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SOCIO-ECONOMIC DEVELOPMENT OF COASTAL HEALTH RESORT COMMUNES IN POLAND

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Abstract

The health resort communes have a significant impact on the functioning of the local government. On the one hand, they enhance the development of tourism, but on the other hand, they inhibit the development of other branches of economy. The aim of the study is to compare and point out the developmental trends in the coastal health resort communes, which may provide conclusions on how their health and spa functions affect their development. The subject of the research is the socio-economic situation of six communes including four located on the coast in the West Pomerania Province and two located on the coast in the Pomerania Province. To evaluate the socio-economic situation, the synthetic indicator method was applied involving pointer variables available in Polish public statistics. The measurements were taken in three categories: human and social capital, material capital as well as financial and economic capital. Depending on the data availability, the time period of some indicators was adjusted to their occurrence. The main time period under research are the years 2000–2020.

Key words

coastal communes, health resorts, socio-economic development, synthetic index, Poland.

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1. Introduction

Health resorts as places where specialist activities are conducted have been a subject of interest to researchers and practitioners analyzing various aspects of their functions (Rydz (ed.), 2005; Sikora, 2014, Szromek (ed.), 2010, 2012; Zajączkowski, Cegliński, 2018).

Research around the world confirms the unique nature of these areas. Authors discuss the healing properties of natural resources and their use (Krisciūnas, 2005; Malkhazova et al., 2022), the economic potential of spa services (Halkiv, 2017), marketing and classification (Benett et al., 2004), transformation and development (Boekstein, 2014), or even the role of health resorts in the COVID-19

epidemic crisis) (Szromek, 2021). It seems especially important to determine the state and perspectives of health resorts operating in certain legal space and market economy (Cieślak, 2014; Dryglas, Golba, 2017; Globa, 2009; Grzegorzewska-Mischka, 2011; Januszewska, 2015; Lewandowska, 2007; Madeyski, 1999; Peter-Bombik, 2012). Therefore, determining the social and economic potential of health resorts constitutes the basis to develop a concept of development of such areas (Baran-Zgłobicka, 2015; Górna, 2013; Mirek, 2012; Soliński, 2012). However, in a wider view, the impact of health resorts and tourism on the social and economic local development is reflected in the strategic documentation of local governments and constitutes a subject of scientific research both in Poland and abroad (Bański, Więckowski, 2014; Cristian-Constantin et al., 2015; Kasagrandá, Gurnák, 2017; Kesar, Rimac, 2011; Kurek et al., 2020; Nestorenko et al., 2017).

The aim of the study is to compare and point out the developmental trends in the coastal health resort communes, which may provide conclusions on how their health and spa functions affect their development. The subject of the research is the socio-economic situation of six communes including four located on the coast in the West Pomerania Province and two located on the coast in the Pomerania Province.

From the legal point of view, a health resort is an area where health resort treatment is provided and which has been designated to take advantage of and protect the natural resources with healing properties (Gaworecki, 2003). Obtaining the status of a health resort is a condition necessary to be allowed to function as a statutory health resort (Mika, Ptaszycka-Jackowska, 2007). The issue of health resorts, their functions and rendered services are specified by the following normative acts (Królak, 2021):

- the Act of 28 July, 2005 on healing treatments and health resorts as well as health resort protection areas and communes (Ustawa..., 2005).
- the Polish Standard PN-2001/Z-11000 Health Resorts. Terminology, classification and general requirements (Polska..., 2001).

According to the regulations of the Act of 28 July, 2005 (Ustawa..., 2005), a statutory health resort is an area, which has been granted the status of the health resort in the manner specified in the Act (Ustawa..., 2005, art. 2, item 2). Such a status may be granted to an area, provided it meets all the following requirements (Ustawa..., 2005, art. 34, item 1):

1. It has natural healing resources of confirmed healing properties under the terms of the Act;
2. It has climate with confirmed medicinal properties under the terms of the Act;
3. It has health resort enterprises and spa treatment facilities prepared to implement curative services;
4. It fulfills the environment protection requirements specified in the regulations;
5. It has the technical infrastructure for water and sewage, energy, mass transport and waste management.

The study refers to those communes which were granted the status of health resorts and are located on the Baltic Sea coast. According to the classification of Statistics Poland (GUS, 2011), statutory coastal resorts are those located within 3 km from the sea shore. There are statutory health resorts in the Pomerania Province (2) and the West Pomerania Province (4). These are: Sopot, Ustka, Dąbki, Kołobrzeg, Kamień Pomorski and Świnoujście (Tab. 1, Fig. 1).

Tab. 1. List of coastal health resort communes including the health resort area in Poland in 2020.

Name of the health resort	Commune	Area of the health resort
Dąbki	Darłowo rural commune	Villages: Dąbki, Bobolin, Bukowo Morskie, Porzeczce, Żukowo Morskie – 6113.5 ha
Kamień Pomorski	Kamień Pomorski urban-rural commune	Villages: Żółcino, precincts 1-7 in the area of Kamień Pomorski – 1994.53 ha
Kołobrzeg	Kołobrzeg urban commune	Town borders – 2567 ha
Sopot	Sopot town with county rights	Sopot town area - 1723 ha
Świnoujście	Świnoujście town with county rights	Health resort area – 956.27 ha A part of Uznam island
Ustka	Ustka urban commune	The town and 5 villages of Ustka commune: Lędowo, Wodnica, Przewłoka, Grabno-Zimowiska, Wytowno – 6899.34 ha

Source: own study based on health resort statutes.

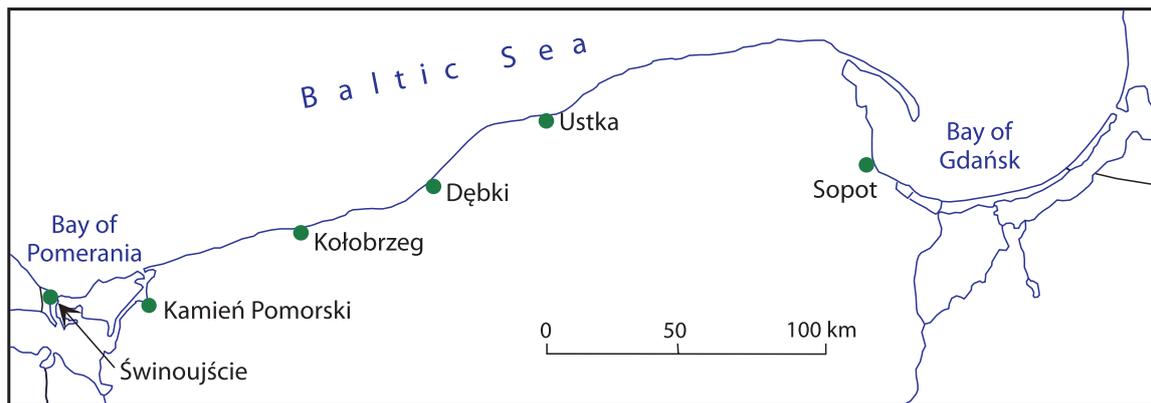


Fig. 1. Map of coastal health resort communes in Poland in 2020.

Source: own study based on Tab. 1.

2. Data and Methods

The analysis of the socio-economic situation of the coastal communes holding the status of health resorts in Poland was made on the basis of the synthetic indicator developed with the data available in the public statistics of the Statistics Poland – Local Data Bank (Local..., 2022). The analysis of most of the indicators was carried out in the time period of 2000–2020. Depending on the data availability, the time period of some indicators was adjusted to their occurrence (e.g. the European Union funds for programs and projects per capita where data are available since 2010). Also, certain inaccuracy of the Polish statistics must be emphasized especially those concerning the population, which results from the fact that part of the foreign and internal migration had not been registered (Michalski, 2014; Sakson, 2002; Śleszyński, 2005; Wiśniewski et al., 2020). Moreover, T. Michalski and W. Szymańska (2017) distinguished 5 groups of problems concerning the analysis of legacy statistical data, i.e. statistical data timing (delay or longer than one year period of collecting data), low specificity or high specificity of the process, problems with unequivocal definitions of indicators (fluctuations in the period of defining, classifying and interpreting the data), problems with delimitation of units (changes to the territorial divisions, different units collecting data for different institutions) and the human factor. Despite all the difficulties, the analysis made on the basis of public data reflects the changes that have taken place over the years.

Thanks to the applied method, the differences in the sizes of health resorts measured by the number of their residents and their economic potential were basically eliminated by using relative measures. The measurements were taken in three categories:

1. Human and social capital, which constitutes a crucial factor enhancing local development;
2. Material capital, which describes the elements of infrastructure related to the living conditions and life quality of the inhabitants dependent on the economic situation;
3. Financial and economic capital related to the financial and economic situation of the health resort communes and including indicators describing the level of changes in the development of tourism and health resort activity.

23 indicators were applied in total, 10 of which described the human and social capital, 4 indicators described the material capital and 9 indicators described the financial and economic capital (Tab. 2).

The synthetic indicator procedure applied in the study required standardization of diagnostic criteria due to the fact that the data in a multidimensional matrix were in various measurement units. Therefore, the diagnostic criteria were transformed into such a form where the range of their variability had a fixed length of 1 with the method of unitarization according to the following formula (Młodak, 2006):

$$\text{for stimulants } Z_{ij} = \frac{x_{ij} - \min x_{ij}}{\max x_{ij} - \min x_{ij}} ;$$

$$\text{for destimulants } Z_{ij} = \frac{\max x_{ij} - x_{ij}}{\max x_{ij} - \min x_{ij}} ;$$

where:

Z_{ij} – standardized value of criterion x_i ,

$\min x_{ij}$ – minimum value of criterion x_i ,

$\max x_{ij}$ – maximum value of criterion x_i .

The value of the synthetic indicator is the arithmetic mean for such standardized criteria of each place.

Tab. 2. Indicators characterizing the social and economic situation of the coastal health resort communes.

The area	The name of the indicator
Human and social capital	Demographic potential: <ul style="list-style-type: none"> the dynamics of the population changes compared to the previous year (%); population growth per 1000 inhabitants – average level; migration balance per 1000 inhabitants – average level; indicator of population aging – the number of inhabitants aged 65 and older per 100 inhabitants up to 14 years of age – the dynamics of changes in relations to the previous year (%).
	Social potential: <ul style="list-style-type: none"> educational level of council members – percentage of council members holding an academic degree; share of social foundations, associations and organizations in the total number of national economic entities (%).
	Labor market: <ul style="list-style-type: none"> the number of employed people per 1000 inhabitants – average level; registered unemployment rate – the number of unemployed people per 1000 working-age population – average level; the number of economic entities per 1000 working-age population – average level; natural persons conducting economic activity per 1000 inhabitants – average level.
Material capital	Social infrastructure: <ul style="list-style-type: none"> number of apartments per 1000 inhabitants - the dynamics of the changes compared to the previous year (%); usable floor area per capita – average level.
	Technical infrastructure <ul style="list-style-type: none"> expenditure on municipal economy and environmental protection per capita – average level; share of people using the sewage network (%) – average level.
Financial and economic capital	Public finances: <ul style="list-style-type: none"> the commune income per capita – the dynamics of increase/decrease compared to the previous year (%); share of the commune's own income in the budget – average level; share of the investment spending in total spending – average level; the European Union funds per capita to finance programs and projects – average level.
	Tourism: <ul style="list-style-type: none"> total tourist accommodation (as in VII) per 1000 inhabitants – average level; expenditure per capita in department 630 – Tourism – average level.
	Health resorts: <ul style="list-style-type: none"> accommodation (as in VII) in health and spa establishments per 1000 inhabitants – average level; expenditure per capita in department 851 – Health protection – average level; share of newly registered entities in medical sector in the total number of economic entities – average level.

Source: own study.

3. Results and Discussion

3.1. Health resort traditions of coastal communes in Poland

Coastal health resort communes in Poland (excluding Dąbki health resort) have a long history and tradition connected with the development of health resort treatment dating back to the beginning of the 19th century (20th c. pre-war Ustka, 20th c. post-war Sopot) (Tab. 3) Kołobrzeg, Kamień Pomorski and Świnoujście were the first to be granted the status of statutory health resorts as early as in 1967 by order of the Minister of Health and Social Welfare of 25 July 1967 on the list of localities recognized as health

resorts (Zarządzenie..., 1967). The following places were granted the status of health resorts later: Ustka in 1988, Sopot in 1999 and Dąbki in 2007. However, all of them had been receiving visitors arriving to relax at the sea and take advantage of the medicinal properties of the sea climate.

Not all the health resort communes have the same natural conditions to be used in health resort treatments. Having natural resources and a climate with medicinal properties are necessary conditions (Ustawa..., 2005, Art. 34, item 1). However, in the past, creating health resort houses, therapeutic stays and brine baths establishments provided a basis for shaping and developing health resort treatment

Tab. 3. Health resort traditions of coastal communes in Poland.

Name of the health resort	Commune	Health resort traditions Health resort status
Dąbki	Darłowo rural commune	1920s – holiday makers, sanatorium of the Berlin Health Fund 2007 – health resort status
Kamień Pomorski	Kamień Pomorski urban-rural commune	1876 – discovery of brine and peat deposits 1882 – the first brine baths establishment “Fenix” 1967 – health resort status
Kołobrzeg	Kołobrzeg urban commune	1803 – the first sea baths establishment 1830 – the first brine baths establishment 1882 – the beginning of peat treatments 1967 – health resort status
Sopot	Sopot town with county rights	1823 – the first baths establishment 1824 – the first Spa House 1999 – health resort status
Świnoujście	Świnoujście town with county rights	1822 – setting up the Association of Building a Sea Baths Establishment 1823 – the first season for health resort patients 1826 – the first therapeutic baths 1967 – health resort status
Ustka	Ustka urban commune	1832 – arrivals to relax at the sea 1911 – the first balneology establishment 1988 – health resort status

Source: own study based on GUS (2011).

Tab. 4. Natural medicinal resources and climate factors applied in health treatments in coastal health resorts in Poland.

Name of the health resort	Commune	Natural medicinal resources; Climate factors
Dąbki	Darłowo rural commune	Natural resources: peloids - low-type peat deposits. Climate factors: “harsh” marine climate rich in iodine and strong cooling stimuli attenuated by large forest areas.
Kamień Pomorski	Kamień Pomorski urban-rural commune	Natural resources: mineral waters — sodium chloride, iodine; peloids - low-type peat deposits. Climate factors: marine climate, moderated and attenuated by dense forest areas.
Kołobrzeg	Kołobrzeg urban commune	Natural resources: mineral waters — sodium chloride, iodine, chalybeate; peloid - low-type peat deposits. Climate factors: marine climate strongly stimulating, clean non-allergenic air, sea aerosols rich in iodine, essential oils and bromine contents, favorable thermal and humidity conditions.
Sopot	Sopot town with county rights	Natural resources: — sodium chloride water (brine), iodine water. Climate factors: marine climate rich in high iodine and essential oils content from coniferous forests.
Świnoujście	Świnoujście town with county rights	Natural resources: sodium chloride, iodine, chalybeate waters; peloid deposits. Climate factors: marine climate gently stimulating, moderated by coniferous forest areas and parks.
Ustka	Ustka urban commune	Natural resources: sodium chloride (brine), iodine, chalybeate waters, hypothermal waters, peloids – low-type and transitional peat deposits. Climate factors: marine climate rich in iodine, calcium salts, magnesium moderated by forest areas (pines).

Source: own study based on health resort statutes.

with the use of natural resources in those places (Tab. 4).

The coastal health resorts operate on the basis of peloids and brine water. Only Dąbki does not have any medicinal waters. In the case of coastal communes, it is particularly important to take advantage of the marine climate which is usually strongly stimulating, rich in iodine but often attenuated by forest areas (Tab. 4).

As far as health resort activity is concerned (in accordance with Ustawa..., 2005, Art.13 item 1), health resorts usually base their activities on 6–7 groups of diseases (Tab. 5). Kołobrzeg and Świnoujście are the only health resorts that offer a wider range of services (11 groups of diseases). All the described health resort communes offer treatment for orthopedic and traumatic diseases, neurological system diseases (excluding Dąbki health resort), rheumatic

diseases, cardiovascular diseases and high blood pressure, diseases of the upper and lower respiratory tract (excluding Sopot which only offers treatment for lower respiratory tract diseases). Some health resorts specialize in treating other diseases for instance, Dąbki, Kołobrzeg, Świnoujście and Ustka health resorts specialize in endocrine diseases; Kołobrzeg, Sopot and Świnoujście specialize in osteoporosis; Kołobrzeg and Świnoujście specialize in obesity and skin diseases; Kołobrzeg also specializes in treating women's diseases.

Apart from differences in terms of the area and profile, the communes under analysis are not homogeneous in terms of the population: Sopot, Kołobrzeg and Świnoujście are medium-size towns, Ustka and Kamień Pomorski are small towns, while Dąbki is a place located in a rural commune (Tab. 6). Those facts make the social and economic

Tab. 5. Health resort activity of coastal health resorts in Poland in 2020.

Name of the health resort	Commune	Health resort activity
Dąbki	Darłowo rural commune	Orthopedic and traumatic diseases, rheumatic diseases, cardiovascular diseases and high blood pressure, diseases of the upper respiratory tract, diseases of the lower respiratory tract, endocrine diseases.
Kamień Pomorski	Kamień Pomorski urban-rural commune	Orthopedic and traumatic diseases, rheumatic diseases, cardiovascular diseases and high blood pressure (including rehabilitation), diseases of the lower respiratory tract, neurological system diseases and children's diseases: cardiovascular diseases, diseases of the upper and lower respiratory tract.
Kołobrzeg	Kołobrzeg urban commune	Orthopedic and traumatic diseases, neurological system diseases, rheumatic diseases, cardiovascular diseases and high blood pressure, diseases of the upper respiratory tract, diseases of the lower respiratory tract, diabetes, obesity, endocrine diseases, osteoporosis, skin diseases.
Sopot	Sopot town with county rights	Orthopedic and traumatic diseases, neurological system diseases, rheumatic diseases, cardiovascular diseases and high blood pressure, diseases of the lower respiratory tract, osteoporosis.
Świnoujście	Świnoujście town with county rights	Orthopedic and traumatic diseases, neurological system diseases, rheumatic diseases, cardiovascular diseases and high blood pressure, diseases of the upper respiratory tract, diseases of the lower respiratory tract, obesity, endocrine diseases, osteoporosis, skin diseases, women's diseases.
Ustka	Ustka urban commune	Orthopedic and traumatic diseases, neurological system diseases, rheumatic diseases, cardiovascular diseases and high blood pressure, diseases of the lower respiratory tract, endocrine diseases.

Source: own study based on health resort statutes.

Tab. 6. Population in coastal health resort communes in 2000 and 2020.

Health resort	2000	2020
Ustka	16,419	15,199
Sopot	42,348	35,286
Kamień Pomorski	14,485	14,217
Kołobrzeg	45,107	46,198
Dąbki (Darłowo commune)	7,470	7,965
Świnoujście	42,207	40,948

Source: Local Data Bank.

development of each of the places have completely different backgrounds; therefore, they show elements of distinctiveness.

3.2. Human capital in coastal health resort communes in Poland

The human capital was defined on the basis of the demographic and social potential of the communities under study. Each of them constitutes a significant factor of developmental opportunities understood in social, economic and cultural categories.

The demographic potential¹ of the health resort communes under study undoubtedly shows stable population dynamics; however, it must be emphasized that there is a visible depopulation trend especially in the second sub-period i.e., the years 2010–2020. In the first decade, Sopot and Świnoujście experienced a population decline. The situation significantly worsened in the majority of the coastal health resorts in the second decade under study, and apart from Darłowo all the other resorts recorded a population decrease. The final balance for the years 2000–2020 shows a stagnating population situation of the coastal health resorts and depopulation as the predominant trend (Tab. 7).

The rate of population aging points to the aging of the population in all the resorts under study. The lowest average dynamics of that rate characterized Sopot, which has the oldest age structure compared to the others. The lowest average dynamics of aging was also recorded in Darłowo commune, which is the only one to represent rural areas. On average, the other health resort communes have shown an increase in the share of the oldest population

compared to children (aged 0–14) by about 6% annually in the last 20 years.

A similar situation occurs with regard to the average natural birth rate. It is negative and shows a population decrease, which is the highest in Sopot. The average birth rate is positive only in Darłowo in the years under study.

Equally negative trends are visible in the average migration balance. Over the years, the average rate was positive only in Darłowo and Świnoujście. However, Ustka and Sopot recorded the biggest population losses.

In general, the indicator of demographic potential was the most favorable in Darłowo commune, and it was the lowest in Ustka and Sopot (Fig. 2). All the more favorable indicators under analysis exerted an influence on the favorable demographic potential compared to the other coastal health resort communes: relatively high population dynamics, low population aging dynamics, positive average birth rate and migration balance. Quite the opposite situation occurred in Sopot where the only favorable indicator was the population aging rate. However, it should not be overestimated due to exceptionally old age structure of the population of that town.

Social potential was related to the measurement of shaping social awareness and the general level of social development of the local communities which influence local development (Tab. 8, Fig. 3).

In this respect, the variables point to a clear dominance of Sopot as a town with a community that is well-shaped, aware and striving to achieve the specified objectives. Both the share of people holding an academic degree and prepared to make decisions about the town and a larger share of non-profit organizations than in the other resorts point to an undoubtedly high level of social capital in this town.

Darłowo commune has the lowest average share of its council members holding an academic degree. However, it also reports a kind of resilience of local communities as it takes the second place in terms of NGO's share in the total number of economic entities.

In all the coastal health resort communes, the civic society awareness has been on the increase as the indicators are clearly more favorable in the years 2010–2020 than in the previous years. In this respect, Ustka is an exception as there has been a decrease in the average share of people holding an academic degree among the town's council members.

Another area defining the human and social capital is the labor market. It defines social engagement in the economic development and a conscious shaping of material capital through own entrepreneurship (Tab. 9, Fig. 4).

¹ From 1999 to 2009, (according to the administrative division of 31 XII), the balance of population size and structure was calculated on the basis of results of the National Census (NSP)-2002. Since 2010, the basis for calculating the balance of the population size and structure have been the results of NSP-2011. As there is no balance of population registered for permanent residence any more, the methodology of calculating all demographic ratios has changed and individual demographic and migration facts were related to the population (formerly referred to as "current status - resident"). The balance sheet data for permanent and actual population and the rates for 2010 based on the data of NSP 2002 have a historical value only. The balance sheet data of the population for 2010 was prepared according to the administrative division valid on 1 I 2011. However, due to the specificity of the Local Data Bank, they were calculated according to the administrative division of the country valid on 1 I 2010 (excluding changes that do not affect the indicators and names of the administrative units of the country's territorial division), which results in the difference between the data published in the GUS studies.

Tab. 7. Indicators characterizing the demographic potential in the coastal health resort communes in Poland in the years 2000–2020.

Commune	Demographic potential		
	2000–2010	2010–2020	2000–2020
	Average population dynamics (%)		
Ustka	100.06	99.18	99.62
Sopot	99.15	99.04	99.09
Kamień Pomorski	100.15	99.67	99.91
Kołobrzeg	100.44	99.81	100.13
Darłowo (Dąbki health resort)	100.60	100.05	100.32
Świnoujście	99.83	99.87	99.85
	Average dynamics of the population aging rate (%)		
Ustka	105.23	107.23	106.23
Sopot	103.63	102.17	102.90
Kamień Pomorski	105.04	106.30	105.67
Kołobrzeg	105.93	105.53	105.73
Darłowo (Dąbki health resort)	101.74	105.48	103.61
Świnoujście	106.32	104.93	105.63
	Average birth rate (‰)		
Ustka	0.23	-3.59	-1.68
Sopot	-5.22	-5.81	-5.52
Kamień Pomorski	0.44	-3.29	-1.43
Kołobrzeg	0.85	-2.17	-0.66
Darłowo (Dąbki health resort)	1.71	0.14	0.93
Świnoujście	-1.20	-3.77	-2.49
	Average migration balance (‰)		
Ustka	-3.25	-4.76	-4.00
Sopot	-4.72	-2.95	-3.84
Kamień Pomorski	-1.32	-0.90	-1.11
Kołobrzeg	-2.19	0.29	-0.95
Darłowo (Dąbki health resort)	1.77	0.33	1.05
Świnoujście	-1.23	1.63	0.20

Source: own study based on Local Data Bank.

Tab. 8. Indicators characterizing the social potential in the coastal health resort communes in Poland in the years 2000–2020.

Commune	Social potential		
	2000–2010	2010–2020	2000–2020
	Average level of town council members holding an academic degree (%)		
Ustka	71.75	58.00	64.88
Sopot	97.31	98.52	97.92
Kamień Pomorski	58.31	72.67	65.49
Kołobrzeg	66.45	80.24	73.34
Darłowo (Dąbki health resort)	9.94	38.00	23.97
Świnoujście	69.42	73.69	71.56
	Average share of NGO's in the number of economic entities (%)		
Ustka	1.73	2.52	2.17
Sopot	3.03	4.00	3.57
Kamień Pomorski	1.53	2.61	2.13
Kołobrzeg	1.24	2.36	1.86
Darłowo (Dąbki health resort)	2.84	3.88	3.42
Świnoujście	1.21	1.78	1.53

Source: own study based on Local Data Bank.

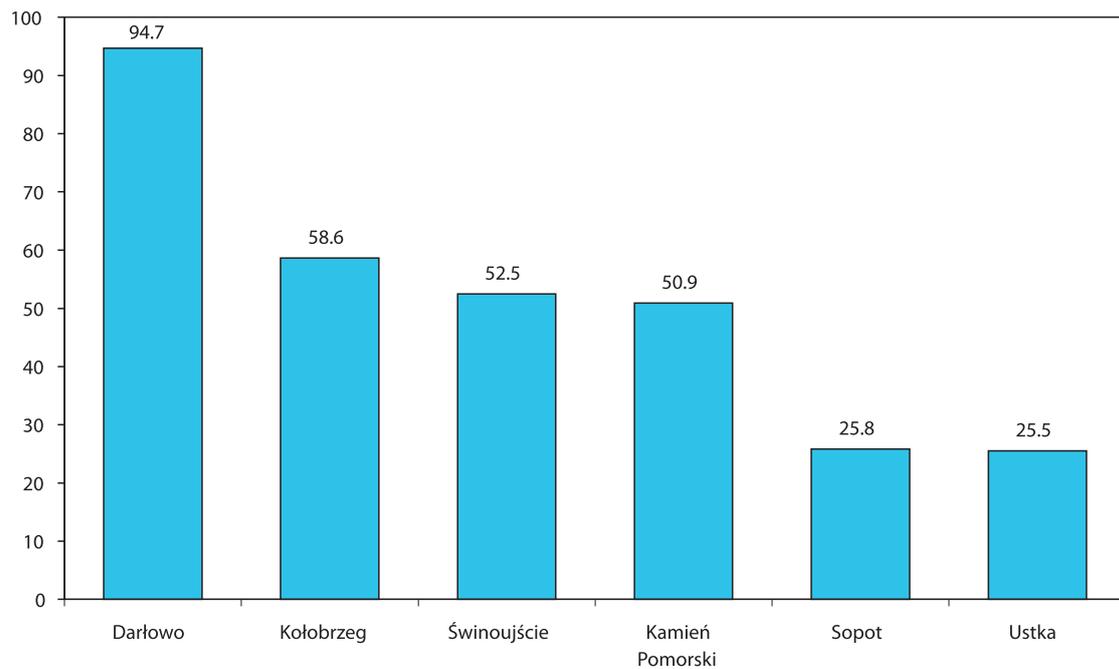


Fig. 2. The synthetic indicator of the demographic potential in the coastal health resort communes in Poland in the years 2000–2020.

Source: own study.

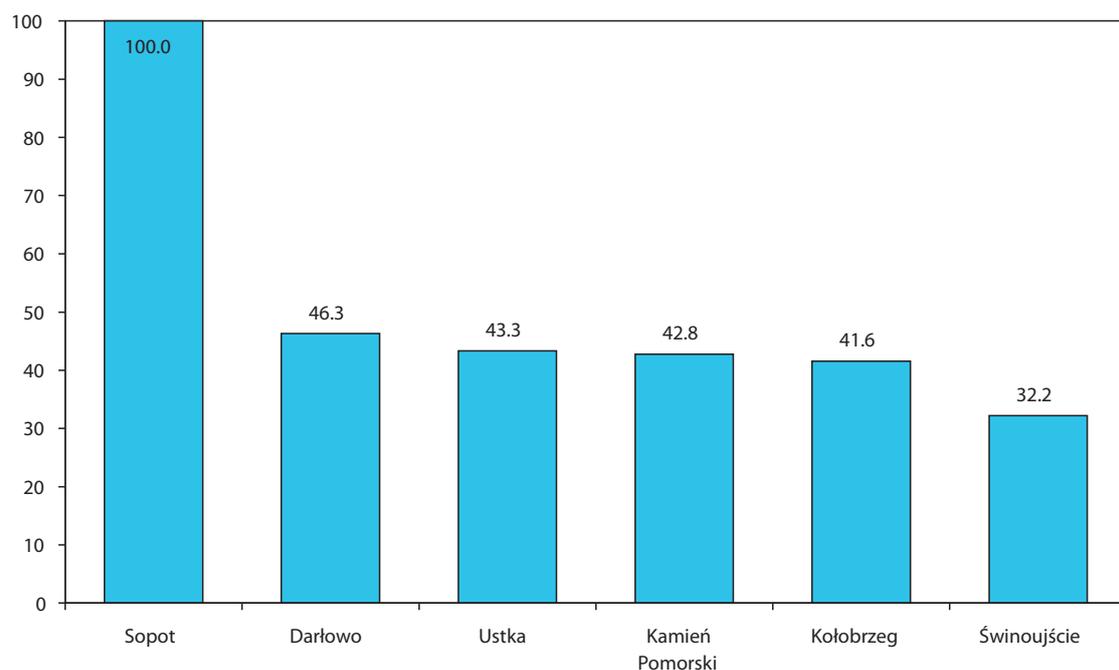


Fig. 3. The synthetic indicator of the social potential in the coastal health resort communes in Poland in the years 2000–2020.

Source: own study.

Sopot deserves attention in this respect as it has a well-developed labor market, low average unemployment rate, the best developed sphere of economic activity and entrepreneurship on average. However, Kołobrzeg showed the highest average number of natural persons running their own economic activity per 1000 inhabitants.

The worst situation connected with the labor market is in Darłowo commune where all the indicators compared with the other health resorts are the worst on average. In general, Sopot, then Kołobrzeg and Świnoujście have the best labor market. Unfortunately, apart from Darłowo commune, also Kamień Pomorski and Ustka have poor labor market where

Tab. 9. Indicators characterizing the labor market of the coastal health resort communes in Poland in the years 2000-2020.

Commune	Labor market		
	2000–2010	2010–2020	2000–2020
	Average dynamics of employed people per 1000 inhabitants (%)		
Ustka	99.00	99.15	99.08
Sopot	102.29	101.60	101.94
Kamień Pomorski	100.21	99.43	99.82
Kołobrzeg	99.98	99.73	99.86
Darłowo (Dąbki health resort)	101.24	100.22	100.73
Świnoujście	97.65	100.92	99.28
	Average unemployment rate per 100 working-age population (%)		
Ustka	9.38	5.31	7.12
Sopot	3.64	2.69	3.12
Kamień Pomorski	14.71	9.48	11.80
Kołobrzeg	8.02	4.03	5.80
Darłowo (Dąbki health resort)	16.47	9.66	12.69
Świnoujście	8.12	3.79	5.71
	Average number of economic entities per 1000 inhabitants (‰)		
Ustka	232.68	230.74	231.60
Sopot	306.86	406.55	362.24
Kamień Pomorski	202.24	226.38	215.65
Kołobrzeg	312.68	293.27	301.89
Darłowo (Dąbki health resort)	118.89	148.59	135.39
Świnoujście	245.53	253.21	249.79
	Average number of natural persons running their own economic activity per 1000 population (‰)		
Ustka	121.44	99.20	109.74
Sopot	111.00	126.60	119.21
Kamień Pomorski	106.78	104.60	105.63
Kołobrzeg	164.44	129.40	146.00
Darłowo (Dąbki health resort)	62.56	76.10	69.68
Świnoujście	132.67	119.70	125.84

Source: own study based on Local Data Bank.

the value of the partial synthetic indicators does not exceed 40%.

In general, Sopot has the biggest potential in terms of human and social capital (Fig. 5). Despite unfavorable demographic trends, it is a health resort with a very high social potential and developmental opportunities. Kołobrzeg and Świnoujście are also very well developing resorts. Although this indicator in all the three towns was similar in the years 2000–2010, Sopot clearly gained an advantage over the others in the next decade.

3.3. Material capital of the coastal health resort communes in Poland

Material capital refers to the investment which enables satisfying social needs and influences the opportunities of economic development including

economic activity and entrepreneurship. The study describes it on the basis of social and technical infrastructure.

The social infrastructure was defined only on the basis of the housing market which seems convenient and willing to improve the housing conditions for living in a health resort with developmental potential (Tab. 10, Fig. 6).

In this respect, Kołobrzeg is an outstanding town. It has the highest dynamics of its housing resources (Świnoujście is the next) which makes it a very friendly place to live despite giving way to Sopot in terms of the comfort (i.e. average usable floor area of apartments per capita).

Both indicators point to the worst situation in Kamień Pomorski, where there has been a visible increase in the housing resources and the average

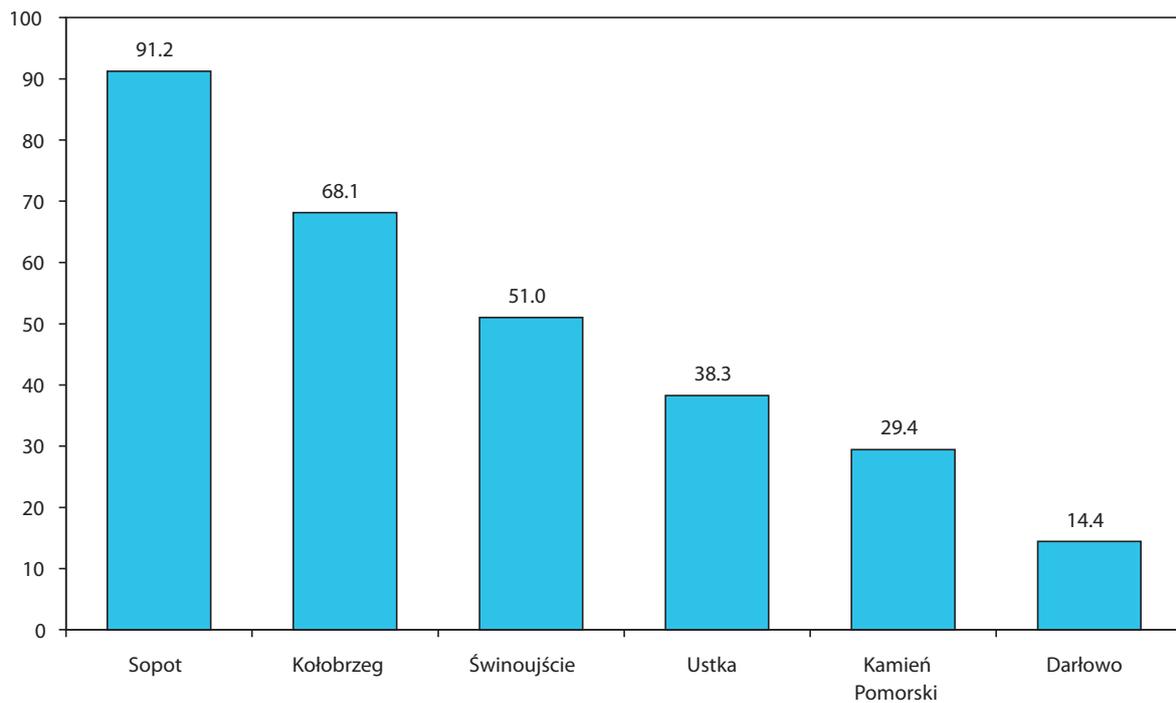


Fig. 4. The synthetic indicator of the labor market potential of the coastal health resort communes in Poland in the years 2000–2020.

Source: own study.

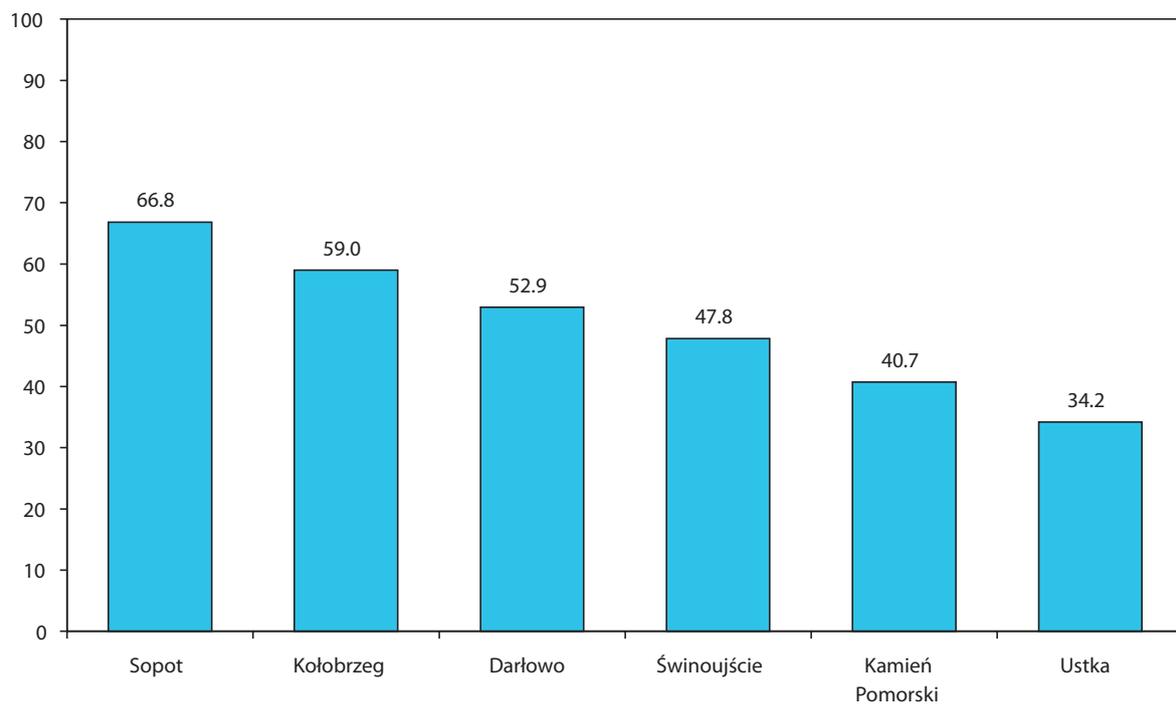


Fig. 5. The synthetic indicator of the human and social capital in the coastal health resort communes in Poland in the years 2000–2020.

Source: own study.

usable floor area of apartments over the years. However, it is the slowest increase compared to the other health resorts.

The potential resulting from the technical infrastructure was defined on the basis of average spending on the municipal economy and environmental

protection per capita and the average level of the sewage network use.

In all the communes, both indicators have been rising though the increase is not the same. While the average spending on the municipal economy and environmental protection per capita has increased

Tab. 10. Indicators characterizing the social infrastructure in the coastal health resort communes in Poland in the years 2000–2020.

Commune	Social infrastructure		
	2000–2010	2010–2020	2000–2020
	Average dynamics of housing resources per 1000 population (%)		
Ustka	102.53	101.41	101.97
Sopot	101.94	101.56	101.75
Kamień Pomorski	101.18	101.32	101.27
Kołobrzeg	103.12	102.29	102.70
Darłowo (Dąbki health resort)	101.59	101.33	101.46
Świnoujście	103.92	100.92	102.42
	Average usable floor area of apartments per capita (m ²)		
Ustka	24.55	28.96	26.76
Sopot	27.48	32.81	30.14
Kamień Pomorski	22.16	26.63	24.39
Kołobrzeg	26.17	33.38	29.78
Darłowo (Dąbki health resort)	25.57	30.66	28.12
Świnoujście	24.01	33.41	28.71

Source: own study based on Local Data Bank.

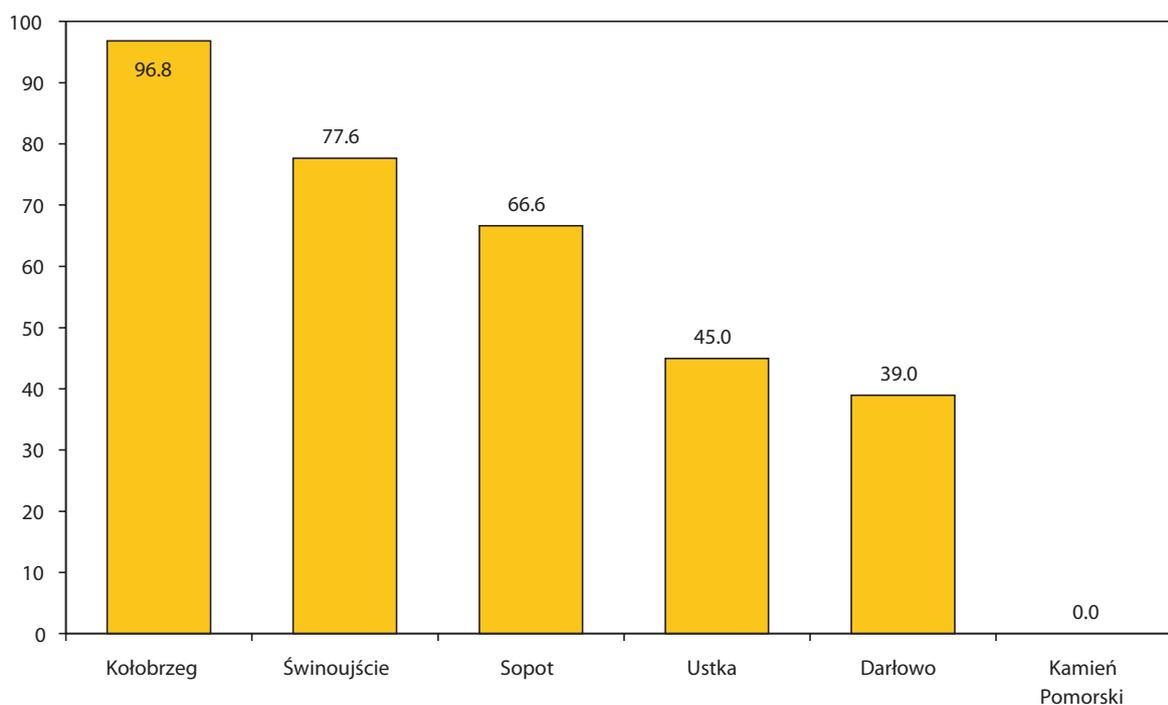


Fig. 6. The synthetic indicator of the social infrastructure potential in the coastal health resort communes in Poland in the years 2000–2020.

Source: own study.

more than threefold in Ustka, Kołobrzeg and Darłowo, more than twofold in Świnoujście, twofold in Sopot, it has only increased by 40% in Kamień Pomorski. Nevertheless, it must be emphasized that the level of spending is significantly higher in Sopot and Darłowo commune than elsewhere (Tab. 11).

As far as the sewage network is concerned, it seems that Sopot, Ustka and Kołobrzeg health resorts have nearly satisfied all the needs as almost all their residents use their technical infrastructure.

Darłowo and Kamień Pomorski have not reached a satisfying level due to the communes' rural or urban-rural character.

Sopot has a good level of investment in its technical structure judging from the indicators under analysis (Fig. 7). However, it is not good enough in Darłowo and Kamień Pomorski although spending per capita on the municipal economy and environmental protection is more than average in Darłowo.

Tab. 11. Indicators characterizing the technical infrastructure in the coastal health resort communes in Poland in the years 2000–2020.

Commune	Technical infrastructure		
	2000–2010	2010–2020	2000–2020
	Average spending per capita on municipal economy and environmental protection (PLN)		
Ustka	158.82	502.41	330.62
Sopot	534.35	1048.73	791.54
Kamień Pomorski	238.93	330.22	284.57
Kołobrzeg	142.79	433.36	288.07
Darłowo (Dąbki health resort)	275.13	923.29	599.21
Świnoujście	199.81	514.16	356.99
	The average share of the sewage network users (%)		
Ustka	97.21	97.70	97.46
Sopot	98.54	99.73	99.13
Kamień Pomorski	61.62	74.60	68.11
Kołobrzeg	97.70	99.11	98.40
Darłowo (Dąbki health resort)	14.08	26.48	20.28
Świnoujście	93.16	94.23	93.70

Source: own study based on Local Data Bank.

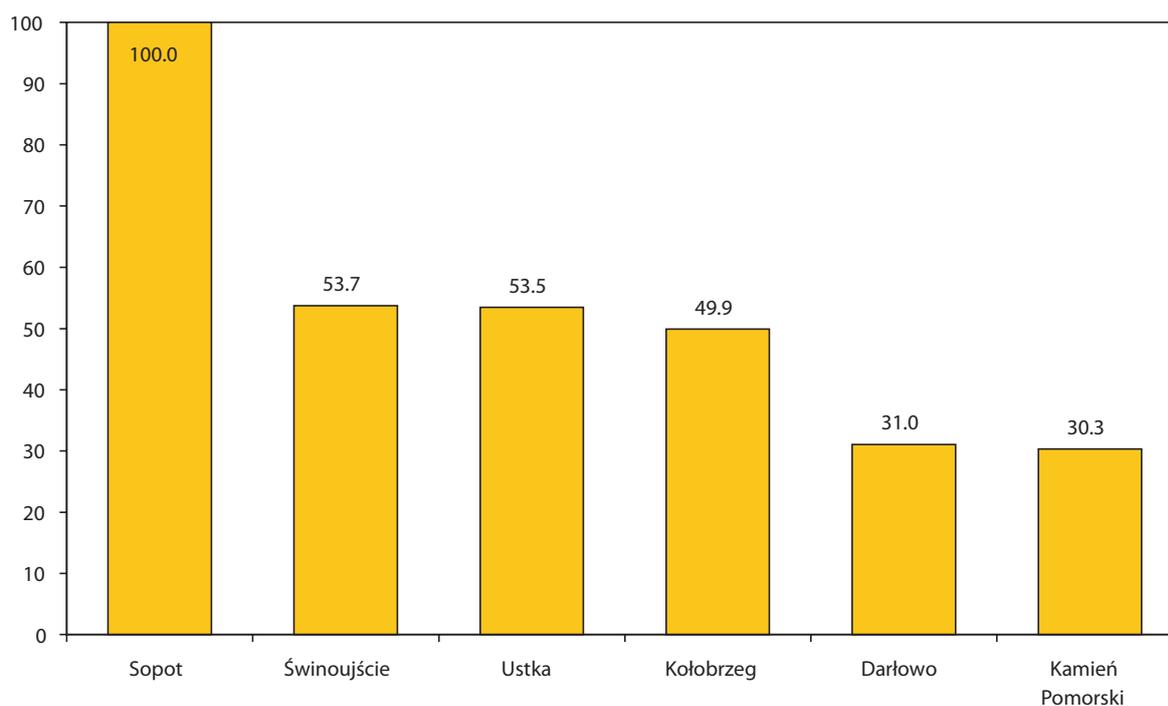


Fig. 7. The synthetic indicator of the technical infrastructure potential in the coastal health resort communes in Poland in the years 2000–2020.

Source: own study.

Finally, the material capital indicator is the highest in Sopot, although it increased in Kołobrzeg in the second decade (Fig. 8). Kamień Pomorski has the

lowest material capital indicator which results from the worst social and technical infrastructure compared to the other health resorts.

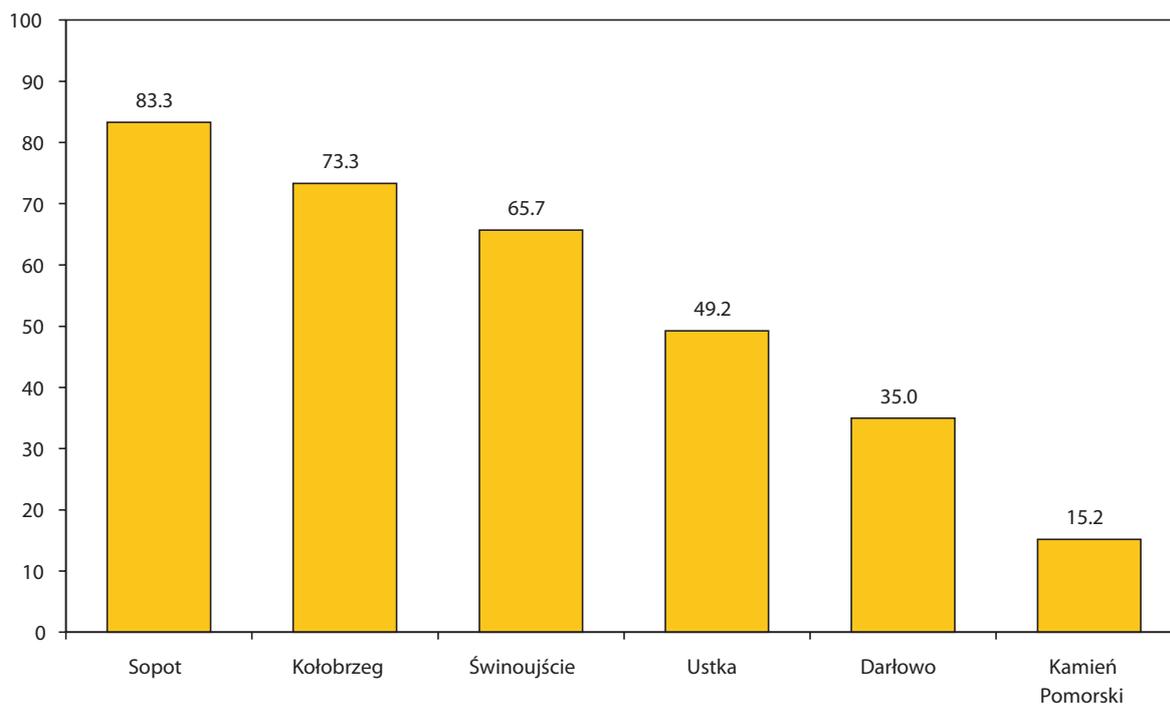


Fig. 8. The synthetic indicator of material capital in the coastal health resort communes in Poland in the years 2000–2020. Source: own study.

3.4. Financial and economic capital in the coastal health resort communes in Poland

The financial capital including the communes' own income is a crucial element determining local development and the result of that development at the same time. Similarly, investment spending and the value of the EU funds prove the activity of the communes' authorities and their engagement in the local development (Tab. 12, Fig. 9).

The income dynamics of the coastal health resort communes in Poland declined in Sopot, Kamień Pomorski and Kołobrzeg. Generally, the income itself increased; however, the average increase in the income slightly declined in the second decade. The average income increase remained at a similar level in Ustka and Darłowo communes and significantly increased in Świnoujście.

Sopot had the highest average share of its own income in the budget in the period under study. This indicator improved in Sopot, Darłowo and Świnoujście in the years 2010–2020. Yet, the average share of their own income in the budget decreased in Ustka and Kołobrzeg in the same period. In general, Kamień Pomorski had the lowest share of their own income in the budget in the period under study.

As far as the investment spending is concerned, only Świnoujście reported an increase in investment spending in the years 2010–2020 compared to the

previous decade. All the other health resorts were characterized by stagnation (Ustka, Darłowo commune) or even decrease (Sopot, Kamień Pomorski, Kołobrzeg) in average investment spending.

As far as the evaluation of the EU funds is concerned, the available data did not allow conducting an evaluation for the years 2000–2010. However, they remain a very crucial element of the commune's budget and oftentimes condition the investment development which is not possible from the communes' own financial resources.

In general, as far as the public finances are concerned, i.e., income, investment spending, obtaining EU funds, all the communes under study are at a similar level. However, Ustka excels in this respect as it obtained significant EU funds in the years 2012–2015 thus securing many investment opportunities for itself (Fig. 9). Only Kamień Pomorski has the lowest financial capital and showed the lowest level of nearly all the indicators on average compared to the other health resorts.

Tourism is undoubtedly a very important area of the communes' economy. When it is described as an average phenomenon calculated per capita, it points out to Darłowo which has a clear tourism profile, and tourism economy has an important share in the labor market and affects the developmental trends of that commune. Average spending on tourism was the highest in Sopot and Darłowo (Tab. 13, Fig. 10).

Tab. 12. Indicators characterizing public finances in the coastal health resort communes in Poland in the years 2000–2020.

Commune	Public finances		
	2000–2010	2010–2020	2000–2020
Average income dynamics of the commune per capita (%)			
Ustka	109.40	110.48	109.94
Sopot	113.62	102.94	108.28
Kamień Pomorski	111.15	105.78	108.46
Kołobrzeg	110.80	106.45	108.62
Darłowo (Dąbki health resort)	111.05	110.13	110.59
Świnoujście	108.18	115.30	111.74
Average share of the commune's own income in the budget (%)			
Ustka	62.89	60.94	61.92
Sopot	69.44	72.47	70.95
Kamień Pomorski	53.65	53.09	53.37
Kołobrzeg	68.41	61.62	65.02
Darłowo (Dąbki health resort)	55.51	62.01	58.76
Świnoujście	53.91	59.91	56.91
Average share of investment spending in total spending (%)			
Ustka	19.52	19.42	19.47
Sopot	28.81	22.23	25.52
Kamień Pomorski	14.80	12.44	13.62
Kołobrzeg	22.97	17.20	20.09
Darłowo (Dąbki health resort)	20.30	20.23	20.26
Świnoujście	18.55	27.13	22.84
Average share of the EU funds per capita (PLN)			
Ustka	x	121.62	121.62
Sopot	x	12.47	12.47
Kamień Pomorski	x	0.35	0.35
Kołobrzeg	x	15.53	15.53
Darłowo (Dąbki health resort)	x	0.25	0.25
Świnoujście	x	44.02	44.02

Source: own study based on Local Data Bank.

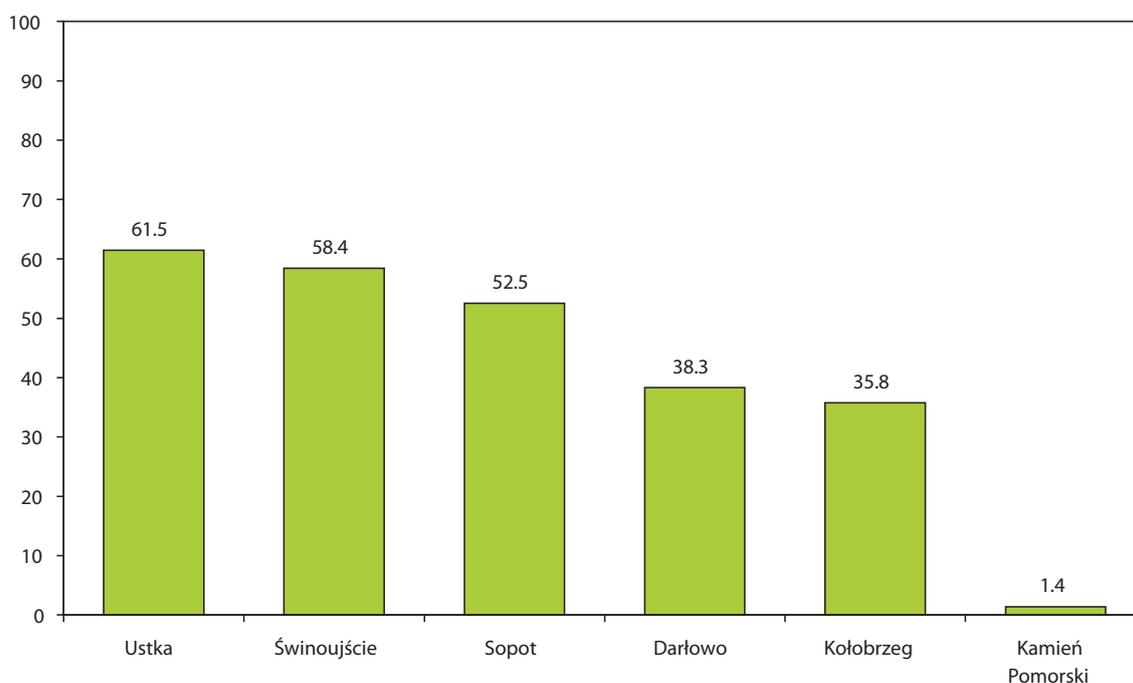


Fig. 9. The synthetic indicator of public finances in the coastal health resort communes in Poland in the years 2000–2020.

Source: own study.

Tab. 13. Indicators characterizing tourist economy in the coastal health resort communes in Poland in the years 2000–2020.

Commune	Tourism		
	2000-2010	2010-2020	2000-2020
	Average number of beds (sleeping places) in tourism accommodation enterprises per 100 inhabitants		
Ustka	337.15	316.32	326.74
Sopot	88.21	130.51	109.36
Kamień Pomorski	32.29	46.67	39.48
Kołobrzeg	234.00	337.85	285.92
Darłowo (Dąbki health resort)	527.59	625.13	576.36
Świnoujście	203.19	252.54	470.32
	Average spending on tourism per capita (PLN)		
Ustka	43.98	38.07	40.04
Sopot	357.38	142.88	214.38
Kamień Pomorski	23.14	139.20	100.52
Kołobrzeg	54.47	103.87	87.40
Darłowo (Dąbki health resort)	45.27	241.20	175.89
Świnoujście	49.03	69.70	62.81

Source: own study based on Local Data Bank.

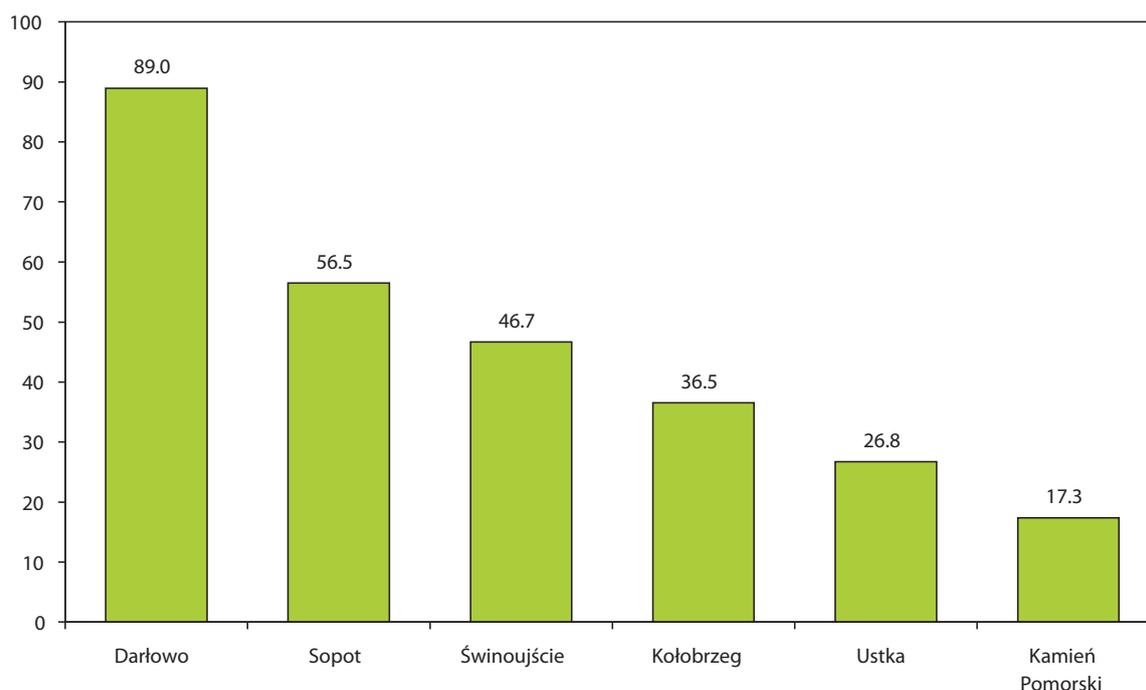


Fig. 10. The synthetic indicator of tourism economy in the coastal health resort communes in Poland in the years 2000–2020.

Source: own study.

The social and economic development of health resort communes is mostly stimulated by their health and spa activity. However, having the status of a health resort has both advantages and disadvantages in terms of economic policy. Health and spa activity was assessed on the basis of the average number of beds in health and spa enterprises, spending in the department 851, i.e., Health

protection and the level of registering new entities of the medical sector (Tab. 14).

The health and spa activity has improved in the communes under study in the last twenty years. Excluding Świnoujście, all the other communes reported an increase in the number of accommodation in health resort enterprises. Apart from Darłowo commune, average spending per capita in the area of health protection has increased. Unfortunately,

Tab. 14. Indicators characterizing health and spa economy in the coastal health resort communes in Poland in the years 2000–2020.

Commune	Health resort		
	2000–2010	2010–2020	2000–2020
	Average number of beds (sleeping places) in health and spa enterprises per 1000 inhabitants		
Ustka	16.09	38.78	27.43
Sopot	9.36	17.33	13.34
Kamień Pomorski	0.00	36.43	18.22
Kołobrzeg	128.90	129.05	128.97
Darłowo (Dąbki health resort)	74.02	90.75	82.38
Świnoujście	32.21	24.10	28.15
	Average spending on health protection per capita (PLN)		
Ustka	28.72	46.09	40.30
Sopot	53.84	119.03	97.30
Kamień Pomorski	23.27	31.08	28.48
Kołobrzeg	32.66	57.01	48.89
Darłowo (Dąbki health resort)	135.54	65.05	88.55
Świnoujście	254.42	275.44	268.43
	Average share of newly registered enterprises of the medical sector in the total number of economic entities (%)		
Ustka	2.63	2.21	2.28
Sopot	5.34	4.81	4.90
Kamień Pomorski	3.95	3.17	3.30
Kołobrzeg	3.46	6.99	6.40
Darłowo (Dąbki health resort)	1.72	1.23	1.31
Świnoujście	3.74	2.50	2.70

Source: own study based on Local Data Bank.

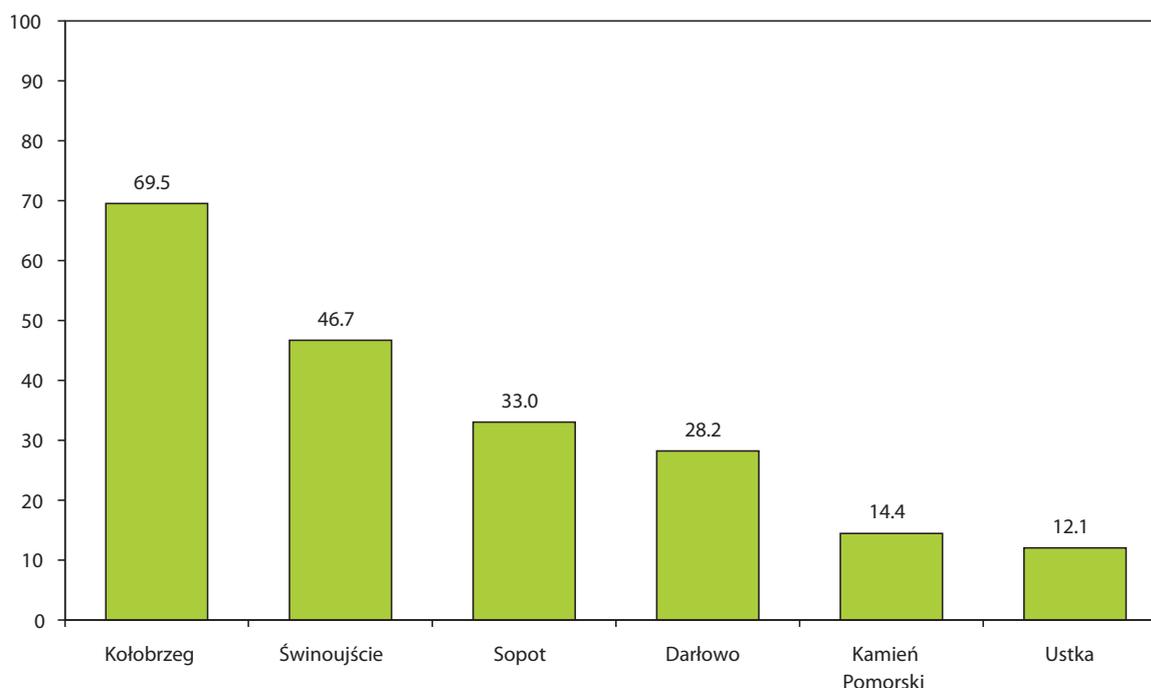


Fig. 11. The synthetic indicator of the economy of health resorts in the coastal health resort communes in Poland in the years 2000–2020.

Source: own study.

the number of newly set up enterprises in the medical sector has decreased in all the health resort communes apart from Kołobrzeg. If a commune reached the saturation level in terms of the number of enterprises in the medical sector, the indicator should not be very relevant.

In general, the health and spa activity is best developed in Kołobrzeg, where both accommodation, new medical sector entities and even expenditure on health protection are at a high level on average (Fig. 11). Kołobrzeg excels among the other communes under study in this respect. It reached such a high level as early as in 2000–2010 and improved it significantly in the next decade.

In general, the financial and economic indicator is similar in the health resorts under study. Kamień Pomorski is in a slightly worse situation. It must also be emphasized that Sopot excelled in this respect in the first decade; however, the level of its capital has flattened since 2010 and is nearly the same as for dominating Kołobrzeg (Fig. 12).

3.5. Changes in the social and economic development in the coastal health resort communes in Poland in the years 2000–2020

When comparing the general social and economic situation in the coastal health resort communes in Poland in the years 2000–2020, Sopot takes the first place, while Kołobrzeg takes the second place at the beginning of the period under study. In all the types

of capital, both towns took the first and the second place, respectively (Fig. 13).

Towards the end of the period under study, the role of Kołobrzeg is increasing while Sopot loses its strong position. The most favorable changes in terms of the financial and economic capital take place in Kołobrzeg, which significantly exceeded Sopot in the years 2010–2020. In addition, the role of that capital becomes more important in Ustka, Świnoujście and Darłowo, which means that Sopot lost significantly compared to the other communes.

The changes to the social and economic development in the coastal health resort communes were the most favorable in Kołobrzeg, where all types of capital increased (Tab. 15). Świnoujście reported a significant rise due to the improvements in the human capital as well as in the financial and economic capital. Unfortunately, it is weakened by a decrease in the value of the material capital indicator.

Two health resorts reported a decrease in the value of the synthetic indicator. In Sopot, it was due to a significant loss of importance of the financial and economic capital, while in Kamień Pomorski it was due to a significant decline in the human capital and in the financial and economic capital, which were the poorest compared to the other communes.

All the changes that took place in the years 2000–2010 and 2010–2020 clearly point to an increasing role of Kołobrzeg and Świnoujście and a decreasing role of Sopot.

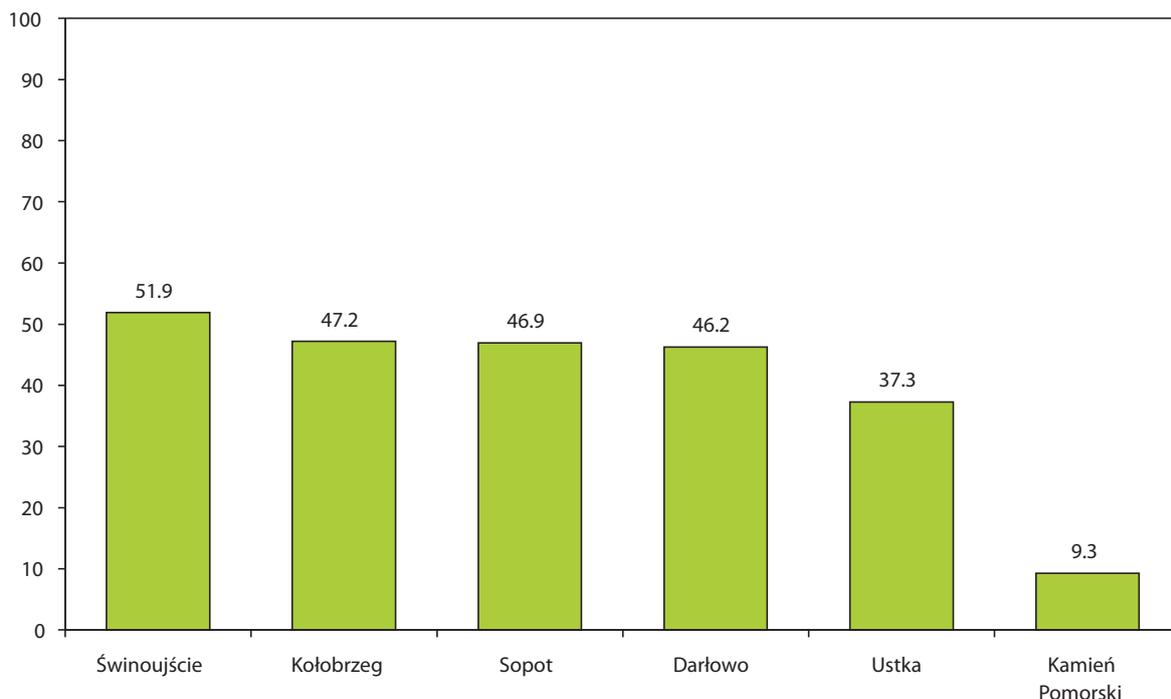


Fig. 12. The synthetic indicator of the financial and economic capital in the coastal health resort communes in Poland in the years 2000–2020.

Source: own study.

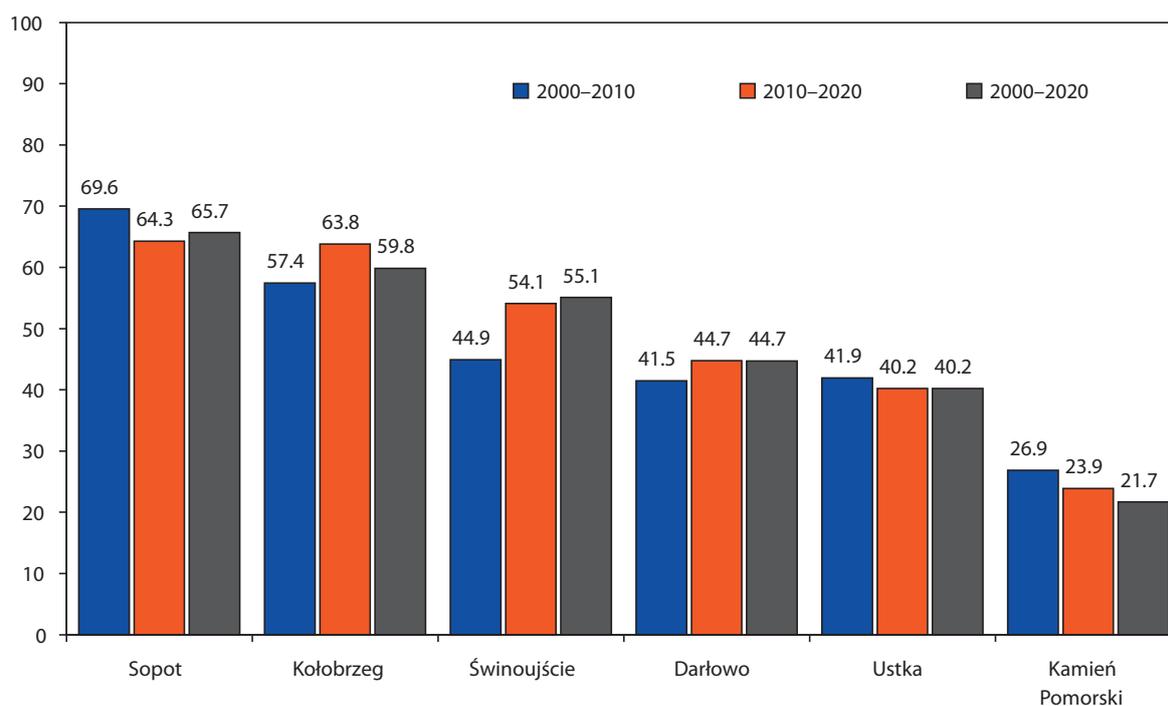


Fig. 13. Synthetic indicator of the social and economic development in the coastal health resort communes in Poland in the years 2000–2010, 2010–2020 and 2000–2020.

Source: own study.

Tab. 15. The change to the value of the synthetic indicator of social and economic development in two sub-periods: 2000–2010 and 2010–2020 in the coastal health resorts.

Health resort	Human capital	Financial and economic capital	Material capital	General synthetic indicator
Ustka	-13.48	19.63	-1.47	1.56
Sopot	11.98	-30.28	2.46	-5.28
Kamień Pomorski	-7.01	-3.96	3.42	-2.52
Kołobrzeg	2.51	2.28	16.94	7.24
Darłowo	-11.45	6.59	14.57	3.23
Świnoujście	10.28	16.43	-6.24	6.82

Source: own study.

4. Summary

The development of the coastal health resort communes is not homogeneous. The best operating ones are the already developed settlements and villages and the bigger towns in terms of resident numbers, like Sopot and Kołobrzeg, which suggests that a diversification of economic functions (serving to strengthen the tourism functions) may be beneficial also for the development of the health resort function. Despite significant human capital, small health resorts do not have as large economic potential as the bigger ones, which impacts their poorer economic condition and a slower growth rate.

The greatest differences are visible in terms of the material capital, especially the residents' quality

of life and housing resources as well as investment in technical infrastructure.

The development of health resorts is a chance for the residents to improve the quality of their lives, find employment and raise their qualifications. Implementation of training and educational activities is an exceptionally important issue to facilitate the development of health resort functions and create atmosphere facilitating local entrepreneurship. Such activities should be addressed to people already employed in the health resorts but also to their future employees. Therefore, introducing new fields of study connected with tourism and hospitality at all levels of education may significantly contribute to creating job careers in health resorts. Health resort tourism may play an important role by stimulating

social and economic development in marginalized areas which are characterized by social exclusion. However, it is necessary to find appropriate staff rendering services to tourists, especially health resort tourists (peripheral regions usually do not have such human resources). The experience of other areas of sanatoriums and health resorts confirms that the development of therapeutic services and other auxiliary services may facilitate an economic and social success of certain territorial units (Bański, Więckowski, 2014). At the same time, it is crucial to generate new jobs in the same health resorts and companies that cooperate with them.

At the end of the last few years, global events, such as the Covid-19 pandemic or the war crisis between Russia and Ukraine, have a significant impact on the economy, even the local economy. In this situation, it is difficult to predict how local economies, which are very dependent on state policy, especially in the field of financial regulations, will react.

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