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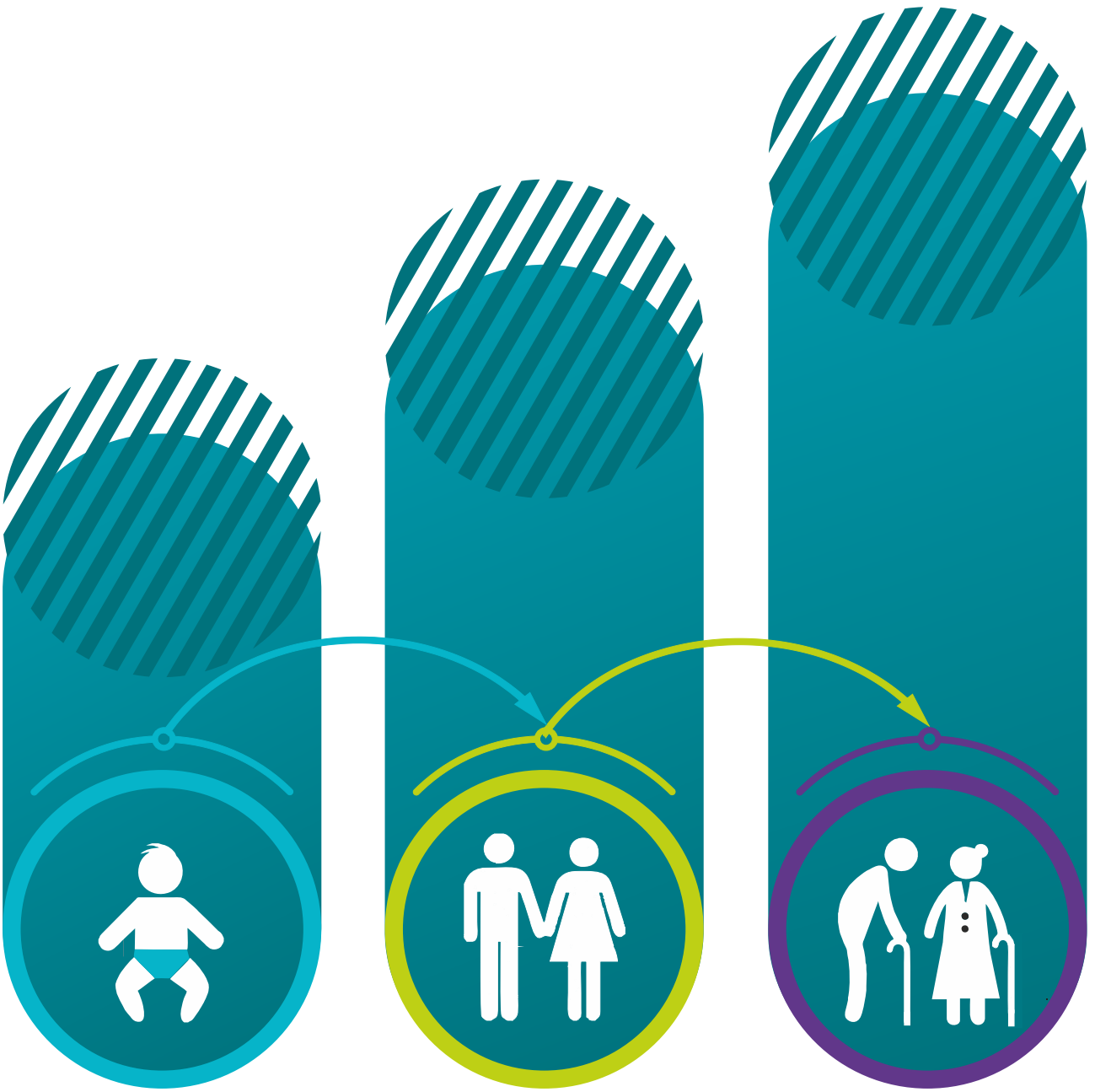

Life expentancy tables of Poland 2022

Warsaw 2023

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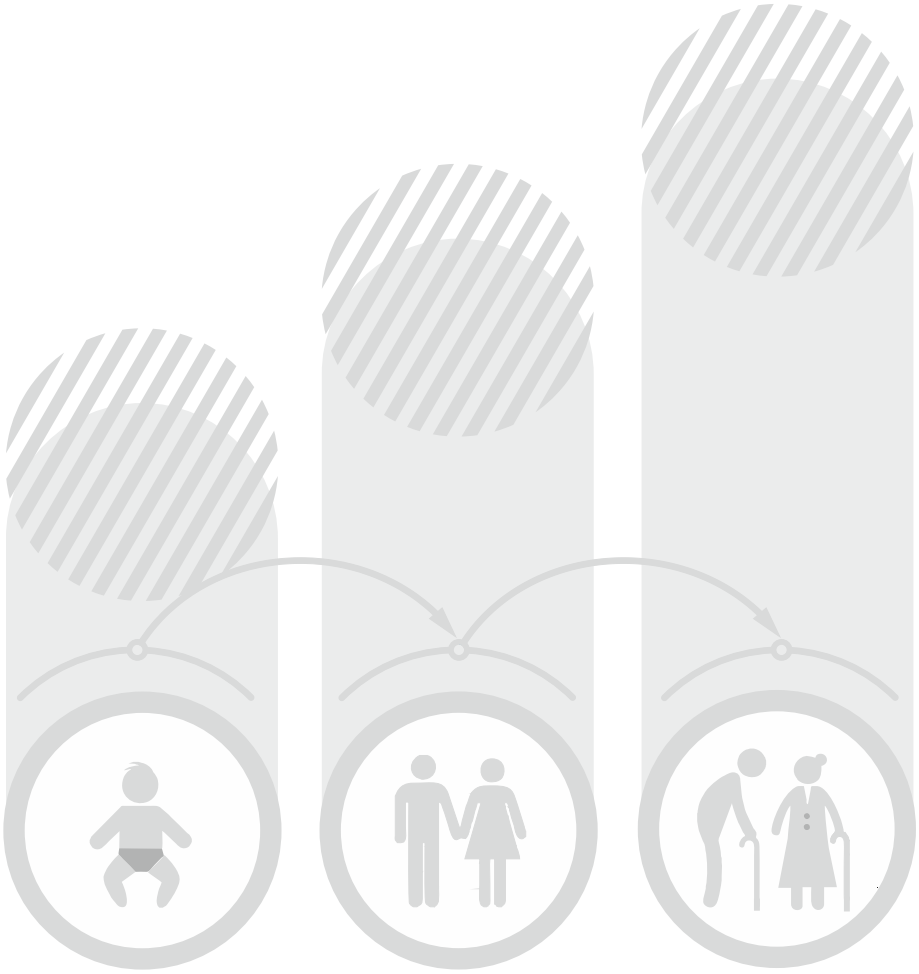

Life expentancy tables of Poland 2022

Główny Urząd Statystyczny Statistics Poland

Warsaw 2023

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Supervised by
Doroty Szałtys

Editorial team
Maciej Potyra, Katarzyna Góral-Radziszewska, Kamil Waśkiewicz, Emilia Gawińska-Drużba

Typesetting and graphics
Andrzej Paluchowski, Paweł Luty

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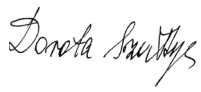
Preface

This publication is a regular elaboration of the Statistics Poland concerning life tables. Since the 1950s the publications were released every five years and contained complete life tables. Also, each year since the early 1970s the abridged life tables were calculated, using an alternative method. Beginning from 1995 only complete life tables have been prepared. Life expectancy tables in the years 2012-2021 were compiled using balances of number and structure of the population derived on the basis of the results of the population and housing census of 2011. From 2022, the basis for calculating life expectancy is the result of the National Census 2021.

This publication consists of three parts – the analytical one, which presents the current parameters of life expectancy and discusses the changes that took place in the years 1960-2022, methodological notes and basic tables, which present the results of the study, also divided by voivodeships and subregions.

Presenting this publication we shall appreciate any comments and suggestions which will be a valuable advice in the development of this research area and will also contribute to the improvement of content and form of next editions of this publication.

Director
of Demographic Surveys Department



Dorota Szałtys

President
of Statistics Poland

Dominik Rozkrut, Ph.D.

Warsaw, July 2023 r.

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Chapter 1. Introduction - synthesis

The average life expectancy is known as the measure used to determine the amount of retirement pensions. Meanwhile, the use of this indicator in social sciences is much broader. Annual analysis of life expectancy allows to observe changes in the general health of the population. In addition, average life expectancy also illustrates the living conditions in a given area. For example, in less developed countries, life expectancy is clearly lower than in more developed ones.

In recent decades the development of various measures based on average life expectancy has been observed. For example, with their help, attempts are made to estimate life expectancy without illness or disability[1], as well as analyses of the population ageing process.

In 2022, the average life expectancy for men in Poland was 73.4 years, while for women 81.1 years. In comparison to the 2021, life expectancy increased by 1.7 and 1.4 years respectively. Taking into account 1990, life expectancy increased by 7.2 and 5.9 years.

The average life expectancy of a person aged x years is denoted in literature by ex and expresses the average number of years a person aged x has left to live – given current mortality conditions of the population. Particularly noteworthy is the parameter e0 called the average life expectancy of a newborn (or shorter - the average life expectancy). These measures are calculated using data from registers regarding the number of:

- deaths in a given calendar year by age,
- population by sex and age as of June 30 of a given year.

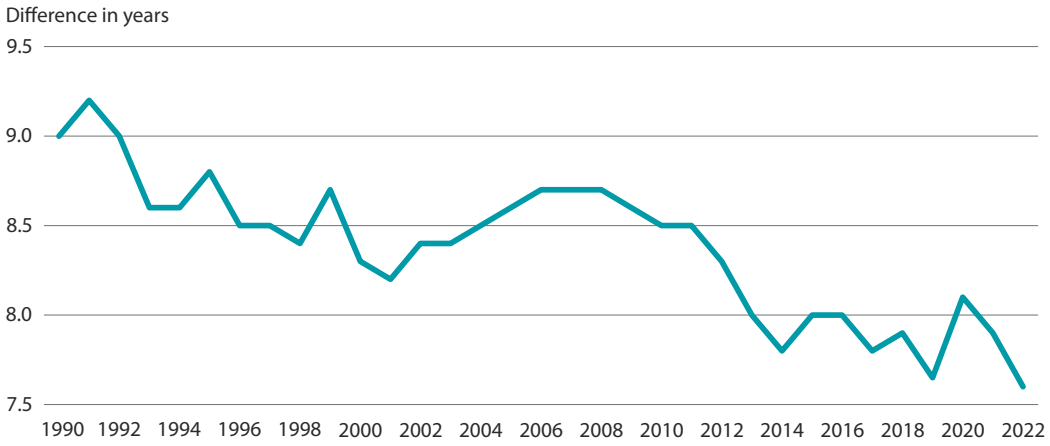
This publication presents data on life expectancy and mortality of the Polish population until 2022. The indicators contained in the study, for 2022, can be interpreted as calculated for a hypothetical cohort, assuming that the risk of death at a particular age would be the same as in the examined period.

1 Góral-Radziszewska K., Waśkiewicz K., Potyra M., Kuczyńska K. [2020], Healthy Life Years in Poland in 2009–2019, „Analizy Statystyczne", Statistics Poland, Warsaw, https://stat.gov.pl/en/topics/population/life-expectancy/healthy-life-years-in-poland-in-20092019,3,1.html (access 30.05.2023)

Chapter 2. Life expectancy in Poland

In Poland, as in other countries, mortality among men is higher compared to women. However, the scale of this phenomenon is much higher than in most European countries. Although in the 90s the decline of the difference between the average life expectancy of men and women was observed (in 1991 – 9.2 years; in 2001 – 8.2 years), in the first decade of the 21st century it rose again to the value of 8.7 (in 2006-2008). By 2014, it fell too slightly below 8.0. Since then it has remained at roughly similar level, in 2022 it amounted to 7.6 years (Chart 1).

Chart 1. Difference in life expectancy between males and females 1990-2022



Higher mortality among men compared to women is observed in almost all age groups. In 2022, the age of 18 would not be reached by 0.7% of men (in 1990 – 3.0%) and 0.6% of women (in 1990 – 2.2%). The difference between men and women increases with age. 5.2% of men and 2.1% of women would not reach the age of full professional activity i.e. 45 years (compared to 10.7% and 4.7% in 1990), while 75 years would not be reached by 47.1% of men and 24.4% of women (63.9% and 37.5% in 1990).

In 2022, the life expectancy of 15-year-olds was 58.9 years for males and 66.5 for females (in 1990 it was 5.8 years more for males and 4.7 years for females). Life expectancy of the 45-year-olds was 30.7 years for men and 37.2 for women, which in comparison to 1990 means an increase in the life expectancy by 4.6 and 4.2 respectively.

Table 1. Life expectancy by age in Poland 1960-2022[2]

Years	Males						Females					
	by age											
	0	15	30	45	60	75	0	15	30	45	60	75
1960	64.9	55.0	41.1	27.7	15.9	7.5	70.6	59.9	45.5	31.6	18.7	8.6
1961	64.9	54.8	41.0	27.6	15.8	7.7	70.8	60.0	45.6	31.6	18.7	8.7
1962	64.5	54.4	40.6	27.3	15.4	7.3	70.5	59.7	45.3	31.3	18.4	8.4
1963	65.4	55.0	41.2	27.8	15.9	7.5	71.5	60.3	45.8	31.9	18.9	8.8
1964	65.8	55.1	41.2	27.7	15.7	7.4	71.6	60.3	45.8	31.7	18.7	8.6
1965	66.6	55.5	41.5	28.1	16.1	7.7	72.4	60.6	46.1	32.1	19.0	8.8
1966	66.9	55.6	41.6	28.2	16.2	7.8	72.9	60.9	46.4	32.3	19.3	8.9
1967	66.4	55.1	41.1	27.7	15.8	7.4	72.6	60.6	46.0	31.9	18.9	8.5
1968	67.0	55.3	41.4	27.9	16.1	7.9	73.6	61.3	46.7	32.6	19.6	9.4
1969	66.5	54.8	40.8	27.4	15.6	7.6	73.1	60.8	46.3	32.1	19.2	8.9
1970	66.6	54.8	40.9	27.5	15.7	7.6	73.3	61.0	46.5	32.3	19.2	8.9
1971	66.1	54.0	40.1	26.8	15.0	6.8	73.3	60.6	46.1	31.9	18.9	8.5
1972	67.3	55.1	41.2	27.8	16.0	7.6	74.2	61.5	46.9	32.7	19.6	9.0
1973	67.2	54.8	40.8	27.5	15.8	7.3	74.3	61.4	46.8	32.6	19.5	8.9
1974	67.8	55.2	41.1	27.7	16.0	7.5	74.6	61.6	47.0	32.8	19.7	9.0
1975	67.0	54.5	40.6	27.3	15.7	7.2	74.3	61.3	46.7	32.5	19.4	8.7
1976	66.9	54.3	40.3	27.1	15.7	7.3	74.6	61.5	46.9	32.7	19.6	9.0
1977	66.5	53.9	40.1	26.9	15.6	7.2	74.5	61.5	46.9	32.7	19.7	9.0
1978	66.4	53.7	39.8	26.7	15.5	7.1	74.5	61.4	46.8	32.6	19.6	8.8
1979	66.8	54.0	40.1	26.9	15.7	7.3	74.9	61.6	47.1	32.8	19.8	9.1
1980	66.0	53.1	39.2	26.2	15.2	6.9	74.4	61.2	46.5	32.4	19.4	8.8
1981	67.1	54.2	40.3	27.0	15.8	7.5	75.2	61.9	47.3	33.1	20.1	9.4
1982	67.2	54.3	40.3	27.1	15.8	7.5	75.2	61.9	47.3	33.1	20.1	9.4
1983	67.0	54.0	40.0	26.8	15.7	7.4	75.2	61.8	47.2	32.9	19.9	9.3
1984	66.8	53.7	39.7	26.5	15.5	7.3	75.0	61.5	46.9	32.7	19.7	9.1
1985	66.5	53.3	39.2	26.0	15.1	7.0	74.8	61.3	46.7	32.5	19.5	9.0
1986	66.8	53.4	39.4	26.1	15.3	7.3	75.1	61.5	46.9	32.7	19.7	9.2
1987	66.8	53.5	39.4	26.1	15.3	7.3	75.2	61.6	46.9	32.7	19.8	9.3
1988	67.2	53.7	39.6	26.4	15.5	7.5	75.7	61.9	47.2	33.0	20.1	9.5
1989	66.8	53.3	39.3	26.2	15.4	7.6	75.5	61.8	47.1	32.9	19.9	9.5
1990	66.2	53.1	39.1	26.1	15.3	7.5	75.2	61.8	47.2	33.0	20.0	9.5
1991	65.9	52.6	38.6	25.7	15.1	7.4	75.1	61.6	46.9	32.7	19.8	9.3
1992	66.5	53.1	39.1	26.1	15.4	7.7	75.5	61.9	47.3	33.1	20.1	9.5
1993	67.2	53.7	39.6	26.4	15.5	7.7	75.8	62.2	47.5	33.2	20.1	9.4
1994	67.5	53.9	39.9	26.7	15.8	7.8	76.1	62.4	47.7	33.5	20.4	9.6
1995	67.6	53.9	39.8	26.7	15.8	7.9	76.4	62.6	47.9	33.6	20.5	9.7
1996	68.1	54.3	40.2	26.9	15.9	7.9	76.6	62.7	48.0	33.7	20.5	9.7

2 Life tables for 1990-1994 have been recalculated according to the birth and infant death definition implemented in 1994. ("Methodological report – Vital statistics. Balances of population", 2018. Pages 11, 34, https://stat.gov.pl/en/topics/population/population/methodological-report-vital-statistic-balances-of-population,11,1.html, access 30.05.2023)

Table 1. Life expectancy by age in Poland 1960-22 (cont.)

Years	Males						Females					
	by age											
	0	15	30	45	60	75	0	15	30	45	60	75
1997	68.5	54.5	40.4	27.1	16.1	8.2	77.0	62.9	48.2	33.9	20.8	9.9
1998	68.9	54.8	40.7	27.4	16.4	8.4	77.3	63.2	48.5	34.2	21.0	10.0
1999	68.8	54.8	40.6	27.3	16.3	8.3	77.5	63.3	48.6	34.3	21.1	10.1
2000	69.7	55.6	41.4	27.9	16.7	8.6	78.0	63.8	49.0	34.7	21.5	10.4
2001	70.2	56.0	41.8	28.3	17.0	8.8	78.4	64.1	49.4	35.0	21.8	10.6
2002	70.4	56.2	42.0	28.5	17.2	8.8	78.8	64.5	49.8	35.4	22.2	10.8
2003	70.5	56.3	42.0	28.5	17.1	8.7	78.9	64.6	49.8	35.4	22.2	10.8
2004	70.7	56.4	42.1	28.6	17.4	8.9	79.2	64.9	50.1	35.7	22.5	11.0
2005	70.8	56.5	42.2	28.7	17.5	9.0	79.4	65.0	50.3	35.8	22.7	11.2
2006	70.9	56.6	42.3	28.8	17.7	9.1	79.6	65.2	50.5	36.0	22.8	11.3
2007	71.0	56.6	42.4	28.8	17.7	9.1	79.7	65.3	50.6	36.1	22.9	11.4
2008	71.3	56.9	42.6	29.1	17.9	9.2	80.0	65.5	50.8	36.3	23.1	11.5
2009	71.5	57.1	42.9	29.3	17.9	9.2	80.1	65.6	50.9	36.4	23.2	11.6
2010	72.1	57.6	43.3	29.7	18.3	9.5	80.6	66.1	51.3	36.8	23.5	11.9
2011	72.4	58.0	43.7	30.0	18.5	9.7	80.9	66.4	51.6	37.1	23.8	12.1
2012	72.7	58.2	43.9	30.2	18.6	9.7	81.0	66.5	51.7	37.1	23.8	12.2
2013	73.1	58.6	44.3	30.5	18.7	9.8	81.1	66.6	51.8	37.3	23.9	12.3
2014	73.8	59.2	44.9	31.0	19.2	10.1	81.6	67.1	52.3	37.7	24.3	12.6
2015	73.6	59.0	44.7	30.8	19.0	10.0	81.6	67.0	52.2	37.6	24.1	12.5
2016	73.9	59.4	45.0	31.2	19.3	10.3	81.9	67.3	52.5	38.0	24.5	12.8
2017	74.0	59.4	45.0	31.2	19.2	10.2	81.8	67.2	52.4	37.9	24.3	12.8
2018	73.8	59.3	44.9	31.1	19.1	10.2	81.7	67.1	52.3	37.7	24.2	12.7
2019	74.1	59.5	45.1	31.3	19.3	10.2	81.8	67.2	52.4	37.8	24.2	12.6
2020	72.6	58.0	43.6	29.9	17.9	9.2	80.7	66.1	51.3	36.8	23.2	11.9
2021	71.8	57.2	42.8	29.1	17.3	8.8	79.7	65.1	50.3	35.8	22.4	11.3
2022	**73.4**	**58.9**	**44.5**	**30.7**	**18.7**	**9.7**	**81.1**	**66.5**	**51.7**	**37.2**	**23.6**	**12.0**

In 2022 the value of e_0 for a male newborn was 73.4 years (Table 1). This means that if during the life of a man born in 2022 the conditions of population mortality did not change at all, he would, on average, live to that age. In order to correctly interpret the life expectancy table, it should be remembered that each value depends on two conditions – maintenance of the mortality pattern at the level for a given year and survival till the indicated age.

And so - according to the life expectancy table for 2022 – the average life expectancy for a man at the age of 30 is 44.5 years, i.e. on average he would live to 74.5 years - thus one year more than a boy born in 2022. The chances of reaching the next birthday increase with age. For a man aged 60, the average life expectancy is 18.7 years, so on average he would live to 78.7 years.

In 2022, the life expectancy for males living in urban areas was 73.7 years, which is a 0.7 year longer than for males in rural areas. Females in urban areas live on average 81 years which is 0.1 year shoter than in rural areas. Nowadays females in urban areas live 7.3 years longer than males (in 1991 it was almost 9; in 2001 – 7.8) while in rural areas the difference is 8.1 years (in 1991 – 9.7; in 2001 – 8.8).

The mortality in Poland was very high directly after the Second World War. In 1950 the life expectancy for male was slightly above 56 years, while for female it was almost 62 years. In the 1950s Poland experienced a sharp drop in mortality rates and consequently a significant growth of life expectancy. This positive tendency continued also in the next decade although the progress was much slower. Over a period of next 20 years (during the 1970s and 1980s) the life expectancy for men hardly changed – even some drops were recorded periodically – while life expectancy for women increased by only 2 years.

The 1990s brought a change of this negative tendency. Between 1991 and 2019 life expectancy increased by 8.2 years for males and by 6.7 years for females (Chart 2). Such a significant growth was achieved thanks to the crucial progress in lowering the mortality both for men and women and particularly by strengthening the tendency of decreasing infant mortality. In 2019, males in Poland lived on average 18 years longer than in the middle of the last century, while women lived 20 years longer.

The increase of life expectancy for older males observed in the 1950s became inhibited in the 1960s. The renewed growth was observed from the middle of the 1980s. Thus in the years 1960-2019 life expectancy for a 60-year-old man rose by 3.4 years (to 19.3 years). Among women of the same age a constant improvement of life expectancy was observed (Chart 3). Life expectancy of a 60-year-old woman grew from 1960 till 2019 by 5.5 years (to 24.2 years).

As a result of the COVID-19 pandemic and the related increased number of deaths, life expectancy in 2020 and 2021 was significantly shortened compared to 2019 by 2.3 years for men and 2.1 years for women. This unfavorable trend was reversed in 2022 and life expectancy increased again (compared to 2021 by 1.7 years for men and 1.4 for women). It should be emphasized, that it is still lower for both sexes by 0.7 year than in 2019.

Chart 2. Life expectancy at birth in Poland 1960-2022

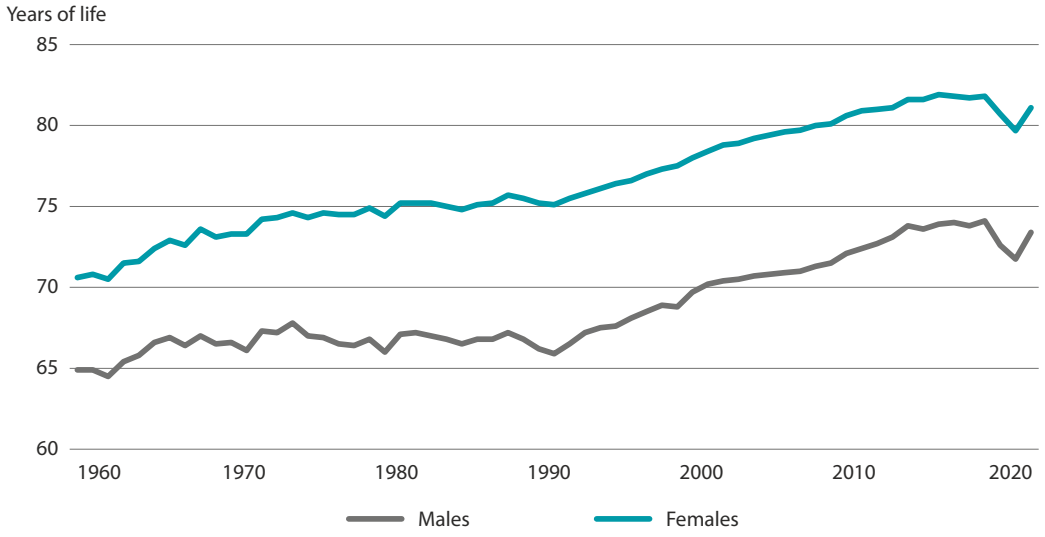
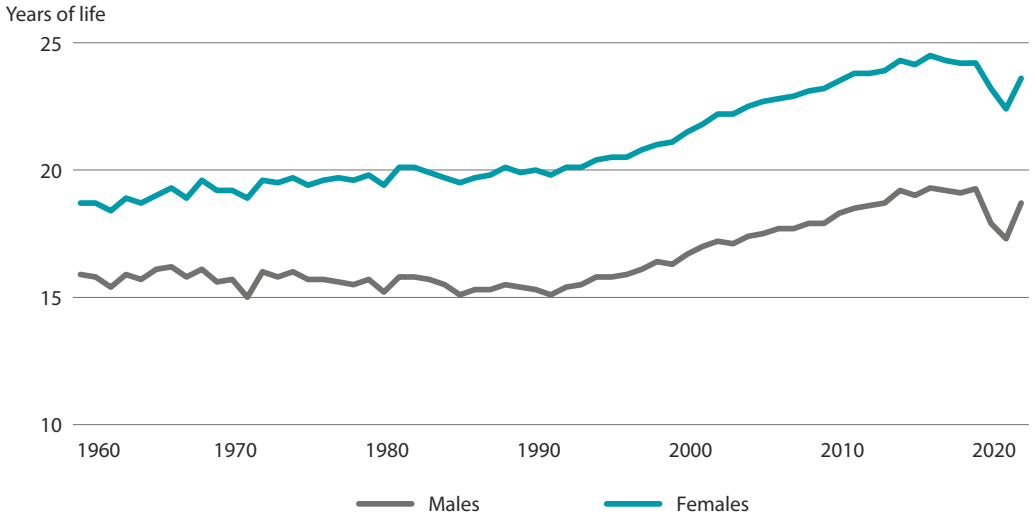


Chart 3. Life expectancy at age 60 in Poland 1960-2022



Chapter 3. Spatial diversity of life expectancy

3.1. Macroregions

In 2022, the longest life expectancy, both for men and women, was in Eastern macroregion – 73.9 and 82.2 years, respectively (Table 2). The shortest was recorded in the Central macroregion (72.4 years for men and 80.5 years for women).

In urban areas men live on average longer than in rural areas. In the Eastern macroregion this difference is the biggest – 1.8 years. Only in the Southern macroregion, the life expectancy for men in urban areas is shorter than in rural (by 0.6 years). In the case of women in two macro-regions, life expectancy is higher among women living in rural areas, and in five – in urban areas.

Table 2. Life expectancy in Poland by macroregions in 2022

	Males					Females				
	by age									
	0	15	30	45	60	0	15	30	45	60
Total	**73.4**	**58.9**	**44.5**	**30.7**	**18.7**	**81.1**	**66.5**	**51.7**	**37.2**	**23.6**
Southern	73.7	59.2	44.7	30.9	18.8	81.0	66.4	51.6	37.1	23.5
North-western	73.2	58.6	44.3	30.5	18.5	80.8	66.2	51.4	36.9	23.4
South-western	73.1	58.5	44.2	30.4	18.4	80.9	66.2	51.4	36.9	23.4
Northern	73.3	58.8	44.5	30.7	18.5	80.6	66.1	51.4	36.9	23.3
Central	72.4	57.8	43.5	30.0	18.3	80.5	65.9	51.2	36.8	23.3
Eastern	73.9	59.4	44.9	31.2	19.2	82.2	67.6	52.8	38.3	24.4
Mazowieckie voivod.	73.8	59.2	44.8	31.0	19.0	81.5	66.9	52.2	37.6	23.9
Urban areas	**73.7**	**59.2**	**44.8**	**31.0**	**18.9**	**81.0**	**66.5**	**51.8**	**37.3**	**23.7**
Southern	73.5	59.0	44.6	30.8	18.7	80.6	66.1	51.3	36.9	23.3
North-western	73.5	58.9	44.5	30.7	18.7	81.0	66.4	51.7	37.2	23.7
South-western	73.2	58.7	44.3	30.6	18.6	81.0	66.3	51.6	37.1	23.6
Northern	73.6	59.1	44.7	30.9	18.8	80.8	66.3	51.6	37.1	23.5
Central	72.5	57.9	43.7	30.2	18.5	80.1	65.6	51.0	36.7	23.2
Eastern	74.9	60.4	45.9	32.2	19.9	82.4	67.8	53.1	38.6	24.7
Mazowieckie voivod.	74.5	59.9	45.5	31.6	19.4	81.8	67.1	52.4	37.8	24.2
Rural areas	**73.0**	**58.4**	**44.0**	**30.4**	**18.3**	**81.1**	**66.5**	**51.7**	**37.1**	**23.4**
Southern	74.1	59.5	45.0	31.1	18.9	81.8	67.1	52.3	37.7	23.9
North-western	72.8	58.2	43.9	30.1	18.0	80.4	65.7	50.9	36.4	22.8
South-western	72.7	58.1	43.8	30.0	17.8	80.5	65.8	51.0	36.5	22.9
Northern	72.9	58.3	44.0	30.3	18.1	80.2	65.8	51.0	36.4	22.8
Central	72.2	57.6	43.2	29.7	18.0	81.0	66.3	51.5	37.1	23.4
Eastern	73.1	58.5	44.1	30.5	18.5	81.9	67.4	52.6	38.0	24.2
Mazowieckie voivod.	72.5	57.9	43.6	30.1	18.2	81.0	66.4	51.7	37.1	23.4

3.2. Voivodships

In the last three decades there was a significant progress in increasing the life expectancy in all voivodships. This particularly applies to males in Pomorskie, Zachodniopomorskie, Śląskie, Kujawsko-Pomorskie, Opolskie and Warmińsko-Mazurskie, for whom life expectancy between 1990 and 2019 has grown by more than 8 years (Table 3). In this period the smallest growth took place in Lubelskie and Świętokrzyskie (7.1 years). For females the highest growth of life expectancy parameters was observed in Opolskie and Pomorskie (7.1 years), the smallest in Warmińsko-Mazurskie and Lubelskie (6 years).

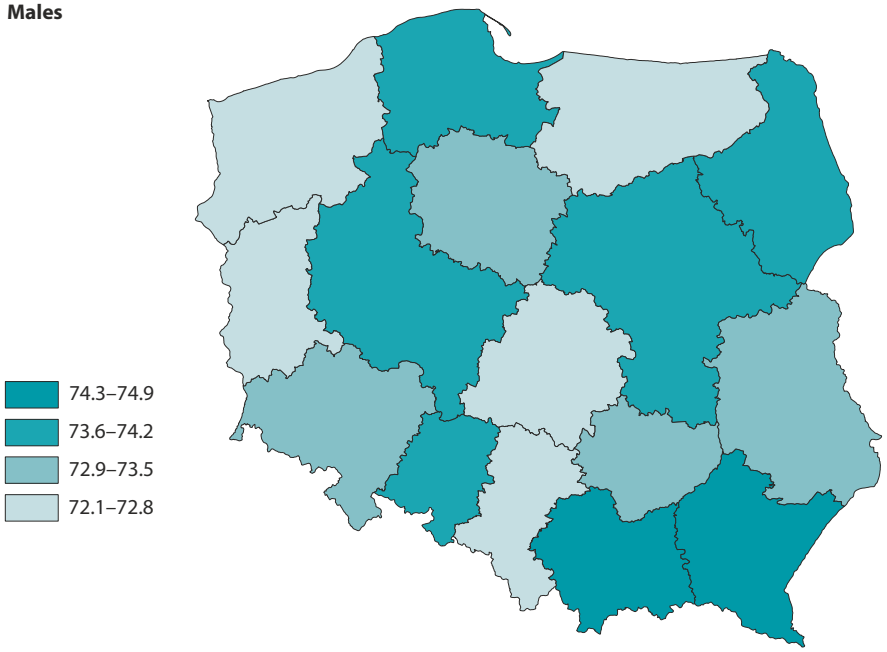
In 2020 and 2021, due to the COVID-19 pandemic, there was a sharp decline in life expectancy in all voivodships, for both men and women. In the case of men, the largest decrease compared to 2019 was recorded in Warmińsko-Mazurskie (3 years), the smallest in Wielkopolskie (0.9 years). For women, the decrease was the highest in Lubelskie (2.9 years), and the lowest in Opolskie (1.6 years).

In Poland there is a high diversity of life expectancy between voivodships. In 2022, the span between the highest and the lowest parameters for males was 2.8 years. The shortest life expectancy was observed among men living in the Łódzkie (72.1 years) and the longest was in the Małopolskie (74.9 years). Among women, the diversity is smaller and amounts to 2.1 years. For women the shortest life expectancy is in the Łódzkie Voivodeship (80 years) and the longest in Podlaskie (82.6 years) (Map 1).

Higher mortality among men compared to women is clearly visible in all voivodships. In 2022, the disproportion between the average life expectancy of men and women was the highest in Podlaskie (8.9 years) and the lowest in Kujawsko-Pomorskie (6.9 years).

Map 1. Life expectancy at birth in Poland by voivodships in 2022

Males



Females

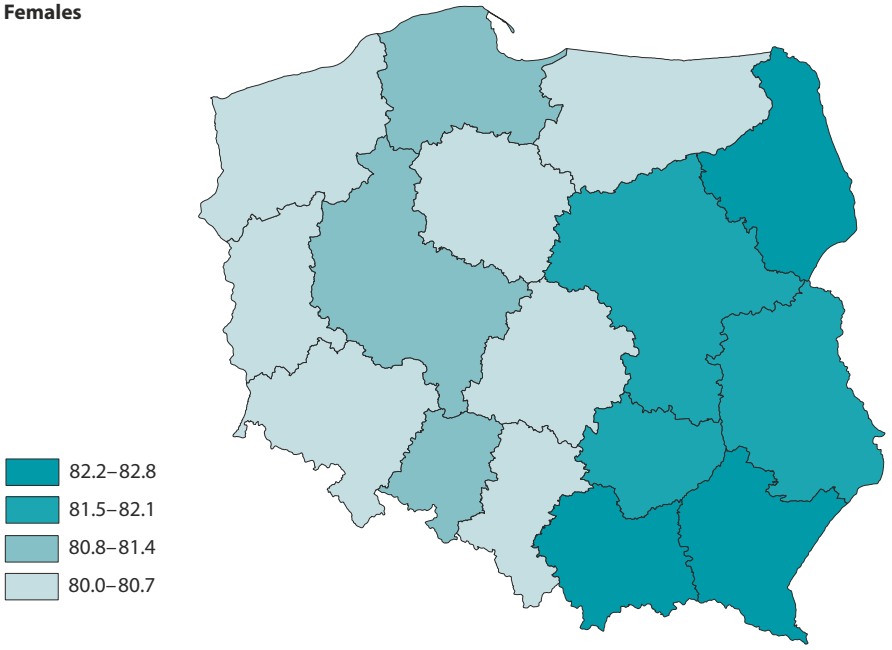


Table 3. Life expectancy at birth by voivodships in selected years[3]

Voivodships	Males							Females						
	1990	2000	2010	2019	2020	2021	**2022**	1990	2000	2010	2019	2020	2021	**2022**
Total	**66.2**	**69.7**	**72.1**	**74.1**	**72.6**	**71.8**	**73.4**	**75.2**	**78.0**	**80.6**	**81.8**	**80.7**	**79.7**	**81.1**
Dolnośląskie	65.7	68.8	71.7	73.5	72.1	71.4	**72.9**	74.7	77.6	80.2	81.3	80.6	79.5	**80.7**
Kujawsko-pomorskie	65.7	69.6	71.4	73.7	72.4	71.3	**73.3**	74.6	77.5	79.8	81.0	80.4	78.9	**80.2**
Lubelskie	66.8	69.1	71.2	73.9	72.3	71.3	**73.2**	76.4	78.5	81.0	82.4	81.1	79.5	**81.7**
Lubuskie	65.2	69.2	71.5	72.9	71.8	70.5	**72.6**	74.6	77.4	80.1	81.0	80.0	79.0	**80.3**
Łódzkie	65.3	67.9	70.1	72.5	71.1	70.6	**72.1**	74.5	77.2	79.4	81.0	79.6	79.0	**80.0**
Małopolskie	68.0	71.3	73.7	75.3	73.8	73.5	**74.9**	76.3	78.8	81.4	82.7	81.6	81.0	**82.2**
Mazowieckie	66.6	69.8	72.6	74.3	72.8	71.6	**73.8**	75.9	78.6	81.0	82.1	80.9	80.0	**81.5**
Opolskie	66.5	70.7	73.0	74.5	73.0	72.4	**73.6**	74.9	78.2	80.4	82.0	81.0	80.4	**81.4**
Podkarpackie	68.0	71.2	73.7	75.4	73.7	72.7	**74.7**	76.4	79.0	81.8	83.2	81.8	80.6	**82.5**
Podlaskie	67.1	70.5	72.5	74.3	73.1	71.5	**73.7**	76.8	79.1	81.9	83.1	81.9	80.5	**82.6**
Pomorskie	66.0	70.6	73.0	74.8	73.3	72.7	**73.8**	74.7	78.1	80.8	81.8	81.2	80.1	**80.9**
Śląskie	65.8	69.6	71.6	73.8	72.3	71.3	**72.8**	74.2	77.2	79.7	80.8	80.0	78.9	**80.2**
Świętokrzyskie	66.7	70.5	71.8	73.8	72.0	71.6	**72.9**	76.0	78.6	80.9	82.2	80.9	80.0	**81.5**
Warmińsko-mazurskie	65.4	69.2	71.3	73.8	72.0	70.8	**72.5**	75.2	78.6	80.4	81.2	80.6	79.4	**80.7**
Wielkopolskie	65.8	69.7	72.5	73.0	72.8	72.1	**73.6**	74.9	77.5	80.5	81.5	80.5	79.6	**81.0**
Zachodniopomorskie	65.1	69.0	71.3	74.3	72.1	71.5	**72.8**	74.5	77.5	80.1	81.2	80.6	79.2	**80.7**
Urban areas	**66.2**	**70.0**	**72.6**	**74.5**	**72.9**	**72.0**	**73.7**	**74.9**	**77.8**	**80.6**	**81.7**	**80.8**	**79.8**	**81.0**
Dolnośląskie	65.9	69.2	72.1	73.7	72.3	71.5	**73.1**	74.5	77.5	80.2	81.4	80.9	79.5	**80.9**
Kujawsko-pomorskie	65.9	70.0	71.7	74.0	72.2	71.4	**73.2**	74.6	77.5	79.9	80.9	80.1	79.0	**80.2**
Lubelskie	67.1	70.0	72.7	75.1	73.5	72.3	**74.2**	76.4	78.5	80.8	82.6	81.1	79.7	**81.9**
Lubuskie	65.8	69.7	72.3	73.6	72.2	70.5	**72.8**	74.6	77.2	80.3	81.3	80.3	79.3	**80.7**
Łódzkie	64.9	67.8	70.3	73.0	71.3	70.4	**72.2**	74.0	76.7	79.2	80.7	79.6	78.7	**79.7**
Małopolskie	67.7	71.6	74.2	75.9	74.5	73.9	**75.1**	75.9	78.6	81.4	82.7	81.7	81.2	**82.3**
Mazowieckie	66.8	70.5	73.6	75.3	73.6	72.3	**74.5**	75.7	78.5	81.2	82.3	81.1	80.3	**81.8**
Opolskie	67.0	70.7	73.0	75.2	73.5	72.6	**73.7**	74.8	78.3	80.4	81.9	81.2	80.2	**81.7**
Podkarpackie	68.3	71.8	74.5	76.3	74.5	73.7	**75.9**	76.5	78.7	82.1	83.5	82.2	80.8	**82.8**
Podlaskie	66.5	70.9	73.5	75.3	73.5	72.4	**74.6**	76.4	78.8	82.2	83.3	82.0	80.8	**82.8**
Pomorskie	66.2	71.1	73.4	75.5	73.9	73.0	**74.1**	74.8	78.0	81.0	82.1	81.6	80.5	**81.2**
Śląskie	65.4	69.4	71.5	73.6	72.1	71.1	**72.7**	73.9	77.0	79.5	80.6	79.8	78.8	**79.9**
Świętokrzyskie	67.2	70.6	72.9	74.7	72.5	72.1	**73.4**	76.1	78.5	81.0	82.3	80.6	80.1	**81.4**
Warmińsko-mazurskie	66.0	70.3	72.2	73.7	72.4	71.3	**73.3**	75.3	78.6	80.4	81.6	81.0	79.7	**81.0**
Wielkopolskie	66.0	70.0	73.1	74.7	73.3	72.4	**74.0**	74.8	77.5	80.4	81.8	80.7	80.0	**81.1**
Zachodniopomorskie	65.9	69.5	72.1	73.9	72.6	71.7	**73.0**	74.4	77.4	80.3	81.5	80.7	79.3	**80.8**

3 At the calculation of life table parameters for 1990 has been introduced the modified definition of live births implemented since 1994. (see note No. 2)

Table 3. Life expectancy at birth by voivodships in selected years (cont.)

Voivodships	Males							Females						
	1990	2000	2010	2019	2020	2021	**2022**	1990	2000	2010	2019	2020	2021	**2022**
Rural areas	**66.2**	**69.4**	**71.4**	**73.4**	**72.1**	**71.4**	**73.0**	**75.8**	**78.4**	**80.7**	**81.8**	**80.6**	**79.6**	**81.1**
Dolnośląskie	65.3	67.9	70.7	72.7	71.7	71.0	**72.4**	75.0	77.8	80.2	81.0	79.8	79.4	**80.1**
Kujawsko-pomorskie	65.3	69.0	70.9	73.3	72.7	71.1	**73.5**	74.6	77.6	79.6	81.1	80.8	78.6	**80.3**
Lubelskie	66.4	68.4	70.1	72.9	71.3	70.5	**72.4**	76.5	78.5	81.2	82.3	81.2	79.3	**81.5**
Lubuskie	64.0	68.3	70.4	71.6	71.2	70.4	**72.1**	74.6	77.8	79.6	80.3	79.4	78.3	**79.6**
Łódzkie	65.9	68.2	70.0	71.8	70.7	70.8	**72.0**	75.3	78.2	80.0	81.7	79.8	79.7	**80.6**
Małopolskie	68.2	71.0	73.3	74.8	73.2	73.0	**74.6**	76.7	79.1	81.4	82.7	81.5	80.7	**82.2**
Mazowieckie	66.2	68.8	70.8	72.6	71.4	70.4	**72.5**	76.2	78.9	80.8	81.7	80.4	79.5	**81.0**
Opolskie	65.9	70.8	72.9	73.8	72.3	72.1	**73.4**	74.9	78.0	80.4	82.2	80.6	80.5	**81.1**
Podkarpackie	67.8	70.8	73.2	74.7	73.1	72.1	**74.0**	76.4	79.2	81.5	82.9	81.5	80.5	**82.2**
Podlaskie	67.3	69.9	71.3	72.9	72.5	70.4	**72.4**	77.1	79.4	81.4	83.0	81.7	79.9	**82.4**
Pomorskie	65.5	69.3	71.9	73.5	72.3	72.0	**73.1**	74.7	78.3	80.0	80.9	80.2	79.1	**80.2**
Śląskie	67.0	70.1	72.0	74.3	73.1	71.7	**73.2**	75.7	77.9	80.5	81.6	80.3	79.2	**81.2**
Świętokrzyskie	66.2	70.3	70.8	73.0	71.5	71.2	**72.5**	75.9	78.7	80.8	82.2	81.0	79.9	**81.6**
Warmińsko-mazurskie	64.5	67.9	70.0	72.0	71.4	70.0	**71.5**	75.2	78.6	80.3	80.5	79.8	78.8	**80.1**
Wielkopolskie	65.6	69.3	71.8	73.8	72.2	71.7	**73.2**	75.1	77.6	80.5	81.2	80.2	79.0	**80.6**
Zachodniopomorskie	63.4	67.9	69.6	72.9	71.1	71.2	**72.1**	74.8	77.4	79.4	80.2	80.2	78.5	**80.1**

3.3. Subregions

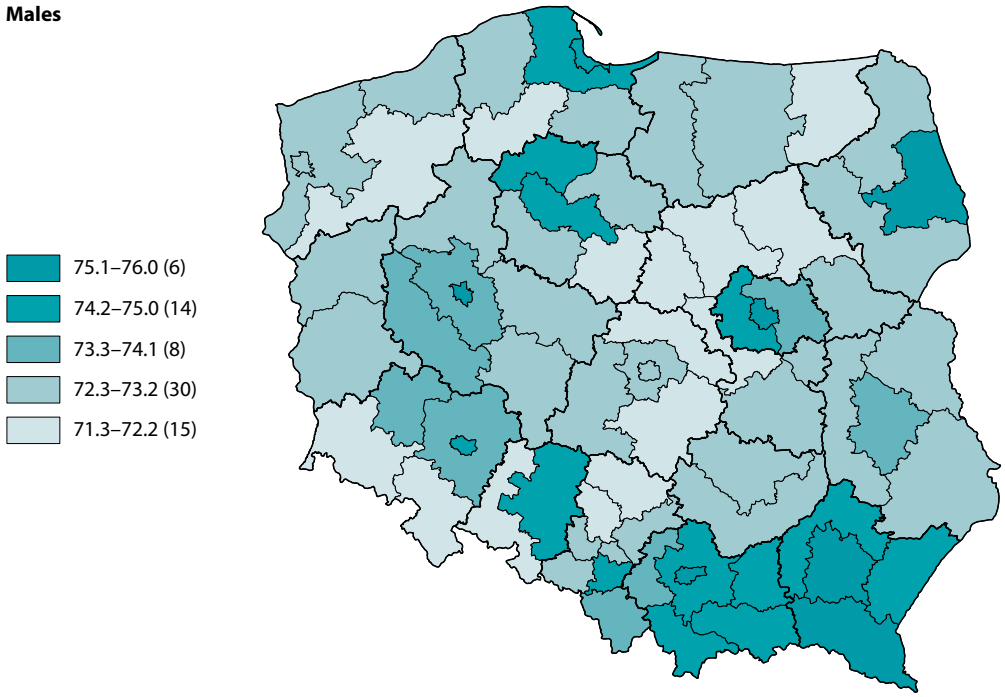
In 2022, the range between the extreme values of life expectancy in Polish subregions was 4.5 years for men and 3.8 years for women (Map 2). The longest life expectancy was for men in Kraków (75.9 years), and the shortest in the Wałbrzych and Żyrardów subregions (71.4 years). In the case of women, the longest life expectancy was noted in the Białystok and Rzeszów subregions (82.9 years), and the shortest in the Grudziądzki and Katowice subregions (79.2 years).

Among the subregions, the subregions formed by the largest cities in the country, with 6.4 million inhabitants (i.e. 16.9% of the total population of the country) are particularly noteworthy. These include the following cities: Cracow, Łódź, Poznań, Szczecin, Warsaw, Wrocław, as well as the Katowicki and Trójmiejski subregions. Of these, in five subregions, both men and women lived longer than the national average.

In 2022, the longest life expectancy was recorded in Kraków (75.9 years for men, 82.3 years for women). In the case of men, it was the shortest in Łódź (72.3 years), and for women – in the Katowice subregion (79.2 years). The biggest difference between the life expectancy of men and women was noted in Szczecin (7.8 years). Compared to other large cities, the Katowice and Łódź subregions look very unfavorable, as their life expectancy is over a year shorter than the national average (Chart 4).

Map 2. Life expectancy at birth in Poland by subregions in 2022

Males



Females

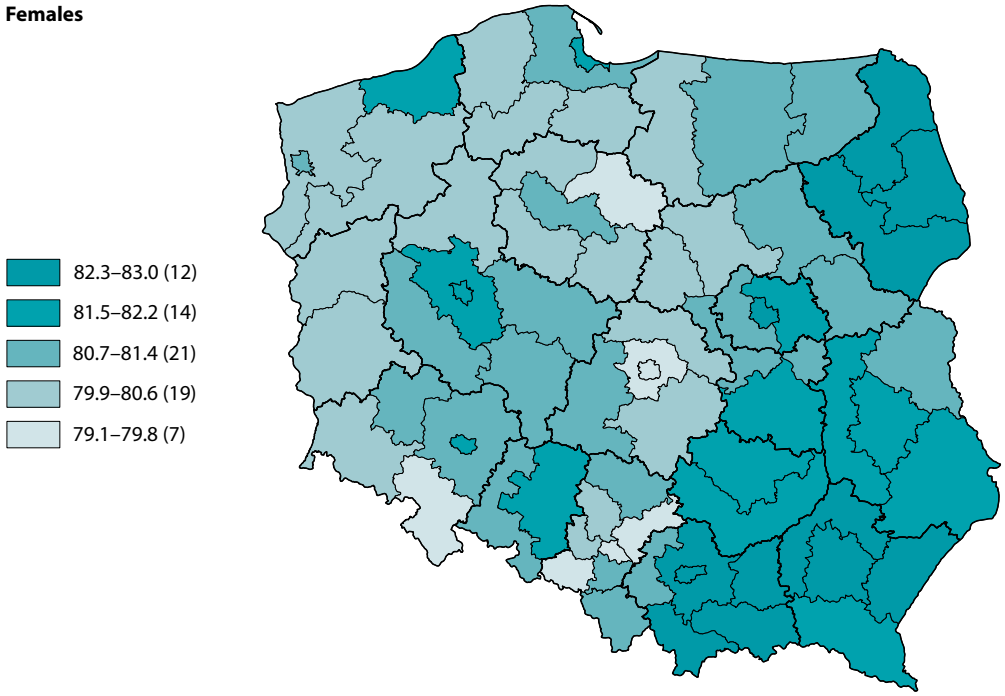
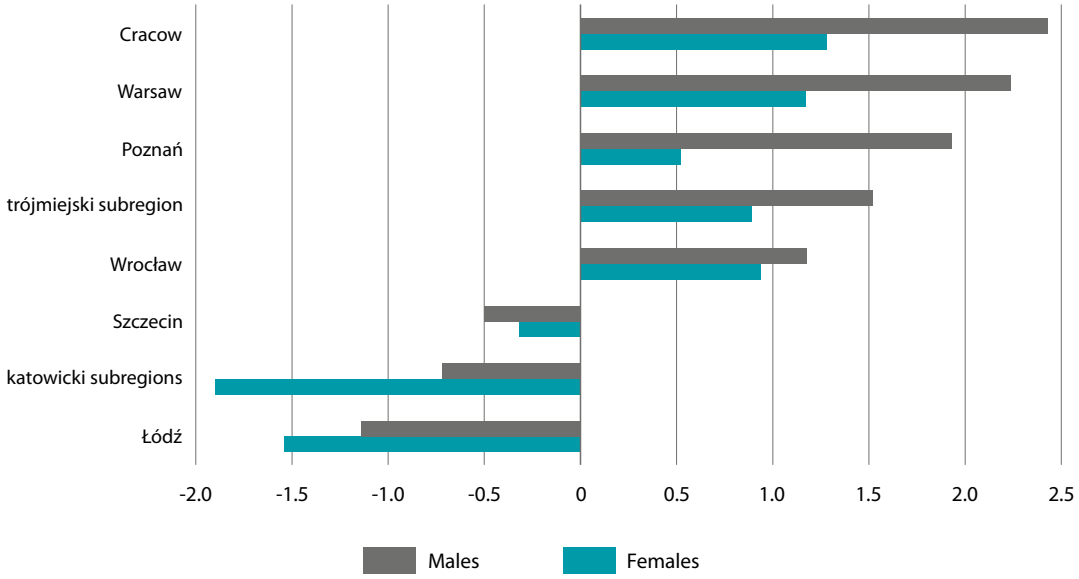


Chart 4. Life expectancy at birth in 2022 in selected subregions



Chapter 4. International comparison

This chapter presents the results of comparative analyzes of life expectancy in selected European countries in 2021 based only on data compiled by Eurostat.[4]

In term of life expectancy for men, Poland (71.6 years) was only 25th out of 34 European countries included in the analysis, ahead of Balkan countries (Bulgaria, Serbia, Montenegro, North Macedonia), Carpathian countries (Hungary, Romania, Slovakia) and Baltic countries (Latvia and Lithuania). In case of women, Poland (79.6 years) was one place higher in this ranking, because, apart from the above-mentioned countries, the average life expectancy was longer also than in Albania (Table 4).

In Europe, there was a large diversity in life expectancy (Map 3). The longest life expectancy for men was recorded in Switzerland (81,8 years), Iceland (81,8 years) and Norway (81.7 years), and the shortest in Bulgaria (68.0 years) and Latvia (68,2 years). Among women, the longest life expectancy was recorded in Spain (86.2 years), and the shortest in Bulgaria (75.1 years) and North Macedonia (75.5 years).

In countries, where life expectancy was relatively short, the difference between men and women – with few exceptions – was very large. The countries with the largest gap were: Latvia (9.8 years), Lithuania (9.3 years), Estonia (8.7 years) and Poland (8.0 years), and with the smallest were: Iceland (2.8 years), Norway (3.0 years) and Netherlands (3.3 years).

Table 4. Average life expectancy of a newborn in selected European countries in 2021

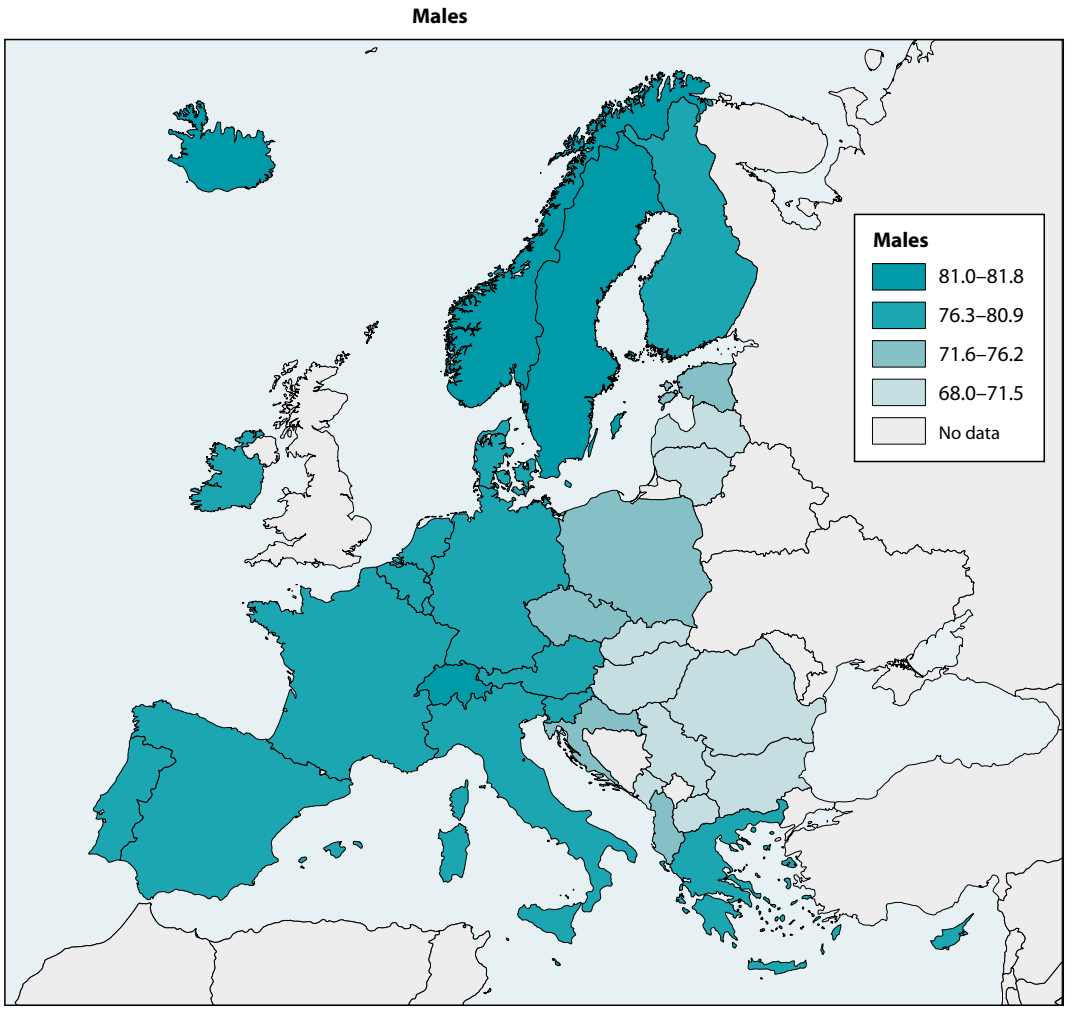
Country	Males	Females	Difference
Albania	73.6	77.7	4.1
Austria	78.8	83.7	4.9
Belgium	79.4	84.3	4.9
Bulgaria	68.0	75.1	7.1
Croatia	73.6	79.8	6.2
Cyprus	79.2	83.4	4.2
Czech Republic	74.1	80.5	6.4
Denmark	79.6	83.3	3.7
Estonia	72.7	81.4	8.7
Finland	79.3	84.6	5.3
France	79.3	85.5	6.2
Germany	78.4	83.3	4.9
Greece	77.4	82.9	5.5
Hungary	70.7	77.8	7.1
Iceland	81.8	84.6	2.8
Ireland	80.5	84.3	3.8
Italy	80.5	84.9	4.4
Latvia	68.2	78.0	9.8
Lithuania	69.5	78.8	9.3
Luxembourg	80.5	84.8	4.3
Malta	80.8	84.3	3.5
Montenegro	70.8	77.0	6.2
Netherlands	79.7	83.0	3.3

4 https://ec.europa.eu/eurostat (access 12.06.2023)

Table 4. Average life expectancy of a newborn in selected European countries in 2021 (cont.)

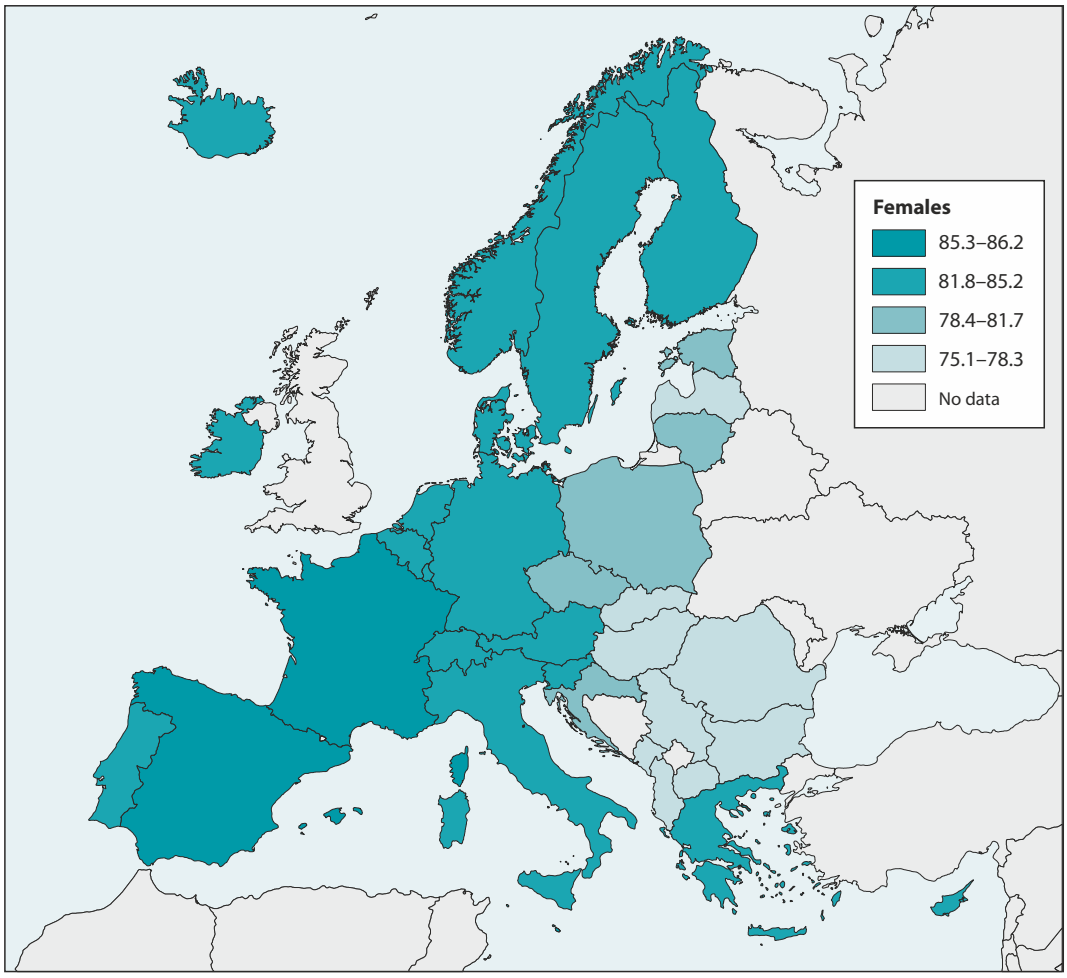
Country	Males	Females	Difference
North Macedonia	71.1	75.5	4.4
Norway	81.7	84.7	3.0
Poland	**71.6**	**79.6**	**8.0**
Portugal	78.5	84.4	5.9
Romania	69.2	76.6	7.4
Serbia	70.0	75.7	5.7
Slovakia	71.2	78.2	7.0
Slovenia	77.7	83.8	6.1
Spain	80.4	86.2	5.8
Sweden	81.3	84.9	3.6
Switzerland	81.8	85.8	4.0

Map 3. Life expectancy at birth in European countries in 2021



Map 3. Life expectancy at birth in European countries in 2021 (cont.)

Females



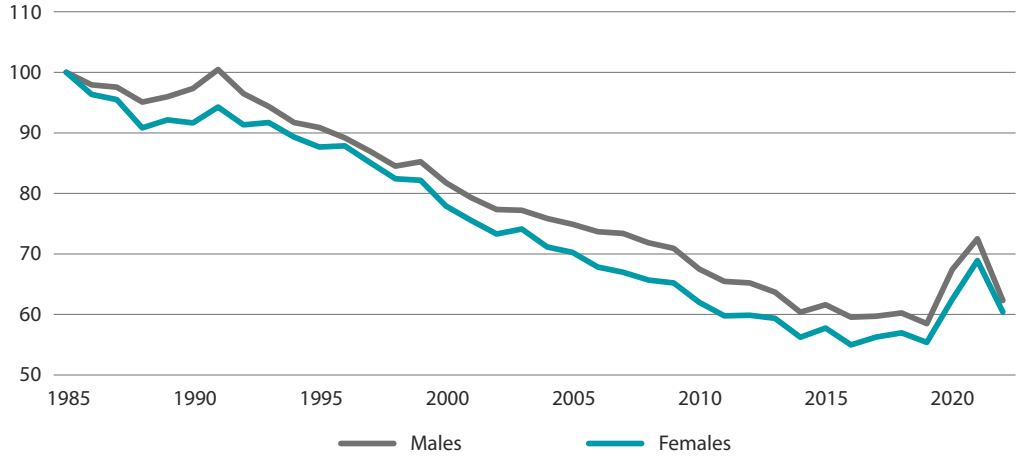
Source: https://ec.europa.eu/eurostat (access 12.06.2023)

Chapter 5. Mortality in Poland

In this chapter an additional analysis of life expectancy in Poland is presented. For this purpose a study of mortality (total and divided into five groups of causes of death, which have the most impact on life expectancy) was used. Additionally, charts 5-11 show the change in the value of standardized death rates compared to 1985 r.[5] The development of data on causes of death is a long and complex process, and thus the results are available only at the end of the following year.[6] For this reason, the analysis of mortality by cause of death is presented with a one-year shift.

> In order to control the influence of changing age structure on death rates, a method of direct standardization has been applied. It allows to answer the following question: what would death rates be if the population structure was the same during the entire period of analysis. As the standard, the population structure from 2010, which had been estimated using the results of 2011 population census, was used.

Chart 5. Change in the value of standardized death rates for males and females 1985-2022 (1985 year = 100)



Between 1990 and 2019, despite periodic fluctuations, the overall level of death rates tended to decrease. However, the spread of the COVID-19 disease has resulted in a sharp increase in standardized and non-standardized death rates (Chart 5). In 2022, a reversal of this trend was observed, with 937 people dying per 100 thous. of population, 144 less than the year before.

Throughout the whole analysed period, mortality of men was higher in every age group (Table 5). During the entire analysed period the death rates among men below 60 years of age were about 2.6 times higher than women of the same age. Among older people (60+) the difference gets smaller.

5 Indicators of dynamics (single-base indexes) were used - informing about changes in the level of the phenomenon in subsequent periods (yt) compared with the level of the phenomenon from one fixed period (y0) adopted for the comparative period (in the presented analysis it is 1985). https://stat.gov.pl/en/metainformation/glossary/terms-used-in-official-statistics/2889,term.html (access 30.05.2023)

$$i = \frac{y_t}{y_0} \cdot 100$$

6 Methodological report Vital statistic. Balances of population. [2018] Statistical research mothodology, Statistics Poland, Warsaw https://stat.gov.pl/en/topics/population/population/methodological-report-vital-statistic-balances-of-population,11,1.html (access 30.05.2023)

Table 5. Standardized death rates for males and females by age in selected years (per 100 thous. of population)

Years	0-44 years		45-59 years		60 years and more	
	males	females	males	females	males	females
1985	247.0	109.3	1426.0	567.3	6986.5	5673.2
1990	253.7	103.0	1481.8	544.7	6618.9	5168.1
1995	220.9	86.2	1400.0	501.8	6221.8	4993.5
2000	177.7	67.2	1216.5	474.7	5736.2	4434.1
2005	158.0	57.6	1168.4	441.5	5200.5	3993.6
2010	137.3	47.2	1049.1	399.2	4710.8	3524.6
2015	118.1	41.5	907.0	356.3	4396.0	3303.2
2016	115.9	41.7	888.4	344.3	4226.0	3134.2
2017	115.9	42.5	874.0	341.4	4270.2	3227.6
2018	119.4	42.6	868.1	340.6	4310.8	3263.5
2019	118.1	41.8	843.5	329.4	4173.7	3173.3
2020	124.9	43.9	922.8	353.5	4925.6	3609.0
2021	133.4	49.1	982.3	382.2	5312.5	3985.6
2022	**124.8**	**47.2**	**850.1**	**321.9**	**4515.3**	**3491.5**

5.1. Mortality by selected groups of death causes and age 1985-2021

In Poland the main causes of deaths are cardiovascular diseases, neoplasms and respiratory diseases (Table 6 and 7). In 2021, they were responsible for almost 60% of all deaths.

Table 6. Standardized death rates by selected groups of causes in selected years (per 100 thous. of population)

Years	Total	Deaths from diseases of the circulatory system	Deaths from neoplasms	Deaths from external causes	Deaths from diseases of the respiratory system	Deaths from diseases of the digestive system
	per 100 thous. of population					
1985	1508	819	250	88	82	47
1990	1426	785	258	92	58	43
1995	1347	711	262	86	47	43
2000	1204	597	270	75	62	46
2005	1097	516	265	70	56	48
2010	983	452	249	61	50	42
2015	909	405	248	49	55	35
2016	873	365	244	48	51	38
2017	886	353	241	47	57	39
2018	894	349	242	49	58	40
2019	869	330	237	49	57	40
2020	994	347	233	49	59	42
2021	**1081**	**359**	**217**	**52**	**58**	**46**

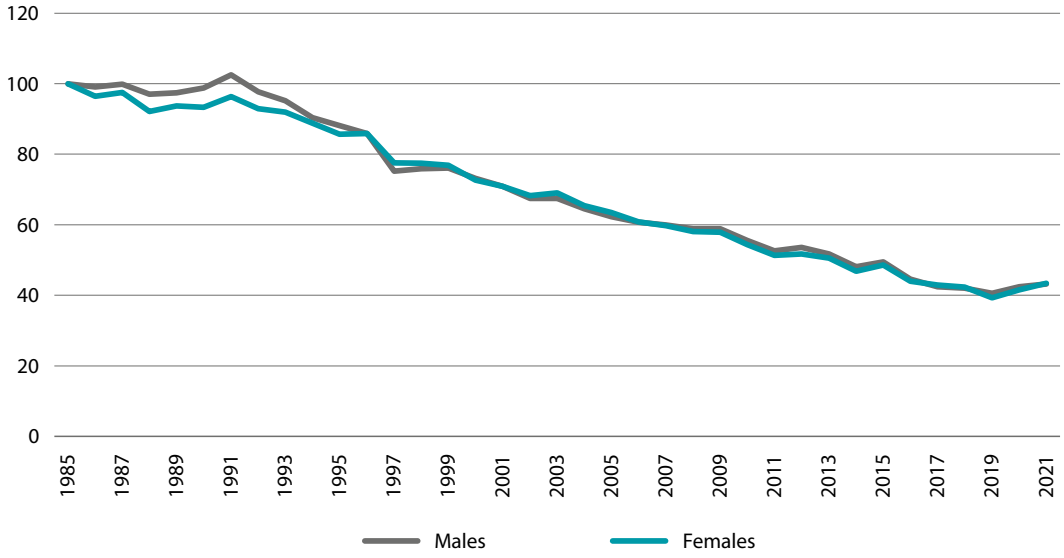
Table 7. Standardized death rates by selected groups of causes, age and sex in selected years (per 100 thous. of population)

	Deaths from neo-plasms		Deaths from diseases of the circulatory system		Deaths from external causes		Deaths from diseases of the respiratory system		Deaths from diseases of the digestive system	
	males	females	males	females	males	females	males	females	males	females
0-44 years										
1985	39.7	14.2	23.1	21.5	96.1	18.1	6.7	4.7	7.5	3.0
1990	43.6	14.0	22.1	21.4	105	18.1	5.2	3.6	7.1	2.8
1995	32.8	10.3	19.6	20.1	93.1	17.6	4.3	2.5	10.0	2.9
2000	24.0	7.6	17.2	17.2	77.0	14.8	3.9	2.1	10.5	2.8
2005	20.1	6.2	14.6	15.0	69.0	13.0	3.1	1.7	10.2	2.7
2010	19.3	5.7	12.0	11.9	60.0	9.7	3.7	1.8	9.6	2.9
2015	16.6	4.6	10.9	11.2	47.6	7.9	3.9	2.0	8.2	2.6
2016	13.1	3.8	10.5	10.4	44.6	8.1	4.1	1.7	9.3	3.2
2017	10.9	3.7	9.9	10.9	44.1	7.6	3.5	2.0	9.8	3.3
2018	12.2	3.7	10.3	10.6	47.1	8.1	4.7	2.4	10.6	3.7
2019	10.8	2.9	10.3	10.1	49.3	9.2	5.0	2.1	10.4	3.6
2020	10.5	3.3	10.0	9.9	50.6	9.6	4.5	2.0	12.4	3.7
2021	**12.2**	**3.5**	**9.3**	**9.7**	**45.7**	**8.6**	**4.8**	**1.9**	**13.0**	**4.6**
45-59 years										
1985	577.0	201.8	390.5	218.0	165.5	31.2	63.7	20.1	63.3	26.0
1990	607.2	193.8	406.5	214.3	186.4	31.5	47.0	13.7	56.0	22.7
1995	521.7	159.5	385.7	217.4	187.6	30.9	31.6	10.4	69.4	22.8
2000	425.5	128.4	346.8	222.4	156.9	29.1	31.7	14.8	80.5	25.3
2005	363.9	103.7	320.4	217.3	166.7	28.5	32.9	11.8	89.0	28.0
2010	325.4	85.8	280.1	201.4	154.7	25.2	36.0	12.9	80.5	27.5
2015	281.1	78.6	240.1	176.2	115.1	19.3	34.6	13.0	71.0	25.6
2016	247.4	68.0	228.3	170.3	110.9	18.0	36.1	12.5	74.1	26.2
2017	215.5	59.1	222.3	169.7	108.7	18.0	35.2	12.0	76.5	28.9
2018	218.5	59.7	211.8	167.9	111.3	18.6	37.4	13.1	80.4	29.1
2019	213.7	57.2	205.8	161.6	107.2	17.2	36.9	15.0	80.0	29.1
2020	209.5	55.6	201.3	155.8	109.2	16.2	36.9	14.0	85.8	30.7
2021	**217.9**	**57.8**	**185.4**	**141.1**	**106.7**	**17.9**	**38.3**	**12.9**	**92.2**	**33.7**
60 years and more										
1985	3961.3	3607.2	1239.0	671.6	208.9	150.5	553.9	237.4	207.2	160.0
1990	3844.9	3359.9	1299.5	682.1	213.5	140.9	396.6	160.6	190.1	146.8
1995	3482.1	3108.0	1368.4	705.2	190.4	134.4	311.9	139.9	176.6	134.3
2000	2913.8	2645.5	1459.5	754.3	184.9	117.4	391.3	216.6	187.6	144.1
2005	2480.0	2320.4	1446.3	755.4	178.2	94.8	369.2	187.8	192.0	146.3
2010	2202.9	1989.4	1363.6	731.6	165.6	73.0	320.1	160.1	164.2	122.0
2015	1976.9	1777.6	1363.5	771.4	139.2	64.3	328.4	195.2	134.9	95.1
2016	1795.4	1612.3	1341.7	770.6	137.5	61.5	305.4	174.1	146.2	99.9
2017	1742.2	1581.8	1312.9	770.8	138.0	62.6	330.6	205.1	145.9	103.4
2018	1717.7	1557.2	1321.4	785.0	143.0	63.1	341.2	207.4	148.6	102.1
2019	1654.6	1446.5	1272.1	781.1	134.2	61.7	327.9	199.8	151.6	101.8
2020	1752.4	1531.0	1258.8	766.7	133.6	62.9	350.5	204.3	156.6	105.8
2021	**1771.6**	**1601.9**	**1165.2**	**727.1**	**158.4**	**81.5**	**328.3**	**209.1**	**170.7**	**119.5**

The primary cause of death in Poland are cardiovascular diseases. In 2021 there were close to 35% of deaths due to these diseases. Since 1992 the share of these diseases in total number of deaths has decreased from 52% to the current one (Chart 6). According to the analysis of deaths in Poland between 1991 and 2005 caused by ischemic heart disease, the decrease in this period was caused by i.a.: lowering the average total cholesterol concentration in blood, lower prevalence of smoking among men and lowering the average blood pressure values among women. Progress in cardiac therapy accounted for 1/3 of the decline in deaths.[7]

In 2021, the standardized death rate from cardiovascular disease was 359 per 100,000 persons, by 12 people more than the year before. This is about 60% of the value of 2000- but still the frequency of deaths as a result of these diseases is very high.

Chart 6. Change in the value of standardized death rates due to cardiovascular diseases for males and females 1985-2021 (1985 year = 100)



In 2021 the cardiovascular disease mortality rate among men aged less than 45 was more than 3.5 times higher than among women of the same age (Table 6). This also concerns people at age of 45-59, however, the level of this rate was over a dozen times higher than among younger people. After a significant increase of men's death rate from these diseases at age of 45-59 in the 1980s, in the next decade a decrease was observed. The mortality rate (from this cause) for women of the same age had remained at roughly the same level for many years, only since 1992 it has started to decline gradually. Still the cardiovascular diseases are one of the most common, apart from neoplasms, causes of death among men and women aged 45-59 and the primary cause of death among people over 60 years of age. The oldest age group is characterised by the fact that male death rate from these diseases is only slightly higher than female, while in younger age groups the mortality for males is much higher than for females.

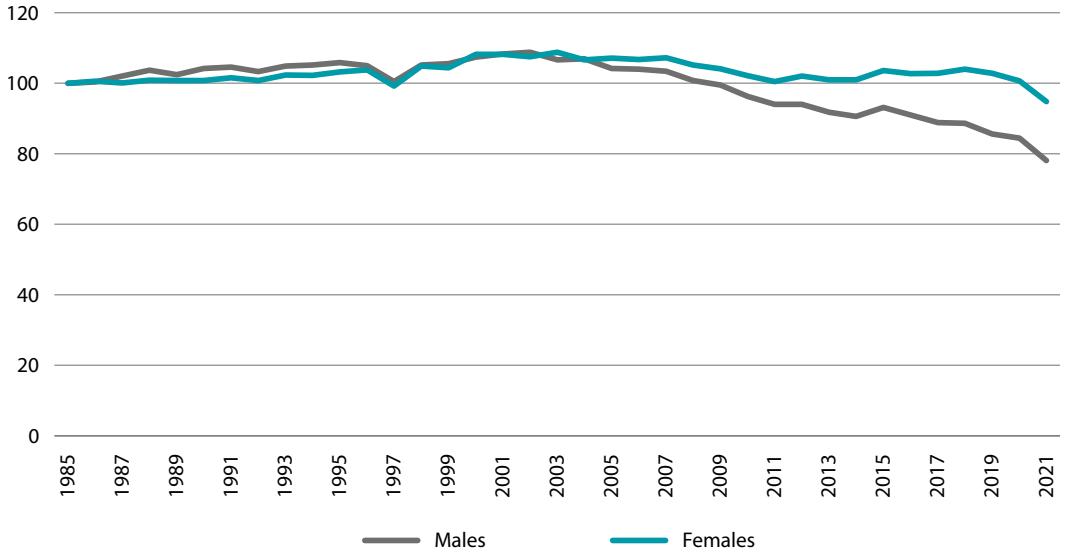
The second highest cause of deaths are neoplasms, causing – near 20% of all deaths in 2021, and standardized death rate caused by this diseases was 217 per 100,000 persons. In 2021, a slight decrease in mortality due to this causes was observed in all age groups.

In Poland, a constant increase of standardized death rates caused by these diseases was observed from 1980 till 2001. The beginning of the new century has brought a change of this tendency – a decrease of the standardized death rate for the whole population has been observed (Chart 7). Such a situation was a result of a rapid decrease of death rates caused by neoplasms among people younger than 44 years old.

7 Bandosz P., Rutkowski M., Drygas W., Wojtyniak B. (2015) IMPACT-PL Research. In: Kopeć G., Jankowski P., Pająk A., Drygas W. (ed.) Epidemiologia i prewencja chorób układu krążenia. Wydawnictwo Medycyna Praktyczna, Kraków, ISBN: 978-83-7430-469-6, https://www.researchgate.net/publication/292986866_Badanie_IMPACT-Pl (access 30.05.2023)

During the last 30 years the death rate of male and female at this age decreased twice. The death rates from cancer among people aged 0-44 years are over a dozen times lower than the level noted among aged 45-59 (Table 6).

Chart 7. Change in the value of standardized death rates due to neoplasms for males and females 1985-2021 (1985 year = 100)

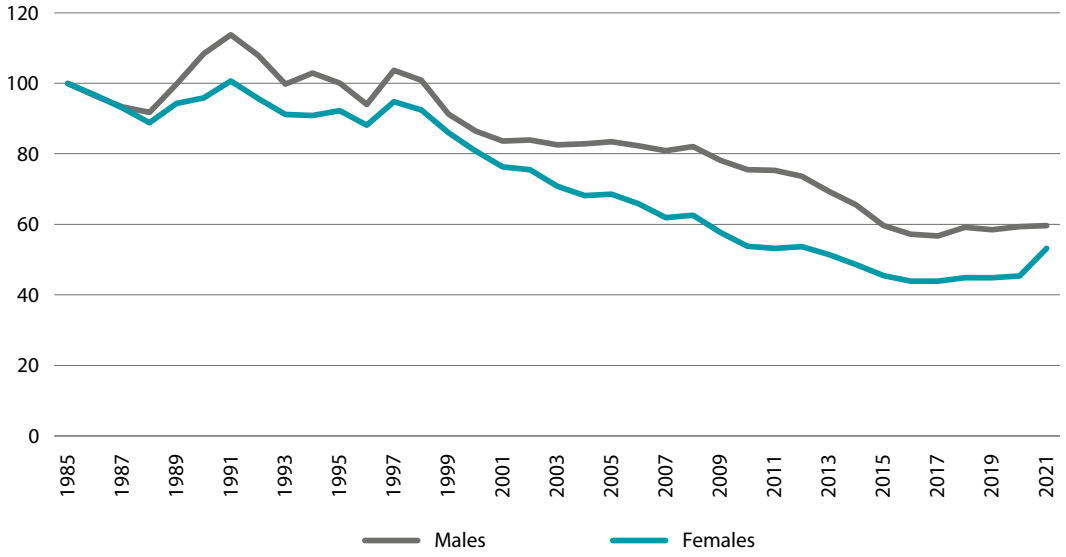


A rapid decline in neoplasm mortality observed from 1991 till 1997 among men aged 45-59 decelerated in the following years. Since 2002 a decline of frequency of neoplasms mortality can be observed again. In case of women, the cancer death rate has remained fairly stable for almost twenty five years. In older age groups (60+), the mortality of males, caused by neoplasms had kept increasing until 2004. During next ten years the decline of death rates was observed. In 2021, standardized death rate from neoplasms was 1165 per 100 thousand males. Among women over 60, the level of deaths caused by neoplasms has decrease by 40 per 100 thousand compared to the previous year. It ought to be mentioned that death rate from neoplasms was over six times higher among older males (i.e. above 60) than among younger ones (45-59, both males and females); for females about 4 times.

In 2021 deaths due to external reasons (mainly accidents and injuries) make up 4.2% of all deaths. A positive tendency of decreasing the mortality from these causes slowed down slightly in 2018 (Chart 8). In 2021 standardized death rate was 52 per 100 thousand persons and constituted only 60% of the maximum value during in analysed period, in 1991, when it was 88 deaths per 100 thousand persons.

External causes are the most frequent reasons of death among young men aged below 45 (Table 6). In fact, in 2021 it comprised almost 31% of all deaths among males at this age. The death rate among men aged 0-44 is above five times higher than among women. Similarly in age group 45-59 (above six time higher) and above 60 – two times higher. The share of external causes in total deaths decreases with age. Proportion of these causes of death, among people aged over 60, was 4.8% for males and 2.1% for females.

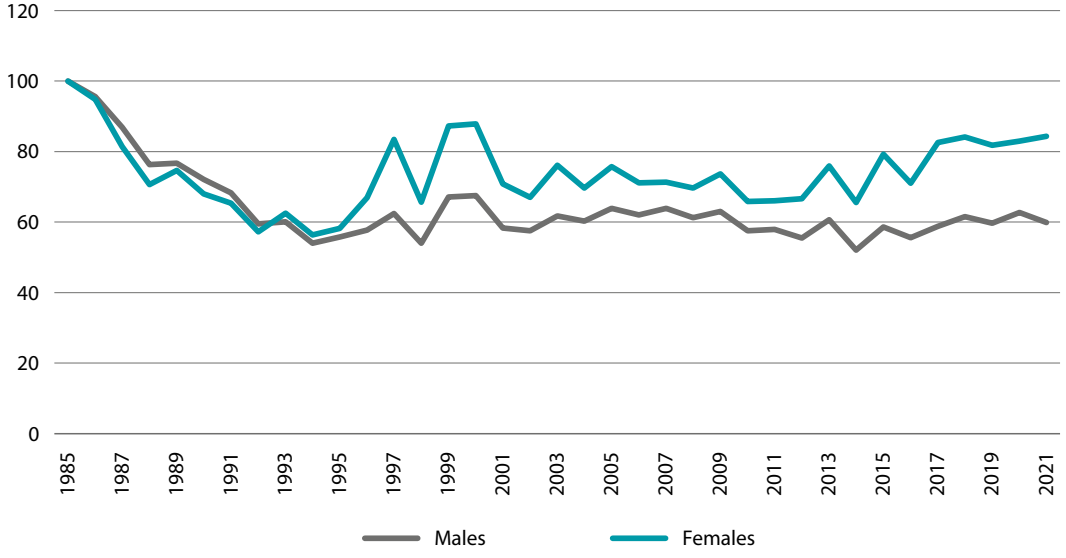
Chart 8. Change in the value of standardized death rates due to external causes for males and females 1985-2021 (1985 year = 100)



In Poland, in 2021, respiratory diseases were responsible for 5.4% of all deaths, and standardized death rate was 58 per 100 thousand persons. After the decline in mortality due to these diseases for several years, the death rate has remained at a similar level since the beginning of the 21st century (Chart 9).

For persons aged 60 and more, the incidence of deaths as a result of respiratory diseases was over 8 times higher than for those aged 44-59 in case of men and 16 times higher in case of women (Table 6).

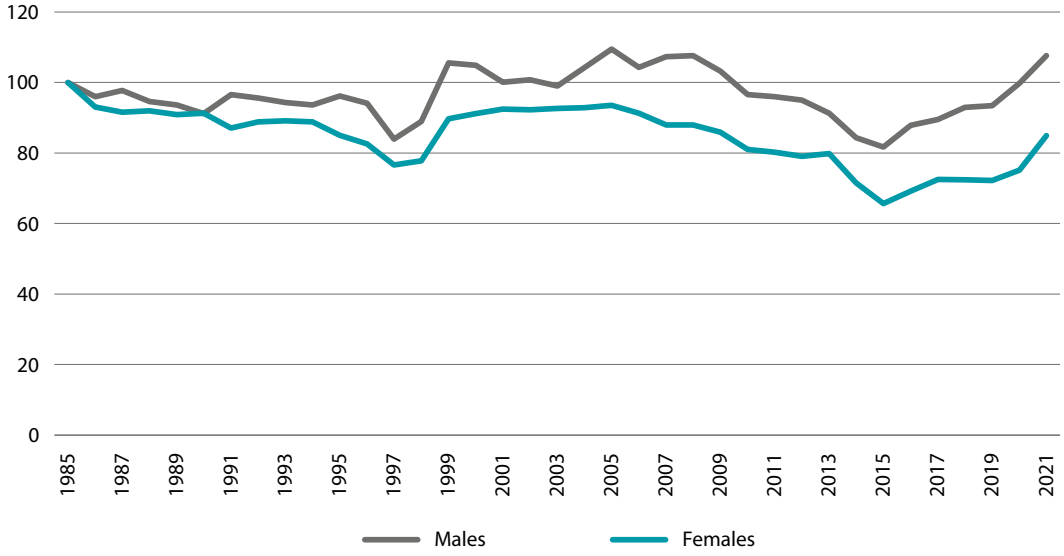
Chart 9. Change in the value of standardized death rates due to diseases of the respiratory system for males and females 1985-2021 (1985 year = 100)



Similar changes concern death rates caused by digestive disorders, but at a slightly lower level (Table 6, Chart 10). In the first half of the 80s, the death rate reached 38-39 per 100 thousand people, during the subsequent ten years it decreased to 35-36 and it increased again to 38-39 deaths per 100 thousand people between 2004-2008. In 2021 this value increased again (both in general and for all age groups) and

amounted to 46. Changes to the general mortality caused by digestive disorders are mostly influenced by increase of mortality of males aged above 45 years and female in age 60 years and more.

Chart 10. Change in the value of standardized death rates due to digestive system for males and females 1985-2021 (1985 year = 100)



In 2020, an additional cause of death was identified, related to the COVID-19 disease. In 2021 this disease was responsible for almost 18% of all deaths. The standardized death rate was 193 per 100 thousand people and was about 2 times higher than in the previous year.

The rate of deaths from this cause significantly increases with age (Table 8). For men in the oldest age group, the standardized death rate was nearly 8 times higher than for those aged 44-59, while the analogous proportion for women was above 11. In addition, the standardized death rate for men was about 2 times higher than for women in each of the analysed age groups.

Table 8. Standardized death rates due to COVID-19 diseases in selected years including age and sex (per 100 thous. of population)

	0-44 years		45-59 years		60 years and more	
	male	female	male	female	male	female
2020	3.8	1.9	60.2	25.9	531.6	290.6
2021	11.2	5.8	135.5	64.0	1069.6	707.3

5.2. Mortality by voivodships in 2022

In order to analyse mortality at regional level in 2022 the standardized death rates for individual voivodships have been counted. For calculation of such death rates a nationwide population structure (according to age, in 2022) was used.

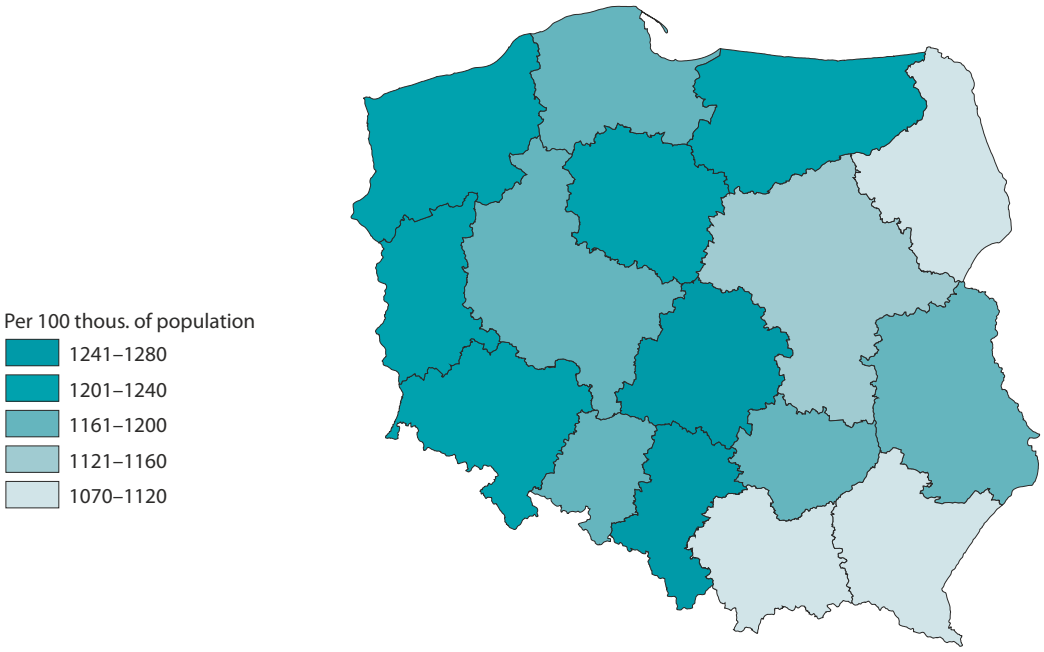
On the basis of recent results, the highest mortality rate for 2022 was noted in Łódzkie and Śląskie (Table 9, Map 4) where standardized death rates were 1320 and 1235 per each 100 thousand persons. A rather low death rates – in comparison to other regions of Poland – were observed in Małopolskie and Podkarpackie (less than 1150 persons). In 2022, in almost all voivodships, higher death rates were registered in rural than in urban areas. The exception was the Śląskie Voivodship, where 11 more deaths per 100 thous. of

populations were registered in cities compared to rural areas. The largest difference was noted in Podlaskie, Mazowieckie and Warmińsko-mazurskie (more than 190 more deaths in the rural areas per 100,000 population) and the smallest in Śląskie.

Table 9. Standardized death rates by voivodships in 2022 (per 100 thous. of population)

Voivodships		Total	Urban Areas	Rural Areas
00	**Total**	**1186**	**1149**	**1253**
02	Dolnośląskie	1223	1188	1331
04	Kujawsko-pomorskie	1222	1204	1262
06	Lubelskie	1164	1071	1251
08	Lubuskie	1233	1182	1355
10	Łódzkie	1279	1259	1320
12	Małopolskie	1090	1049	1138
14	Mazowieckie	1146	1083	1277
16	Opolskie	1168	1116	1237
18	Podkarpackie	1074	990	1141
20	Podlaskie	1112	1031	1230
22	Pomorskie	1169	1128	1278
24	Śląskie	1243	1246	1235
26	Świętokrzyskie	1199	1139	1256
28	Warmińsko-mazurskie	1239	1171	1362
30	Wielkopolskie	1195	1139	1288
32	Zachodniopomorskie	1229	1196	1326

Map 4. Standardized death rates by voivodships in 2022



5.3. Mortality by selected groups of death causes and voivodships in 2021

The analysis of mortality by selected groups of causes of death and voivodships is based on the 2021 data. For a calculation of standardized death rates for individual voivodships a nationwide population age structure from 2021 was used.

In 2021 the highest mortality related to cardiovascular diseases was noted in the Lubuskie voividship (Table 10, Chart 11), where standardized death rate was 667 for each 100 thousand people. This rate is 42% higher than in Wielkopolskie in which the lowest rate was noted (386).

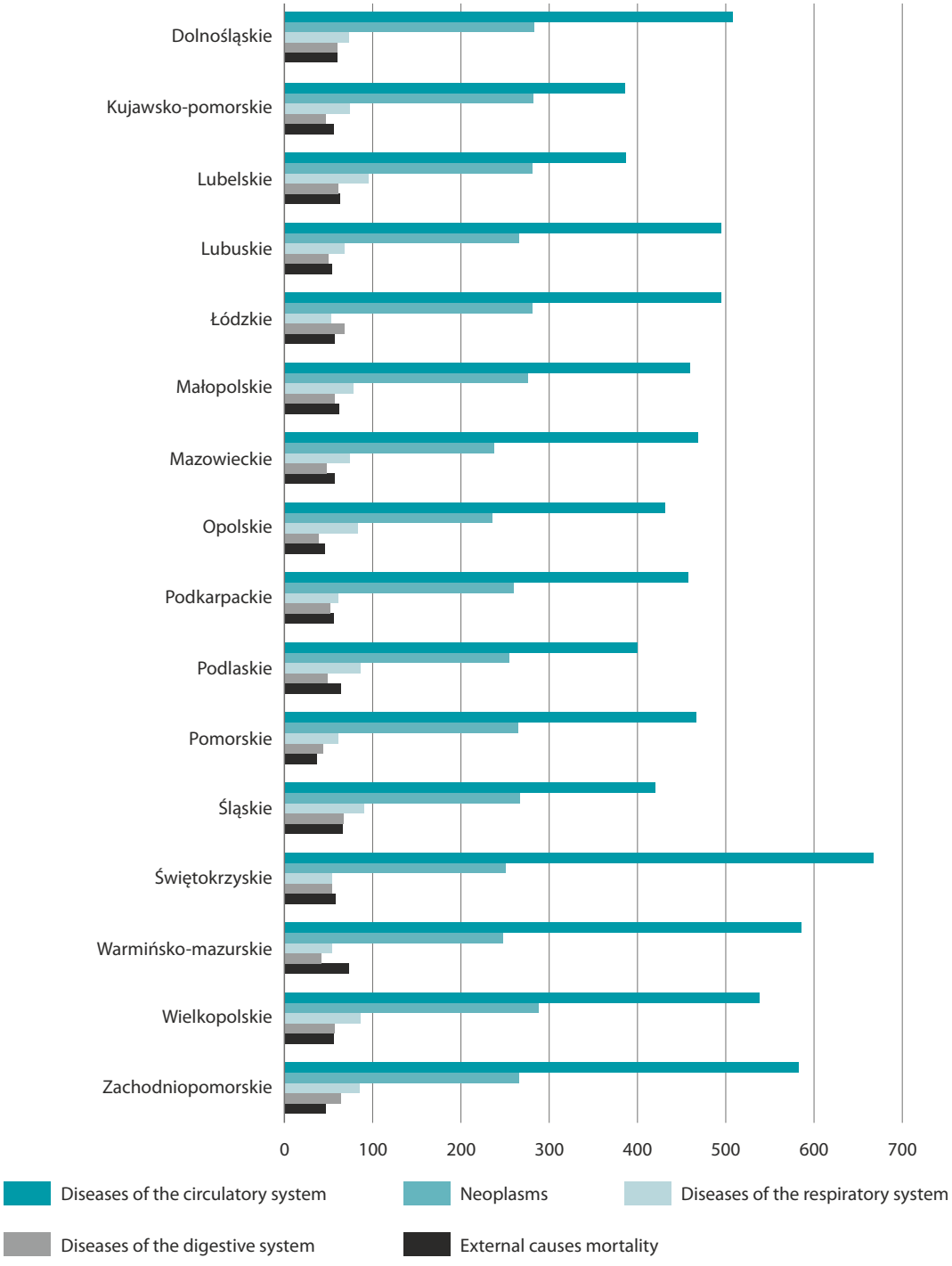
In 2021, as in previous year, Kujawsko-Pomorskie (Chart 11) experienced the highest mortality caused by neoplasms. In this region, standardized death rate was 288 per 100 thousand people. The lowest mortality rate was noted in Podkarpackie, Podlaskie and Lubelskie (below 250 per 100 thousand persons). The highest frequency of deaths caused by external reasons was noted in Lubelskie Voivodship, where death rate in was 73 per 100 thousand persons. The voivodship with the lowest death rate due to external causes was Małopolskie, the value of this indicator was 37.

In 2021 the lowest level of mortality related to respiratory diseases was in Śląskie, Lubuskie and Lubelskie (less than 60 deaths per 100 thousand people). On the other hand highest mortality rate was noted in Warmińsko-Mazurskie and Łódzkie (at least 9 in each) (Chart 11). The highest death rates caused by digestive disorders were noted in Łódzkie and Śląskie (more than 65 deaths per 100 thousand people). The lowest – in Podkarpackie (39) and Lubelskie (42) (Chart 11).

Table 10. Standardized death rates by selected groups of causes and voivodships in 2021 (per 100 thous. of population)

Voivodships		Total	Deaths from diseases of the circulatory system	Deaths from neoplasms	Deaths from external causes	Deaths from diseases of the respiratory system	Deaths from diseases of the digestive system
		per 100 thous. of population					
00	**Total**	**1361**	**474**	**267**	**57**	**74**	**54**
02	Dolnośląskie	1358	583	266	47	85	64
04	Kujawsko-pomorskie	1422	538	288	56	86	57
06	Lubelskie	1408	586	248	73	54	42
08	Lubuskie	1459	667	251	58	54	54
10	Łódzkie	1444	420	267	66	90	67
12	Małopolskie	1234	467	265	37	61	44
14	Mazowieckie	1337	400	255	64	86	49
16	Opolskie	1262	458	260	56	61	52
18	Podkarpackie	1294	431	236	46	83	39
20	Podlaskie	1357	469	238	57	74	48
22	Pomorskie	1294	460	276	62	78	57
24	Śląskie	1405	495	281	57	53	68
26	Świętokrzyskie	1382	495	266	54	68	50
28	Warmińsko-mazurskie	1441	387	281	63	95	61
30	Wielkopolskie	1366	386	282	56	74	47
32	Zachodniopomorskie	1388	508	283	60	73	60

Chart 11. Standardized death rates by selected groups of causes in 2021 (per 100 thous. of population)



Chapter 6. Conclusion

Life expectancy is a key measure of population health. Projections published by Eurostat and the United Nations, based on analyzes of changes taking place in the world, predict that life expectancy will increase in most countries, including Poland. Similar results are presented in projections prepared by Statistics Poland.

This is due to the fact that in most countries, a significant increase in life expectancy has been observed in recent years. One of the key reasons for this phenomenon was the achievement of significant progress in the field of prevention and health protection. A particularly important factor was also the decline in the infant mortality rate, which is taking place in the majority of countries around the world (including Poland).

The increase in the life expectancy observed in Poland over the last three decades was abruptly halted by the effects of the SARS-CoV-2 pandemic. According to current results of the life expectancy analysis there has been a reversal of the downward trend, but the indicators have not yet reached the pre-pandemic level.

Currently other phenomena, that can potentially contribute to the slowing down the increase in life expectancy in Poland, are also observed. The increase in the number of obese people in Poland is alarming. According to Eurostat data for Poland, in 2019 the percentage of people with a BMI above the norm[8] was 56,8[9], and the "Non-Communicable Disease Risk Factor Collaboration" forecast indicates that in 2025 30.3% of men and 25.9% of women above age 20 will be obese in Poland.[10] Another important factor may be air pollution and resulting increase in the incidence of i.a. respiratory diseases, some cancers, as well as cardiovascular diseases (Jędrak et al. 2017). Pope et al. (2009) showed that long-term exposure to dust particles with a diameter not greater than 2.5 μm (PM2.5 dust particles) shortens life expectancy.

Research conducted by various countries proves that apart from gender and place of residence, the factors that differentiate life expectancy include i.a.: education and socio-economic status. Therefore, there is no doubt that it is necessary to conduct further systematic analyzes of life expectancy and mortality, which will enable to observe their changes in the near future. Therefore, it is advisable to take into account additional variables and indicators that will give a more complete picture of the diversity of these phenomena.

8 BMI above normal: 25.00-29.99 is overweight; 30.00 or more is obese

9 Eurostat, European Health Interview Survey (EHIS), https://ec.europa.eu/eurostat/web/main/data/database (access 25.04.2023)

10 *NCD Risk Factor Collaboration* (NCD-RisC), https://ncdrisc.org/country-profile.html (access 25.04.2023)

Chapter 7. List of publication containing Polish life tables

1. Statistics Poland [1938]; Polskie tablice wymieralności 1931/32, (*Polish complete mortality 1931/1932*), „Statystyka Polski", seria C, 91/1938, Warsaw
2. Statistics Poland [1956]; Polskie tablice wymieralności 1952/1953, (*Polish complete mortality 1952/1953*), (ed. R. Zasępa), „Przegląd Statystyczny", 4/1956, Warsaw
3. Statistics Poland [1960]; Polskie tablice wymieralności 1955/1956, (*Polish complete mortality 1955/1956*), (ed. J. Z. Holzer), „Statystyka Polski", 32/1960, Warsaw
4. Statistics Poland [1964]; Polskie tablice wymieralności 1960/61, (*Polish complete mortality 1960/1961*), (ed. J. Z. Holzer), „Statystyka Polski", 91/1964, Warsaw
5. Statistics Poland [1968]; Polskie tablice wymieralności 1965/1966, (*Polish complete mortality 1965/1966*), (ed. J. Aleksińska), „Studia i Prace Statystyczne", 13/1968, Warsaw
6. Statistics Poland [1973]; Polskie tablice trwania życia 1970-72, (*Polish complete life expectancy tables 1970-1972*), (ed. J. Aleksińska i Z. Gałązka), „Rocznik Demograficzny 1973", Warsaw
7. Statistics Poland [1978]; Polskie tablice trwania życia 1975/1976, (*Polish complete life expectancy tables 1975/1976*), (ed. J. Mijakowska), Statystyka Polski, 101/1978, Warsaw
8. Statistics Poland [1983]; Polskie tablice trwania życia 1980/1981, (*Polish complete life expectancy tables 1980/1981*), (ed. L. Nowak), „Studia i Prace", 4/1983, Warsaw
9. Statistics Poland [1987]; Polskie tablice trwania życia 1985/1986, (*Polish complete life expectancy tables 1985/1986*), (ed. L. Nowak), „Studia i Prace", 14/1987, Warsaw
10. Statistics Poland [1993]; Polskie tablice trwania życia 1990-1991, (*Polish complete life expectancy tables 1990/1991*), (ed. J. Mijakowska), „Studia i Analizy Statystyczne", Warsaw
11. Statistics Poland [1997]; Polskie tablice trwania życia 1995-1996, (*Polish complete life expectancy tables 1995/1996*), (ed. L. Bolesławski), „Studia i Analizy Statystyczne", Warsaw

Life expectancy tables and mortality by causes

1. Statistics Poland [1975]; Trwanie życia i umieralność według przyczyn w latach 1970-1974, (*Life expectancy tables and mortality by causes in 1970-1974*), (ed. L. Bolesławski), Life tables, Warsaw
2. Statistics Poland [1976];Trwanie życia i umieralność według przyczyn w 1975 r., (*Life expectancy tables and mortality by causes in 1975*), (ed. L. Bolesławski), Life tables, Warsaw
3. Statistics Poland [1976];Trwanie życia i umieralność według przyczyn w województwach w latach 1973-1975, (*Life expectancy tables and mortality by causes and voivodships in 1973-1975*), (ed. L. Bolesławski), Life tables, Warsaw
4. Statistics Poland [1977]; Trwanie życia i umieralność według przyczyn w 1976 r., (*Life expectancy tables and mortality by causes in 1976*), (ed. J. Mijakowska), Life tables, Warsaw
5. Statistics Poland [1981];Trwanie życia i umieralność według przyczyn w latach 1977-1980, (*Life expectancy tables and mortality by causes in 1977-1980*), (ed. J. Mijakowska), „Opracowania Statystyczne", Warsaw
6. Statistics Poland [1981]; Trwanie życia i umieralność według przyczyn w latach 1976-1981, cz.I, (*Life expectancy tables and mortality by causes in 1976-1981*), (ed. L. Nowak), „Opracowania Statystyczne", Warsaw
7. Statistics Poland [1982]; Trwanie życia i umieralność według przyczyn w województwach w latach 1976-1980, cz.II, (*Life expectancy tables and mortality by causes and voivodships in 1976-1980*), (ed. J.Mijakowska), „Opracowania Statystyczne", Warsaw
8. Statistics Poland [1983]; Trwanie życia i umieralność według przyczyn w 1982 r., (*Life expectancy tables and mortality by causes in 1982*), (ed. L. Nowak), „Opracowania Statystyczne", Warsaw

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Chapter 8. Methodological notes

Life tables, also called mortality tables, illustrate both the average life expectancy and the potential schedule of population extinction. Life expectancy of a person at the age of *x* years is a prediction of future life expectancy. It informs how many years on average a person aged *x* completed would survive, if the currently observed mortality conditions were maintained for a sufficiently long time. The most frequently used and cited parameter is the newborn's life expectancy or shortly: life expectancy (denoted as e_0). It is used to study changes in mortality over time and is also one of the measures of the health status of the population. It is also used for national (e.g. intervoivodeship) and international comparisons.

The following data is used to build complete life tables:

- the number of people who died in a given year by age,
- population by age group as of June 30 of a given year.

The basic coefficients needed to create the table are age specific death rates (m_x), which are calculated up to 99 years of age.

$$m_x = \frac{D_x}{E_x} \tag{1}$$

where:

D_x – numer of deaths at age *x*,

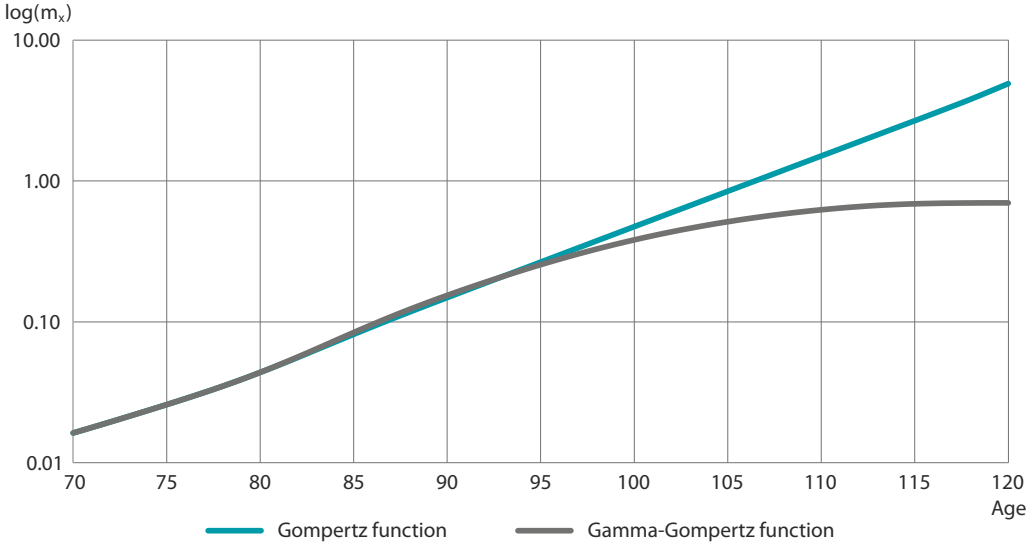
E_x – population on 30th June at age *x*.

Due to significant fluctuations in the value of death rates in the youngest and oldest ages, it is necessary to use modeling. This allows to eliminate accidental deviations of the coefficients from the long-term norm, caused by a small number of deaths in these ages. In case of the oldest years, strong fluctuations are also caused by very low population, resulting from the fact that relatively few survive to such an advanced age.

The Gamma-Gompertz model was used to smooth out death rates for the ages 85-99 and to extrapolate them over 100. The model was estimated on the basis of coefficients for ages from 70 to 99. This is due to the fact that above the age of 70, mortality rate acceleration increases dynamically.

The Gamma-Gompertz function is a modified version of the classical Gompertz model, which does not assume a constant, exponential increase in death rates. It projects a slowdown and ultimately a standstill of the increase in death rates (Chart 12). According to many demographers, this takes place in the oldest ages [1, 2, 3].

Chart 12. Example of the Gompertz and Gamma-Gompertz functions for the ages from 70 to 120



The applied function for the death rates is expressed by the formula [4]:

$$\hat{m}(x) = \frac{be^{b(x-M)}}{1+\Gamma e^{(-bM)}(e^{bx}-1)} \tag{2}$$

where:

b – parameter defining the rate of increase of mortality,

Γ – parameter defining the degree of slowdown of mortality in the oldest age groups,

M – the age at which the number of deaths is the highest (modal).

The model parameters (b, Γ, M) are estimated using the maximum likelihood[11] method, assuming that the number of deaths in individual years is the result of a random process with a Poisson distribution. The Nelder-Mead algorithm was used to optimize the parameters, with the additional assumption that the maximum value that the death rates can reach is 0.7 [2].

The values of death rates over 85 years of age were replaced with model ones, while for younger age groups they remained the same as the empirical ones at this stage. Then, centered five-period moving averages were used to smooth the death rates. For the age of 2 years a three-period average was used, for the age 0 and 1 years the empirical value was left unchanged. Before the smoothing, the coefficients were logarithmized. The described averaging formula was performed three times. For example, chart 13 shows the effect of the proposed modeling of death rates for women in 2021. The use of a moving average allowed to smooth out the mx coefficients, especially for the youngest ages, where fluctuations are especially strong. In turn, the effect of applying the Gamma-Gompertz function is of particular importance for the smoothing of the values of the coefficients for the oldest ages, i.e. 95 years and more.

11 Maxiumum log-likelihood is calculated using the following formula [5]:

$$l(\theta|D) \propto \sum_x D_x log\theta - E_x\theta \quad dla \quad x \in [70,99]$$

where:

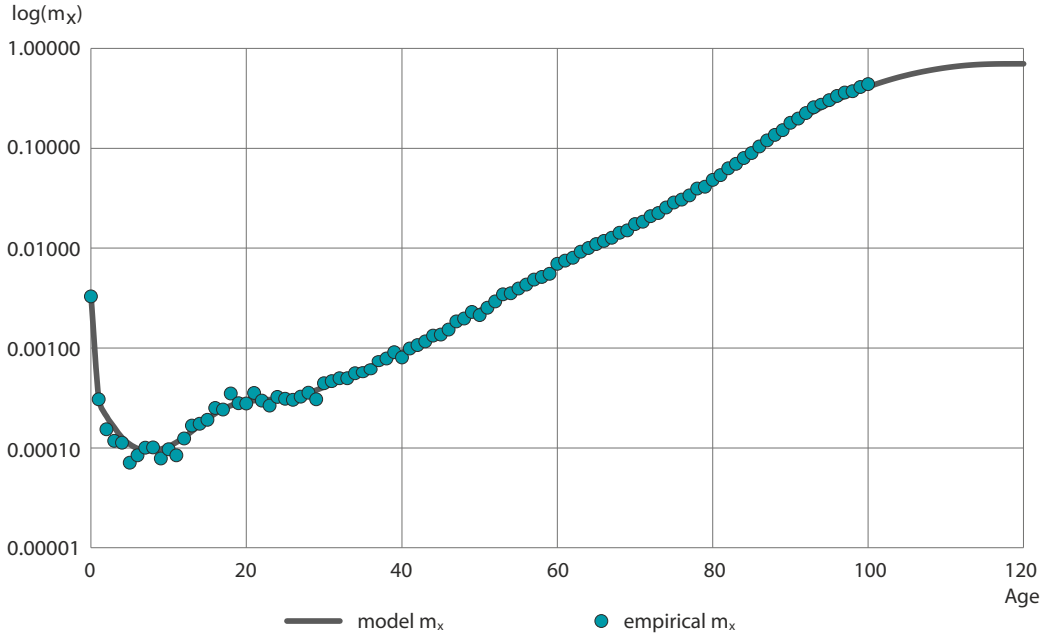
$\propto$ – mathematical symbol meaing „is proporcional to",

D_x – number of deaths at age x,

E_x – population aged x,

θ – model parameters.

Chart 13. Empirical and modeled death rates for women in Poland in 2022 (logarithmic scale)



In the next step, the probabilities of deaths for individual age groups (q_x) were calculated, using the following formula [6, 7]:

$$q_x = \frac{\hat{m}_x}{1+(1-a_x)\hat{m}_x} \tag{3}$$

where:

a_x – the part of the year that deceased persons aged x years have lived, on average, since their last birthday It is assumed that deaths for most ages are evenly distributed throughout the year, then the value of this parameter is 0.5. Exceptionally, for year 0 it is 0.1, because infants die much more often closer to birth than to the first birthday.

The remaining parameters are calculated according to the rules for creating life tables, using the following formulas:

l_x – number of people living up to the age of x completed years

$$\begin{aligned} l_x &= l_{x-1}(1 - q_{x-1}) \\ l_0 &= 100\,000 \end{aligned} \tag{4}$$

d_x – number of people who died during the year at the age of x completed years

$$d_x = l_x q_x \tag{5}$$

L_x – stationary population - average number of people living at the age of x years

$$L_x = \begin{cases} l_1 + 0{,}1d_0 & for\ x = 0 \\ \frac{l_x + l_{x+1}}{2} & for\ x > 0 \end{cases} \tag{6}$$

T_x – stationary cumulative population – the total number of years that remain to be lived – until the end of this generation – all people aged x

$$T_x = \sum_{i=x}^{120} L_i \tag{7}$$

e_x – average life expectancy of a person at the age of x completed years

$$e_x = \frac{T_x}{l_x} \tag{8}$$

The above formulas (4-8) are presented together with exemplary results in Table 11.

Table 11. Life table for males in 2022

age	Probability of dying	Number of survivors	Number of deceased	Stationary population	Cumulated stationary population	Life expectancy
x	q_x	l_x	d_x	L_x	T_x	e_x
0	0.00408	100000	409 $l_0 \times q_0$	99632 $l_1+0{,}1 \times d_0$	7341781 sum from L_0 to L_{120}	73.42 T_0/l_0
1	0.00032	99591 $l_0 \times (1-q_0)$	32 $l_1 \times q_1$	99575 $(l_1+l_2)/2$	7242150 sum from L_1 to L_{120}	72.72 T_1/l_1
2	0.00024	99559 $l_1 \times (1-q_1)$	24 $l_2 \times q_2$	99547 $(l_2+l_3)/2$	7142575 sum from L_2 to L_{120}	71.74 T_2/l_2
3	0.00019	99535 $l_2 \times (1-q_2)$	19 $l_3 \times q_3$	99526 $(l_3+l_4)/2$	7043028 sum from L_3 to L_{120}	70.76 T_3/l_3
…	…	…	…	…	…	…

Life expectancy table for both sexes combined

According to 26th article p. 3 of the Act of 17 December 1998 on pensions from the Social Insurance Fund (Journal of Laws of 2018, item 1270), life expectancy for the purposes of determining the amount of pensions by ZUS (*The Social Insurance Institution*) is calculated for women and men jointly, which is equivalent to the calculation of life expectancy for people aged x years without taking into account their gender. This is to ensure the same pension is paid to all people of the same age and earnings.

The cumulative life expectancy table is calculated for the sum of survivors (l_x) of both sexes assuming the ratio: 0.485 for female and 0.515 for male, which is based on the ratio of sexes at birth.

Data on life expectancy for both sexes in total, converted into months of life, are published annually in the form of an appendix to the announcement of the President of Statistics Poland as well as Table E attached to this publication.

Duration of life on lower territorial levels

To calculate life expectancy at the regional level, the methodology using TOPALS [9] (tools for projecting age-specific rates using linear splines) was used. It enables life expectancy to be calculated for small areas where significant year-to-year fluctuations in death rates and zero deaths (in some ages, mostly younger ones) occur (Chart 13). To ensure comparability of results, the TOPALS model is used at all administrative levels. The starting point in TOPALS is the model distribution of the death rates calculated at the national

level, the so-called m_x*_standard*. Differences between the empirical death rates at a given administrative level and the pattern are modeled. For their modeling spline regression is used:

$$\widehat{m}_x = m_{x\_\text{standard}} + B \times v, \tag{9}$$

where:

B – b-spline basis,

v – regression parameter vector.

In the Statistics Poland model, quadratic splines are used, which ensure greater accuracy of fit than linear ones. The knots (points between which the regression is estimated) were set on ages: 0, 1, 10, 20, 30, 45, 70, 85, 99. This selection aims to take into account the moments when significant changes in mortality occur. Due to strong fluctuations in the youngest and oldest years, it is also necessary to introduce the so-called penalization, which is implemented using the "penalty" calculated according to the appropriate formula. Its purpose is to reduce the differences between the regression parameters in particular intervals, leading to an inadequate shape of the curve. The penalty is calculated according to the following formula [10]:

$$Kara = \lambda \sum_{i=1}^{n-1} (v_{i+1} - v_i)^2 \tag{10}$$

where:

λ – parameter on penalization (in Statistics Poland model λ=5),

n – numer of knots (in Statistics Poland model n=9),

i – order of knot i ∈ {1, 2, …, 9},

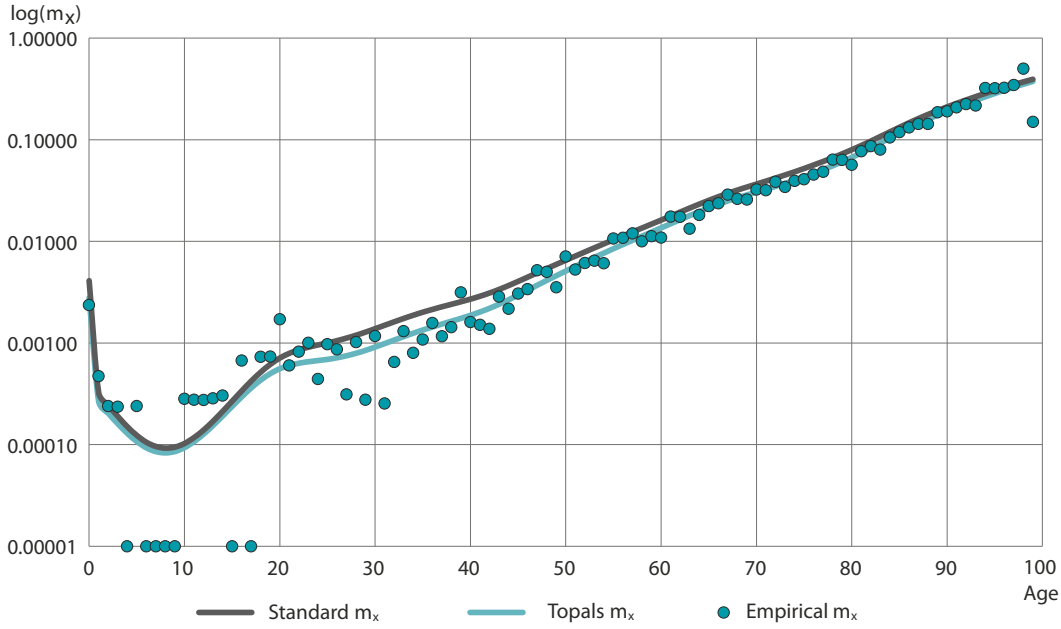
v_i – regression parameter in the interval [i-1, i].

The penalty is subtracted from the value of the maximum likelihood function by which the model parameters are estimated.

Chart 14 shows the result of modeling death rates using the TOPALS technique for men from the Cracow in 2022. This city is characterized by significantly lower mortality rates for men than Poland, which is particularly noticeable for the ages 30-70.

The technique used allowed to estimate a smooth distribution of mx values, which additionally is similar in shape to the distribution at the national level. It is especially important for the youngest age groups, where the empirical data is very irregular.

Chart 14. Comparison of empirical death rates (empirical mx) with the country standard (standard m_x) and the TOPALS-modeled coefficients (Topals m_x) for men from Cracow in 2022



mx is equal to 0, i.e. no deaths are shown as 0.00001

Then, the death rates over 85 years of age are replaced by those modeled using the Gamma-Gompertz function (in a similar way as it was done at the national level), which allows to extrapolate them over age 100. For age 75 and higher, the coefficients (after been logaritmized) were adjusted with a five-period, centered moving average. This ensures a smooth transition between the coefficients from the TOPALS model and those estimated using the Gamma-Gompertz function.

The mortality rates calculated in accordance with the presented procedure were used to calculate regional life expectancy tables, using the same formulas as at the national level.

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Basic tables

Table A. LIFE TABLE FOR POLAND 2022

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Total males						
0	0.00408	100000	409	99632	7341781	73.42
1	0.00032	99591	32	99575	7242150	72.72
2	0.00024	99559	24	99547	7142575	71.74
3	0.00019	99535	19	99526	7043028	70.76
4	0.00015	99516	15	99509	6943502	69.77
5	0.00012	99501	12	99495	6843994	68.78
6	0.00011	99489	11	99484	6744499	67.79
7	0.00010	99478	9	99474	6645015	66.80
8	0.00009	99469	9	99465	6545542	65.80
9	0.00009	99460	10	99455	6446077	64.81
10	0.00010	99450	10	99445	6346622	63.82
11	0.00012	99440	12	99434	6247177	62.82
12	0.00014	99428	13	99422	6147743	61.83
13	0.00017	99415	17	99407	6048322	60.84
14	0.00021	99398	21	99388	5948915	59.85
15	0.00027	99377	27	99364	5849528	58.86
16	0.00034	99350	33	99334	5750164	57.88
17	0.00042	99317	42	99296	5650831	56.90
18	0.00052	99275	51	99250	5551535	55.92
19	0.00061	99224	61	99194	5452285	54.95
20	0.00071	99163	70	99128	5353092	53.98
21	0.00079	99093	79	99054	5253964	53.02
22	0.00085	99014	84	98972	5154910	52.06
23	0.00091	98930	90	98885	5055938	51.11
24	0.00095	98840	94	98793	4957053	50.15
25	0.00100	98746	99	98697	4858260	49.20
26	0.00105	98647	103	98596	4759564	48.25
27	0.00111	98544	110	98489	4660968	47.30
28	0.00119	98434	117	98376	4562479	46.35
29	0.00128	98317	126	98254	4464104	45.41
30	0.00138	98191	135	98124	4365850	44.46
31	0.00149	98056	146	97983	4267726	43.52
32	0.00161	97910	158	97831	4169743	42.59
33	0.00174	97752	170	97667	4071912	41.66
34	0.00187	97582	182	97491	3974245	40.73
35	0.00200	97400	195	97303	3876754	39.80
36	0.00213	97205	208	97101	3779452	38.88

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Total males (cont.)						
37	0.00226	96997	219	96888	3682351	37.96
38	0.00240	96778	232	96662	3585463	37.05
39	0.00254	96546	245	96424	3488801	36.14
40	0.00269	96301	260	96171	3392378	35.23
41	0.00288	96041	276	95903	3296207	34.32
42	0.00309	95765	296	95617	3200304	33.42
43	0.00335	95469	320	95309	3104687	32.52
44	0.00366	95149	349	94975	3009378	31.63
45	0.00402	94800	381	94610	2914403	30.74
46	0.00443	94419	418	94210	2819794	29.86
47	0.00488	94001	458	93772	2725584	29.00
48	0.00537	93543	503	93292	2631812	28.13
49	0.00591	93040	550	92765	2538520	27.28
50	0.00649	92490	600	92190	2445755	26.44
51	0.00713	91890	655	91563	2353565	25.61
52	0.00783	91235	714	90878	2262003	24.79
53	0.00858	90521	777	90133	2171125	23.98
54	0.00940	89744	843	89323	2080992	23.19
55	0.01029	88901	915	88444	1991670	22.40
56	0.01125	87986	990	87491	1903226	21.63
57	0.01229	86996	1069	86462	1815735	20.87
58	0.01342	85927	1154	85350	1729274	20.12
59	0.01467	84773	1243	84152	1643924	19.39
60	0.01604	83530	1340	82860	1559772	18.67
61	0.01754	82190	1442	81469	1476912	17.97
62	0.01920	80748	1550	79973	1395443	17.28
63	0.02100	79198	1663	78367	1315470	16.61
64	0.02294	77535	1779	76646	1237104	15.96
65	0.02498	75756	1892	74810	1160458	15.32
66	0.02708	73864	2000	72864	1085648	14.70
67	0.02923	71864	2101	70814	1012784	14.09
68	0.03140	69763	2190	68668	941971	13.50
69	0.03362	67573	2272	66437	873303	12.92
70	0.03592	65301	2345	64129	806866	12.36
71	0.03836	62956	2415	61749	742737	11.80
72	0.04102	60541	2484	59299	680989	11.25
73	0.04393	58057	2550	56782	621690	10.71

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Total males (cont.)						
74	0.04715	55507	2618	54198	564908	10.18
75	0.05076	52889	2684	51547	510710	9.66
76	0.05480	50205	2751	48830	459163	9.15
77	0.05929	47454	2814	46047	410333	8.65
78	0.06436	44640	2873	43204	364286	8.16
79	0.07010	41767	2928	40303	321083	7.69
80	0.07661	38839	2976	37351	280780	7.23
81	0.08399	35863	3012	34357	243429	6.79
82	0.09243	32851	3037	31333	209072	6.36
83	0.10199	29814	3040	28294	177739	5.96
84	0.11259	26774	3015	25267	149445	5.58
85	0.12415	23759	2950	22284	124179	5.23
86	0.13651	20809	2840	19389	101895	4.90
87	0.14945	17969	2686	16626	82506	4.59
88	0.16273	15283	2487	14040	65880	4.31
89	0.17634	12796	2256	11668	51840	4.05
90	0.19026	10540	2006	9537	40172	3.81
91	0.20452	8534	1745	7662	30635	3.59
92	0.21914	6789	1488	6045	22974	3.38
93	0.23416	5301	1241	4681	16929	3.19
94	0.24953	4060	1014	3553	12248	3.02
95	0.26515	3046	807	2643	8695	2.85
96	0.28096	2239	630	1924	6053	2.70
97	0.29686	1609	477	1371	4129	2.57
98	0.31275	1132	355	955	2758	2.44
99	0.32856	777	255	650	1804	2.32
100	0.34419	522	180	432	1154	2.21

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Total females						
0	0.00327	100000	327	99706	8105817	81.06
1	0.00031	99673	31	99658	8006112	80.32
2	0.00021	99642	20	99632	7906454	79.35
3	0.00016	99622	16	99614	7806822	78.36
4	0.00013	99606	13	99600	7707208	77.38
5	0.00011	99593	11	99588	7607609	76.39
6	0.00010	99582	10	99577	7508021	75.40
7	0.00010	99572	9	99568	7408444	74.40
8	0.00009	99563	9	99559	7308877	73.41
9	0.00010	99554	10	99549	7209318	72.42
10	0.00010	99544	10	99539	7109769	71.42
11	0.00011	99534	12	99528	7010230	70.43
12	0.00013	99522	12	99516	6910702	69.44
13	0.00015	99510	15	99503	6811186	68.45
14	0.00017	99495	17	99487	6711684	67.46
15	0.00020	99478	19	99469	6612197	66.47
16	0.00022	99459	22	99448	6512729	65.48
17	0.00025	99437	25	99425	6413281	64.50
18	0.00027	99412	26	99399	6313856	63.51
19	0.00028	99386	28	99372	6214457	62.53
20	0.00029	99358	29	99344	6115085	61.55
21	0.00030	99329	30	99314	6015742	60.56
22	0.00030	99299	30	99284	5916428	59.58
23	0.00030	99269	30	99254	5817144	58.60
24	0.00031	99239	30	99224	5717890	57.62
25	0.00031	99209	32	99193	5618666	56.63
26	0.00032	99177	32	99161	5519473	55.65
27	0.00034	99145	33	99129	5420312	54.67
28	0.00036	99112	35	99095	5321183	53.69
29	0.00038	99077	38	99058	5222089	52.71
30	0.00041	99039	40	99019	5123031	51.73
31	0.00044	98999	44	98977	5024012	50.75
32	0.00048	98955	47	98932	4925035	49.77
33	0.00051	98908	51	98883	4826103	48.79
34	0.00056	98857	55	98830	4727221	47.82
35	0.00060	98802	59	98773	4628391	46.85
36	0.00065	98743	64	98711	4529619	45.87

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
			Total females (cont.)			
37	0.00071	98679	70	98644	4430908	44.90
38	0.00077	98609	75	98572	4332264	43.93
39	0.00083	98534	82	98493	4233692	42.97
40	0.00091	98452	89	98408	4135199	42.00
41	0.00098	98363	97	98315	4036792	41.04
42	0.00107	98266	106	98213	3938477	40.08
43	0.00118	98160	116	98102	3840264	39.12
44	0.00130	98044	127	97981	3742162	38.17
45	0.00143	97917	140	97847	3644182	37.22
46	0.00158	97777	155	97700	3546335	36.27
47	0.00175	97622	171	97537	3448635	35.33
48	0.00193	97451	188	97357	3351099	34.39
49	0.00214	97263	208	97159	3253742	33.45
50	0.00236	97055	230	96940	3156583	32.52
51	0.00262	96825	253	96699	3059643	31.60
52	0.00289	96572	279	96433	2962944	30.68
53	0.00321	96293	309	96139	2866512	29.77
54	0.00355	95984	341	95814	2770373	28.86
55	0.00392	95643	375	95456	2674560	27.96
56	0.00433	95268	412	95062	2579104	27.07
57	0.00479	94856	454	94629	2484042	26.19
58	0.00530	94402	501	94152	2389413	25.31
59	0.00588	93901	552	93625	2295262	24.44
60	0.00654	93349	611	93044	2201637	23.59
61	0.00727	92738	674	92401	2108593	22.74
62	0.00807	92064	742	91693	2016192	21.90
63	0.00891	91322	814	90915	1924499	21.07
64	0.00981	90508	888	90064	1833584	20.26
65	0.01076	89620	964	89138	1743520	19.45
66	0.01177	88656	1044	88134	1654382	18.66
67	0.01286	87612	1127	87049	1566248	17.88
68	0.01407	86485	1217	85877	1479200	17.10
69	0.01542	85268	1315	84611	1393323	16.34
70	0.01693	83953	1421	83243	1308713	15.59
71	0.01862	82532	1537	81764	1225470	14.85
72	0.02053	80995	1662	80164	1143707	14.12
73	0.02266	79333	1798	78434	1063543	13.41

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
			Total females (cont.)			
74	0.02503	77535	1941	76565	985109	12.71
75	0.02768	75594	2093	74548	908544	12.02
76	0.03067	73501	2254	72374	833997	11.35
77	0.03403	71247	2424	70035	761623	10.69
78	0.03786	68823	2606	67520	691588	10.05
79	0.04230	66217	2801	64817	624068	9.42
80	0.04750	63416	3012	61910	559251	8.82
81	0.05358	60404	3236	58786	497341	8.23
82	0.06073	57168	3472	55432	438555	7.67
83	0.06910	53696	3710	51841	383123	7.14
84	0.07870	49986	3934	48019	331282	6.63
85	0.08950	46052	4122	43991	283263	6.15
86	0.10149	41930	4255	39803	239272	5.71
87	0.11447	37675	4313	35519	199470	5.29
88	0.12828	33362	4280	31222	163951	4.91
89	0.14288	29082	4155	27005	132729	4.56
90	0.15827	24927	3945	22955	105725	4.24
91	0.17441	20982	3660	19152	82770	3.94
92	0.19130	17322	3314	15665	63618	3.67
93	0.20894	14008	2927	12545	47953	3.42
94	0.22721	11081	2518	9822	35409	3.20
95	0.24598	8563	2106	7510	25587	2.99
96	0.26508	6457	1712	5601	18077	2.80
97	0.28434	4745	1349	4071	12476	2.63
98	0.30358	3396	1031	2881	8405	2.47
99	0.32264	2365	763	1984	5525	2.34
100	0.34134	1602	547	1329	3541	2.21

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Males in urban areas						
0	0.00424	100000	424	99618	7367735	73.68
1	0.00031	99576	32	99560	7268117	72.99
2	0.00025	99544	24	99532	7168557	72.01
3	0.00020	99520	20	99510	7069025	71.03
4	0.00016	99500	16	99492	6969515	70.05
5	0.00014	99484	13	99478	6870023	69.06
6	0.00012	99471	12	99465	6770546	68.07
7	0.00010	99459	11	99454	6671081	67.07
8	0.00011	99448	11	99443	6571627	66.08
9	0.00011	99437	11	99432	6472185	65.09
10	0.00012	99426	12	99420	6372753	64.10
11	0.00013	99414	13	99408	6273333	63.10
12	0.00015	99401	15	99394	6173926	62.11
13	0.00019	99386	18	99377	6074532	61.12
14	0.00023	99368	23	99357	5975155	60.13
15	0.00029	99345	29	99331	5875799	59.15
16	0.00036	99316	35	99299	5776468	58.16
17	0.00045	99281	45	99259	5677170	57.18
18	0.00054	99236	54	99209	5577911	56.21
19	0.00064	99182	64	99150	5478702	55.24
20	0.00073	99118	72	99082	5379552	54.27
21	0.00081	99046	81	99006	5280470	53.31
22	0.00087	98965	86	98922	5181465	52.36
23	0.00092	98879	91	98834	5082543	51.40
24	0.00096	98788	94	98741	4983709	50.45
25	0.00099	98694	98	98645	4884968	49.50
26	0.00103	98596	101	98546	4786323	48.54
27	0.00108	98495	106	98442	4687778	47.59
28	0.00113	98389	112	98333	4589336	46.64
29	0.00120	98277	117	98219	4491003	45.70
30	0.00127	98160	125	98098	4392784	44.75
31	0.00136	98035	134	97968	4294687	43.81
32	0.00146	97901	143	97830	4196719	42.87
33	0.00157	97758	154	97681	4098889	41.93
34	0.00170	97604	166	97521	4001208	40.99
35	0.00183	97438	179	97349	3903687	40.06
36	0.00198	97259	192	97163	3806339	39.14

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Males in urban areas (cont.)						
37	0.00213	97067	206	96964	3709176	38.21
38	0.00228	96861	221	96751	3612212	37.29
39	0.00244	96640	236	96522	3515461	36.38
40	0.00262	96404	253	96278	3418939	35.46
41	0.00282	96151	270	96016	3322662	34.56
42	0.00304	95881	292	95735	3226646	33.65
43	0.00331	95589	317	95431	3130911	32.75
44	0.00363	95272	346	95099	3035480	31.86
45	0.0040	94926	380	94736	2940381	30.98
46	0.00442	94546	418	94337	2845645	30.10
47	0.00488	94128	459	93899	2751308	29.23
48	0.00537	93669	503	93418	2657410	28.37
49	0.00589	93166	548	92892	2563992	27.52
50	0.00647	92618	599	92319	2471100	26.68
51	0.00709	92019	653	91693	2378782	25.85
52	0.00778	91366	710	91011	2287089	25.03
53	0.00852	90656	773	90270	2196078	24.22
54	0.00933	89883	839	89464	2105809	23.43
55	0.01019	89044	907	88591	2016345	22.64
56	0.01111	88137	979	87648	1927755	21.87
57	0.01211	87158	1056	86630	1840107	21.11
58	0.01320	86102	1137	85534	1753477	20.37
59	0.01441	84965	1224	84353	1667944	19.63
60	0.01576	83741	1320	83081	1583591	18.91
61	0.01726	82421	1423	81710	1500510	18.21
62	0.01891	80998	1531	80233	1418800	17.52
63	0.02070	79467	1645	78645	1338568	16.84
64	0.02260	77822	1759	76943	1259923	16.19
65	0.02458	76063	1870	75128	1182981	15.55
66	0.02660	74193	1973	73207	1107853	14.93
67	0.02862	72220	2067	71187	1034646	14.33
68	0.03067	70153	2152	69077	963460	13.73
69	0.03276	68001	2227	66888	894383	13.15
70	0.03494	65774	2298	64625	827495	12.58
71	0.03726	63476	2365	62294	762870	12.02
72	0.03979	61111	2432	59895	700577	11.46
73	0.04257	58679	2497	57431	640682	10.92

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Males in urban areas (cont.)						
74	0.04564	56182	2565	54900	583251	10.38
75	0.04912	53617	2633	52301	528352	9.85
76	0.05307	50984	2706	49631	476051	9.34
77	0.05747	48278	2775	46891	426420	8.83
78	0.06243	45503	2841	44083	379530	8.34
79	0.06805	42662	2903	41211	335447	7.86
80	0.07434	39759	2956	38281	294237	7.40
81	0.08139	36803	2995	35306	255956	6.95
82	0.08944	33808	3024	32296	220650	6.53
83	0.09856	30784	3034	29267	188354	6.12
84	0.10868	27750	3016	26242	159087	5.73
85	0.11978	24734	2963	23253	132845	5.37
86	0.13172	21771	2867	20338	109593	5.03
87	0.14426	18904	2728	17540	89255	4.72
88	0.15715	16176	2542	14905	71715	4.43
89	0.17040	13634	2323	12473	56810	4.17
90	0.18399	11311	2081	10271	44338	3.92
91	0.19793	9230	1827	8317	34067	3.69
92	0.21226	7403	1572	6617	25751	3.48
93	0.22705	5831	1324	5169	19134	3.28
94	0.24221	4507	1092	3961	13965	3.10
95	0.25768	3415	880	2975	10004	2.93
96	0.27338	2535	693	2189	7029	2.77
97	0.28923	1842	533	1576	4840	2.63
98	0.30514	1309	400	1109	3265	2.49
99	0.32102	909	292	763	2156	2.37
100	0.33678	617	208	513	1393	2.26

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Females in urban areas						
0	0.00332	100000	332	99701	8104472	81.04
1	0.00035	99668	35	99651	8004771	80.31
2	0.00023	99633	23	99622	7905121	79.34
3	0.00018	99610	18	99601	7805499	78.36
4	0.00015	99592	15	99585	7705898	77.37
5	0.00013	99577	12	99571	7606314	76.39
6	0.00012	99565	12	99559	7506743	75.40
7	0.00010	99553	11	99548	7407184	74.40
8	0.00011	99542	11	99537	7307636	73.41
9	0.00011	99531	11	99526	7208100	72.42
10	0.00011	99520	11	99515	7108574	71.43
11	0.00011	99509	11	99504	7009060	70.44
12	0.00013	99498	13	99492	6909556	69.44
13	0.00014	99485	14	99478	6810065	68.45
14	0.00017	99471	17	99463	6710587	67.46
15	0.00020	99454	20	99444	6611124	66.47
16	0.00023	99434	23	99423	6511680	65.49
17	0.00026	99411	26	99398	6412258	64.50
18	0.00029	99385	29	99371	6312860	63.52
19	0.00031	99356	31	99341	6213489	62.54
20	0.00033	99325	33	99309	6114149	61.56
21	0.00034	99292	34	99275	6014840	60.58
22	0.00034	99258	34	99241	5915565	59.60
23	0.00035	99224	34	99207	5816324	58.62
24	0.00034	99190	34	99173	5717117	57.64
25	0.00035	99156	35	99139	5617944	56.66
26	0.00035	99121	34	99104	5518806	55.68
27	0.00036	99087	36	99069	5419702	54.70
28	0.00038	99051	37	99033	5320633	53.72
29	0.00040	99014	40	98994	5221600	52.74
30	0.00043	98974	42	98953	5122606	51.76
31	0.00046	98932	45	98910	5023653	50.78
32	0.00049	98887	49	98863	4924744	49.80
33	0.00053	98838	52	98812	4825881	48.83
34	0.00057	98786	57	98758	4727069	47.85
35	0.00061	98729	60	98699	4628312	46.88
36	0.00067	98669	66	98636	4529613	45.91

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Females in urban areas (cont.)						
37	0.00073	98603	72	98567	4430977	44.94
38	0.00080	98531	79	98492	4332410	43.97
39	0.00088	98452	86	98409	4233918	43.00
40	0.00097	98366	95	98319	4135509	42.04
41	0.00106	98271	104	98219	4037191	41.08
42	0.00115	98167	113	98111	3938972	40.13
43	0.00126	98054	124	97992	3840861	39.17
44	0.00137	97930	134	97863	3742869	38.22
45	0.00150	97796	147	97723	3645006	37.27
46	0.00165	97649	162	97568	3547284	36.33
47	0.00182	97487	177	97399	3449716	35.39
48	0.00200	97310	195	97213	3352317	34.45
49	0.00221	97115	215	97008	3255105	33.52
50	0.00245	96900	237	96782	3158097	32.59
51	0.00271	96663	263	96532	3061316	31.67
52	0.00301	96400	289	96256	2964784	30.76
53	0.00333	96111	321	95951	2868529	29.85
54	0.00368	95790	352	95614	2772578	28.94
55	0.00406	95438	388	95244	2676964	28.05
56	0.00447	95050	425	94838	2581720	27.16
57	0.00493	94625	467	94392	2486883	26.28
58	0.00544	94158	512	93902	2392491	25.41
59	0.00602	93646	564	93364	2298589	24.55
60	0.00667	93082	621	92772	2205225	23.69
61	0.00741	92461	685	92119	2112454	22.85
62	0.00821	91776	754	91399	2020335	22.01
63	0.00906	91022	825	90610	1928936	21.19
64	0.00996	90197	898	89748	1838327	20.38
65	0.01091	89299	974	88812	1748579	19.58
66	0.01190	88325	1052	87799	1659767	18.79
67	0.01298	87273	1132	86707	1571968	18.01
68	0.01416	86141	1220	85531	1485261	17.24
69	0.01548	84921	1315	84264	1399730	16.48
70	0.01698	83606	1419	82897	1315466	15.73
71	0.01865	82187	1534	81420	1232570	15.00
72	0.02054	80653	1656	79825	1151150	14.27
73	0.02264	78997	1789	78103	1071325	13.56

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Females in urban areas (cont.)						
74	0.02499	77208	1929	76244	993222	12.86
75	0.02759	75279	2077	74241	916979	12.18
76	0.03053	73202	2235	72085	842738	11.51
77	0.03382	70967	2400	69767	770654	10.86
78	0.03755	68567	2575	67280	700887	10.22
79	0.04183	65992	2760	64612	633607	9.60
80	0.04680	63232	2959	61753	568995	9.00
81	0.05254	60273	3167	58690	507243	8.42
82	0.05925	57106	3384	55414	448553	7.85
83	0.06710	53722	3605	51920	393139	7.32
84	0.07613	50117	3815	48210	341220	6.81
85	0.08633	46302	3998	44303	293010	6.33
86	0.09769	42304	4132	40238	248707	5.88
87	0.11007	38172	4202	36071	208469	5.46
88	0.12325	33970	4186	31877	172398	5.08
89	0.13719	29784	4087	27741	140521	4.72
90	0.15190	25697	3903	23746	112781	4.39
91	0.16733	21794	3647	19971	89035	4.09
92	0.18351	18147	3330	16482	69065	3.81
93	0.20046	14817	2971	13332	52583	3.55
94	0.21810	11846	2583	10555	39251	3.31
95	0.23630	9263	2189	8169	28697	3.10
96	0.25492	7074	1804	6172	20528	2.90
97	0.27380	5270	1443	4549	14356	2.72
98	0.29280	3827	1121	3267	9808	2.56
99	0.31174	2706	843	2285	6541	2.42
100	0.33046	1863	616	1555	4257	2.28

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Males in rural areas						
0	0.00386	100000	387	99652	7300655	73.01
1	0.00034	99613	34	99596	7201004	72.29
2	0.00024	99579	23	99568	7101408	71.31
3	0.00017	99556	17	99548	7001840	70.33
4	0.00013	99539	13	99533	6902293	69.34
5	0.00010	99526	10	99521	6802760	68.35
6	0.00008	99516	8	99512	6703239	67.36
7	0.00010	99508	7	99505	6603727	66.36
8	0.00007	99501	7	99498	6504223	65.37
9	0.00007	99494	7	99491	6404725	64.37
10	0.00008	99487	8	99483	6305235	63.38
11	0.00010	99479	9	99475	6205752	62.38
12	0.00012	99470	12	99464	6106277	61.39
13	0.00015	99458	15	99451	6006813	60.40
14	0.00019	99443	19	99434	5907363	59.40
15	0.00024	99424	23	99413	5807929	58.42
16	0.00030	99401	30	99386	5708517	57.43
17	0.00038	99371	38	99352	5609131	56.45
18	0.00047	99333	46	99310	5509779	55.47
19	0.00057	99287	57	99259	5410469	54.49
20	0.00067	99230	66	99197	5311210	53.52
21	0.00076	99164	75	99127	5212013	52.56
22	0.00083	99089	82	99048	5112887	51.60
23	0.00089	99007	89	98963	5013839	50.64
24	0.00095	98918	94	98871	4914876	49.69
25	0.00101	98824	99	98775	4816005	48.73
26	0.00108	98725	106	98672	4717231	47.78
27	0.00116	98619	115	98562	4618559	46.83
28	0.00127	98504	125	98442	4519997	45.89
29	0.00139	98379	136	98311	4421556	44.94
30	0.00153	98243	150	98168	4323245	44.01
31	0.00168	98093	165	98011	4225077	43.07
32	0.00183	97928	179	97839	4127066	42.14
33	0.00199	97749	194	97652	4029228	41.22
34	0.00213	97555	208	97451	3931576	40.30
35	0.00226	97347	219	97238	3834125	39.39
36	0.00237	97128	230	97013	3736887	38.47

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Males in rural areas (cont.)						
37	0.00247	96898	239	96779	3639874	37.56
38	0.00257	96659	249	96535	3543096	36.66
39	0.00267	96410	257	96282	3446561	35.75
40	0.00280	96153	270	96018	3350280	34.84
41	0.00296	95883	284	95741	3254262	33.94
42	0.00316	95599	303	95448	3158521	33.04
43	0.00341	95296	325	95134	3063073	32.14
44	0.00370	94971	351	94796	2967940	31.25
45	0.00404	94620	382	94429	2873144	30.37
46	0.00444	94238	419	94029	2778715	29.49
47	0.00488	93819	457	93591	2684687	28.62
48	0.00537	93362	502	93111	2591096	27.75
49	0.00592	92860	550	92585	2497985	26.90
50	0.00652	92310	602	92009	2405400	26.06
51	0.00717	91708	657	91380	2313391	25.23
52	0.00788	91051	717	90693	2222012	24.40
53	0.00865	90334	782	89943	2131319	23.59
54	0.00949	89552	850	89127	2041376	22.80
55	0.01042	88702	924	88240	1952249	22.01
56	0.01142	87778	1002	87277	1864009	21.24
57	0.01251	86776	1086	86233	1776732	20.47
58	0.01370	85690	1173	85104	1690499	19.73
59	0.01500	84517	1268	83883	1605396	18.99
60	0.01639	83249	1365	82567	1521513	18.28
61	0.01792	81884	1467	81151	1438946	17.57
62	0.01959	80417	1576	79629	1357796	16.88
63	0.02143	78841	1689	77997	1278167	16.21
64	0.02343	77152	1808	76248	1200170	15.56
65	0.02558	75344	1927	74381	1123922	14.92
66	0.02785	73417	2045	72395	1049542	14.30
67	0.03021	71372	2156	70294	977147	13.69
68	0.03261	69216	2258	68087	906853	13.10
69	0.03506	66958	2347	65785	838766	12.53
70	0.03761	64611	2430	63396	772982	11.96
71	0.04031	62181	2506	60928	709586	11.41
72	0.04323	59675	2580	58385	648658	10.87
73	0.04642	57095	2650	55770	590273	10.34

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Males in rural areas (cont.)						
74	0.04995	54445	2720	53085	534503	9.82
75	0.05382	51725	2784	50333	481418	9.31
76	0.05805	48941	2841	47521	431085	8.81
77	0.06272	46100	2891	44655	383564	8.32
78	0.06797	43209	2937	41741	338910	7.84
79	0.07393	40272	2977	38784	297169	7.38
80	0.08082	37295	3015	35788	258386	6.93
81	0.08879	34280	3044	32758	222598	6.49
82	0.09796	31236	3059	29707	189840	6.08
83	0.10835	28177	3053	26651	160134	5.68
84	0.11989	25124	3013	23618	133483	5.31
85	0.13237	22111	2926	20648	109866	4.97
86	0.14559	19185	2794	17788	89218	4.65
87	0.15938	16391	2612	15085	71430	4.36
88	0.17345	13779	2390	12584	56345	4.09
89	0.18778	11389	2139	10320	43761	3.84
90	0.20237	9250	1872	8314	33441	3.62
91	0.21723	7378	1603	6577	25127	3.41
92	0.23237	5775	1342	5104	18551	3.21
93	0.24785	4433	1099	3884	13447	3.03
94	0.26358	3334	879	2895	9563	2.87
95	0.27948	2455	686	2112	6669	2.72
96	0.29545	1769	523	1508	4557	2.58
97	0.31139	1246	388	1052	3049	2.45
98	0.32722	858	281	718	1997	2.33
99	0.34285	577	198	478	1280	2.22
100	0.35818	379	136	311	802	2.11

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Females in rural areas						
0	0.00320	100000	320	99712	8107679	81.08
1	0.00025	99680	25	99668	8007967	80.34
2	0.00017	99655	17	99647	7908300	79.36
3	0.00013	99638	13	99632	7808653	78.37
4	0.00010	99625	9	99621	7709022	77.38
5	0.00008	99616	8	99612	7609401	76.39
6	0.00007	99608	7	99605	7509789	75.39
7	0.00010	99601	6	99598	7410185	74.40
8	0.00007	99595	7	99592	7310587	73.40
9	0.00007	99588	8	99584	7210995	72.41
10	0.00008	99580	8	99576	7111411	71.41
11	0.00010	99572	10	99567	7011835	70.42
12	0.00012	99562	11	99557	6912268	69.43
13	0.00013	99551	14	99544	6812712	68.43
14	0.00015	99537	15	99530	6713168	67.44
15	0.00018	99522	17	99514	6613638	66.45
16	0.00020	99505	20	99495	6514125	65.47
17	0.00021	99485	21	99475	6414630	64.48
18	0.00023	99464	22	99453	6315155	63.49
19	0.00023	99442	24	99430	6215702	62.51
20	0.00023	99418	23	99407	6116272	61.52
21	0.00023	99395	23	99384	6016866	60.53
22	0.00023	99372	23	99361	5917482	59.55
23	0.00024	99349	23	99338	5818122	58.56
24	0.00024	99326	24	99314	5718784	57.58
25	0.00026	99302	26	99289	5619470	56.59
26	0.00028	99276	27	99263	5520181	55.60
27	0.00030	99249	30	99234	5420919	54.62
28	0.00032	99219	31	99204	5321685	53.64
29	0.00034	99188	34	99171	5222481	52.65
30	0.00037	99154	37	99136	5123310	51.67
31	0.00040	99117	40	99097	5024175	50.69
32	0.00044	99077	43	99056	4925078	49.71
33	0.00048	99034	48	99010	4826022	48.73
34	0.00053	98986	53	98960	4727012	47.75
35	0.00057	98933	56	98905	4628053	46.78
36	0.00062	98877	61	98847	4529148	45.81

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Females in rural areas (cont.)						
37	0.00066	98816	66	98783	4430301	44.83
38	0.00070	98750	69	98716	4331518	43.86
39	0.00075	98681	74	98644	4232803	42.89
40	0.00080	98607	79	98568	4134159	41.93
41	0.00087	98528	85	98486	4035591	40.96
42	0.00095	98443	94	98396	3937106	39.99
43	0.00105	98349	103	98298	3838710	39.03
44	0.00117	98246	114	98189	3740412	38.07
45	0.00131	98132	129	98068	3642223	37.12
46	0.00147	98003	144	97931	3544156	36.16
47	0.00164	97859	160	97779	3446225	35.22
48	0.00183	97699	179	97610	3348446	34.27
49	0.00202	97520	197	97422	3250836	33.34
50	0.00224	97323	218	97214	3153415	32.40
51	0.00247	97105	240	96985	3056201	31.47
52	0.00273	96865	264	96733	2959216	30.55
53	0.00302	96601	292	96455	2862483	29.63
54	0.00335	96309	323	96148	2766028	28.72
55	0.00372	95986	357	95808	2669880	27.82
56	0.00412	95629	393	95433	2574073	26.92
57	0.00457	95236	435	95019	2478640	26.03
58	0.00509	94801	483	94560	2383622	25.14
59	0.00567	94318	534	94051	2289062	24.27
60	0.00632	93784	593	93488	2195011	23.40
61	0.00703	93191	655	92864	2101524	22.55
62	0.00781	92536	723	92175	2008660	21.71
63	0.00864	91813	793	91417	1916486	20.87
64	0.00952	91020	867	90587	1825069	20.05
65	0.01048	90153	945	89681	1734483	19.24
66	0.01152	89208	1028	88694	1644802	18.44
67	0.01265	88180	1115	87623	1556108	17.65
68	0.01389	87065	1210	86460	1468486	16.87
69	0.01528	85855	1311	85200	1382026	16.10
70	0.01682	84544	1423	83833	1296826	15.34
71	0.01854	83121	1541	82351	1212994	14.59
72	0.02050	81580	1672	80744	1130643	13.86
73	0.02268	79908	1813	79002	1049899	13.14

Table A. LIFE TABLE FOR POLAND 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
Females in rural areas (cont.)						
74	0.02513	78095	1962	77114	970898	12.43
75	0.02786	76133	2121	75073	893784	11.74
76	0.03096	74012	2291	72867	818711	11.06
77	0.03443	71721	2470	70486	745845	10.4
78	0.03845	69251	2663	67920	675359	9.75
79	0.04319	66588	2876	65150	607439	9.12
80	0.04882	63712	3111	62157	542289	8.51
81	0.05549	60601	3362	58920	480133	7.92
82	0.06346	57239	3633	55423	421213	7.36
83	0.07277	53606	3901	51656	365790	6.82
84	0.08343	49705	4147	47632	314135	6.32
85	0.09538	45558	4345	43386	266503	5.85
86	0.10853	41213	4473	38977	223118	5.41
87	0.12265	36740	4506	34487	184141	5.01
88	0.13763	32234	4437	30016	149654	4.64
89	0.15345	27797	4266	25664	119639	4.30
90	0.17009	23531	4002	21530	93975	3.99
91	0.18749	19529	3662	17698	72445	3.71
92	0.20566	15867	3263	14236	54747	3.45
93	0.22450	12604	2830	11189	40511	3.21
94	0.24386	9774	2383	8583	29322	3.00
95	0.26356	7391	1948	6417	20740	2.81
96	0.28340	5443	1543	4672	14323	2.63
97	0.30318	3900	1183	3309	9651	2.47
98	0.32272	2717	877	2279	6343	2.33
99	0.34181	1840	629	1526	4064	2.21
100	0.36031	1211	436	993	2539	2.10

Table B. LIFE EXPECTANCY IN POLAND BY VOIVODSHIPS IN 2022

	Males					Females				
	by age					by age				
	0	15	30	45	60	0	15	30	45	60
Total	**73.42**	**58.86**	**44.46**	**30.74**	**18.67**	**81.06**	**66.47**	**51.73**	**37.22**	**23.59**
02 Dolnośląskie	72.90	58.38	44.03	30.24	18.26	80.68	65.99	51.25	36.76	23.32
04 Kujawsko-pomorskie	73.33	58.81	44.42	30.63	18.49	80.24	65.80	51.07	36.57	23.04
06 Lubelskie	73.23	58.68	44.27	30.73	18.84	81.67	67.11	52.39	37.87	24.12
08 Lubuskie	72.58	58.00	43.74	30.14	18.29	80.34	65.83	51.09	36.68	23.34
10 Łódzkie	72.11	57.52	43.19	29.83	18.14	80.02	65.46	50.81	36.41	22.95
12 Małopolskie	74.89	60.23	45.72	31.81	19.45	82.23	67.54	52.75	38.15	24.30
14 Mazowieckie	73.78	59.16	44.79	31.03	19.01	81.51	66.88	52.15	37.60	23.90
16 Opolskie	73.56	58.95	44.56	30.82	18.61	81.44	66.69	51.94	37.41	23.72
18 Podkarpackie	74.74	60.17	45.68	31.84	19.52	82.48	67.86	53.09	38.51	24.61
20 Podlaskie	73.66	59.12	44.72	31.12	19.09	82.58	67.96	53.21	38.61	24.66
22 Pomorskie	73.78	59.29	44.99	31.12	18.80	80.94	66.41	51.67	37.11	23.46
24 Śląskie	72.84	58.39	44.02	30.29	18.32	80.19	65.65	50.92	36.46	22.97
26 Świętokrzyskie	72.89	58.37	43.98	30.31	18.51	81.49	66.82	52.09	37.64	24.03
28 Warmińsko-mazurskie	72.53	57.98	43.68	30.15	18.19	80.68	66.22	51.49	36.99	23.43
30 Wielkopolskie	73.61	59.02	44.61	30.79	18.65	80.95	66.33	51.54	37.01	23.41
32 Zachodniopomorskie	72.75	58.27	43.91	30.19	18.20	80.67	66.02	51.32	36.86	23.39
Urban areas	**73.68**	**59.15**	**44.75**	**30.98**	**18.91**	**81.04**	**66.47**	**51.76**	**37.27**	**23.69**
02 Dolnośląskie	73.10	58.57	44.20	30.42	18.50	80.86	66.15	51.40	36.93	23.53
04 Kujawsko-pomorskie	73.16	58.68	44.26	30.46	18.42	80.16	65.71	51.03	36.61	23.18
06 Lubelskie	74.23	59.74	45.32	31.70	19.64	81.89	67.39	52.70	38.17	24.40
08 Lubuskie	72.81	58.26	44.03	30.42	18.61	80.66	66.19	51.48	37.07	23.69
10 Łódzkie	72.17	57.58	43.34	29.96	18.25	79.67	65.22	50.62	36.29	22.92
12 Małopolskie	75.14	60.54	46.09	32.12	19.75	82.25	67.59	52.82	38.23	24.41
14 Mazowieckie	74.53	59.92	45.49	31.61	19.44	81.75	67.13	52.38	37.83	24.15
16 Opolskie	73.70	59.16	44.76	31.12	19.01	81.66	66.94	52.20	37.72	24.07
18 Podkarpackie	75.87	61.30	46.75	32.83	20.30	82.82	68.12	53.35	38.80	24.94
20 Podlaskie	74.62	60.04	45.59	31.91	19.70	82.75	68.16	53.43	38.85	24.93
22 Pomorskie	74.06	59.67	45.33	31.45	19.12	81.24	66.68	51.93	37.37	23.71
24 Śląskie	72.72	58.28	43.90	30.18	18.28	79.91	65.39	50.67	36.24	22.85
26 Świętokrzyskie	73.37	58.90	44.56	30.90	18.98	81.35	66.83	52.14	37.70	24.12
28 Warmińsko-mazurskie	73.27	58.72	44.33	30.69	18.64	81.01	66.53	51.82	37.32	23.76
30 Wielkopolskie	73.95	59.33	44.87	31.04	18.94	81.12	66.57	51.83	37.33	23.76
32 Zachodniopomorskie	73.00	58.55	44.16	30.39	18.43	80.84	66.22	51.51	37.07	23.60

Table B. LIFE EXPECTANCY IN POLAND BY VOIVODSHIPS IN 2022 (cont.)

	Males					Females				
	by age					by age				
	0	15	30	45	60	0	15	30	45	60
Rural areas	**73.01**	**58.42**	**44.01**	**30.37**	**18.28**	**81.08**	**66.45**	**51.67**	**37.12**	**23.40**
02 Dolnośląskie	72.37	57.88	43.54	29.75	17.64	80.11	65.49	50.75	36.23	22.70
04 Kujawsko-pomorskie	73.54	58.97	44.61	30.84	18.56	80.29	65.84	51.05	36.44	22.77
06 Lubelskie	72.42	57.82	43.43	29.94	18.15	81.47	66.87	52.12	37.60	23.88
08 Lubuskie	72.07	57.47	43.13	29.56	17.62	79.61	65.01	50.26	35.84	22.54
10 Łódzkie	71.97	57.38	42.96	29.61	17.94	80.61	65.92	51.17	36.65	23.03
12 Małopolskie	74.60	59.90	45.34	31.47	19.12	82.17	67.47	52.66	38.06	24.17
14 Mazowieckie	72.50	57.87	43.57	30.05	18.24	81.03	66.40	51.66	37.12	23.41
16 Opolskie	73.35	58.69	44.29	30.43	18.12	81.11	66.38	51.60	37.02	23.28
18 Podkarpackie	73.96	59.37	44.92	31.13	18.93	82.24	67.67	52.90	38.29	24.37
20 Podlaskie	72.38	57.88	43.57	30.09	18.30	82.37	67.71	52.91	38.27	24.30
22 Pomorskie	73.14	58.53	44.24	30.41	18.07	80.24	65.73	51.00	36.43	22.83
24 Śląskie	73.22	58.74	44.38	30.63	18.46	81.16	66.60	51.82	37.25	23.43
26 Świętokrzyskie	72.46	57.91	43.48	29.83	18.09	81.59	66.85	52.08	37.61	23.96
28 Warmińsko-mazurskie	71.48	56.94	42.75	29.35	17.49	80.09	65.62	50.87	36.38	22.81
30 Wielkopolskie	73.16	58.61	44.25	30.44	18.24	80.59	65.90	51.08	36.50	22.86
32 Zachodniopomorskie	72.06	57.55	43.26	29.63	17.57	80.13	65.46	50.74	36.26	22.79

Table C. LIFE EXPECTANCY IN POLAND BY SUBREGIONS IN 2022

	Males					Females				
	by age					by age				
	0	15	30	45	60	0	15	30	45	60
1 Jeleniogórski	72.01	57.57	43.33	29.63	17.73	80.03	65.26	50.54	36.12	22.83
2 Legnicko-Głogowski	73.38	58.84	44.44	30.69	18.61	80.69	65.98	51.23	36.78	23.37
3 Wałbrzyski	71.35	56.82	42.58	29.05	17.38	79.63	65.14	50.46	36.06	22.72
4 Wrocławski	73.34	58.79	44.39	30.61	18.45	80.89	66.19	51.42	36.91	23.31
5 Wrocław, City	74.60	60.10	45.57	31.56	19.41	82.00	67.35	52.56	38.00	24.41
6 Bydgosko-Toruński	74.26	59.86	45.41	31.40	19.03	80.92	66.48	51.76	37.24	23.66
7 Grudziądzki	72.68	58.12	43.78	30.12	18.08	79.17	64.89	50.22	35.76	22.31
8 Włocławski	72.18	57.66	43.34	29.84	18.09	80.13	65.60	50.83	36.33	22.86
9 Bialski	72.50	57.91	43.51	30.01	18.37	81.32	66.79	52.10	37.61	23.87
10 Chełmsko-Zamojski	72.74	58.35	44.00	30.54	18.67	81.47	66.82	52.12	37.66	23.97
11 Lubelski	74.00	59.42	44.95	31.21	19.13	81.77	67.23	52.48	37.90	24.16
12 Puławski	73.13	58.49	44.17	30.76	18.89	82.02	67.54	52.78	38.22	24.39
13 Gorzowski	72.44	57.79	43.49	29.89	18.15	80.42	65.81	51.09	36.69	23.33
14 Zielonogórski	72.67	58.15	43.89	30.30	18.38	80.29	65.83	51.09	36.68	23.33
15 Łódzki	72.26	57.84	43.49	29.97	18.23	79.70	65.32	50.66	36.25	22.84
16 Łódź, City	72.28	57.69	43.36	29.85	18.13	79.52	64.99	50.41	36.10	22.82
17 Piotrkowski	71.90	57.32	42.97	29.64	17.93	80.15	65.47	50.75	36.32	22.81
18 Sieradzki	72.26	57.65	43.45	30.21	18.50	80.88	66.36	51.64	37.15	23.53
19 Skierniewicki	71.65	57.02	42.72	29.43	17.89	80.17	65.62	50.92	36.46	22.90
20 Krakowski	74.97	60.27	45.73	31.85	19.43	82.27	67.56	52.77	38.16	24.25
21 Kraków, City	75.85	61.19	46.65	32.58	20.09	82.34	67.66	52.86	38.21	24.37
22 Nowosądecki	74.52	59.87	45.37	31.43	19.10	82.58	67.79	52.98	38.41	24.51
23 Oświęcimski	73.74	59.05	44.60	30.88	18.86	81.20	66.47	51.72	37.20	23.57
24 Tarnowski	74.97	60.43	45.93	32.07	19.54	82.48	68.05	53.22	38.58	24.58
25 Ciechanowski	71.86	57.20	42.90	29.56	17.88	80.37	65.65	50.90	36.39	22.77
26 Ostrołęcki	71.97	57.46	43.21	29.78	18.18	81.32	66.87	52.15	37.61	23.86
27 Radomski	72.87	58.17	43.73	30.16	18.36	81.47	66.77	52.04	37.56	23.87
28 Warszawa, City	75.66	61.05	46.53	32.46	20.12	82.23	67.64	52.88	38.27	24.52
29 Warszawski East	73.82	59.13	44.74	30.98	18.80	81.76	67.09	52.31	37.69	23.85
30 Warszawski West	74.67	60.06	45.64	31.75	19.46	81.37	66.69	51.93	37.44	23.83
31 Nyski	72.19	57.64	43.33	29.69	17.76	81.01	66.28	51.51	36.93	23.23
32 Opolski	74.44	59.81	45.36	31.55	19.18	81.70	66.97	52.22	37.73	24.04
33 Krośnieński	75.14	60.50	46.01	32.08	19.62	81.63	67.05	52.36	37.83	24.05
34 Przemyski	74.43	59.92	45.38	31.56	19.28	82.54	67.80	52.99	38.39	24.45
35 Rzeszowski	75.07	60.52	45.95	32.01	19.64	82.94	68.32	53.52	38.89	24.93
36 Tarnobrzeski	74.29	59.65	45.33	31.63	19.45	82.66	68.09	53.32	38.73	24.84
37 Białostocki	75.10	60.44	45.93	32.05	19.63	82.90	68.30	53.52	38.89	24.91
38 Łomżyński	72.59	58.24	43.94	30.50	18.67	82.28	67.70	52.94	38.35	24.43

Table C. LIFE EXPECTANCY IN POLAND BY SUBREGIONS IN 2022 (cont.)

	Males					Females				
	by age					by age				
	0	15	30	45	60	0	15	30	45	60
39 Suwalski	72.60	58.01	43.74	30.40	18.77	82.45	67.74	53.01	38.43	24.53
40 Gdański	74.45	59.91	45.54	31.52	18.95	80.68	66.19	51.44	36.88	23.22
41 Słupski	72.81	58.21	43.93	30.39	18.45	80.32	65.91	51.24	36.76	23.14
42 Starogardzki	72.46	57.89	43.57	29.88	17.75	80.10	65.55	50.79	36.23	22.61
43 Trójmiejski	74.94	60.59	46.22	32.18	19.66	81.95	67.26	52.48	37.89	24.20
44 Bielski	73.40	59.13	44.71	30.89	18.81	81.34	66.89	52.13	37.58	23.76
45 Bytomski	72.04	57.54	43.18	29.43	17.61	80.02	65.32	50.52	36.02	22.54
46 Częstochowski	72.20	57.75	43.46	30.13	18.34	80.75	66.15	51.41	36.94	23.35
47 Gliwicki	73.16	58.60	44.21	30.40	18.41	80.56	66.06	51.32	36.83	23.35
48 Katowicki	72.70	58.36	44.01	30.22	18.29	79.16	64.62	49.92	35.56	22.32
49 Rybnicki	72.96	58.55	44.24	30.47	18.33	79.80	65.37	50.69	36.25	22.84
50 Sosnowiecki	72.46	57.77	43.33	29.69	17.92	79.67	65.10	50.40	35.98	22.61
51 Tyski	74.20	59.61	45.14	31.28	18.99	80.88	66.26	51.56	37.04	23.33
52 Kielecki	72.92	58.38	43.96	30.30	18.53	81.45	66.84	52.18	37.77	24.18
53 Sandomiersko-Jędrzejowski	72.83	58.34	44.00	30.34	18.46	81.53	66.79	51.98	37.44	23.77
54 Elbląski	72.38	57.79	43.50	29.94	17.91	80.10	65.70	51.00	36.52	23.08
55 Ełcki	72.15	57.84	43.51	29.98	18.15	80.79	66.21	51.47	36.99	23.39
56 Olsztyński	72.85	58.24	43.95	30.42	18.47	81.15	66.65	51.91	37.39	23.74
57 Kaliski	72.84	58.27	43.86	30.32	18.53	80.62	65.98	51.22	36.69	23.05
58 Koniński	73.04	58.47	44.15	30.54	18.48	80.85	66.17	51.42	36.95	23.37
59 Leszczyński	73.58	58.91	44.52	30.70	18.53	80.66	66.07	51.30	36.78	23.22
60 Pilski	72.73	58.14	43.76	30.03	17.91	80.01	65.53	50.80	36.37	22.90
61 Poznański	74.08	59.58	45.17	31.18	18.82	81.44	66.73	51.91	37.28	23.51
62 Poznań, City	75.35	60.70	46.10	31.95	19.49	81.58	67.03	52.26	37.72	24.16
63 Koszaliński	73.04	58.57	44.10	30.34	18.39	81.44	66.71	51.96	37.49	23.97
64 Szczecinecko-Pyrzycki	71.94	57.42	43.10	29.50	17.59	80.24	65.68	50.96	36.50	23.12
65 Szczecin, City	72.92	58.43	43.98	30.20	18.37	80.74	66.15	51.42	36.91	23.38
66 Szczeciński	73.06	58.57	44.32	30.61	18.40	80.36	65.74	51.07	36.68	23.21
67 Inowrocławski	72.73	58.18	43.81	30.16	18.11	80.03	65.49	50.76	36.26	22.77
68 Świecki	74.19	59.43	44.92	31.00	18.66	80.31	65.68	50.93	36.46	22.83
69 Nowotarski	74.77	60.14	45.65	31.75	19.36	82.66	68.00	53.24	38.68	24.81
70 Płocki	71.77	57.29	43.15	29.70	17.91	80.05	65.51	50.79	36.35	22.93
71 Siedlecki	72.33	57.82	43.54	30.14	18.45	80.66	66.13	51.47	37.05	23.40
72 Chojnicki	72.06	57.64	43.36	29.83	17.87	80.26	65.82	51.11	36.64	23.16
73 Żyrardowski	71.42	57.01	42.86	29.51	17.97	80.69	66.00	51.24	36.74	23.15

Table D. LIFE TABLE FOR BOTH SEXES COMBINED FOR POLAND IN 2022

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
0	0.00369	100000	369	99668	7712339	77.12
1	0.00032	99631	32	99615	7612672	76.41
2	0.00022	99599	22	99588	7513057	75.43
3	0.00017	99577	17	99569	7413469	74.45
4	0.00014	99560	14	99553	7313900	73.46
5	0.00012	99546	12	99540	7214347	72.47
6	0.00010	99534	10	99529	7114807	71.48
7	0.00009	99524	9	99520	7015278	70.49
8	0.00009	99515	9	99511	6915759	69.49
9	0.00010	99506	10	99501	6816248	68.50
10	0.00010	99496	10	99491	6716747	67.51
11	0.00012	99486	12	99480	6617256	66.51
12	0.00013	99474	13	99468	6517776	65.52
13	0.00016	99461	16	99453	6418309	64.53
14	0.00019	99445	19	99436	6318856	63.54
15	0.00023	99426	23	99415	6219420	62.55
16	0.00028	99403	28	99389	6120006	61.57
17	0.00034	99375	34	99358	6020617	60.58
18	0.00038	99341	38	99322	5921259	59.61
19	0.00045	99303	45	99281	5821937	58.63
20	0.00051	99258	51	99233	5722656	57.65
21	0.00055	99207	55	99180	5623424	56.68
22	0.00058	99152	58	99123	5524244	55.71
23	0.00061	99094	60	99064	5425121	54.75
24	0.00064	99034	63	99003	5326057	53.78
25	0.00068	98971	67	98938	5227055	52.81
26	0.00070	98904	69	98870	5128117	51.85
27	0.00073	98835	72	98799	5029248	50.89
28	0.00078	98763	77	98725	4930449	49.92
29	0.00085	98686	84	98644	4831724	48.96
30	0.00090	98602	89	98558	4733080	48.00
31	0.00097	98513	96	98465	4634523	47.04
32	0.00106	98417	104	98365	4536058	46.09
33	0.00115	98313	113	98257	4437693	45.14
34	0.00122	98200	120	98140	4339436	44.19
35	0.00132	98080	129	98016	4241296	43.24
36	0.00141	97951	138	97882	4143281	42.30
37	0.00150	97813	147	97740	4045399	41.36

Table D. LIFE TABLE FOR BOTH SEXES COMBINED FOR POLAND IN 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
38	0.00160	97666	156	97588	3947659	40.42
39	0.00170	97510	166	97427	3850071	39.48
40	0.00182	97344	177	97256	3752644	38.55
41	0.00195	97167	189	97073	3655389	37.62
42	0.00210	96978	204	96876	3558316	36.69
43	0.00228	96774	221	96664	3461440	35.77
44	0.00250	96553	241	96433	3364777	34.85
45	0.00274	96312	264	96180	3268344	33.93
46	0.00303	96048	291	95903	3172164	33.03
47	0.00333	95757	319	95598	3076262	32.13
48	0.00367	95438	350	95263	2980664	31.23
49	0.00404	95088	384	94896	2885401	30.34
50	0.00445	94704	421	94494	2790505	29.47
51	0.00488	94283	460	94053	2696012	28.59
52	0.00536	93823	503	93572	2601959	27.73
53	0.00589	93320	550	93045	2508387	26.88
54	0.00646	92770	599	92471	2415342	26.04
55	0.00708	92171	653	91845	2322872	25.20
56	0.00776	91518	710	91163	2231027	24.38
57	0.00849	90808	771	90423	2139864	23.56
58	0.00930	90037	837	89619	2049442	22.76
59	0.01018	89200	908	88746	1959823	21.97
60	0.01117	88292	986	87799	1871077	21.19
61	0.01226	87306	1070	86771	1783278	20.43
62	0.01343	86236	1158	85657	1696507	19.67
63	0.01470	85078	1251	84453	1610850	18.93
64	0.01607	83827	1347	83154	1526398	18.21
65	0.01748	82480	1442	81759	1443244	17.50
66	0.01895	81038	1536	80270	1361485	16.80
67	0.02049	79502	1629	78688	1281215	16.12
68	0.02206	77873	1718	77014	1202528	15.44
69	0.02374	76155	1808	75251	1125514	14.78
70	0.02552	74347	1897	73399	1050263	14.13
71	0.02745	72450	1989	71456	976864	13.48
72	0.02959	70461	2085	69419	905409	12.85
73	0.03196	68376	2185	67284	835990	12.23
74	0.03460	66191	2290	65046	768707	11.61
75	0.03751	63901	2397	62703	703661	11.01

Table D. LIFE TABLE FOR BOTH SEXES COMBINED FOR POLAND IN 2022 (cont.)

Age	Probability of dying	Number of survivors	Number deceased	Stationary population		Life expectancy
				At age x	Cumulated	
x	q_x	l_x	d_x	L_x	T_x	e_x
76	0.04081	61504	2510	60249	640958	10.42
77	0.04450	58994	2625	57682	580709	9.84
78	0.04868	56369	2744	54997	523028	9.28
79	0.05345	53625	2866	52192	468031	8.73
80	0.05898	50759	2994	49262	415839	8.19
81	0.06532	47765	3120	46205	366577	7.67
82	0.07275	44645	3248	43021	320372	7.18
83	0.08129	41397	3365	39715	277351	6.70
84	0.09100	38032	3461	36302	237636	6.25
85	0.10176	34571	3518	32812	201335	5.82
86	0.11358	31053	3527	29290	168523	5.43
87	0.12624	27526	3475	25789	139233	5.06
88	0.13954	24051	3356	22373	113445	4.72
89	0.15352	20695	3177	19107	91072	4.40
90	0.16823	17518	2947	16045	71965	4.11
91	0.18345	14571	2673	13235	55921	3.84
92	0.19953	11898	2374	10711	42686	3.59
93	0.21619	9524	2059	8495	31975	3.36
94	0.23349	7465	1743	6594	23481	3.15
95	0.25114	5722	1437	5004	16887	2.95
96	0.26954	4285	1155	3708	11884	2.77
97	0.28754	3130	900	2680	8176	2.61
98	0.30628	2230	683	1889	5496	2.46
99	0.32385	1547	501	1297	3608	2.33
100	0.34226	1046	358	867	2311	2.21

Table E. LIFE EXPECTANCY FOR BOTH SEXES COMBINED IN 2022 (Expected months of future life by age)

Age in completed years	Months above full year of age											
	0	1	2	3	4	5	6	7	8	9	10	11
30	576.0	575.0	574.1	573.1	572.2	571.2	570.2	569.3	568.3	567.4	566.4	565.4
31	564.5	563.5	562.6	561.6	560.7	559.7	558.8	557.8	556.9	555.9	555.0	554.0
32	553.1	552.1	551.2	550.2	549.3	548.3	547.4	546.4	545.5	544.5	543.6	542.6
33	541.7	540.7	539.8	538.8	537.9	536.9	536.0	535.0	534.1	533.1	532.2	531.2
34	530.3	529.3	528.4	527.4	526.5	525.5	524.6	523.6	522.7	521.7	520.8	519.8
35	518.9	517.9	517.0	516.1	515.1	514.2	513.2	512.3	511.4	510.4	509.5	508.5
36	507.6	506.7	505.7	504.8	503.8	502.9	502.0	501.0	500.1	499.1	498.2	497.3
37	496.3	495.4	494.4	493.5	492.6	491.6	490.7	489.7	488.8	487.9	486.9	486.0
38	485.0	484.1	483.2	482.2	481.3	480.3	479.4	478.5	477.5	476.6	475.6	474.7
39	473.8	472.8	471.9	471.0	470.0	469.1	468.2	467.2	466.3	465.4	464.5	463.5
40	462.6	461.7	460.7	459.8	458.9	457.9	457.0	456.1	455.2	454.2	453.3	452.4
41	451.4	450.5	449.6	448.6	447.7	446.8	445.9	444.9	444.0	443.1	442.1	441.2
42	440.3	439.4	438.4	437.5	436.6	435.7	434.8	433.8	432.9	432.0	431.1	430.2
43	429.2	428.3	427.4	426.5	425.6	424.6	423.7	422.8	421.9	421.0	420.0	419.1
44	418.2	417.3	416.4	415.4	414.5	413.6	412.7	411.8	410.8	409.9	409.0	408.1
45	407.2	406.3	405.4	404.5	403.6	402.7	401.8	400.9	400.0	399.1	398.2	397.3
46	396.4	395.5	394.6	393.7	392.8	391.9	391.0	390.1	389.2	388.3	387.4	386.5
47	385.6	384.7	383.8	382.9	382.0	381.1	380.2	379.3	378.4	377.5	376.6	375.7
48	374.8	373.9	373.0	372.1	371.2	370.3	369.4	368.5	367.6	366.8	365.9	365.0
49	364.1	363.2	362.3	361.5	360.6	359.7	358.9	358.0	357.1	356.2	355.4	354.5
50	353.6	352.8	351.9	351.0	350.1	349.2	348.4	347.5	346.6	345.7	344.8	344.0
51	343.1	342.2	341.4	340.5	339.6	338.8	337.9	337.1	336.2	335.3	334.5	333.6
52	332.8	331.9	331.1	330.2	329.4	328.5	327.7	326.8	326.0	325.1	324.3	323.4
53	322.6	321.7	320.9	320.0	319.2	318.4	317.5	316.7	315.8	315.0	314.2	313.3
54	312.5	311.6	310.8	310.0	309.1	308.3	307.4	306.6	305.8	304.9	304.1	303.2
55	302.4	301.6	300.8	299.9	299.1	298.3	297.5	296.7	295.8	295.0	294.2	293.4
56	292.6	291.7	290.9	290.1	289.3	288.5	287.6	286.8	286.0	285.2	284.4	283.5
57	282.7	281.9	281.1	280.3	279.5	278.7	277.9	277.1	276.3	275.5	274.7	273.9
58	273.1	272.3	271.5	270.8	270.0	269.2	268.4	267.6	266.8	266.0	265.2	264.4
59	263.6	262.9	262.1	261.3	260.5	259.7	259.0	258.2	257.4	256.6	255.8	255.1
60	254.3	253.5	252.8	252.0	251.2	250.5	249.7	249.0	248.2	247.4	246.7	245.9
61	245.2	244.4	243.6	242.9	242.1	241.4	240.6	239.8	239.1	238.3	237.6	236.8
62	236.0	235.3	234.6	233.8	233.1	232.3	231.6	230.9	230.1	229.4	228.6	227.9
63	227.2	226.4	225.7	225.0	224.3	223.6	222.8	222.1	221.4	220.7	220.0	219.2
64	218.5	217.8	217.1	216.4	215.7	215.0	214.3	213.6	212.8	212.1	211.4	210.7
65	210.0	209.3	208.6	207.9	207.2	206.5	205.8	205.1	204.4	203.7	203.0	202.3
66	201.6	200.9	200.2	199.6	198.9	198.2	197.5	196.8	196.2	195.5	194.8	194.1
67	193.4	192.8	192.1	191.4	190.7	190.0	189.4	188.7	188.0	187.3	186.6	186.0

Table E. LIFE EXPECTANCY FOR BOTH SEXES COMBINED IN 2022 (cont.)
(Expected months of future life by age)

Age in com-plited years	Months above full year of age											
	0	1	2	3	4	5	6	7	8	9	10	11
68	185.3	184.6	184.0	183.3	182.6	182.0	181.3	180.7	180.0	179.3	178.7	178.0
69	177.4	176.7	176.1	175.4	174.8	174.1	173.5	172.8	172.2	171.5	170.9	170.2
70	169.6	168.9	168.3	167.6	167.0	166.3	165.7	165.0	164.4	163.7	163.1	162.4
71	161.8	161.1	160.5	159.9	159.2	158.6	158.0	157.3	156.7	156.1	155.5	154.8
72	154.2	153.6	153.0	152.3	151.7	151.1	150.5	149.9	149.2	148.6	148.0	147.4
73	146.8	146.1	145.5	144.9	144.3	143.7	143.0	142.4	141.8	141.2	140.6	139.9
74	139.3	138.7	138.1	137.5	136.9	136.3	135.7	135.1	134.5	133.9	133.3	132.7
75	132.1	131.5	130.9	130.3	129.8	129.2	128.6	128.0	127.4	126.8	126.2	125.6
76	125.0	124.5	123.9	123.3	122.7	122.1	121.6	121.0	120.4	119.8	119.2	118.7
77	118.1	117.5	117.0	116.4	115.8	115.3	114.7	114.2	113.6	113.0	112.5	111.9
78	111.4	110.8	110.3	109.7	109.2	108.6	108.1	107.5	107.0	106.4	105.9	105.3
79	104.8	104.2	103.7	103.1	102.6	102.1	101.5	101.0	100.4	99.9	99.4	98.8
80	98.3	97.8	97.2	96.7	96.2	95.7	95.2	94.6	94.1	93.6	93.1	92.6
81	92.0	91.6	91.1	90.6	90.1	89.6	89.1	88.6	88.1	87.6	87.1	86.6
82	86.2	85.7	85.2	84.7	84.2	83.8	83.3	82.8	82.3	81.8	81.4	80.9
83	80.4	80.0	79.5	79.1	78.6	78.2	77.7	77.2	76.8	76.3	75.9	75.4
84	75.0	74.6	74.1	73.7	73.3	72.8	72.4	72.0	71.6	71.1	70.7	70.3
85	69.8	69.4	69.1	68.7	68.3	67.9	67.5	67.1	66.7	66.3	65.9	65.6
86	65.2	64.8	64.4	64.0	63.7	63.3	62.9	62.6	62.2	61.8	61.5	61.1
87	60.7	60.4	60.0	59.7	59.4	59.0	58.7	58.3	58.0	57.7	57.3	57.0
88	56.6	56.3	56.0	55.7	55.4	55.0	54.7	54.4	54.1	53.8	53.4	53.1
89	52.8	52.5	52.2	51.9	51.6	51.4	51.1	50.8	50.5	50.2	49.9	49.6
90	49.3	49.1	48.8	48.5	48.2	48.0	47.7	47.4	47.2	46.9	46.6	46.4