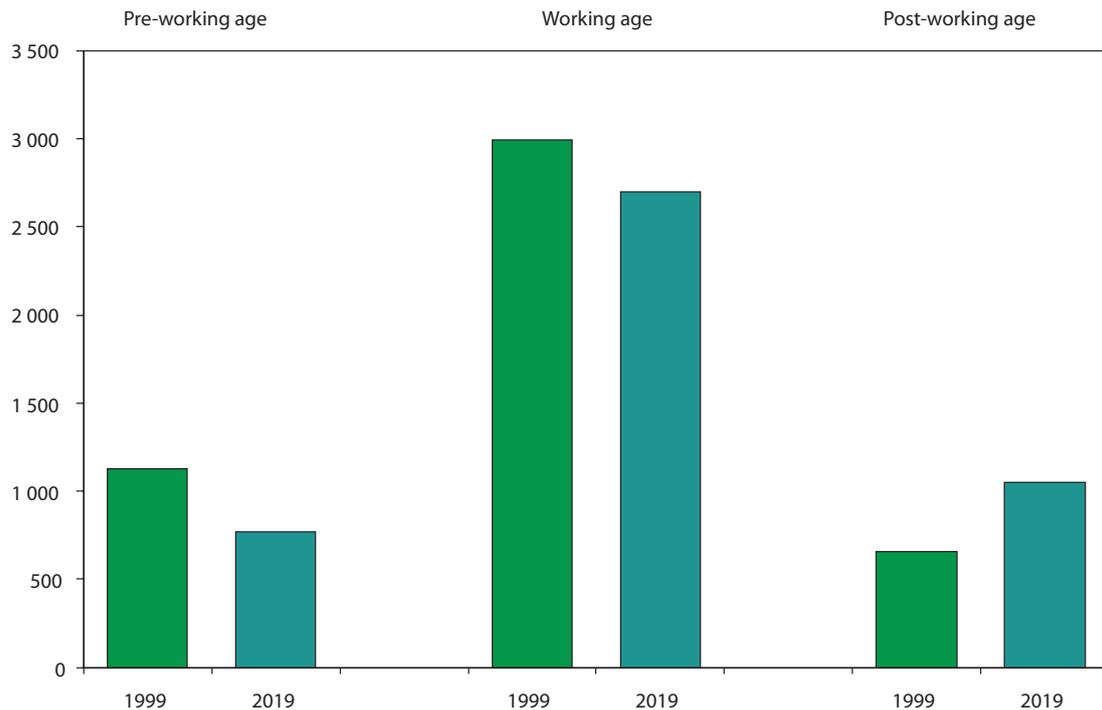


Fig. 2. The population of the Silesian Voivodeship in pre-working, working and post-working age in 1999 and 2019 (in thousands).

Source: Own study based on Local Data Bank Statistics Poland.

the population of the voivodeship decreased from 4,776.9 thousand to 4,517.6 thousand persons, i.e. by 259.3 thousand (this represents 5.4% of the state from 1999). Obviously, these are official data from Statistics Poland and they do not take into account population losses resulting from foreign migrations

which over the years often change from initially being temporary in nature to definitive migrations.

In this analysis, data relating to changes in the total population are too general; therefore, in order to better understand the problem, it is necessary

to present more detailed data, i.e. by age groups of economic activity and 5-year age groups.

In the case of age groups of economic activity, the population is broken down into 3 groups: pre-working age (in this analysis 0–17 years old), working age (18–64 years old for men and 18–59 years old for women) and post-working age (60 years old and over for women and 65 years old and over for men).

When analyzing Figure 2, it can be seen that the changes in these groups are much larger than in the case of the total population. The fall in the number of working-age population amounted to 10%, (thus, it was almost twice higher than in the case of the total population), while in the group of pre-working age population it was already 31% (thus, it was 6 times higher than in the dynamics of changes for the total population of the voivodeship). However, taking into account both the dynamics and changes in the absolute population, the greatest changes occurred in the group of post-working age population, although the trend was different here, since an increase in this group of residents was observed. Between 1999 and 2019, its number increased by as many as 391,000 people, i.e. by 59% of the state from 1999.

In most 5-year age groups, there was a reduction in the population number (Fig. 3), the largest in three groups of young people, i.e. 15–19-year-olds by 213,000 people, 20–24-year-olds by 161,000 people and 10–14-year-olds years by 137,000. On the other hand, an increase in the population number was recorded mainly in the oldest years, starting

with the 55–59-year-olds, reaching the maximum value for the group over 70-year-olds, which increased by 228,000 people (68.2%). In the working-age group, a slight increase took place in 2 groups of 30–34-year-olds and 35–39-year-olds, but it only amounted to 28,000 and 29,000 people, respectively. Simultaneously, one should be aware that, according to forecasts, the group of people of the retirement age will continue to grow dynamically in the coming years, which is related to entering the retirement age by persons born during the baby boom of the 1950s.

### 3.2. Demographic changes in selected cities

All these data refer to the demographic image of the entire voivodeship, while changes relating to individual municipalities are much more diverse. Considering the fact that the services are located mainly in cities (especially the poviats ones), these will be the main focus of attention.

Out of 67 cities in the Silesian Voivodeship, only in 11 of them there was an increase in the population number. Usually, these were increments of a few percent; it exceeded 10% only in three cases, namely in Wilamowice (11% increase), Orzesze (14%) and Imielin (20%). In the other cities, population declines were recorded. In the case of 15 cities, they exceeded 10% of the population, amounting to over 15% in 3 cities, i.e. in Toszek (16.5%), Bytom (16.4%) and Sosnowiec (15.2%). Interestingly, this group mainly comprised large cities (except Toszek) including the capital of the province – Katowice (Tab. 1).

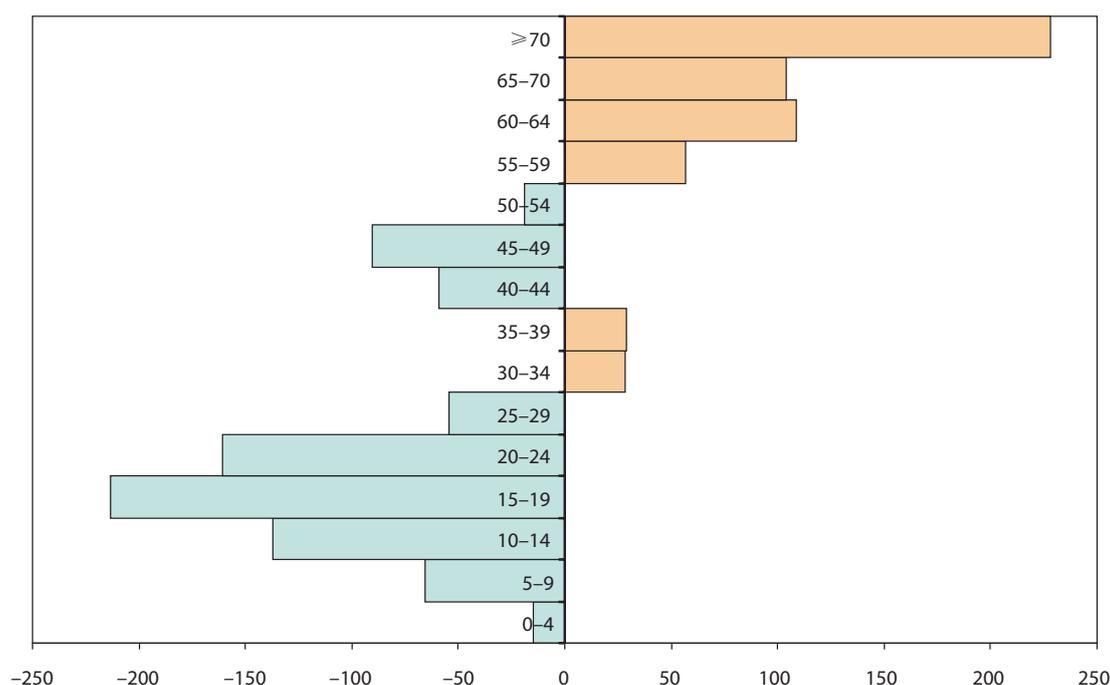


Fig. 3. Changes in the population of the Silesian Voivodeship by age groups in 1999-2019 (in thousands).

Source: Own study based on Local Data Bank Statistics Poland.

Tab. 1. Cities with the largest demographic changes in the Silesian Voivodeship in 1999–2019 (1999=100).

Cities	Total demographic change	Changes in age groups		
		pre-working age	working age	post-working age
Population growth				
Imielin	120.7	98.8	122.5	148.2
Orzesze	114.3	89.5	115.5	155.6
Wilamowice	111.2	92.8	114.0	128.7
Population loss				
Toszek	83.5	58.7	80.9	144.7
Bytom	83.6	59.2	78.3	148.2
Sosnowiec	84.9	62.0	74.1	168.0
Gliwice	86.5	65.2	78.8	155.6
Częstochowa	86.8	62.6	79.5	147.6
Zabrze	86.9	57.6	83.3	159.1
Katowice	87.9	62.9	80.8	151.4

Source: Own calculations based on Local Data Bank Statistics Poland.

Table 1 clearly shows that in cities with a higher population growth, there is a small decrease in the population in the pre-working age group (usually a few percent), an average increase in the number of working-age population (from a several to slightly over 20%) and a large increase in the post-working age population (from 28 to 55%). In the group of cities with the largest population decrease, there is a very large decline in the number of people of pre-working age (at the level of 30–40%), a significant decrease in the population of working age (approx. 20%) and a large increase in the post-working age population (usually, approx. 50%, with a maximum value of 68%).

### 3.3. Changes in services

In the analyzed period, both the total number of employees in the Silesian Voivodeship and the number of employees in services increased, but the dynamics of growth of employees in services was higher than in the case of the entire economy (Tab. 2). Thus, the share of services in the structure of employees increased from 49.3% in 1999 to 58.8% in 2018. This is an effect of the continuation of structural changes in the Silesian economy, which at the turn of the 20th and 21st century was one of the most industrialized in Poland. In 1999, 710,000 people, or 45.6% of those working in the economy, were associated with industry. The above-mentioned process of structural changes meant that the share of industry, although still significant, dropped to 37.9%.

Table 2 shows that changes in the number of inhabitants have had a different impact on the total number of employees and the number of those working in services. In most cases, regardless of the nature of demographic changes (population

increases or decreases), there was an increase in the total number of employees and the number of those working in services. A different trend was observed in only 3 cities (Bytom, Zabrze, Wilamowice). Yet, while in Bytom and Zabrze there was a decrease in the total number of employees, the decrease in the number of people working in services affected Wilamowice and Bytom. Interestingly, despite the population increase and the total number of people working in the economy, in Wilamowice, there was a decrease in the number of people working in services. On the other hand, the case of Bytom is a consequence of the general (not only economic) decline of the city (Sobala-Gwosdz (ed.) 2010; Krzysztofik et al., 2011, 2012), accompanied by one of the highest unemployment rates in the voivodeship (in 2019, the unemployment rate was 8.3%, while the average for the voivodeship amounted to 3.6%).

In the research period, despite the decrease in the population, the total number of REGON business entities increased from 371,200 to 481,800, and the number of REGON business entities operating in services from 283,500 to 370,000. Thus, the dynamics of changes in both groups slightly differed in favor of service providers (129.8 and 130.5, respectively).

The situation was very similar in the case of the surveyed cities, as also here increases were observed; however, their dynamics varied (Tab. 3). In the examined cities with a population increase, the dynamics of REGON entities operating in services exceeded 150, while in cities with a decrease in the population, this dynamics was lower (with the exception of Toszek). For example, in Sosnowiec it only slightly exceeded 100.

Tab. 2. Changes in the number of people working in services in selected cities of the Silesian Voivodeship in 2000–2018.

Specification	Total number of employees			Working in services			Dynamics of changes in 2000–2018			
	2000	2004	2018	2000	2004	2018	Total number of employees 2000=100	Total number of employees 2004=100	Working in services 2000=100	Working in services 2004=100
Silesian voivodeship	1750800	1491800	1870000	877151	856293	1100000	106.8	125.4	125.4	128.5
Imielin	–	631	1281	–	295	592	–	203.0	–	207.7
Orzesze	–	2013	3047	–	1225	1515	–	151.4	–	123.7
Wilamowice	–	478	818	–	442	386	–	171.1	–	87.3
Toszek	–	837	1099	–	718	862	–	131.3	–	120.0
Bytom	44938	33642	28365	23907	22243	21016	63.1	84.3	87.9	94.5
Sosnowiec	50908	46731	51378	28712	28451	36351	100.9	109.9	126.6	127.8
Gliwice	63629	59569	81049	36714	34619	46713	127.4	136.0	127.2	134.9
Częstochowa	74018	71428	77225	42264	40016	46444	104.3	108.1	109.9	116.0
Zabrze	40705	38576	37819	22632	23937	25466	92.9	98.0	112.5	106.4
Katowice	158496	144150	168639	101912	101487	134248	106.4	117	131.7	132.3

Explanation: „–” no data

Source: Own study based on Local Data Bank Statistics Poland.

Tab. 3. Changes in the number of REGON business entities in selected cities of the Silesian Voivodeship in 2000–2019.

Specification	Number of entities of the national economy		Number of entities of the national economy in services		Dynamics of changes	
	1999	2019	1999	2019	Total number of business entities 1999=100	Number of business entities in services 1999=100
Silesia	371 234	481 757	283 546	370 002	129.8	130.5
Imielin	604	960	419	698	158.9	166.6
Orzesze	1 308	1 946	961	1448	148.8	150.7
Wilamowice	240	336	159	240	140.0	150.9
Toszek	217	340	166	266	156.7	160.2
Bytom	13 152	16 500	10 599	13 386	125.5	123.3
Sosnowiec	21 635	21 916	17 615	17 779	101.3	100.9
Gliwice	18 047	24 243	14 431	19 896	134.3	137.9
Częstochowa	26 057	26 626	18 944	20 575	102.2	108.6
Zabrze	11 588	16 966	9 628	13 988	146.4	145.3
Katowice	38 690	48 460	31 957	40 880	125.3	127.9

Source: Own study based on Local Data Bank Statistics Poland.

To illustrate the situation in other service areas, several available service examples were selected (Tab. 4).

As can be seen, in other services addressed to the general public, usually, the number of health clinics and cinemas increased during the studied period, while the number of hospital beds and libraries decreased.

### 3.4. Services addressed to selected age groups

Given the fact that, irrespective of the direction of population changes, this usually results in an increase in the level and availability of services. Thus, a question arises: what is it like with selected types of service activities. Analyzing demographic changes, further attention will mainly be focused on services dedicated to specific age groups, namely a group of children and youth and a group of seniors.

Tab. 4. Dynamics of changes in selected service areas in cities of the Silesian Voivodeship in 1999–2019.

Specification	Dynamics of changes (1999=100)			
	Total health clinics	Total hospital beds	Libraries and their branches	Cinemas
Silesian voivodeship	314.6	90.4	88.8	79.7
Imielin	400.0	–	–	–
Orzesze	175.0	–	–	–
Wilamowice	500.0	–	–	–
Toszek	200.0	–	–	–
Bytom	184.6	70.4	64.7	100.0
Sosnowiec	281.8	77.9	90.9	200.0
Gliwice	227.8	108.2	72.0	66.7
Częstochowa	151.4	91.3	92.0	133.3
Zabrze	297.2	79.3	95.7	150.0
Katowice	355.7	101.8	97.4	160.0

Explanation: “–” the phenomenon does not occur

Source: Own study based on Local Data Bank Statistics Poland.

### 3.4.1. Services addressed to children and adolescents

As regards this group, the services are primarily educational ones. Their role is especially important because, due to legal regulations, there is an obligation to learn at an educational establishment until turning 18 years of age. Thus, every child must (with a few exceptions) attend school. So what has changed in the education system in the past two decades due to the decrease in the number of children and adolescents?

It should be noted that due to the reforms of the education system in 1999 and 2016, the types of schools changed in the studied period (lower-secondary and profiled upper-secondary schools were first introduced and then abolished), and years of learning in particular types (including primary schools and secondary comprehensive schools) also changed. Therefore, for the sake of comparability of data (full functioning of a given type of school), the periods of comparison for different types of school may slightly vary.

As already signaled earlier, the number of children and adolescents decreased. This is also visible in the decrease in the number of pupils at most types of schools. In the case of the entire Silesian Voivodeship, this is visible in the case of primary schools (a decrease in pupils by 25.9%), in lower-secondary schools (by 42.2%) and basic vocational schools (by 22.2%). On the other hand, the number of pupils increased in the case of comprehensive secondary schools (an increase by 62.9%) and technical secondary schools (by 17.7%). This is a result

of actions taken by regional authorities as well as of social expectations, signals coming from the labor market and the educational crisis in basic vocational schools (then referred to as the “hatchery of the unemployed”) that contributed to changes in the model of education (Szczepański et al. (ed.), 1999; Kłosowski, 2010). As a result, the number of pupils undertaking secondary education increased at the expense of vocational schools. The situation was similar in the studied cities (Tab. 5).

Interestingly, large drops in the number of pupils did not always affect adequate reductions in the number of institutions. This is understandable in the case of small towns where there are single establishments (Wilamowice, Toszek, Imielin), because it is difficult to liquidate the only such facility in the city, but interestingly, in many large cities there was stabilization or even a growth of their numbers. In the case of primary schools, such a situation occurred in Częstochowa, Katowice and Zabrze, while in the case of lower secondary schools in Bytom, Gliwice, Zabrze, Sosnowiec, Katowice and Częstochowa. Częstochowa is particularly noteworthy here is, as it recorded the highest increases in the number of facilities among the studied cities.

In the case of secondary schools, there was a significant increase in the number of comprehensive secondary school students and technical secondary school (Tab. 6). Two cities were characterized by a different trend, namely Katowice and Zabrze, where the number of such schools decreased (by 20.6% and 3.8%, respectively).

Tab. 5. Dynamics of changes in primary and lower secondary schools in the Silesian Voivodeship.

Specification	The dynamics of changes in primary schools in 1999–2018 (1999=100)			Dynamics of changes in lower secondary schools in 2002–2016 (2002=100)		
	Establishments	Branches	Pupils	Establishments	Branches	Pupils
Silesian voivodeship	92.2	91.6	74.1	110.0	67.3	57.8
Imielin	100.0	123.3	111.1	100.0	85.7	87.9
Orzesze	110.0	116.5	93.9	100.0	77.8	58.9
Wilamowice	100.0	121.4	89.6	100.0	60.0	42.1
Toszek	100.0	86.2	62.6	100.0	70.6	51.3
Bytom	82.9	79.4	62.6	105.0	64.7	51.3
Sosnowiec	86.3	82.3	69.3	110.0	63.5	53.7
Gliwice	90.9	88.7	71.6	108.3	64.8	55.7
Częstochowa	113.1	93.1	70.5	122.9	70.0	57.0
Zabrze	106.3	87.2	65.9	97.1	57.0	56.3
Katowice	106.5	87.9	68.1	119.0	73.1	48.9

Source: Own study based on Local Data Bank Statistics Poland.

Tab. 6. The dynamics of changes in upper secondary education.

Specification	Comprehensive secondary schools 2002–2018 (2002=100)			Technical secondary schools 2004–2018 (2004=100)			Basic vocational schools 2004–2016 (2004=100)		
	Establishments	Branches	Pupils	Establishments	Branches	Pupils	Establishments	Branches	Pupils
Silesian voivodeship	90.8	196.7	169.3	102.9	140.0	117.7	89.7	82.8	67.8
Bytom	88.9	241.7	196.1	100.0	154.8	110.0	83.3	85.7	75.1
Sosnowiec	92.9	158.0	140.4	90.0	117.2	115.9	66.7	96.4	75.5
Gliwice	100.0	202.1	183.7	180.0	290.5	232.8	62.5	85.7	38.8
Częstochowa	100.0	191.7	167.6	127.3	159.5	127.2	81.8	87.7	69.5
Zabrze	91.7	229.4	186.0	100.0	109.1	96.2	66.7	79.5	58.9
Katowice	87.0	219.8	140.4	94.7	122.6	79.4	71.4	76.2	51.8

Source: Own study based on Local Data Bank Statistics Poland.

In the smallest surveyed cities (Imielin, Orzesze, Wilamowice, Toszek), there were no upper secondary education institutions.

The situation was slightly different in the case of upper secondary education. Decreases in the number of students in basic vocational schools were accompanied by a general decrease in the number of institutions, while in technical secondary schools, the increase in the number of students was accompanied by stabilization (Bytom), growth (Gliwice, Częstochowa), as well as a decrease in the number of institutions (Sosnowiec). A similar situation was observed in the case of comprehensive secondary schools, where stabilization (Gliwice, Częstochowa) or a decrease (the remaining studied cities) in the number of institutions was observed.

A more detailed analysis indicates that local government and school authorities responded to the change in the number of students mainly by creating new or closing down classes in the existing

institutions. The increase in the number of students was usually associated with an increase in the number of classes (comprehensive secondary schools, technical secondary school), and the decrease in the number of students was accompanied by a reduction in the number of classes (primary schools, lower secondary schools, basic vocational schools). Orzesze and Wilamowice, where the decrease in the number of students was accompanied by an increase in the number of classes, are exceptions from this rule in the case of primary schools.

The situation in the case of preschool education is specific. As results from Fig. 3, also in this age group there was a decrease in the number of children (although not as significant as in the case of other age groups). Simultaneously, the number of kindergartens significantly increased (in the Silesian Voivodeship by 15%) just as the number of children attending kindergartens (an increase by 37.5%). In some cities, this growth was much higher. In Toszek, the

number of kindergartens increased by 200%, and of children attending them by 65%, while Wilamowice this was 100% and 195%, respectively. In all other analyzed cities, both of these parameters went up, with the exception of 2 cities (Imielin and Bytom), where the number of institutions decreased, but it was still accompanied by an increase in the number of children attending pre-school education (by 180% and 16%, respectively). This is a consequence of the adopted social policy aimed at fully involving children aged 3–6 years in pre-school education. Therefore, while still at the beginning of the 21st century 483 children per 1000 children aged 3–6 years attended kindergarten in the Silesian Voivodeship, in 2018 this number almost doubled (890 children per 1000). Therefore, a drop in the number of the youngest children *de facto* facilitated implementation of these guidelines without new investment activities.

While in the case of educational institutions, the decrease in the number of children and young people was not always accompanied by a decrease in the number of institutions, in the case of health care institutions addressed to children and young people, this was generally the case. This is more evident in the case of hospital pediatric wards, which in 2000 had 1,469 beds, while in 2016 their number decreased to 849 (i.e. by 42.2%). However, it is also a mark of the general trend in hospital treatment, in which the aim is to shorten the patient's stay in the hospital; hence, since there is a faster rotation of patients, some of the hospital beds prove to be unnecessary.

### 3.4.2. Services addressed to seniors

The radical increase in the number of seniors translates into the development of specialized facilities aimed at the elderly. These are primarily medical services – especially geriatric ones, various types of care and treatment facilities and retirement homes.

In the case of geriatrics, which treats diseases of the old age, the number of geriatric wards and beds in them significantly grew. In 2000, there were 157 beds in the voivodeship, while in 2018 their number rose to 368 in 15 hospital geriatric wards, which gives 0.8 beds per 10,000 population (one of the best results in the country). However, it should be noted that not all, even large, cities have such wards. Among the surveyed cities, there are none such wards in Bytom, Gliwice and Zabrze. In addition, there are 16 geriatric clinics mainly located in the largest cities of the region, i.e. in Katowice, Sosnowiec and Częstochowa. Thus, despite favorable trends, the availability of this type of services for residents, even in large cities, is not the best.

The number of nursing and care facilities, care and treatment facilities, hospices and palliative medicine wards is growing dynamically. In 2000, there were 10 such wards in Silesia, while in 2018 their number increased to 86. Simultaneously, these wards raised the number of beds 16-fold from 309 (in 2000) to 5,062 (in 2018). Undoubtedly, this increase does not yet meet all the demands of the region (one still needs to wait for admission to these facilities), but it has significantly mitigated them.

There is no doubt that the number of retirement homes increased the most dynamically. Social changes taking place in Silesian families, the departure from multigenerational families, and at the same time the progressive ageing of the population raise the demand for retirement homes. Therefore, it is no wonder that their number is growing rapidly. They are present in virtually all cities, and a large number of them are also located in the countryside. Simultaneously, in addition to public institutions, the number of private institutions is growing as well. There are several such facilities in large cities. Most of them are in Katowice (7 establishments), Zabrze and Częstochowa (6 each), Bytom and Sosnowiec (4 each) and Gliwice (3).

In addition to the development of the infrastructure aimed at seniors, the scope of programs and activities of a social nature has radically increased as well. Today, a senior is not only a person caring for grandchildren and practically staying mainly in their own apartment, but more and more often it is a person actively participating in various manifestations of social life. Among others, it is so thanks to new initiatives with a constantly expanding scope that are addressed to this group. This applies both to initiatives that have been present for a long time but are becoming more popular (e.g. Universities of the Third Age), as well as emerging new ones. This is also the case of initiatives at the national level (government initiatives regarding the activity of older people such as "Senior plus", "Program for the social activation of older people – ASOS") and at the regional one ("Silesian Senior's Card", "Silesia for the senior", "Charter of life") or local ones. Almost all municipalities (96%) provided social services addressed to the elderly, including programs activating this group of people (Regional..., 2019). Institutionally, educational, health and cultural establishments are at the forefront. These include, above all, various types of courses and workshops, including foreign language courses, computer courses, healthy eating, dance classes, etc.

Universities of the Third Age (UTW), which started operating in the region in 1982 (University of the Third Age of the University of Silesia), have a long

tradition. Until 1999 only the University of the Third Age in Częstochowa operated here. Proper development took place in the 21st century, when the number of these facilities grew in Katowice (up to 2) and Częstochowa (up to 3), and new ones were established in Bytom, Gliwice, Sosnowiec and Zabrze.

#### 4. Discussion

It seems that the simple consequence of a decrease in the population of the Silesian Voivodeship, and hence the consumers of services, should be a decrease in the level of development of this sector of the economy. The material presented in the article indicates that the situation is much more complex. It is true that this is indeed the case for certain types of services, but there are also different situations, i.e. a stabilization or even an increase in the level of development of services. So what could be the reasons for this? This seems to be largely due to the ever-increasing demand for services in the region. On the one hand, the Silesian Voivodeship is still undergoing significant structural changes in the economy. The role of industry is decreasing for the benefit of services, hence the increase both in the number of service employees and in the number of business entities registered in the REGON system. In comparison to the leading voivodships of Poland, this sector still shows some underdevelopment in the Silesian Voivodeship (Kłosowski, 2021). It is enough to mention that the Silesian Voivodeship with 234 service employees per 1000 inhabitants is ranked only 6th in the country, while in the leading Mazovian Voivodeship these are 347 persons, in the Lower Silesian Voivodeship – 250, and in the Lesser Poland Voivodeship and the Greater Poland Voivodeship – 248 each. It is also lower than the national average (239). Thus, there is still a great potential for development in the Silesian Voivodeship. On the other hand, the decline in the number of inhabitants is overcompensated by the increasing economic level and standard of living of the inhabitants, which generates an increased demand for services, including new ones. It is enough to mention that during the research period the average monthly gross salary increased by approx. 150%, which is well above the level of inflation for this period.

As regards individual cities, attention should also be paid to the different socio-economic policies of individual local governments, which differently respond to the occurring changes, which, however, is strongly related to their financial capabilities. The attitude of local communities is also important. The process of closing down some institutions (including

schools) usually meets with harsh protests of residents, hence the municipalities, which are the administrator of a large part of services, try (if their financial situation allows it) to limit unpopular decisions on liquidation of institutions. Thus, despite the decrease in the population, there is no “automatic” closing down of facilities. However, relatively large population declines (at the level of several percent) and a difficult socio-economic situation may contribute to a decline in services, especially in some groups. The best example is Bytom, which after 1989 is experiencing a very difficult period (Sobalagwosdz (ed.), 2010; Krzysztofik et al., 2011, 2012). As a consequence, this city showed a regression of services in relation to 1999 in most of the measures adopted for this analysis. To a lesser extent, this also applies to Sosnowiec. On the other hand, we have the example of Toszek with a similar decline in the population, where related trends did not take place. This is because here we can observe the stabilization of the level of certain services, or even their slight increase. However, it should be noted that Toszek is a small city (3,500 inhabitants); therefore, in many cases, there are single operating service facilities, and their liquidation would completely deprive the city of this type of services. Hence, as a rule, authorities do not make such drastic decisions and take alternative measures aimed at, for example, reducing their running costs.

As a rule, cities with an increase in the population were also characterized by an increase in the level of services, although in some areas we also have a stabilization of their level. However, these are primarily small cities with basic services.

However, the situation is very interesting in the case of services addressed to the age groups of the population in which the greatest changes occurred. Thus, despite large decreases in the number of children and adolescents, not only decreases in the number of institutions (e.g. basic vocational schools), but also their increases were recorded. Częstochowa is a good example, where the number of primary school pupils decreased by 29.5%, while the number of primary schools increased by 13%; similarly, in the case of lower secondary schools, the decrease in the number of pupils by 43% was accompanied by a 22.9% increase in the number of institutions. Undoubtedly, these actions resulted in a substantial improvement in the conditions of education.

By contrast, a significant increase in the number of pupils in comprehensive secondary schools caused a certain decrease in the number of institutions or, at most, their stabilization. However, in this case, it can be seen that the situation in comprehensive secondary schools (and technical secondary

schools) was regulated not by creating new facilities, but by adding the number of classes within the existing schools.

The increase in the number of seniors has influenced the dynamic development of facilities and infrastructure addressed to this group, which is constantly being enriched. As regards these services, one can observe an increasing activity of private entities. Simultaneously, one can observe a significant expansion of the service offer addressed to the elderly through implementation of various social programs of a local nature (they occur in virtually all cities).

## 5. Conclusion

The aim of this article was to show the impact of demographic changes on the situation in services of the Silesian Voivodeship and its selected cities. The presented material does not allow defining the nature of this impact unambiguously. The decrease in the population in the voivodship and in most of its cities does not cause an automatic reduction in the level of development of services. Although, of course, such cases do occur. In many cases, we observe stabilization or even an increase in the level of services. This also applies to their types which are addressed to people of pre-working age, i.e. the group with the largest regression. On the other hand, the dynamic increase in the number of seniors results in a significant increase in institutions and social programs addressed to them, although there is no doubt that services addressed to the elderly do not fully meet the needs of this group of residents today, and taking into account demographic forecasts, they must still show high dynamics of development in the coming years.

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