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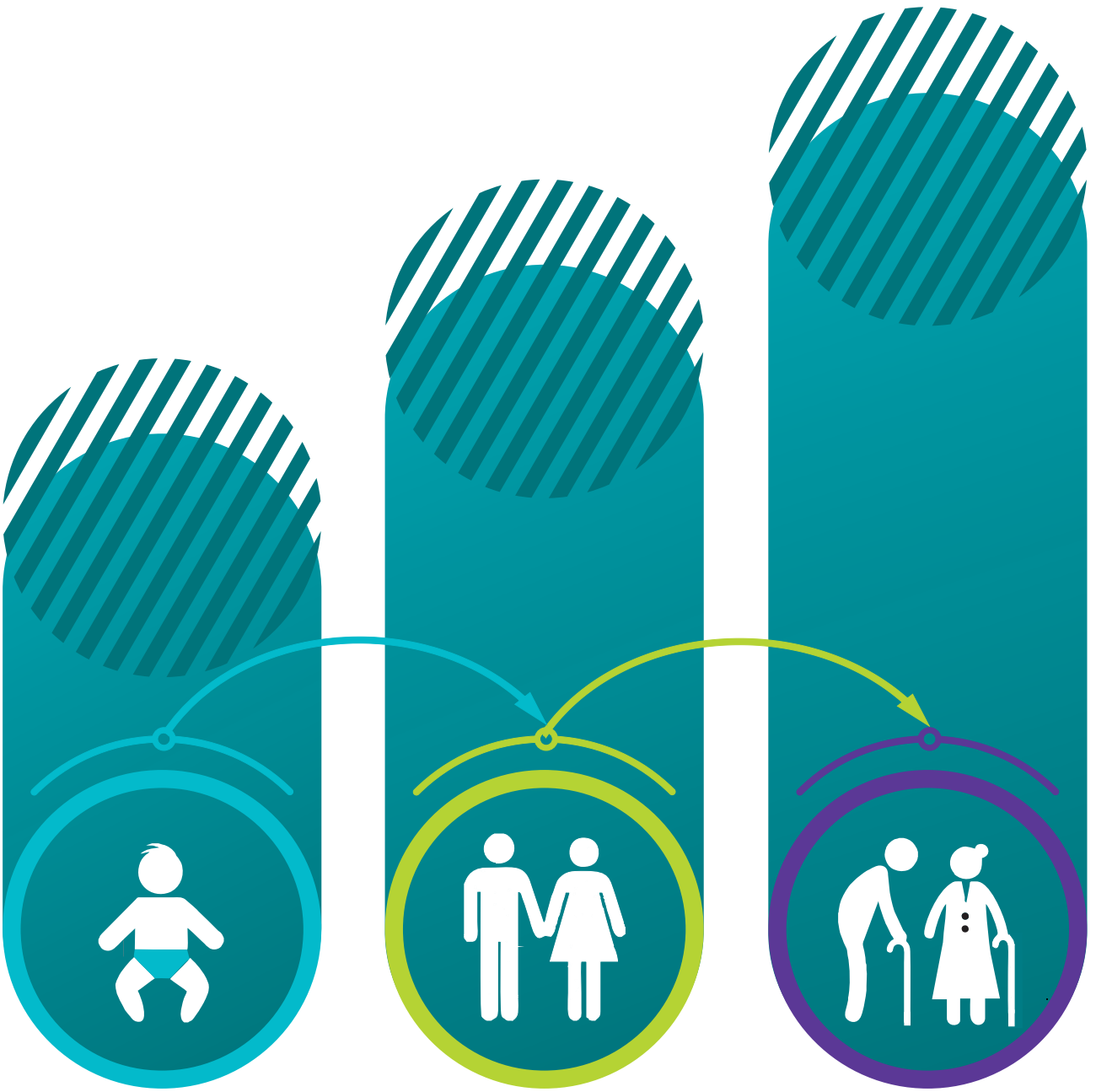

Life expentancy tables of Poland 2021

Warsaw 2022

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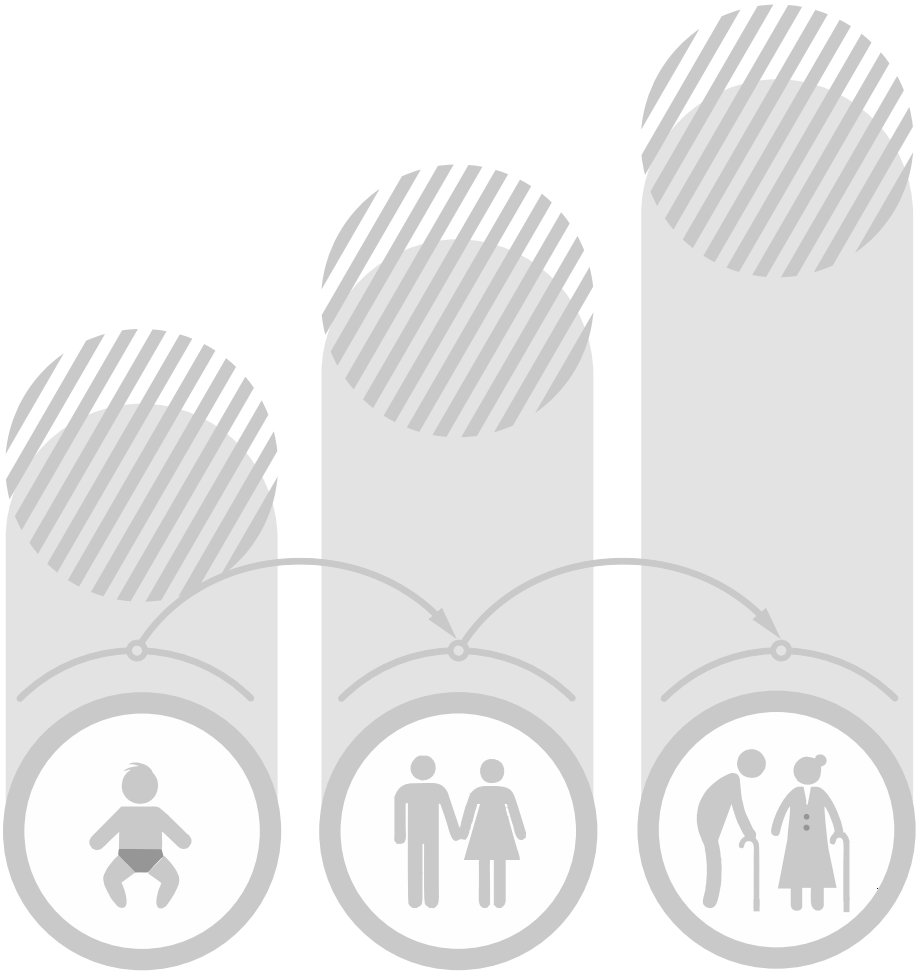

Life expentancy tables of Poland 2021

Główny Urząd Statystyczny Statistics Poland

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supervised by
Dorota Szałtys

Editorial team
Maciej Potyra, Katarzyna Góral-Radziszewska, Kamil Waśkiewicz

Typesetting and graphics
Andrzej Paluchowski, Ola Paprocka

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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, starting from 2012, are prepared with the use of balances of the size and structure of the population derived from the results of the last census of population and housing in 2011.

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 1950–2021, 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 2022

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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 2021, the average life expectancy for men in Poland was 71.8 years, while for women 79.7 years. In comparison to the 2019, life expectancy decreased by 2.3 and 2.1 years respectively. The decline was related to the COVID-19 epidemic. Taking into account 1990, life expectancy increased by 5.6 and 4.5 years.

The average life expectancy of a person aged x years is denoted in literature by e_x 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 e_0 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 and population by age and sex at the middle of a given calendar year.

The publication presents data on the life expectancy and mortality of the Polish population in 2021. The indicators included in the tables can be interpreted as calculated for a hypothetical cohort, assuming that throughout the entire life of this group, the risk of death at a particular age would be identical to that in the examined period, i.e. in 2021.

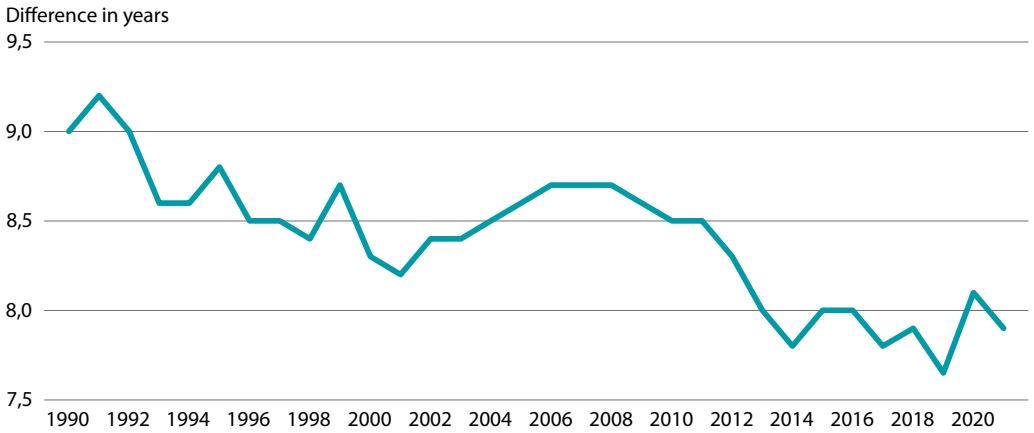
1 Góral-Radziszewska, K. Waśkiewicz K., Potyra M., Kuczyńska K. [2020] Healthy Life Years in Poland in 2009–2019, „Analizy Statystyczne", Statistics Poland, Warsaw, https://stat.gov.pl/en/topics/population/life-expectancy/healthy-life-years-in-poland-in-20092019,3,1.html

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 2021 it amounted to 7.9 years (Chart 1).

Chart 1. Difference in life expectancy between males and females 1990–2021



Higher mortality among men compared to women is observed in almost all age groups. In 2021, 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. 5.5% of men and 2.2% 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 52.7% of men and 28.5% of women (63.9% and 37.5% in 1990).

In 2021, the life expectancy of 15-year-olds was 57.2 years for males and 65.1 for females (in 1990 it was 4.1 years more for males and 3.3 years for females). Life expectancy of the 45-year-olds was 29.1 years for men and 35.8 for women, which in comparison to 1990 means an increase in the life expectancy by 3 and 2.8 respectively.

Table 1. Life expectancy by age in Poland 1960–2021[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

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 on 31.05.2020)

Table 1. Life expectancy by age in Poland 1960–2021 (cont.)

Years	Males						Females					
	By age											
	0	15	30	45	60	75	0	15	30	45	60	75
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
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**

The value of e_0 for a male newborn is 71.8 years (Table 1). This means that if during the life of a man born in 2021 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 2021 – the average life expectancy for a man at the age of 30 is 42.8 years, i.e. on average he would live to 72.8 years – thus one year more than a boy born in 2021. The chances of reaching the next birthday increase with age. For a man aged 60, the average life expectancy is 17.3 years, so on average he would live to 77.3 years.

In 2021, the life expectancy for males living in urban areas was 72 years, which is a 0.6 year longer than for males in rural areas. Females in urban areas live on average 79.8 years which is 0.2 year longer than in rural areas. Nowadays females in urban areas live 7.8 years longer than males (in 1991 it was almost 9; in 2001 – 7.8) while in rural areas the difference is 8.2 years (in 1991 – 9.7; in 2001 – 8.8).

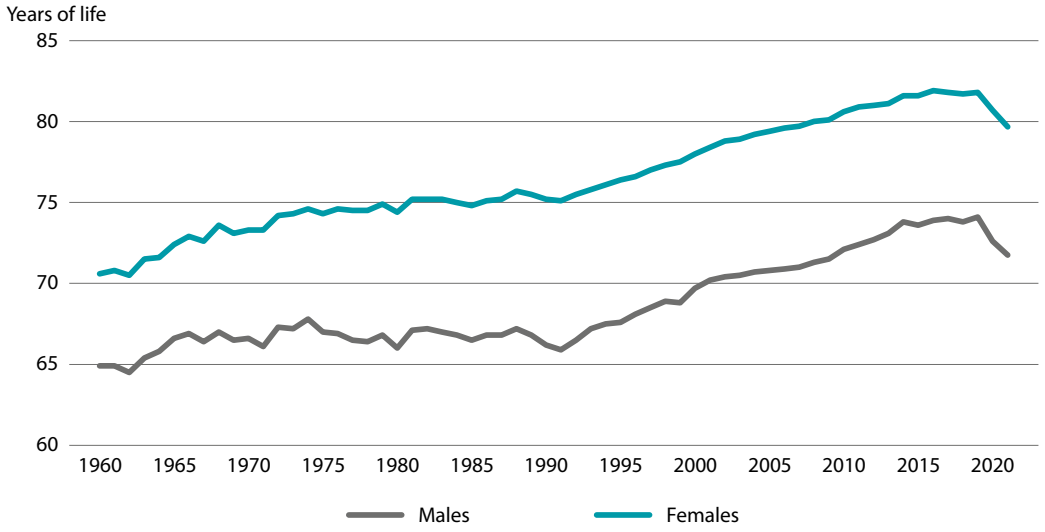
The mortality in Poland was very high directly after the Second World War. In 1950 the life expectancy for male was slightly above 56 years, while for female it was almost 62 years. In the 1950s Poland experienced a sharp drop in mortality rates and consequently a significant growth of life expectancy. 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.

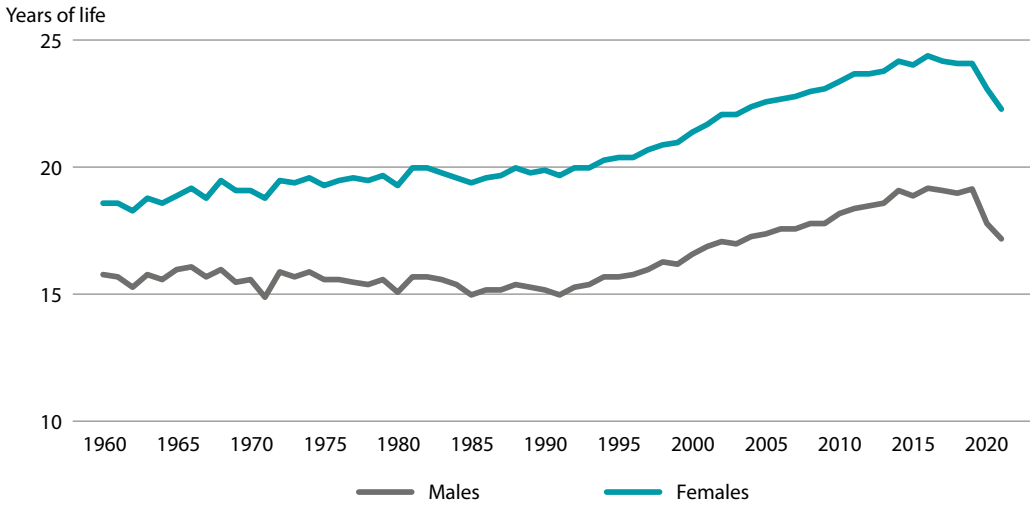
As the result of the COVID-19 epidemic and increased number of deaths related to it, life expectancy in 2021, compared to 2019, was reduced by 2.3 years for men and by 2.1 years for women.

Chart 2. Life expectancy at birth in Poland 1960–2021



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).

Chart 3. Life expectancy at age 60 in Poland 1960–2021



Chapter 3.

Spatial diversity of life expectancy

3.1. Macroregions

In 2021 the longest life expectancy for males was recorded in the Southern macroregion (72.2 years). Among females, the highest was in Eastern macroregion – 80.1 years (Table 2). The Central macroregion is characterized by the shortest life expectancy for men (71 years) and women (79.3 years).

In urban areas men live on average longer than in rural areas. In Mazowieckie voivodship macroregion this difference is the biggest – 1.9 years. In two macroregions, the life expectancy for men in urban areas is shorter than in rural – in the Southern (by 0.5 years) and Central (by 0.1 years). There is a greater diversity in the case of women. In three macroregions, life expectancy is higher among rural women, and in four – in cities.

Table 2. Life expectancy in Poland by macroregions in 2021

	Males					Females				
	By age									
	0	15	30	45	60	0	15	30	45	60
Total	**71.8**	**57.2**	**42.8**	**29.1**	**17.3**	**79.7**	**65.1**	**50.3**	**35.8**	**22.4**
Southern	72.2	57.5	43.0	29.3	17.4	79.7	65.1	50.3	35.8	22.4
North-western	71.7	57.1	42.7	29.0	17.1	79.4	64.8	50.0	35.5	22.1
South-western	71.6	57.2	42.8	29.1	17.3	79.8	65.1	50.3	35.9	22.6
Northern	71.7	57.2	42.8	29.1	17.2	79.5	64.9	50.2	35.7	22.3
Central	71.0	56.3	41.9	28.4	16.9	79.3	64.7	49.9	35.5	22.1
Eastern	71.9	57.4	43.0	29.4	17.4	80.1	65.6	50.8	36.3	22.7
Mazowieckie voivod.	71.6	57.0	42.8	29.2	17.4	80.0	65.4	50.6	36.1	22.6
Urban areas	**72.0**	**57.4**	**43.0**	**29.3**	**17.5**	**79.8**	**65.2**	**50.4**	**36.0**	**22.6**
Southern	72.0	57.3	42.9	29.1	17.4	79.5	64.9	50.1	35.7	22.4
North-western	71.8	57.2	42.9	29.1	17.3	79.7	65.1	50.3	35.8	22.4
South-western	71.7	57.3	42.9	29.2	17.5	79.7	65.0	50.3	35.9	22.7
Northern	72.1	57.5	43.1	29.3	17.5	79.8	65.2	50.5	36.0	22.6
Central	70.9	56.3	41.9	28.5	17.0	79.0	64.4	49.7	35.3	22.1
Eastern	72.8	58.2	43.8	30.1	18.0	80.4	65.8	51.0	36.5	23.0
Mazowieckie voivod.	72.3	57.7	43.4	29.7	17.9	80.3	65.7	50.9	36.4	22.9
Rural areas	**71.4**	**56.8**	**42.4**	**28.8**	**16.9**	**79.6**	**64.9**	**50.1**	**35.6**	**22.1**
Southern	72.5	57.8	43.3	29.5	17.4	80.1	65.5	50.7	36.1	22.5
North-western	71.4	56.8	42.4	28.7	16.8	78.8	64.2	49.5	35.0	21.5
South-western	71.4	56.9	42.6	28.9	16.9	79.8	65.0	50.3	35.7	22.3
Northern	71.1	56.6	42.3	28.6	16.6	78.8	64.3	49.5	35.0	21.5
Central	71.0	56.3	41.9	28.4	16.8	79.8	65.1	50.3	35.8	22.2
Eastern	71.1	56.7	42.4	28.8	16.9	79.9	65.3	50.6	36.1	22.5
Mazowieckie voivod.	70.4	55.8	41.6	28.1	16.6	79.5	64.8	50.0	35.5	22.0

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, Wielkopolskie, Kujawsko-Pomorskie and Opolskie, 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 epidemic, 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 Podlaskie (2.8 years), the smallest in Małopolskie (1.8 years). For women, the decrease was the highest in Lubelskie (2.9 years), and the lowest in Małopolskie and Pomorskie (1.7 years).

In Poland there is a high diversity of life expectancy between voivodships. In 2021 the span between the highest and the lowest parameters for males among 16 voivodships was 3 years. The shortest life expectancy was observed among men living in the Lubelskie (70.5 years) and the longest was in the Małopolskie (73.5 years). Among females the diversity is smaller and amounts to 2.1 years. For women the shortest life expectancy is in the Kujawsko-Pomorskie and Śląskie voivodships (78.9 years), and the longest in Małopolskie (81 years) (Map 1).

Higher mortality among men compared to women is clearly visible in all voivodships. In 2021, the disproportion between the average life expectancy of men and women was the highest in Podlaskie (8.9 years) and the lowest in Pomorskie (7.4 years).

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

Voivodships	Males								Females							
	1990	2000	2005	2010	2015	2019	2020	**2021**	1990	2000	2005	2010	2015	2019	2020	**2021**
Total	66,2	69,7	70,8	72,1	73,6	74,1	72,6	**71,8**	75,2	78,0	79,4	80,6	81,6	81,8	80,7	**79,7**
Dolnośląskie	65,7	68,8	70,4	71,7	73,2	73,5	72,1	**71,4**	74,7	77,6	78,9	80,2	81,0	81,3	80,6	**79,5**
Kujawsko-pomorskie	65,7	69,6	70,6	71,4	73,5	73,7	72,4	**71,3**	74,6	77,5	79,1	79,8	81,3	81,0	80,4	**78,9**
Lubelskie	66,8	69,1	69,9	71,2	73,3	73,9	72,3	**71,3**	76,4	78,5	79,9	81,0	82,4	82,4	81,1	**79,5**
Lubuskie	65,2	69,2	70,2	71,5	72,8	72,9	71,8	**70,5**	74,6	77,4	79,0	80,1	80,9	81,0	80,0	**79,0**
Łódzkie	65,3	67,9	68,6	70,1	71,4	72,5	71,1	**70,6**	74,5	77,2	78,3	79,4	80,4	81,0	79,6	**79,0**
Małopolskie	68,0	71,3	72,3	73,7	75,1	75,3	73,8	**73,5**	76,3	78,8	80,2	81,4	82,4	82,7	81,6	**81,0**
Mazowieckie	66,6	69,8	71,1	72,6	74,0	74,3	72,8	**71,6**	75,9	78,6	80,2	81,0	82,0	82,1	80,9	**80,0**
Opolskie	66,5	70,7	71,9	73,0	73,8	74,5	73,0	**72,4**	74,9	78,2	79,5	80,4	81,4	82,0	81,0	**80,4**
Podkarpackie	68,0	71,2	72,0	73,7	74,9	75,4	73,7	**72,7**	76,4	79,0	80,3	81,8	82,5	83,2	81,8	**80,6**
Podlaskie	67,1	70,5	71,0	72,5	73,8	74,3	73,1	**71,5**	76,8	79,1	80,4	81,9	82,6	83,1	81,9	**80,5**
Pomorskie	66,0	70,6	71,7	73,0	74,2	74,8	73,3	**72,7**	74,7	78,1	79,8	80,8	81,4	81,8	81,2	**80,1**
Śląskie	65,8	69,6	70,5	71,6	73,0	73,8	72,3	**71,3**	74,2	77,2	78,5	79,7	80,3	80,8	80,0	**78,9**
Świętokrzyskie	66,7	70,5	70,6	71,8	73,0	73,8	72,0	**71,6**	76,0	78,6	80,2	80,9	82,2	82,2	80,9	**80,0**
Warmińsko-mazurskie	65,4	69,2	70,0	71,3	72,7	73,8	72,0	**70,8**	75,2	78,6	79,4	80,4	81,1	81,2	80,6	**79,4**
Wielkopolskie	65,8	69,7	71,3	72,5	73,7	73,0	72,8	**72,1**	74,9	77,5	79,2	80,5	81,2	81,5	80,5	**79,6**
Zachodniopomorskie	65,1	69,0	70,6	71,3	73,5	74,3	72,1	**71,5**	74,5	77,5	78,8	80,1	81,1	81,2	80,6	**79,2**
Urban areas	66,2	70,0	71,2	72,6	74,0	74,5	72,9	**72,0**	74,9	77,8	79,3	80,6	81,5	81,7	80,8	**79,8**
Dolnośląskie	65,9	69,2	70,7	72,1	73,4	73,7	72,3	**71,5**	74,5	77,5	79,1	80,2	81,1	81,4	80,9	**79,5**

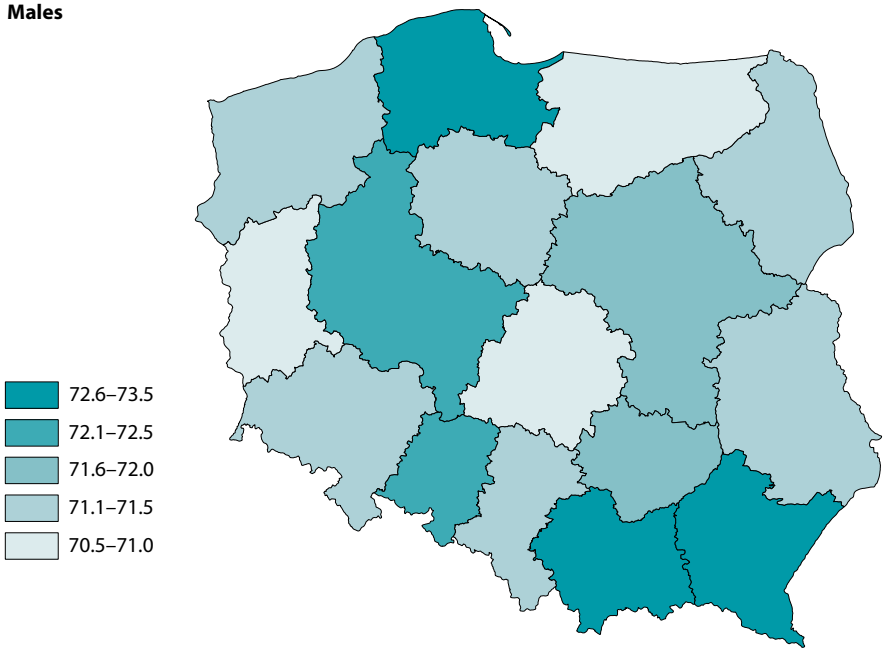
3 At the calculation of life table parameters for 1990 has been introduced the modified definition of live births implemented since 1994.

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

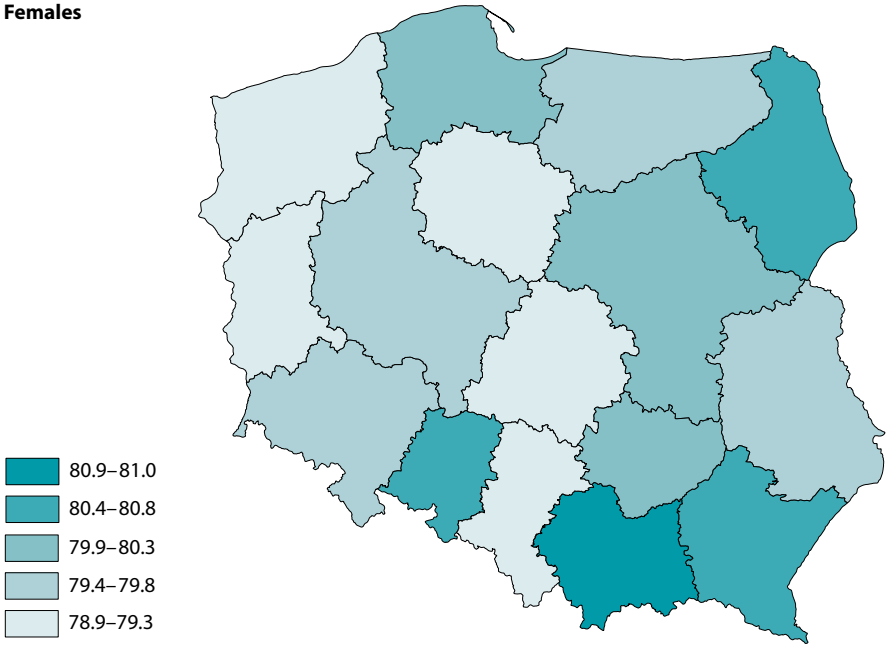
Voivodships	Males								Females							
	1990	2000	2005	2010	2015	2019	2020	**2021**	1990	2000	2005	2010	2015	2019	2020	**2021**
Kujawsko-pomorskie	65,9	70,0	71,3	71,7	73,6	74,0	72,2	**71,4**	74,6	77,5	79,4	79,9	81,2	80,9	80,1	**79,0**
Lubelskie	67,1	70,0	71,0	72,7	74,8	75,1	73,5	**72,3**	76,4	78,5	79,9	80,8	82,6	82,6	81,1	**79,7**
Lubuskie	65,8	69,7	70,6	72,3	73,0	73,6	72,2	**70,5**	74,6	77,2	79,2	80,3	81,0	81,3	80,3	**79,3**
Łódzkie	64,9	67,8	68,7	70,3	71,4	73,0	71,3	**70,4**	74,0	76,7	78,2	79,2	80,1	80,7	79,6	**78,7**
Małopolskie	67,7	71,6	72,6	74,2	75,6	75,9	74,5	**73,9**	75,9	78,6	80,0	81,4	82,3	82,7	81,7	**81,2**
Mazowieckie	66,8	70,5	71,8	73,6	74,9	75,3	73,6	**72,3**	75,7	78,5	80,3	81,2	82,0	82,3	81,1	**80,3**
Opolskie	67,0	70,7	72,3	73,0	74,2	75,2	73,5	**72,6**	74,8	78,3	79,1	80,4	81,4	81,9	81,2	**80,2**
Podkarpackie	68,3	71,8	72,6	74,5	75,9	76,3	74,5	**73,7**	76,5	78,7	80,2	82,1	82,3	83,5	82,2	**80,8**
Podlaskie	66,5	70,9	71,8	73,5	74,7	75,3	73,5	**72,4**	76,4	78,8	80,4	82,2	82,6	83,3	82,0	**80,8**
Pomorskie	66,2	71,1	72,1	73,4	74,8	75,5	73,9	**73,0**	74,8	78,0	79,8	81,0	81,5	82,1	81,6	**80,5**
Śląskie	65,4	69,4	70,3	71,5	72,8	73,6	72,1	**71,1**	73,9	77,0	78,2	79,5	80,0	80,6	79,8	**78,8**
Świętokrzyskie	67,2	70,6	71,2	72,9	74,3	74,7	72,5	**72,1**	76,1	78,5	80,1	81,0	81,9	82,3	80,6	**80,1**
Warmińsko-mazurskie	66,0	70,3	70,7	72,2	73,3	73,7	72,4	**71,3**	75,3	78,6	79,6	80,4	81,4	81,6	81,0	**79,7**
Wielkopolskie	66,0	70,0	71,9	73,1	74,0	74,7	73,3	**72,4**	74,8	77,5	79,3	80,4	81,3	81,8	80,7	**80,0**
Zachodniopomorskie	65,9	69,5	71,3	72,1	74,1	73,9	72,6	**71,7**	74,4	77,4	78,9	80,3	81,4	81,5	80,7	**79,3**
Rural areas	66,2	69,4	70,3	71,4	73,0	73,4	72,1	**71,4**	75,8	78,4	79,6	80,7	81,7	81,8	80,6	**79,6**
Dolnośląskie	65,3	67,9	69,6	70,7	72,6	72,7	71,7	**71,0**	75,0	77,8	78,3	80,2	80,6	81,0	79,8	**79,4**
Kujawsko-pomorskie	65,3	69,0	69,6	70,9	73,3	73,3	72,7	**71,1**	74,6	77,6	78,7	79,6	81,3	81,1	80,8	**78,6**
Lubelskie	66,4	68,4	69,1	70,1	72,1	72,9	71,3	**70,5**	76,5	78,5	80,0	81,2	82,2	82,3	81,2	**79,3**
Lubuskie	64,0	68,3	69,5	70,4	72,2	71,6	71,2	**70,4**	74,6	77,8	78,7	79,6	80,5	80,3	79,4	**78,3**
Łódzkie	65,9	68,2	68,7	70,0	71,4	71,8	70,7	**70,8**	75,3	78,2	78,7	80,0	81,1	81,7	79,8	**79,7**
Małopolskie	68,2	71,0	72,0	73,3	74,7	74,8	73,2	**73,0**	76,7	79,1	80,4	81,4	82,5	82,7	81,5	**80,7**
Mazowieckie	66,2	68,8	69,8	70,8	72,5	72,6	71,4	**70,4**	76,2	78,9	80,1	80,8	81,7	81,7	80,4	**79,5**
Opolskie	65,9	70,8	71,6	72,9	73,5	73,8	72,3	**72,1**	74,9	78,0	79,9	80,4	81,2	82,2	80,6	**80,5**
Podkarpackie	67,8	70,8	71,8	73,2	74,2	74,7	73,1	**72,1**	76,4	79,2	80,4	81,5	82,6	82,9	81,5	**80,5**
Podlaskie	67,3	69,9	70,2	71,3	72,5	72,9	72,5	**70,4**	77,1	79,4	80,5	81,4	82,4	83,0	81,7	**79,9**
Pomorskie	65,5	69,3	70,7	71,9	73,1	73,5	72,3	**72,0**	74,7	78,3	79,7	80,0	81,0	80,9	80,2	**79,1**
Śląskie	67,0	70,1	71,5	72,0	73,5	74,3	73,1	**71,7**	75,7	77,9	79,6	80,5	81,3	81,6	80,3	**79,2**
Świętokrzyskie	66,2	70,3	70,2	70,8	71,9	73,0	71,5	**71,2**	75,9	78,7	80,4	80,8	82,4	82,2	81,0	**79,9**
Warmińsko-mazurskie	64,5	67,9	68,9	70,0	71,7	72,0	71,4	**70,0**	75,2	78,6	79,2	80,3	80,5	80,5	79,8	**78,8**
Wielkopolskie	65,6	69,3	70,5	71,8	73,3	73,8	72,2	**71,7**	75,1	77,6	79,1	80,5	81,0	81,2	80,2	**79,0**
Zachodniopomorskie	63,4	67,9	69,1	69,6	72,1	72,9	71,1	**71,2**	74,8	77,4	78,4	79,4	80,4	80,2	80,2	**78,5**

Map 1. Life expectancy at birth in Poland by voivodships in 2021

Males



Females



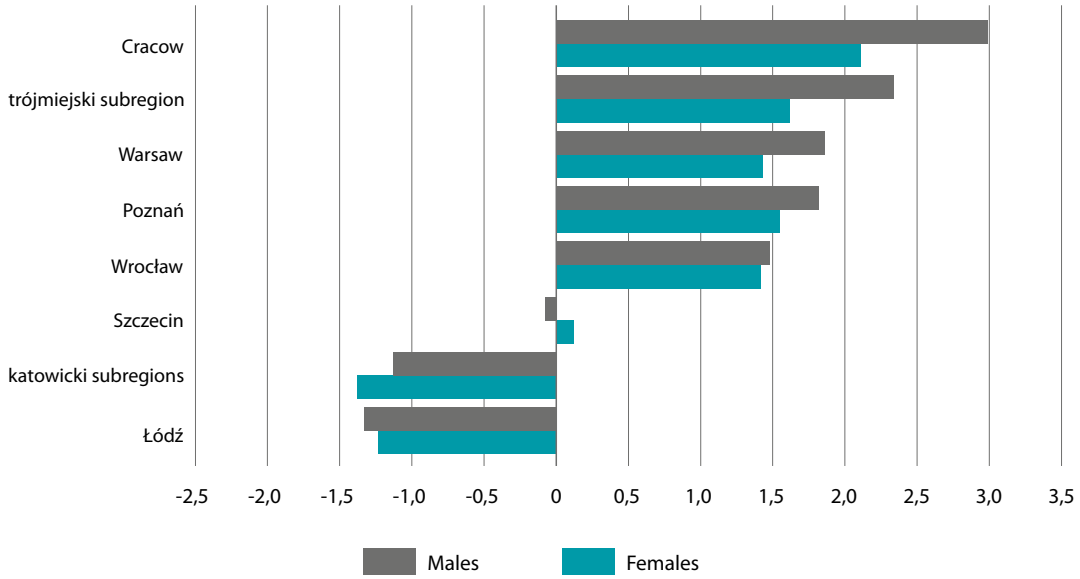
3.3. Subregions

In 2021, the range between the extreme values of life expectancy in Polish subregions was 5.1 years for men and 3.8 years for women (Map 2). The longest life expectancy for both men and women was in the subregion of the city of Cracow (74.8 years and 81 years respectively), and the shortest in the Żyrardów subregion (69.7 years and 78 years).

The subregions formed by the largest cities in the country, with 6.3 million inhabitants (i.e. 16.5% 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.

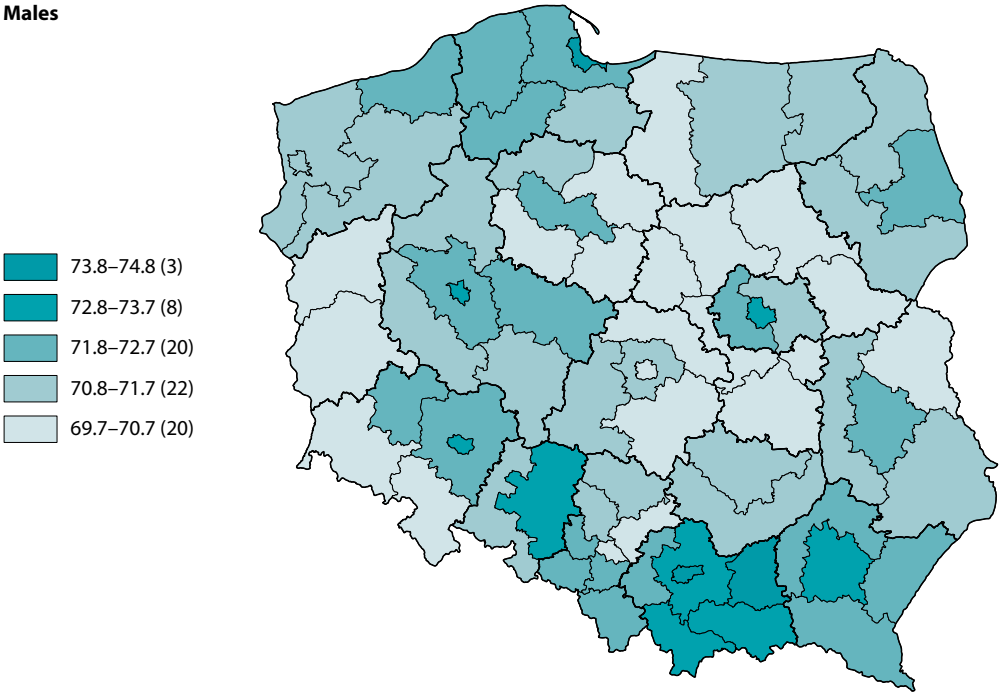
In five of these subregions, both men and women lived longer than the national average. In 2021, the longest life expectancy was recorded in Kraków (74.8 years for men, 81 years for women). In the case of men, the shortest was in Łódź (70.5 years), and for women – in the Katowice subregion (78.3 years). The biggest difference between the life expectancy of men and women was noted in Szczecin (8.1 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).

Chart 4. Life expectancy in selected subregions in relation to the national level in 2021

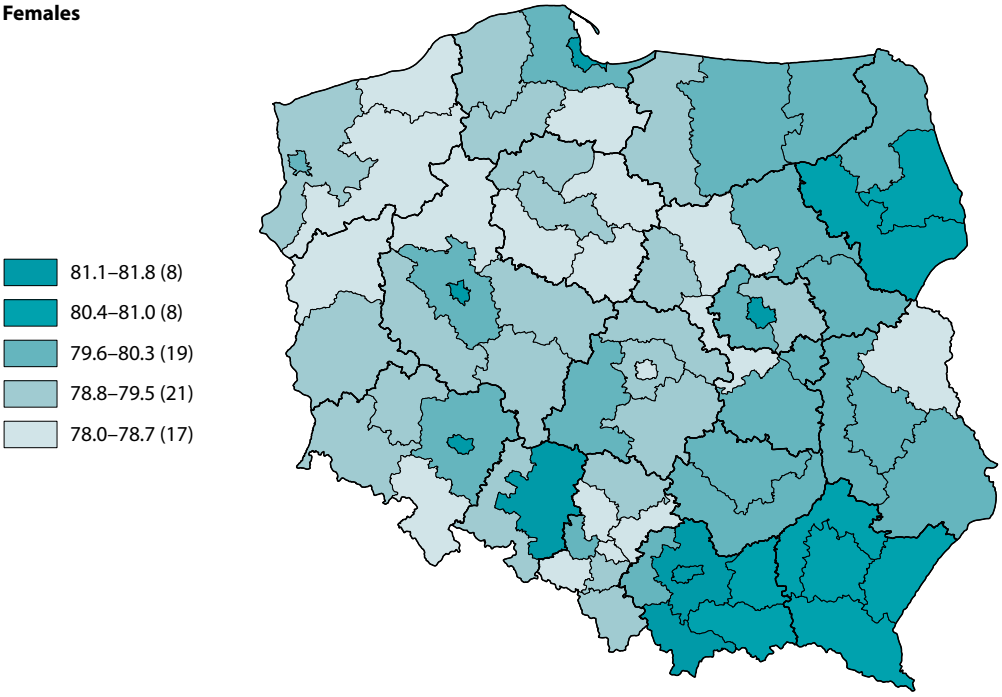


Map 2. Life expectancy at birth in Poland by subregions in 2021

Males



Females



Chapter 4.

International comparison

This chapter presents the results of comparative analyzes of life expectancy in selected European countries in 2020 based only on data compiled by Eurostat[4].

In terms of life expectancy for men, Poland (72.5 years) was only 28th out of 35 countries included in Eurostat data, ahead of Bulgaria, Lithuania, Romania, Latvia, Serbia, North Macedonia and Hungary. In case of women, Poland (88.7 years) was slightly higher in this ranking, i.e. on the 25th place, because apart from the above-mentioned countries, the average life expectancy was longer than in Montenegro, Albania and Slovakia (Table 4).

In Europe, there was a large diversity in life expectancy (Map 3). The longest one for men was recorded in Iceland and Norway (in each 81.6) and the shortest in Bulgaria – 70 years. Among women, the longest life expectancy was recorded in France – 85.3 years, and the shortest in North Macedonia – 76.7 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: Lithuania (10 years), Latvia (9.4 years), Estonia (8.6 years) and Poland (8.2 years), and with the smallest were: Iceland (3 years), Norway (3.3 years), the Netherlands (3.4 years) and Lichtenstein (3.4 years).

Table 4. Average life expectancy of a newborn in selected European countries in 2020

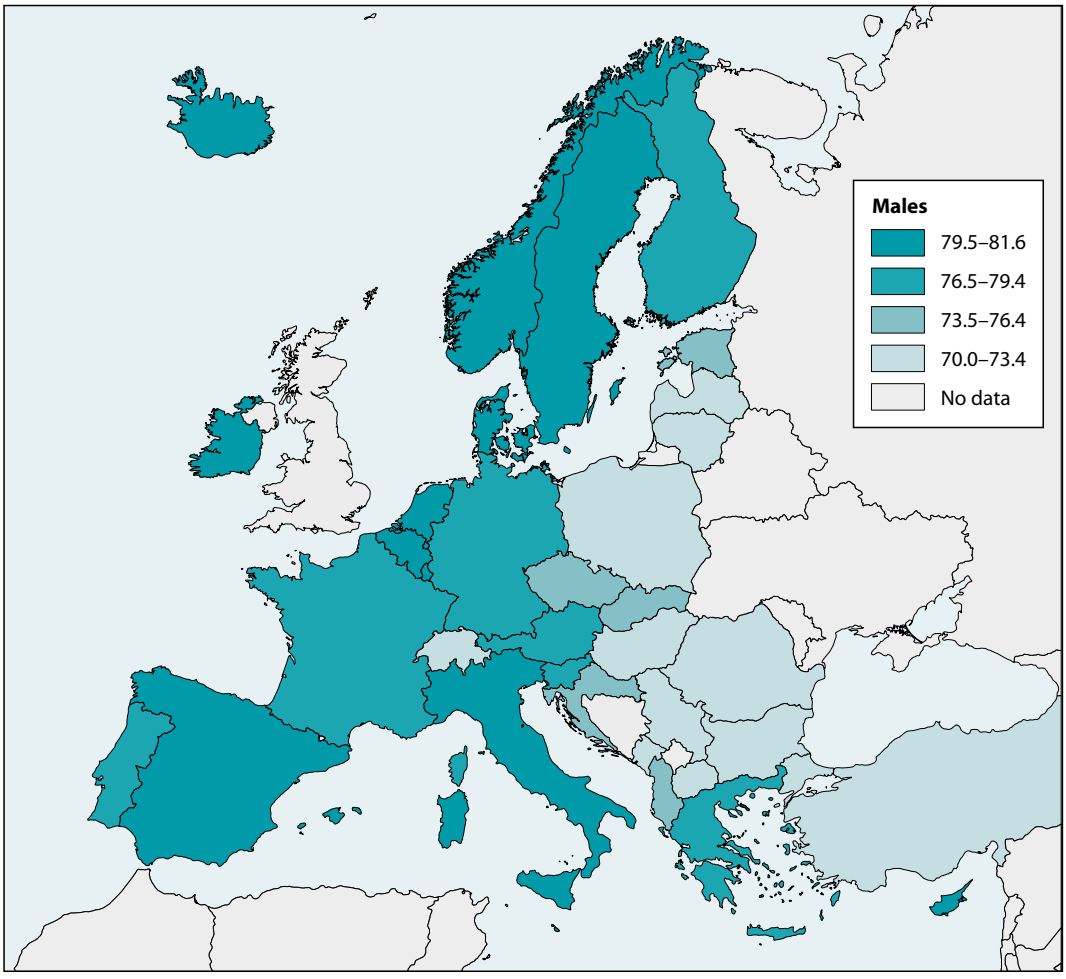
Country	Males	Females	Difference
Albania	75.2	79.6	4.4
Austria	78.9	83.6	4.7
Belgium	78.6	83.0	4.4
Bulgaria	70.0	77.5	7.5
Croatia	74.7	80.9	6.2
Cyprus	80.4	84.4	4.0
Czech Republic	75.3	81.3	6.0
Denmark	79.7	83.6	3.9
Estonia	74.4	83.0	8.6
Finland	79.2	84.8	5.6
France	79.2	85.3	6.1
Germany	78.7	83.5	4.8
Greece	78.8	83.9	5.1
Hungary	72.3	79.0	6.7
Iceland	81.6	84.6	3.0
Ireland	80.8	84.4	3.6
Italy	80.0	84.5	4.5
Latvia	70.6	80.0	9.4
Liechtenstein	80.0	83.4	3.4
Lithuania	70.1	80.1	10.0
Luxembourg	79.9	84.5	4.6

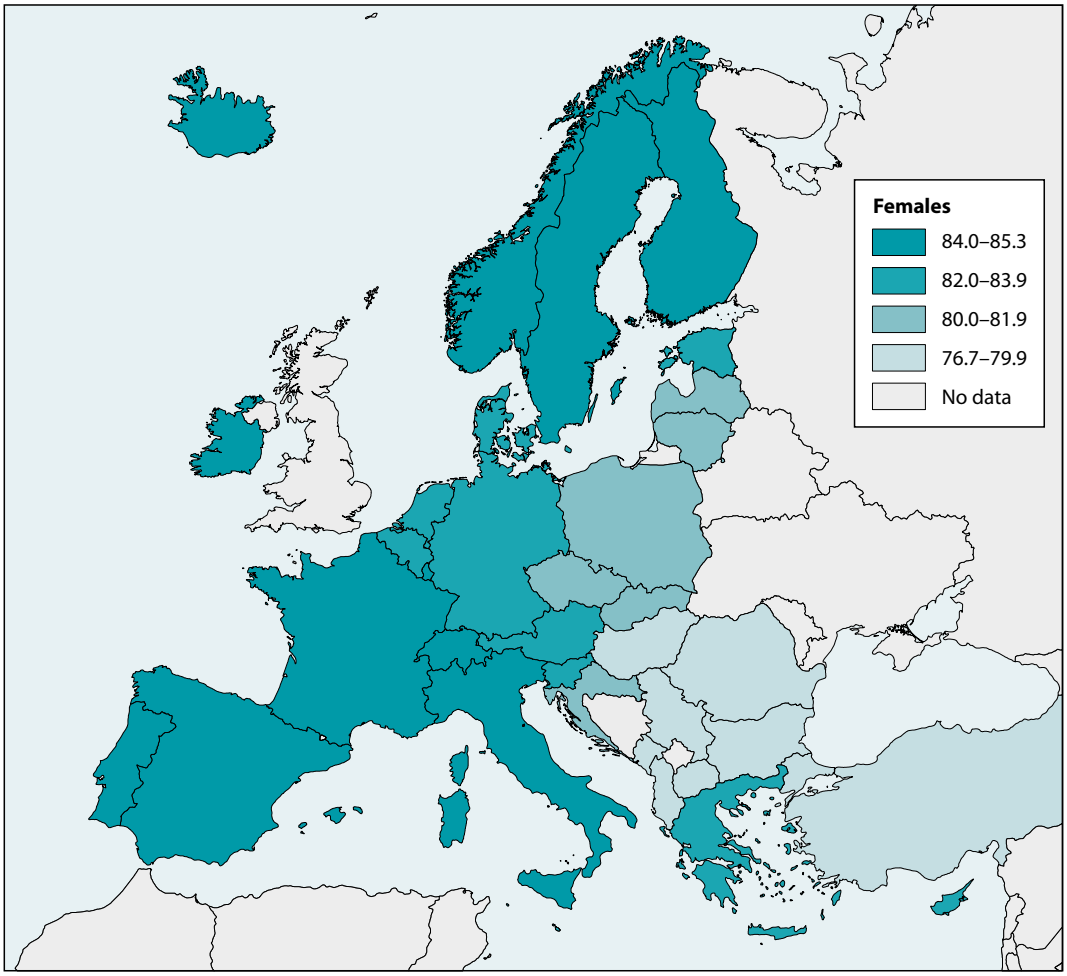
4 https://ec.europa.eu/eurostat (access 5.05.2022)

Table 4. Average life expectancy of a newborn in selected European countries in 2020 (cont.)

Country	Males	Females	Difference
Malta	80.3	84.5	4.2
Montenegro	73.2	78.8	5.6
Netherlands	79.7	83.1	3.4
North Macedonia	72.2	76.7	4.5
Norway	**81.6**	**84.9**	**3.3**
Poland	72.5	80.7	8.2
Portugal	78.0	84.1	6.1
Romania	70.4	78.3	7.9
Serbia	71.6	77.5	5.9
Slovakia	73.5	80.4	6.9
Slovenia	77.8	83.4	5.6
Spain	79.6	85.2	5.6
Sweden	80.6	84.2	3.6
Switzerland	81.0	85.1	4.1

Map 3. Life expectancy at birth in European countries in 2020





Source: https://ec.europa.eu/eurostat, access: 31.05.2020

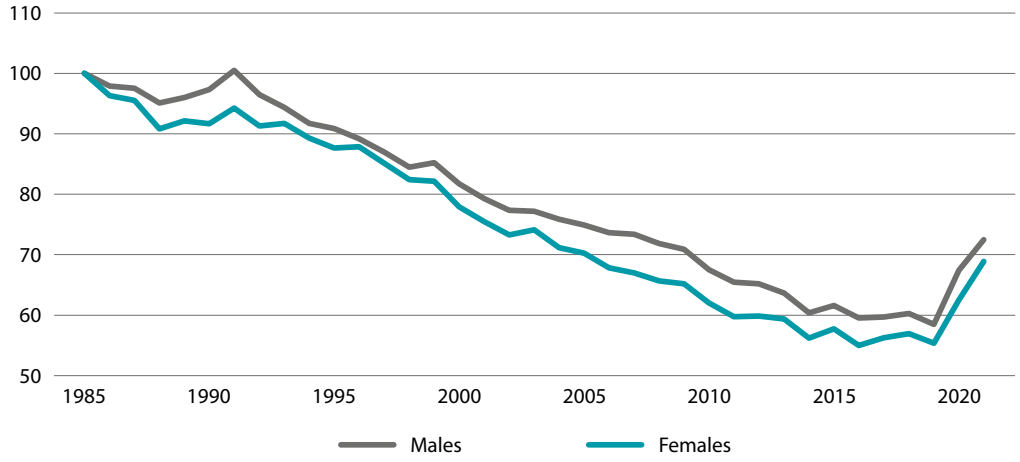
Chapter 5.

Mortality in Poland

In this chapter an additional analysis of life expectancy in Poland is presented. For this purpose, a mortality study according to 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[5].

> 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 1985-2021 (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).

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 2-3 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 (y_t) compared with the level of the phenomenon from one fixed period (y_0) adopted for the comparative period (in the presented analysis it is 1985).

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

https://stat.gov.pl/en/metainformation/glossary/terms-used-in-official-statistics/2889,term.html

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

	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**

5.1. Mortality by age and selected groups of death causes 1985–2020

In Poland the main causes of deaths are cardiovascular diseases, neoplasms and respiratory diseases (Table 6). In 2020, they were responsible for almost 65% of all deaths.

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

	Deaths from neoplasms		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**

Table 6. Standardized death rates by selected groups of causes, age and sex in selected years (per 100 thous. of population) (cont.)

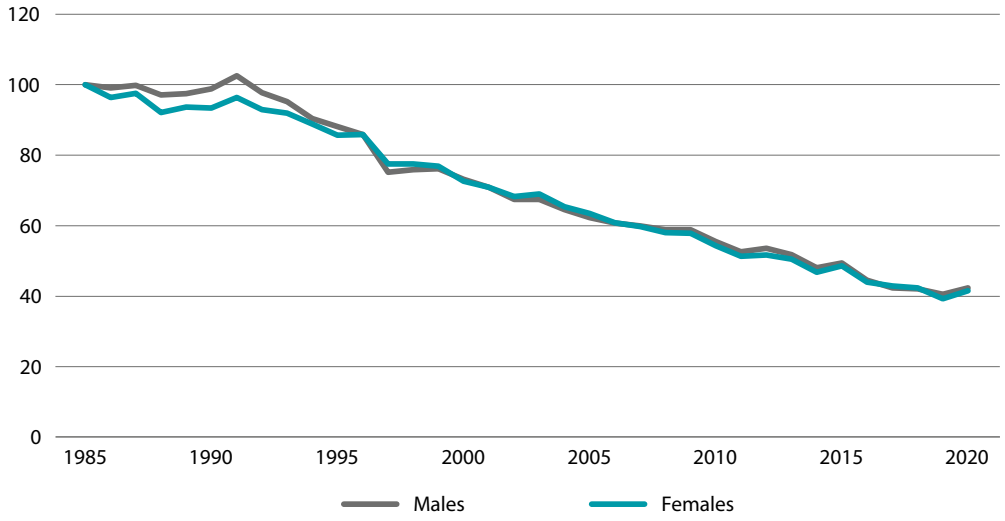
	Deaths from neoplasms		Deaths from diseases of the circulatory system		Deaths from external causes		Deaths from diseases of the respiratory system		Deaths from diseases of the digestive system	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
45–59 years										
1985	577.0	201.8	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**
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**

The primary cause of death in Poland are cardiovascular diseases, above 36% of deaths are 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). The decrease is mainly due to the reduction of risk factors: reduction of the average concentration total cholesterol in blood, lower prevalence of smoking among men, a decrease in average blood pressure values among women and progress in cardiological therapy[6].

In 2020, the standardized death rate from cardiovascular disease was 347 per 100,000 persons, by 17 people more than the year before. This is about 58% of the value of 2000- but still the frequency of deaths as a result of these diseases is very high.

6 *Bandosz P.et al. (2015) IMPACT-PI Research*

Chart 6. Change in the value of standardized death rates due to cardiovascular diseases for males and females 1985-2020 (1985 year = 100)

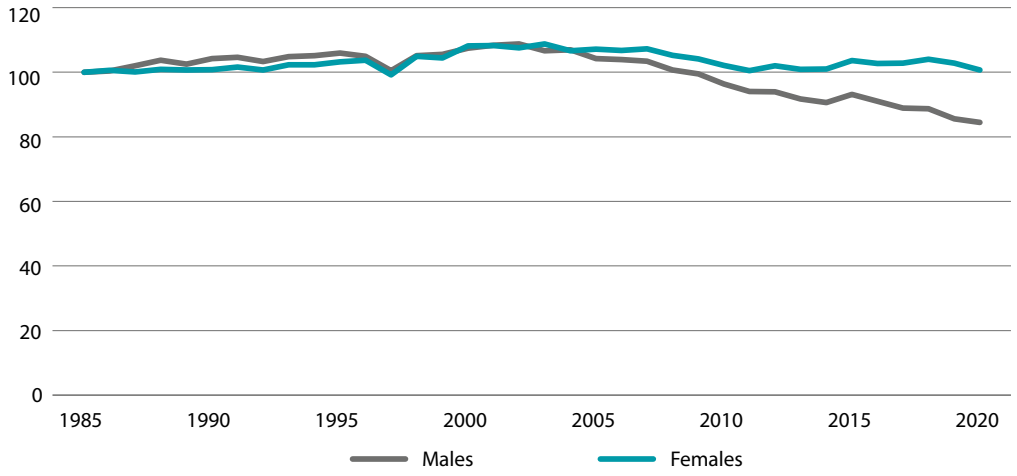


The cardiovascular disease mortality rate among men aged less than 45 is more than 3 times higher than among women of the same age (Table 6). This also concerns people at age of 45-59, however, the level of this rate is over a dozen times higher than among younger people. After a significant increase 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 23% of all deaths in 2020, and standardized death rate caused by this diseases was 233 per 100,000 persons. In 2020, 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 is a result of a rapid decrease of death rates caused by neoplasms among people younger than 44 years old. 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 1985-2020 (1985 year = 100)

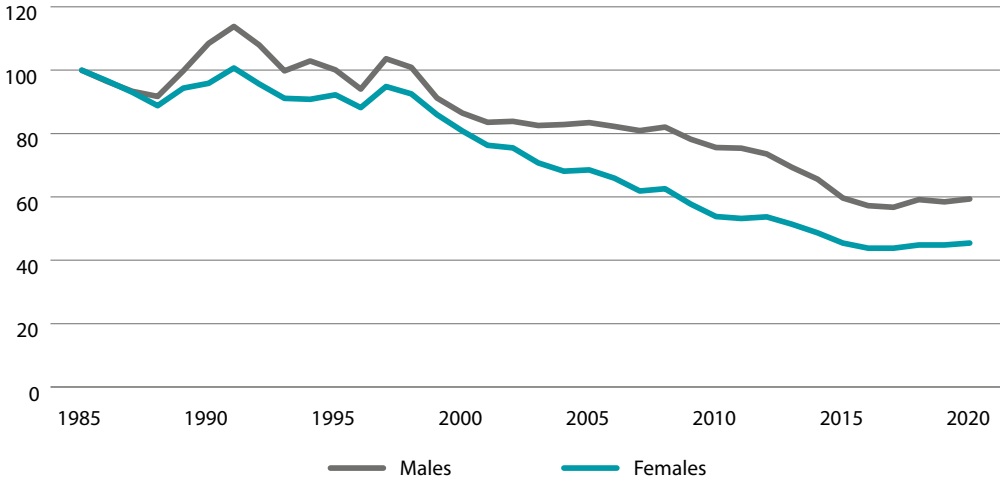


A rapid decline in neoplasm mortality observed from 1991 till 1997 among men aged 45-59 decelerated in the following years. Since 2002 a decline of frequency of neoplasms mortality can be observed again. In case of women, the cancer death rate has remained fairly stable for almost twenty five years. 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 2020, standardized death rate from neoplasms was 1259 per 100 thousand males. Among women over 60, the level of deaths caused by neoplasms has increased by 12 deaths per 100 thousand since 2000. It ought to be mentioned that death rate from neoplasms (for males) is over six times higher among older people (i.e. above 60) than among younger ones (45-59); for females 3.8 times.

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 2020 standardized death rate was 49 per 100 thousand persons and constituted only 55.7% 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 2020 it comprised almost 37% 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, is 2.7% for males and 1.8% for females.

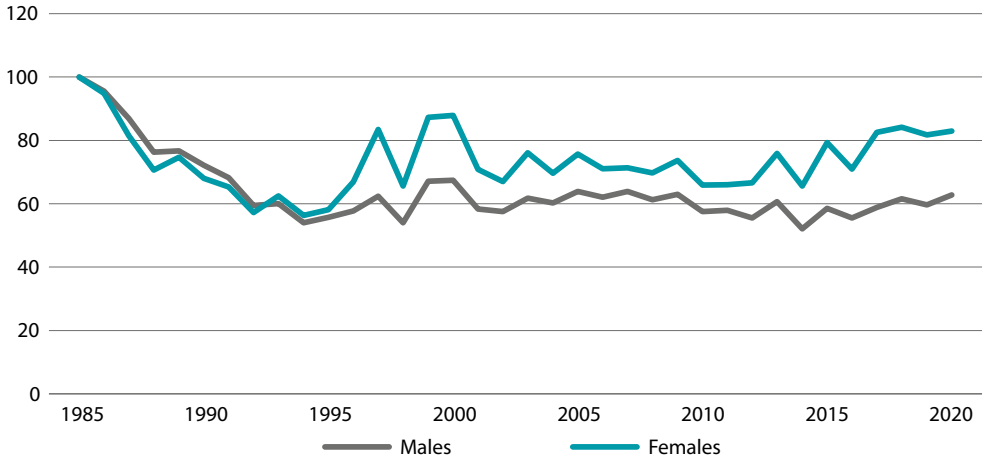
Chart 8. Change in the value of standardized death rates due to external causes for males and females 1985-2020 (1985 year = 100)



In Poland, in 2020, respiratory diseases were responsible for 6% of all deaths, and standardized death rate was 59 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 2015 (Chart 9).

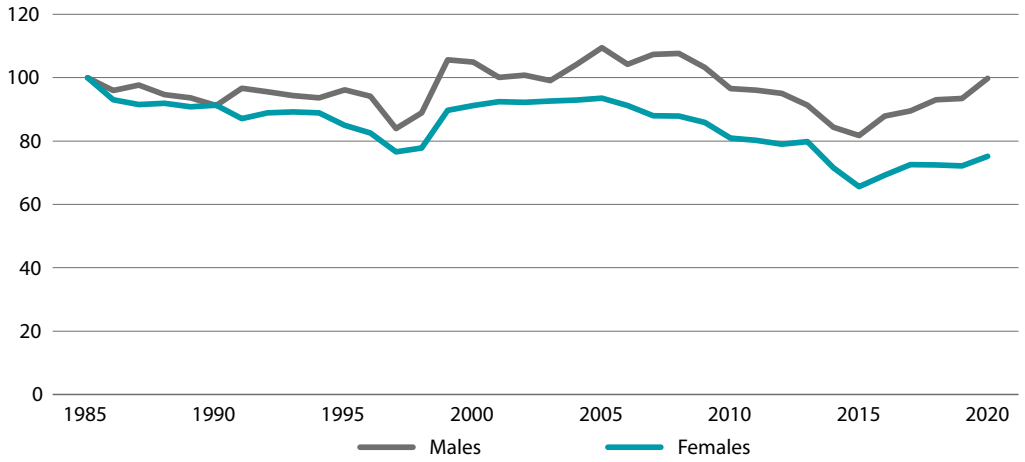
For persons aged 60 and more, the incidence of deaths as a result of respiratory diseases is nearly 9 times higher than for those aged 44-59 in case of men and 14 times higher in case of women (Table 6).

Chart 9. Change in the value of standardized death rates due to diseases of the respiratory system for males and females 1985-2020 (1985 year = 100)



Similar changes concern death rates caused by digestive disorders, but at a slightly lower level (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 2020 this value increased again (both in general and for all age groups) and amounted to 42. Changes to the general mortality caused by digestive disorders are mostly influenced by increase of mortality of males aged below 60 years (Table 6). The mortality rate from this cause for women as well as for men aged over 60 has remained nearly constant over the analysed period.

Chart 10. Change in the value of standardized death rates due to digestive system for males and females 1985-2020 (1985 year = 100)



In 2020, an additional cause of death was identified, related to the COVID-19 disease. The standardized death rate was 87 people per 100 thousand people and was about 2 times higher for men than for women in each of the analyzed age groups (Table 7).

The rate of deaths from this cause significantly increases with age. For men in the oldest age group, the standardized death rate was nearly 9 times higher than for those aged 44-59, while the analogous proportion for women was above 11.

Table 7. Standardized death rates due to COVID-19 diseases in selected years including age and sex in 2020 (per 100 thous. of population)

	0-44 years	45-59 years	60 years and more
Male	3.8	60.2	531.6
Female	1.9	25.9	290.6

5.2. Mortality by voivodships in 2021

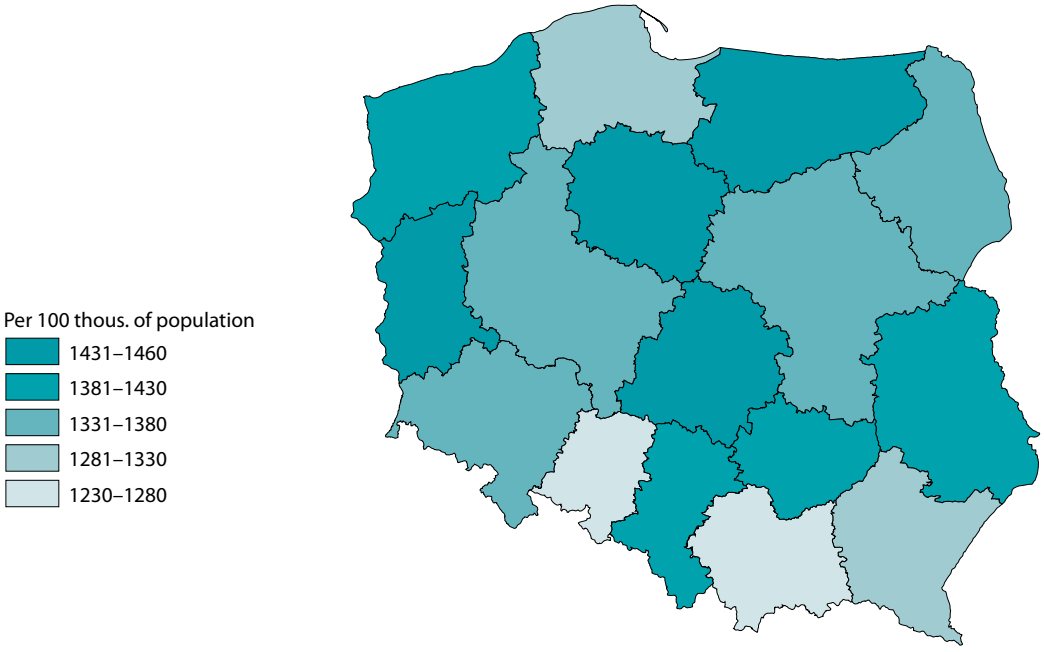
In order to analyse mortality at regional level in 2021 the standardized death rates for individual voivodships have been counted. For calculation of such death rates a nationwide population structure (according to age, in 2021) was used.

On the basis of recent results, the highest mortality rate for 2021 was noted in Lubuskie and Łódzkie (Table 8, Map 4) where standardized death rates were 1459 and 1444 per each 100 thousand persons. A rather low death rates – in comparison to other regions of Poland –were observed in Małopolskie, Opolskie, Pomorskie and Podkarpackie (less than 1300 persons). In 2021, in all voivodships, higher death rates were registered in rural than in urban areas. The largest difference was noted in Mazowieckie, Warmińsko-mazurskie and Pomorskie (more than 230 more deaths in the rural areas per 100,000 population) and the smallest in Łódzkie (38 more deaths per 100,000 population).

Table 8. Standardized death rates by voivodships in 2021

Voivodships		Total	Urban Areas	Rural Areas
00	**Total**	**1361**	**1313**	**1451**
02	Dolnośląskie	1358	1325	1460
04	Kujawsko-pomorskie	1422	1374	1519
06	Lubelskie	1408	1304	1504
08	Lubuskie	1459	1406	1586
10	Łódzkie	1444	1431	1469
12	Małopolskie	1234	1174	1306
14	Mazowieckie	1337	1259	1509
16	Opolskie	1262	1238	1294
18	Podkarpackie	1294	1223	1349
20	Podlaskie	1357	1270	1481
22	Pomorskie	1294	1235	1466
24	Śląskie	1405	1392	1458
26	Świętokrzyskie	1382	1306	1452
28	Warmińsko-mazurskie	1441	1359	1593
30	Wielkopolskie	1366	1305	1466
32	Zachodniopomorskie	1388	1351	1503

Map 4. Standardized death rates by voivodships in 2021



5.3. Mortality by selected groups of death causes and voivodships in 2020

The analysis of mortality by selected groups of causes of death and voivodships is based on the 2020 data. For a calculation of standardized death rates for individual voivodships a nationwide population age structure from 2020 was used.

In 2020, as in previous years, the highest mortality related to cardiovascular diseases was noted in the Świętokrzyskie voivodship (Table 9, Chart 11), where standardized death rate was 631 for each 100 thousand people. This rate is 46% higher than in Mazowieckie in which the lowest rate was noted (341).

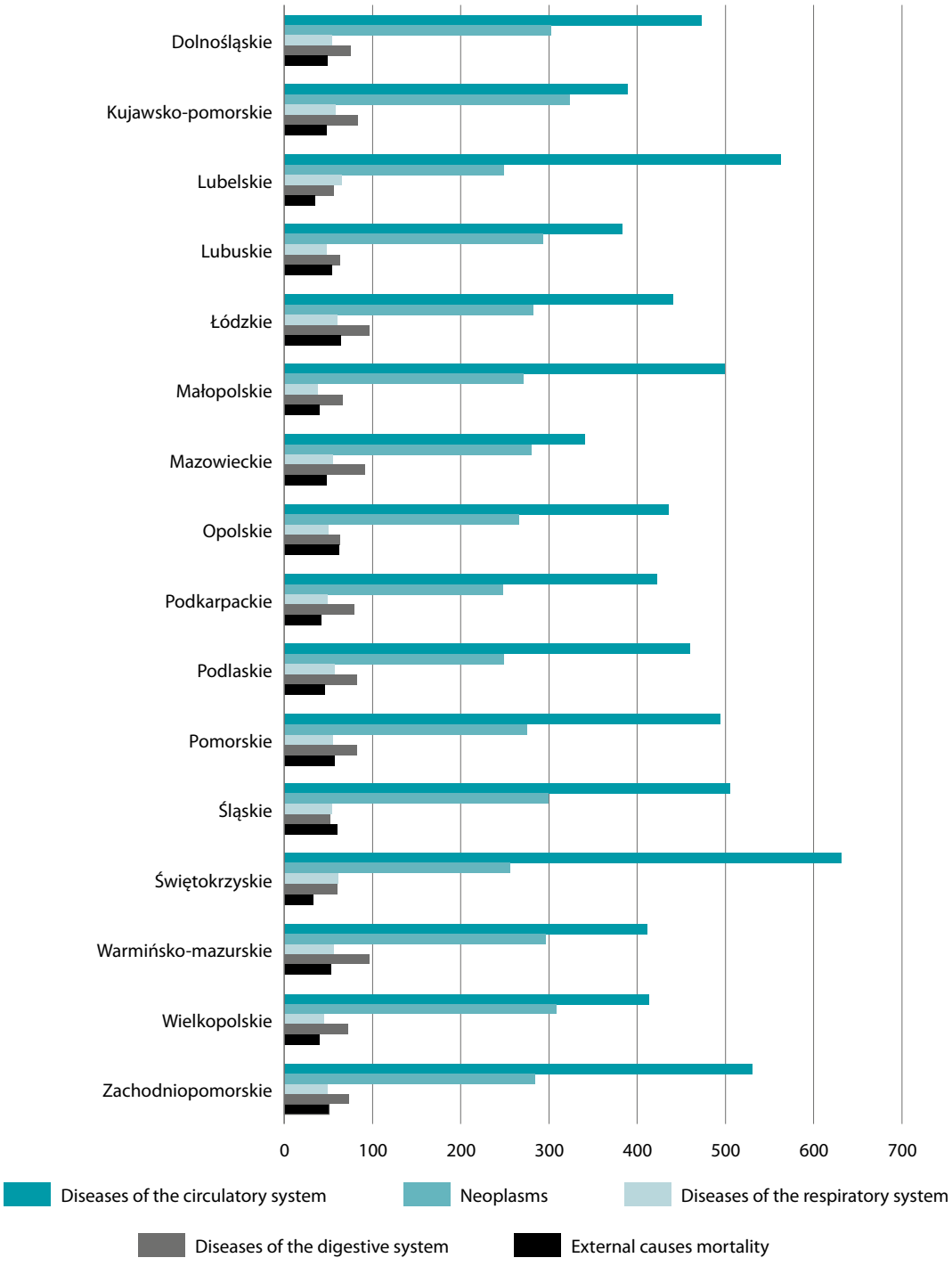
In 2020 Kujawsko-Pomorskie, Wielkopolskie and Dolnośląskie (Chart 11) experienced the highest mortality caused by neoplasms. In these regions, standardized death rate was over 300 per 100 thousand people. The lowest mortality rate was noted in Podkarpackie, Podlaskie and Lubelskie (248-249 per 100 thousand persons). The highest frequency of deaths caused by external reasons was noted in Lubelskie voivodship, where death rate in was 65 per 100 thousand persons. The voivodship with the lowest death rate due to external causes was Małopolskie, the value of this indicator was 38.

In 2020 the lowest level of mortality related to respiratory diseases was in Śląskie and Lubelskie (less than 60 deaths per 100 thousand people). On the other hand highest mortality rate was noted in Warmińsko-Mazurskie and Łódzkie (96 in each) (Chart 11). The highest death rates caused by digestive disorders were noted in Łódzkie and Opolskie (more than 60 deaths per 100 thousand people). The lowest – in Lubelskie (35) and Świętokrzyskie (33) (Chart 11).

Table 9. Standardized death rates by selected groups of causes and voivodships in 2020

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**	**1245**	**455**	**283**	**53**	**75**	**49**
02	Dolnośląskie	1260	473	302	54	75	49
04	Kujawsko-pomorskie	1274	389	324	58	84	48
06	Lubelskie	1241	563	249	65	56	35
08	Lubuskie	1327	383	294	48	63	54
10	Łódzkie	1347	441	282	60	96	64
12	Małopolskie	1171	499	271	38	66	40
14	Mazowieckie	1219	341	280	55	91	48
16	Opolskie	1213	436	266	50	63	62
18	Podkarpackie	1170	423	248	49	80	42
20	Podlaskie	1173	460	249	57	82	46
22	Pomorskie	1184	494	275	55	82	57
24	Śląskie	1274	505	299	54	52	60
26	Świętokrzyskie	1285	631	256	61	60	33
28	Warmińsko-mazurskie	1273	411	296	56	96	53
30	Wielkopolskie	1267	413	308	45	72	40
32	Zachodniopomorskie	1255	531	284	49	73	51

Chart 11. Standardized death rates by selected groups of causes in 2020



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 the 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).

Despite the fact that over the last three decades in Poland there has been an increase of life expectancy, the SARS-CoV-2 pandemic has caused its sudden large decline, and its effects can be felt for many years. It is difficult to determine if and how quickly life expectancy rates will return to pre-epidemic levels.

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. It is estimated that excess body weight is a problem of about 53% of women and 68% of men. In addition, about 25% of Poles suffer from obesity, which is still not perceived as a chronic disease[7], conducive to the development of many diseases, including type 2 diabetes, cardiovascular diseases and some types of cancer[8]. 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.

7 https://pulsmedycyny.pl/swiatowy-dzien-otylosci-53-proc-polek-i-68-proc-polakow-ma-zbyt-wysoka-mase-ciala-1110087 (dostęp 24.06.2022)

8 https://politykazdrowotna.com/artykul/polacy-w-rekordowym-tempie-przybieraja-na-wadze/827129 (dostęp 24.06.2022)

Chapter 7.

List of publication containing Polish life tables

Polish complete life expectancy 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
9. Statistics Poland [1984]; Trwanie życia i umieralność według przyczyn w 1983 r., (*Life expectancy tables and mortality by causes in 1983*), (ed. L. Nowak), „Opracowania Statystyczne", Warsaw
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12. Statistics Poland [1986]; Trwanie życia i umieralność według przyczyn w województwach w latach 1981–1985, (*Life expectancy tables and mortality by causes and voivodships in 1981–1985*), (ed. L. Nowak), „Opracowania Statystyczne", Warsaw
13. Statistics Poland [1987]; Trwanie życia i umieralność według przyczyn w 1986 r., (*Life expectancy tables and mortality by causes in 1986*), (ed. L. Nowak), „Opracowania Statystyczne", Warsaw
14. Statistics Poland [1988]; Trwanie życia i umieralność według przyczyn w 1987 r., (*Life expectancy tables and mortality by causes in 1987*), (ed. L. Nowak), „Opracowania Statystyczne", Warsaw
15. Statistics Poland [1990]; Trwanie życia i umieralność według przyczyn w 1989 r., (*Life expectancy tables and mortality by causes in 1989*), (ed. L. Nowak), „Materiały i Opracowania Statystyczne", Warsaw
16. Statistics Poland [1991]; Trwanie życia i umieralność według przyczyn w 1988 r., (*Life expectancy tables and mortality by causes in 1988*), (ed. L. Nowak), „Materiały i Opracowania Statystyczne", Warsaw
17. Statistics Poland [1991]; Trwanie życia i umieralność według przyczyn w 1990 r., (*Life expectancy tables and mortality by causes in 1990*), (ed. L. Nowak), Materiały i Opracowania Statystyczne", Warsaw
18. Statistics Poland [1991]; Trwanie życia i umieralność według przyczyn w województwach w latach 1986–1990, (*Life expectancy tables and mortality by causes and voivodships in 1986–1990*), (ed. J. Mijakowska), „Materiały i Opracowania Statystyczne", Warsaw
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21. Statistics Poland [1994]; Trwanie życia i umieralność według przyczyn w 1993 r., (*Life expectancy tables and mortality by causes in 1993*), (ed. A. Glazer, L. Bolesławski), „Informacje i 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. inter-voivodship) 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*,

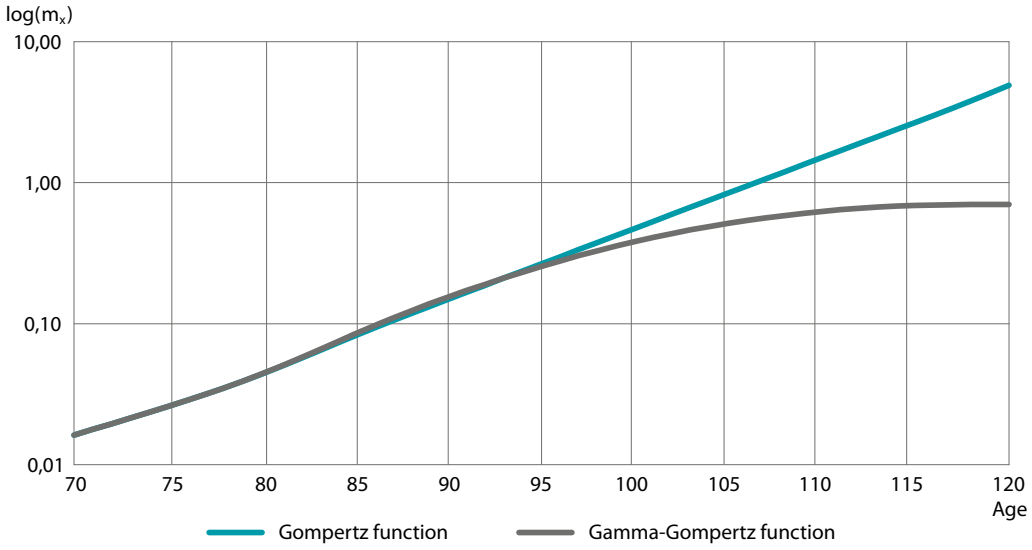
E_x – population on 30th June at age *x*.

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]:

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

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[9] 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.

9 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:

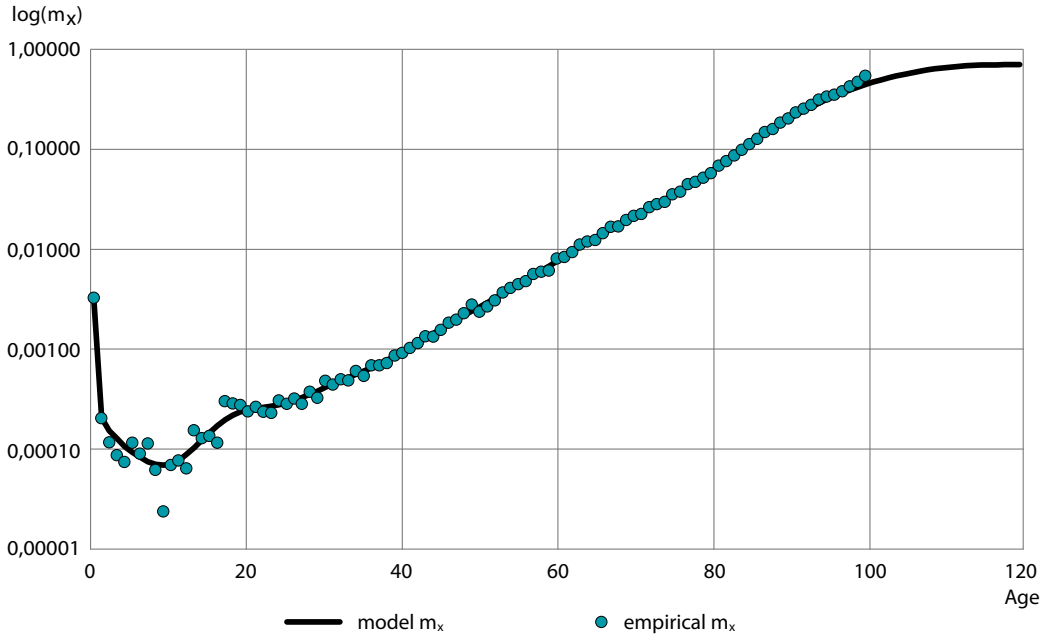
$\propto$ – mathematical symbol meaing "is proporcional to",

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 2021 (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

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

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 9.

Table 10. Life table for males in 2021

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	0.00417	100000	418 $l_0 \times q_0$	99624 $l_1+0{,}1 \times d_0$	7175147 sum L_0 do L_{120}	712.75 T_0/l_0
1	0.00032	99582 $l_0 \times (1-q_0)$	31 $l_1 \times q_1$	99567 $(l_1+l_2)/2$	7075523 sum L_1 do L_{120}	71.05 T_1/l_1
2	0.00023	99551 $l_1 \times (1-q_1)$	23 $l_2 \times q_2$	99540 $(l_2+l_3)/2$	6975957 sum L_2 do L_{120}	70.07 T_2/l_2
3	0.00018	99528 $l_2 \times (1-q_2)$	19 $l_3 \times q_3$	99519 $(l_3+l_4)/2$	6876417 sum L_3 do L_{120}	69.09 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 (lx) 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 (w modelu Statistics Poland n=9),

i – order of knot i ∈ {1, 2, …, 9},

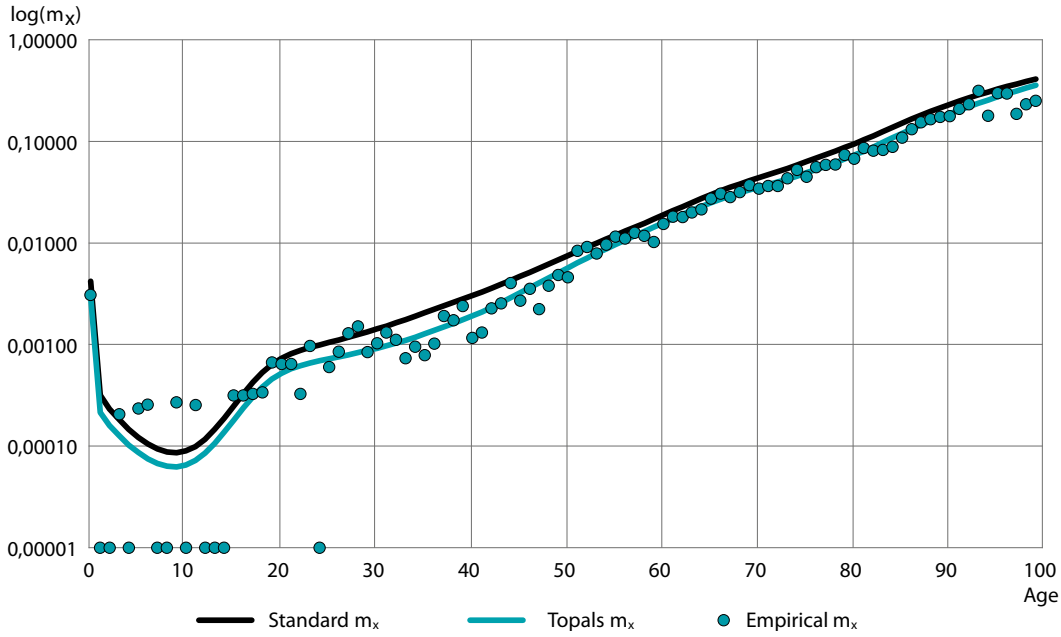
v_i – regression parameter in the interval [i-1, i].

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 2021. 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 m_x) with the country standard (standard m_x) and the TOPALS-modeled coefficients (Topals m_x) for men from Cracow in 2021



m_x 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 logarithmized) 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 2021

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	0.00417	100000	418	99624	7175147	71.75
1	0.00032	99582	31	99567	7075523	71.05
2	0.00023	99551	23	99540	6975957	70.07
3	0.00018	99528	19	99519	6876417	69.09
4	0.00015	99509	14	99502	6776899	68.10
5	0.00012	99495	12	99489	6677397	67.11
6	0.00010	99483	11	99478	6577908	66.12
7	0.00009	99472	9	99468	6478430	65.13
8	0.00009	99463	9	99459	6378963	64.13
9	0.00009	99454	8	99450	6279504	63.14
10	0.00009	99446	9	99442	6180054	62.14
11	0.00010	99437	10	99432	6080613	61.15
12	0.00012	99427	12	99421	5981181	60.16
13	0.00015	99415	14	99408	5881760	59.16
14	0.00019	99401	19	99392	5782352	58.17
15	0.00025	99382	25	99370	5682960	57.18
16	0.00033	99357	33	99341	5583591	56.20
17	0.00042	99324	42	99303	5484250	55.22
18	0.00053	99282	52	99256	5384947	54.24
19	0.00063	99230	63	99199	5285691	53.27
20	0.00073	99167	73	99131	5186493	52.30
21	0.00081	99094	80	99054	5087362	51.34
22	0.00088	99014	87	98971	4988308	50.38
23	0.00094	98927	93	98881	4889338	49.42
24	0.00099	98834	98	98785	4790457	48.47
25	0.00105	98736	103	98685	4691672	47.52
26	0.00111	98633	110	98578	4592988	46.57
27	0.00118	98523	116	98465	4494410	45.62
28	0.00125	98407	122	98346	4395945	44.67
29	0.00133	98285	131	98220	4297599	43.73
30	0.00142	98154	140	98084	4199379	42.78
31	0.00152	98014	149	97940	4101295	41.84
32	0.00163	97865	160	97785	4003356	40.91
33	0.00176	97705	171	97620	3905571	39.97
34	0.00190	97534	186	97441	3807951	39.04
35	0.00205	97348	200	97248	3710510	38.12
36	0.00222	97148	215	97041	3613262	37.19

Table A. LIFE TABLE FOR POLAND 2021 (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	0.00240	96933	233	96817	3516222	36.27
38	0.00259	96700	251	96575	3419405	35.36
39	0.00280	96449	270	96314	3322831	34.45
40	0.00303	96179	291	96034	3226517	33.55
41	0.00329	95888	315	95731	3130483	32.65
42	0.00358	95573	343	95402	3034753	31.75
43	0.00391	95230	372	95044	2939351	30.87
44	0.00428	94858	405	94656	2844307	29.98
45	0.00468	94453	443	94232	2749652	29.11
46	0.00513	94010	482	93769	2655420	28.25
47	0.00562	93528	525	93266	2561651	27.39
48	0.00617	93003	574	92716	2468386	26.54
49	0.00678	92429	627	92116	2375670	25.70
50	0.00746	91802	685	91460	2283554	24.87
51	0.00821	91117	747	90744	2192095	24.06
52	0.00902	90370	816	89962	2101351	23.25
53	0.00990	89554	886	89111	2011389	22.46
54	0.01084	88668	961	88188	1922278	21.68
55	0.01185	87707	1040	87187	1834091	20.91
56	0.01296	86667	1124	86105	1746904	20.16
57	0.01418	85543	1213	84937	1660799	19.41
58	0.01552	84330	1309	83676	1575862	18.69
59	0.01702	83021	1413	82315	1492187	17.97
60	0.01868	81608	1525	80846	1409872	17.28
61	0.02050	80083	1641	79263	1329027	16.60
62	0.02248	78442	1763	77561	1249764	15.93
63	0.02465	76679	1891	75734	1172204	15.29
64	0.02698	74788	2017	73780	1096470	14.66
65	0.02943	72771	2142	71700	1022691	14.05
66	0.03197	70629	2258	69500	950991	13.46
67	0.03460	68371	2365	67189	881491	12.89
68	0.03724	66006	2459	64777	814302	12.34
69	0.03996	63547	2539	62278	749526	11.79
70	0.04278	61008	2610	59703	687248	11.26
71	0.04581	58398	2675	57061	627545	10.75
72	0.04910	55723	2736	54355	570485	10.24
73	0.05275	52987	2795	51590	516130	9.74

Table A. LIFE TABLE FOR POLAND 2021 (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	0.05677	50192	2849	48768	464540	9.26
75	0.06123	47343	2899	45894	415773	8.78
76	0.06608	44444	2937	42976	369879	8.32
77	0.07135	41507	2962	40026	326904	7.88
78	0.07707	38545	2971	37060	286878	7.44
79	0.08337	35574	2966	34091	249818	7.02
80	0.09033	32608	2945	31136	215727	6.62
81	0.09817	29663	2912	28207	184592	6.22
82	0.10707	26751	2864	25319	156385	5.85
83	0.11713	23887	2798	22488	131066	5.49
84	0.12822	21089	2704	19737	108578	5.15
85	0.14025	18385	2579	17096	88841	4.83
86	0.15297	15806	2418	14597	71745	4.54
87	0.16613	13388	2224	12276	57148	4.27
88	0.17950	11164	2004	10162	44872	4.02
89	0.19310	9160	1769	8276	34710	3.79
90	0.20692	7391	1529	6627	26435	3.58
91	0.22099	5862	1296	5214	19808	3.38
92	0.23536	4566	1075	4029	14594	3.20
93	0.25003	3491	873	3055	10566	3.03
94	0.26493	2618	694	2271	7511	2.87
95	0.27999	1924	538	1655	5240	2.72
96	0.29514	1386	410	1181	3585	2.59
97	0.31029	976	303	825	2404	2.46
98	0.32536	673	219	564	1580	2.35
99	0.34029	454	155	377	1016	2.24
100	0.35500	299	106	246	640	2.14

Table A. LIFE TABLE FOR POLAND 2021 (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	0.00350	100000	350	99685	7967915	79.68
1	0.00020	99650	21	99640	7868230	78.96
2	0.00016	99629	15	99622	7768591	77.98
3	0.00013	99614	14	99607	7668969	76.99
4	0.00011	99600	11	99595	7569362	76.00
5	0.00010	99589	9	99585	7469768	75.01
6	0.00008	99580	8	99576	7370183	74.01
7	0.00008	99572	8	99568	7270607	73.02
8	0.00008	99564	8	99560	7171039	72.02
9	0.00008	99556	8	99552	7071479	71.03
10	0.00008	99548	8	99544	6971927	70.04
11	0.00009	99540	9	99536	6872383	69.04
12	0.00010	99531	10	99526	6772848	68.05
13	0.00012	99521	12	99515	6673322	67.05
14	0.00014	99509	14	99502	6573807	66.06
15	0.00017	99495	17	99487	6474305	65.07
16	0.00020	99478	20	99468	6374818	64.08
17	0.00022	99458	22	99447	6275350	63.10
18	0.00025	99436	24	99424	6175903	62.11
19	0.00026	99412	27	99399	6076479	61.12
20	0.00028	99385	27	99372	5977081	60.14
21	0.00028	99358	28	99344	5877709	59.16
22	0.00029	99330	28	99316	5778365	58.17
23	0.00029	99302	29	99288	5679049	57.19
24	0.00030	99273	30	99258	5579762	56.21
25	0.00031	99243	30	99228	5480504	55.22
26	0.00032	99213	32	99197	5381276	54.24
27	0.00034	99181	34	99164	5282079	53.26
28	0.00036	99147	36	99129	5182915	52.28
29	0.00039	99111	38	99092	5083786	51.29
30	0.00042	99073	42	99052	4984694	50.31
31	0.00046	99031	46	99008	4885642	49.33
32	0.00050	98985	50	98960	4786634	48.36
33	0.00055	98935	54	98908	4687674	47.38
34	0.00059	98881	59	98852	4588766	46.41
35	0.00064	98822	64	98790	4489914	45.43
36	0.00069	98758	68	98724	4391124	44.46

Table A. LIFE TABLE FOR POLAND 2021 (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	0.00075	98690	74	98653	4292400	43.49
38	0.00082	98616	80	98576	4193747	42.53
39	0.00089	98536	88	98492	4095171	41.56
40	0.00099	98448	97	98400	3996679	40.60
41	0.00110	98351	108	98297	3898280	39.64
42	0.00122	98243	120	98183	3799983	38.68
43	0.00136	98123	133	98057	3701800	37.73
44	0.00152	97990	150	97915	3603743	36.78
45	0.00170	97840	166	97757	3505828	35.83
46	0.00189	97674	184	97582	3408071	34.89
47	0.00210	97490	205	97388	3310489	33.96
48	0.00233	97285	227	97172	3213102	33.03
49	0.00257	97058	249	96934	3115930	32.10
50	0.00282	96809	273	96673	3018997	31.19
51	0.00310	96536	300	96386	2922324	30.27
52	0.00340	96236	327	96073	2825938	29.36
53	0.00374	95909	360	95729	2729866	28.46
54	0.00413	95549	395	95352	2634137	27.57
55	0.00457	95154	435	94937	2538785	26.68
56	0.00507	94719	480	94479	2443849	25.80
57	0.00564	94239	531	93974	2349370	24.93
58	0.00628	93708	589	93414	2255396	24.07
59	0.00700	93119	652	92793	2161983	23.22
60	0.00781	92467	722	92106	2069190	22.38
61	0.00871	91745	799	91346	1977084	21.55
62	0.00968	90946	881	90506	1885738	20.73
63	0.01073	90065	966	89582	1795233	19.93
64	0.01185	89099	1056	88571	1705651	19.14
65	0.01306	88043	1149	87469	1617080	18.37
66	0.01434	86894	1247	86271	1529611	17.60
67	0.01573	85647	1347	84974	1443341	16.85
68	0.01725	84300	1455	83573	1358367	16.11
69	0.01890	82845	1566	82062	1274795	15.39
70	0.02072	81279	1684	80437	1192733	14.67
71	0.02273	79595	1809	78691	1112296	13.97
72	0.02496	77786	1941	76816	1033605	13.29
73	0.02743	75845	2081	74805	956790	12.62

Table A. LIFE TABLE FOR POLAND 2021 (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	0.03018	73764	2226	72651	881985	11.96
75	0.03324	71538	2378	70349	809334	11.31
76	0.03664	69160	2534	67893	738985	10.69
77	0.04042	66626	2693	65280	671092	10.07
78	0.04465	63933	2854	62506	605813	9.48
79	0.04949	61079	3023	59568	543307	8.90
80	0.05505	58056	3196	56458	483739	8.33
81	0.06152	54860	3375	53173	427281	7.79
82	0.06908	51485	3556	49707	374109	7.27
83	0.07790	47929	3734	46062	324402	6.77
84	0.08792	44195	3886	42252	278340	6.30
85	0.09913	40309	3996	38311	236088	5.86
86	0.11141	36313	4046	34290	197777	5.45
87	0.12457	32267	4019	30258	163487	5.07
88	0.13840	28248	3910	26293	133229	4.72
89	0.15289	24338	3721	22478	106936	4.39
90	0.16804	20617	3465	18885	84459	4.10
91	0.18381	17152	3152	15576	65574	3.82
92	0.20021	14000	2803	12599	49998	3.57
93	0.21725	11197	2433	9981	37400	3.34
94	0.23480	8764	2058	7735	27419	3.13
95	0.25276	6706	1695	5859	19684	2.94
96	0.27098	5011	1358	4332	13826	2.76
97	0.28931	3653	1057	3125	9494	2.60
98	0.30706	2596	799	2197	6369	2.45
99	0.32572	1797	585	1505	4173	2.32
100	0.34350	1212	417	1004	2668	2.20

Table A. LIFE TABLE FOR POLAND 2021 (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	0.00407	100000	408	99633	7199495	71.99
1	0.00036	99592	35	99575	7099862	71.29
2	0.00025	99557	25	99545	7000288	70.31
3	0.00020	99532	20	99522	6900743	69.33
4	0.00015	99512	15	99505	6801221	68.35
5	0.00013	99497	13	99491	6701717	67.36
6	0.00011	99484	10	99479	6602226	66.36
7	0.00010	99474	10	99469	6502747	65.37
8	0.00009	99464	9	99460	6403278	64.38
9	0.00009	99455	8	99451	6303819	63.38
10	0.00009	99447	10	99442	6204368	62.39
11	0.00010	99437	10	99432	6104926	61.39
12	0.00012	99427	11	99422	6005494	60.40
13	0.00015	99416	15	99409	5906072	59.41
14	0.00019	99401	19	99392	5806664	58.42
15	0.00024	99382	24	99370	5707272	57.43
16	0.00031	99358	31	99343	5607902	56.44
17	0.00040	99327	39	99308	5508560	55.46
18	0.00050	99288	49	99264	5409252	54.48
19	0.00060	99239	60	99209	5309989	53.51
20	0.00070	99179	69	99145	5210780	52.54
21	0.00078	99110	78	99071	5111635	51.58
22	0.00086	99032	85	98990	5012564	50.62
23	0.00093	98947	91	98902	4913575	49.66
24	0.00098	98856	97	98808	4814673	48.70
25	0.00103	98759	101	98709	4715866	47.75
26	0.00108	98658	107	98605	4617157	46.80
27	0.00113	98551	111	98496	4518553	45.85
28	0.00120	98440	119	98381	4420057	44.90
29	0.00129	98321	126	98258	4321677	43.95
30	0.00138	98195	136	98127	4223419	43.01
31	0.00148	98059	145	97987	4125292	42.07
32	0.00160	97914	156	97836	4027305	41.13
33	0.00172	97758	168	97674	3929469	40.20
34	0.00186	97590	182	97499	3831795	39.26
35	0.00201	97408	195	97311	3734296	38.34
36	0.00218	97213	212	97107	3636986	37.41

Table A. LIFE TABLE FOR POLAND 2021 (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	0.00236	97001	230	96886	3539879	36.49
38	0.00256	96771	248	96647	3442993	35.58
39	0.00278	96523	268	96389	3346346	34.67
40	0.00302	96255	290	96110	3249957	33.76
41	0.00327	95965	314	95808	3153847	32.86
42	0.00356	95651	341	95481	3058039	31.97
43	0.00387	95310	369	95126	2962558	31.08
44	0.00423	94941	402	94740	2867433	30.20
45	0.00463	94539	437	94321	2772693	29.33
46	0.00507	94102	478	93863	2678372	28.46
47	0.00557	93624	521	93364	2584509	27.61
48	0.00613	93103	570	92818	2491146	26.76
49	0.00675	92533	625	92221	2398328	25.92
50	0.00745	91908	685	91566	2306107	25.09
51	0.00822	91223	749	90849	2214542	24.28
52	0.00904	90474	818	90065	2123693	23.47
53	0.00992	89656	889	89212	2033628	22.68
54	0.01084	88767	963	88286	1944417	21.90
55	0.01183	87804	1038	87285	1856131	21.14
56	0.01290	86766	1119	86207	1768846	20.39
57	0.01408	85647	1205	85045	1682640	19.65
58	0.01538	84442	1299	83793	1597595	18.92
59	0.01685	83143	1401	82443	1513803	18.21
60	0.01849	81742	1512	80986	1431360	17.51
61	0.02030	80230	1629	79416	1350374	16.83
62	0.02227	78601	1750	77726	1270959	16.17
63	0.02443	76851	1877	75913	1193233	15.53
64	0.02670	74974	2002	73973	1117320	14.90
65	0.02909	72972	2123	71911	1043347	14.30
66	0.03157	70849	2236	69731	971437	13.71
67	0.03412	68613	2341	67443	901706	13.14
68	0.03670	66272	2432	65056	834263	12.59
69	0.03933	63840	2511	62585	769207	12.05
70	0.04205	61329	2579	60040	706623	11.52
71	0.04494	58750	2640	57430	646583	11.01
72	0.04806	56110	2697	54762	589153	10.50
73	0.05150	53413	2750	52038	534392	10.00

Table A. LIFE TABLE FOR POLAND 2021 (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	0.05529	50663	2802	49262	482354	9.52
75	0.05950	47861	2848	46437	433092	9.05
76	0.06405	45013	2883	43572	386655	8.59
77	0.06897	42130	2905	40678	343083	8.14
78	0.07424	39225	2912	37769	302406	7.71
79	0.08002	36313	2906	34860	264637	7.29
80	0.08637	33407	2886	31964	229777	6.88
81	0.09356	30521	2855	29094	197813	6.48
82	0.10174	27666	2815	26259	168719	6.10
83	0.11107	24851	2760	23471	142461	5.73
84	0.12142	22091	2683	20750	118990	5.39
85	0.13270	19408	2575	18121	98240	5.06
86	0.14466	16833	2435	15616	80120	4.76
87	0.15708	14398	2262	13267	64504	4.48
88	0.16972	12136	2060	11106	51237	4.22
89	0.18259	10076	1840	9156	40131	3.98
90	0.19570	8236	1612	7430	30975	3.76
91	0.20911	6624	1385	5932	23545	3.55
92	0.22285	5239	1168	4655	17614	3.36
93	0.23695	4071	964	3589	12959	3.18
94	0.25135	3107	781	2717	9370	3.02
95	0.26601	2326	619	2017	6653	2.86
96	0.28084	1707	480	1467	4637	2.72
97	0.29578	1227	363	1046	3170	2.58
98	0.31077	864	269	730	2124	2.46
99	0.32572	595	194	498	1395	2.34
100	0.34057	401	137	333	897	2.24

Table A. LIFE TABLE FOR POLAND 2021 (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	0.00367	100000	368	99669	7974968	79.75
1	0.00020	99632	20	99622	7875299	79.04
2	0.00016	99612	16	99604	7775677	78.06
3	0.00013	99596	13	99590	7676073	77.07
4	0.00011	99583	11	99578	7576484	76.08
5	0.00009	99572	9	99568	7476906	75.09
6	0.00008	99563	8	99559	7377339	74.10
7	0.00008	99555	8	99551	7277780	73.10
8	0.00008	99547	8	99543	7178229	72.11
9	0.00008	99539	8	99535	7078686	71.11
10	0.00009	99531	8	99527	6979151	70.12
11	0.00010	99523	10	99518	6879624	69.13
12	0.00011	99513	11	99508	6780106	68.13
13	0.00013	99502	14	99495	6680598	67.14
14	0.00016	99488	15	99481	6581103	66.15
15	0.00018	99473	18	99464	6481623	65.16
16	0.00021	99455	22	99444	6382159	64.17
17	0.00024	99433	24	99421	6282715	63.19
18	0.00027	99409	26	99396	6183294	62.20
19	0.00028	99383	28	99369	6083898	61.22
20	0.00030	99355	30	99340	5984529	60.23
21	0.00030	99325	29	99311	5885189	59.25
22	0.00030	99296	30	99281	5785878	58.27
23	0.00030	99266	30	99251	5686597	57.29
24	0.00030	99236	30	99221	5587346	56.30
25	0.00031	99206	31	99191	5488125	55.32
26	0.00032	99175	32	99159	5388935	54.34
27	0.00034	99143	34	99126	5289776	53.36
28	0.00037	99109	36	99091	5190650	52.37
29	0.00039	99073	39	99054	5091559	51.39
30	0.00043	99034	43	99013	4992505	50.41
31	0.00047	98991	46	98968	4893493	49.43
32	0.00051	98945	51	98920	4794525	48.46
33	0.00056	98894	56	98866	4695605	47.48
34	0.00061	98838	60	98808	4596739	46.51
35	0.00066	98778	66	98745	4497931	45.54
36	0.00071	98712	70	98677	4399186	44.57

Table A. LIFE TABLE FOR POLAND 2021 (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	0.00077	98642	76	98604	4300509	43.60
38	0.00084	98566	83	98525	4201905	42.63
39	0.00092	98483	91	98438	4103381	41.67
40	0.00102	98392	99	98343	4004943	40.70
41	0.00113	98293	111	98238	3906601	39.74
42	0.00126	98182	124	98120	3808363	38.79
43	0.00141	98058	138	97989	3710243	37.84
44	0.00158	97920	155	97843	3612254	36.89
45	0.00176	97765	172	97679	3514412	35.95
46	0.00196	97593	191	97498	3416733	35.01
47	0.00218	97402	213	97296	3319235	34.08
48	0.00242	97189	235	97072	3221940	33.15
49	0.00267	96954	259	96825	3124868	32.23
50	0.00294	96695	284	96553	3028044	31.32
51	0.00322	96411	311	96256	2931491	30.41
52	0.00353	96100	339	95931	2835235	29.50
53	0.00386	95761	370	95576	2739305	28.61
54	0.00425	95391	405	95189	2643729	27.71
55	0.00468	94986	445	94764	2548540	26.83
56	0.00518	94541	490	94296	2453777	25.95
57	0.00576	94051	541	93781	2359481	25.09
58	0.00642	93510	601	93210	2265700	24.23
59	0.00716	92909	665	92577	2172491	23.38
60	0.00798	92244	735	91877	2079914	22.55
61	0.00887	91509	812	91103	1988038	21.73
62	0.00983	90697	892	90251	1896935	20.92
63	0.01086	89805	975	89318	1806684	20.12
64	0.01196	88830	1063	88299	1717366	19.33
65	0.01312	87767	1151	87192	1629068	18.56
66	0.01438	86616	1246	85993	1541876	17.80
67	0.01573	85370	1343	84699	1455883	17.05
68	0.01720	84027	1445	83305	1371185	16.32
69	0.01882	82582	1554	81805	1287880	15.60
70	0.02060	81028	1668	80194	1206075	14.88
71	0.02256	79360	1791	78465	1125881	14.19
72	0.02475	77569	1920	76609	1047417	13.50
73	0.02717	75649	2056	74621	970808	12.83

Table A. LIFE TABLE FOR POLAND 2021 (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	0.02985	73593	2196	72495	896187	12.18
75	0.03280	71397	2342	70226	823692	11.54
76	0.03604	69055	2489	67811	753466	10.91
77	0.03961	66566	2636	65248	685655	10.30
78	0.04358	63930	2786	62537	620407	9.70
79	0.04808	61144	2940	59674	557870	9.12
80	0.05325	58204	3100	56654	498196	8.56
81	0.05927	55104	3266	53471	441542	8.01
82	0.06634	51838	3438	50119	388071	7.49
83	0.07462	48400	3612	46594	337952	6.98
84	0.08410	44788	3767	42905	291358	6.51
85	0.09474	41021	3886	39078	248454	6.06
86	0.10645	37135	3953	35159	209376	5.64
87	0.11902	33182	3949	31208	174217	5.25
88	0.13222	29233	3866	27300	143010	4.89
89	0.14605	25367	3704	23515	115710	4.56
90	0.16051	21663	3478	19924	92195	4.26
91	0.17558	18185	3193	16589	72271	3.97
92	0.19130	14992	2868	13558	55682	3.71
93	0.20769	12124	2518	10865	42124	3.47
94	0.22467	9606	2158	8527	31259	3.25
95	0.24212	7448	1804	6546	22732	3.05
96	0.25992	5644	1467	4911	16186	2.87
97	0.27795	4177	1161	3597	11276	2.70
98	0.29606	3016	893	2570	7679	2.55
99	0.31411	2123	667	1790	5110	2.41
100	0.33197	1456	484	1214	3320	2.28

Table A. LIFE TABLE FOR POLAND 2021 (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	0.00432	100000	432	99611	7137399	71.37
1	0.00026	99568	26	99555	7037788	70.68
2	0.00020	99542	20	99532	6938233	69.70
3	0.00016	99522	16	99514	6838701	68.72
4	0.00013	99506	13	99500	6739187	67.73
5	0.00011	99493	11	99488	6639688	66.74
6	0.00010	99482	10	99477	6540200	65.74
7	0.00009	99472	8	99468	6440723	64.75
8	0.00008	99464	9	99460	6341255	63.75
9	0.00008	99455	8	99451	6241796	62.76
10	0.00008	99447	8	99443	6142345	61.77
11	0.00009	99439	9	99435	6042902	60.77
12	0.00011	99430	11	99425	5943467	59.78
13	0.00014	99419	14	99412	5844043	58.78
14	0.00019	99405	18	99396	5744631	57.79
15	0.00025	99387	25	99375	5645235	56.80
16	0.00034	99362	35	99345	5545860	55.81
17	0.00045	99327	44	99305	5446516	54.83
18	0.00057	99283	57	99255	5347211	53.86
19	0.00067	99226	66	99193	5247956	52.89
20	0.00076	99160	76	99122	5148763	51.92
21	0.00083	99084	83	99043	5049641	50.96
22	0.00089	99001	88	98957	4950599	50.01
23	0.00095	98913	94	98866	4851642	49.05
24	0.00100	98819	99	98770	4752776	48.10
25	0.00107	98720	105	98668	4654006	47.14
26	0.00114	98615	113	98559	4555339	46.19
27	0.00121	98502	119	98443	4456780	45.25
28	0.00129	98383	127	98320	4358338	44.30
29	0.00138	98256	136	98188	4260018	43.36
30	0.00146	98120	143	98049	4161830	42.42
31	0.00156	97977	153	97901	4063782	41.48
32	0.00168	97824	165	97742	3965881	40.54
33	0.00181	97659	176	97571	3868140	39.61
34	0.00196	97483	191	97388	3770569	38.68
35	0.00212	97292	206	97189	3673181	37.75
36	0.00228	97086	221	96976	3575992	36.83

Table A. LIFE TABLE FOR POLAND 2021 (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	0.00245	96865	238	96746	3479017	35.92
38	0.00263	96627	254	96500	3382271	35.00
39	0.00283	96373	273	96237	3285771	34.09
40	0.00305	96100	292	95954	3189534	33.19
41	0.00331	95808	317	95650	3093580	32.29
42	0.00361	95491	345	95319	2997931	31.39
43	0.00395	95146	376	94958	2902612	30.51
44	0.00434	94770	411	94565	2807654	29.63
45	0.00476	94359	449	94135	2713090	28.75
46	0.00521	93910	489	93666	2618955	27.89
47	0.00569	93421	532	93155	2525290	27.03
48	0.00623	92889	579	92600	2432135	26.18
49	0.00682	92310	629	91996	2339535	25.34
50	0.00747	91681	685	91339	2247540	24.51
51	0.00820	90996	746	90623	2156201	23.70
52	0.00900	90250	812	89844	2065578	22.89
53	0.00987	89438	883	88997	1975734	22.09
54	0.01083	88555	960	88075	1886738	21.31
55	0.01189	87595	1041	87075	1798663	20.53
56	0.01305	86554	1129	85990	1711588	19.77
57	0.01432	85425	1223	84814	1625599	19.03
58	0.01571	84202	1323	83541	1540785	18.30
59	0.01724	82879	1429	82165	1457245	17.58
60	0.01892	81450	1541	80680	1375080	16.88
61	0.02075	79909	1658	79080	1294401	16.20
62	0.02277	78251	1782	77360	1215321	15.53
63	0.02499	76469	1911	75514	1137961	14.88
64	0.02741	74558	2044	73536	1062447	14.25
65	0.02998	72514	2174	71427	988911	13.64
66	0.03265	70340	2297	69192	917484	13.04
67	0.03540	68043	2409	66839	848293	12.47
68	0.03819	65634	2506	64381	781454	11.91
69	0.04106	63128	2593	61832	717073	11.36
70	0.04411	60535	2670	59200	655242	10.82
71	0.04743	57865	2744	56493	596042	10.30
72	0.05107	55121	2815	53714	539549	9.79
73	0.05513	52306	2884	50864	485835	9.29

Table A. LIFE TABLE FOR POLAND 2021 (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	0.05960	49422	2945	47950	434971	8.80
75	0.06456	46477	3001	44977	387022	8.33
76	0.06997	43476	3042	41955	342045	7.87
77	0.07589	40434	3068	38900	300090	7.42
78	0.08238	37366	3079	35827	261190	6.99
79	0.08963	34287	3073	32751	225364	6.57
80	0.09766	31214	3048	29690	192613	6.17
81	0.10672	28166	3006	26663	162923	5.78
82	0.11698	25160	2943	23689	136260	5.42
83	0.12850	22217	2855	20790	112572	5.07
84	0.14113	19362	2733	17996	91782	4.74
85	0.15476	16629	2574	15342	73787	4.44
86	0.16912	14055	2377	12867	58445	4.16
87	0.18386	11678	2147	10605	45578	3.90
88	0.19877	9531	1895	8584	34974	3.67
89	0.21382	7636	1632	6820	26390	3.46
90	0.22899	6004	1375	5317	19570	3.26
91	0.24429	4629	1131	4064	14254	3.08
92	0.25977	3498	909	3044	10190	2.91
93	0.27540	2589	713	2233	7147	2.76
94	0.29109	1876	546	1603	4914	2.62
95	0.30674	1330	408	1126	3311	2.49
96	0.32226	922	298	773	2185	2.37
97	0.33757	624	210	519	1412	2.26
98	0.35257	414	146	341	893	2.16
99	0.36719	268	99	219	552	2.06
100	0.38137	169	65	137	334	1.97

Table A. LIFE TABLE FOR POLAND 2021 (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	0.00325	100000	326	99707	7954572	79.55
1	0.00020	99674	20	99664	7854865	78.81
2	0.00015	99654	16	99646	7755201	77.82
3	0.00013	99638	12	99632	7655555	76.83
4	0.00011	99626	11	99621	7555923	75.84
5	0.00009	99615	9	99611	7456303	74.85
6	0.00008	99606	8	99602	7356692	73.86
7	0.00008	99598	8	99594	7257090	72.86
8	0.00007	99590	7	99587	7157496	71.87
9	0.00007	99583	7	99580	7057910	70.87
10	0.00007	99576	7	99573	6958330	69.88
11	0.00008	99569	8	99565	6858758	68.88
12	0.00009	99561	8	99557	6759193	67.89
13	0.00010	99553	11	99548	6659636	66.90
14	0.00012	99542	12	99536	6560088	65.90
15	0.00015	99530	15	99523	6460552	64.91
16	0.00017	99515	17	99507	6361030	63.92
17	0.00020	99498	19	99489	6261523	62.93
18	0.00022	99479	22	99468	6162035	61.94
19	0.00024	99457	23	99446	6062567	60.96
20	0.00025	99434	25	99422	5963121	59.97
21	0.00026	99409	25	99397	5863700	58.99
22	0.00026	99384	27	99371	5764303	58.00
23	0.00027	99357	26	99344	5664933	57.02
24	0.00028	99331	28	99317	5565589	56.03
25	0.00029	99303	29	99289	5466272	55.05
26	0.00031	99274	31	99259	5366983	54.06
27	0.00033	99243	32	99227	5267725	53.08
28	0.00035	99211	36	99193	5168498	52.10
29	0.00038	99175	37	99157	5069305	51.11
30	0.00041	99138	42	99117	4970148	50.13
31	0.00045	99096	44	99074	4871031	49.15
32	0.00048	99052	48	99028	4771957	48.18
33	0.00052	99004	51	98979	4672929	47.20
34	0.00056	98953	56	98925	4573951	46.22
35	0.00060	98897	59	98868	4475026	45.25
36	0.00065	98838	65	98806	4376158	44.28

Table A. LIFE TABLE FOR POLAND 2021 (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	0.00071	98773	70	98738	4277353	43.30
38	0.00077	98703	76	98665	4178615	42.34
39	0.00085	98627	84	98585	4079950	41.37
40	0.00094	98543	93	98497	3981365	40.40
41	0.00104	98450	102	98399	3882868	39.44
42	0.00115	98348	113	98292	3784469	38.48
43	0.00128	98235	127	98172	3686178	37.52
44	0.00143	98108	140	98038	3588006	36.57
45	0.00160	97968	157	97890	3489968	35.62
46	0.00178	97811	174	97724	3392079	34.68
47	0.00198	97637	193	97541	3294355	33.74
48	0.00218	97444	212	97338	3196814	32.81
49	0.00240	97232	234	97115	3099476	31.88
50	0.00264	96998	257	96870	3002361	30.95
51	0.00291	96741	281	96601	2905492	30.03
52	0.00321	96460	311	96305	2808891	29.12
53	0.00356	96149	342	95978	2712587	28.21
54	0.00396	95807	380	95617	2616609	27.31
55	0.00441	95427	421	95217	2520992	26.42
56	0.00490	95006	465	94774	2425775	25.53
57	0.00544	94541	514	94284	2331002	24.66
58	0.00606	94027	570	93742	2236718	23.79
59	0.00675	93457	630	93142	2142976	22.93
60	0.00753	92827	699	92478	2049834	22.08
61	0.00842	92128	776	91740	1957356	21.25
62	0.00942	91352	860	90922	1865616	20.42
63	0.01048	90492	949	90018	1774694	19.61
64	0.01165	89543	1044	89021	1684677	18.81
65	0.01292	88499	1143	87928	1595656	18.03
66	0.01428	87356	1247	86733	1507728	17.26
67	0.01574	86109	1356	85431	1420996	16.50
68	0.01736	84753	1471	84018	1335565	15.76
69	0.01909	83282	1590	82487	1251547	15.03
70	0.02098	81692	1714	80835	1169060	14.31
71	0.02308	79978	1846	79055	1088225	13.61
72	0.02538	78132	1983	77141	1009170	12.92
73	0.02796	76149	2130	75084	932030	12.24

Table A. LIFE TABLE FOR POLAND 2021 (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	0.03087	74019	2285	72877	856946	11.58
75	0.03415	71734	2449	70510	784069	10.93
76	0.03783	69285	2621	67975	713560	10.30
77	0.04201	66664	2801	65264	645585	9.68
78	0.04673	63863	2985	62371	580322	9.09
79	0.05218	60878	3176	59290	517951	8.51
80	0.05845	57702	3373	56016	458661	7.95
81	0.06575	54329	3572	52543	402646	7.41
82	0.07423	50757	3768	48873	350103	6.90
83	0.08401	46989	3947	45016	301230	6.41
84	0.09502	43042	4090	40997	256214	5.95
85	0.10725	38952	4178	36863	215217	5.53
86	0.12056	34774	4192	32678	178354	5.13
87	0.13478	30582	4122	28521	145676	4.76
88	0.14972	26460	3962	24479	117155	4.43
89	0.16540	22498	3721	20638	92676	4.12
90	0.18173	18777	3412	17071	72039	3.84
91	0.19869	15365	3053	13839	54968	3.58
92	0.21625	12312	2663	10981	41129	3.34
93	0.23433	9649	2261	8519	30149	3.12
94	0.25281	7388	1868	6454	21630	2.93
95	0.27153	5520	1499	4771	15176	2.75
96	0.29032	4021	1167	3438	10406	2.59
97	0.30902	2854	882	2413	6968	2.44
98	0.32745	1972	646	1649	4555	2.31
99	0.34548	1326	458	1097	2906	2.19
100	0.36296	868	315	711	1809	2.08

Table B. LIFE EXPECTANCY IN POLAND BY VOIVODSHIPS IN 2021

	Males					Females				
	By age					By age				
	0	15	30	45	60	0	15	30	45	60
Total	**71.75**	**57.18**	**42.78**	**29.11**	**17.28**	**79.68**	**65.07**	**50.31**	**35.83**	**22.38**
02 Dolnośląskie	71.37	56.92	42.56	28.86	17.13	79.54	64.89	50.16	35.73	22.48
04 Kujawsko-pomorskie	71.31	56.88	42.47	28.81	16.97	78.87	64.34	49.62	35.18	21.85
06 Lubelskie	71.31	56.76	42.39	28.84	17.12	79.49	64.98	50.27	35.85	22.35
08 Lubuskie	70.51	55.97	41.68	28.13	16.60	78.99	64.32	49.56	35.12	21.86
10 Łódzkie	70.60	55.98	41.62	28.23	16.80	79.03	64.38	49.62	35.18	21.90
12 Małopolskie	73.47	58.77	44.24	30.30	18.14	80.97	66.31	51.50	36.93	23.26
14 Mazowieckie	71.63	57.02	42.77	29.15	17.44	80.01	65.36	50.62	36.11	22.63
16 Opolskie	72.37	57.95	43.62	29.81	17.77	80.36	65.61	50.84	36.31	22.76
18 Podkarpackie	72.74	58.21	43.74	29.94	17.85	80.63	66.01	51.22	36.66	22.98
20 Podlaskie	71.52	57.17	42.86	29.29	17.35	80.45	65.80	51.02	36.47	22.87
22 Pomorskie	72.70	58.10	43.65	29.76	17.70	80.09	65.53	50.77	36.21	22.71
24 Śląskie	71.25	56.66	42.23	28.57	16.87	78.85	64.28	49.54	35.12	21.85
26 Świętokrzyskie	71.64	56.89	42.41	28.79	17.18	79.98	65.34	50.56	36.08	22.56
28 Warmińsko-mazurskie	70.76	56.22	41.90	28.41	16.63	79.42	64.90	50.14	35.65	22.18
30 Wielkopolskie	72.10	57.51	43.14	29.33	17.30	79.61	65.01	50.23	35.70	22.19
32 Zachodniopomorskie	71.54	56.90	42.50	28.85	17.15	79.15	64.58	49.86	35.40	22.15
Urban areas	**71.99**	**57.43**	**43.01**	**29.33**	**17.51**	**79.75**	**65.16**	**50.41**	**35.95**	**22.55**
02 Dolnośląskie	71.48	57.04	42.65	28.98	17.34	79.54	64.94	50.23	35.83	22.62
04 Kujawsko-pomorskie	71.42	56.92	42.47	28.83	17.10	78.99	64.53	49.83	35.40	22.09
06 Lubelskie	72.28	57.60	43.27	29.69	17.86	79.68	65.26	50.58	36.18	22.67
08 Lubuskie	70.53	56.09	41.82	28.28	16.84	79.31	64.63	49.86	35.38	22.09
10 Łódzkie	70.43	55.86	41.53	28.20	16.86	78.66	64.04	49.31	34.95	21.80
12 Małopolskie	73.90	59.16	44.59	30.65	18.47	81.16	66.48	51.69	37.14	23.53
14 Mazowieckie	72.34	57.73	43.44	29.74	17.92	80.26	65.65	50.91	36.39	22.91
16 Opolskie	72.59	58.23	43.86	30.05	18.07	80.21	65.46	50.71	36.25	22.78
18 Podkarpackie	73.71	59.01	44.48	30.58	18.32	80.78	66.13	51.33	36.77	23.12
20 Podlaskie	72.35	57.96	43.53	29.89	17.86	80.80	66.14	51.33	36.75	23.19
22 Pomorskie	73.03	58.45	43.97	30.02	17.96	80.45	65.90	51.17	36.62	23.08
24 Śląskie	71.11	56.56	42.13	28.52	16.89	78.75	64.21	49.46	35.06	21.87
26 Świętokrzyskie	72.10	57.38	42.85	29.15	17.46	80.06	65.55	50.79	36.32	22.78
28 Warmińsko-mazurskie	71.31	56.79	42.43	28.89	17.07	79.74	65.17	50.43	36.00	22.59
30 Wielkopolskie	72.38	57.77	43.41	29.59	17.55	80.01	65.35	50.55	36.01	22.53
32 Zachodniopomorskie	71.68	57.06	42.65	28.93	17.24	79.31	64.82	50.12	35.70	22.46

Table B. LIFE EXPECTANCY IN POLAND BY VOIVODSHIPS IN 2021 (cont.)

	Males					Females				
	By age					By age				
	0	15	30	45	60	0	15	30	45	60
Rural areas	**71.37**	**56.80**	**42.42**	**28.75**	**16.88**	**79.55**	**64.91**	**50.13**	**35.62**	**22.08**
02 Dolnośląskie	71.04	56.57	42.24	28.49	16.57	79.40	64.66	49.88	35.39	22.02
04 Kujawsko-pomorskie	71.13	56.78	42.41	28.71	16.73	78.58	63.96	49.21	34.76	21.38
06 Lubelskie	70.49	56.06	41.66	28.12	16.47	79.32	64.74	50.00	35.56	22.06
08 Lubuskie	70.36	55.69	41.34	27.77	16.05	78.30	63.66	48.93	34.55	21.32
10 Łódzkie	70.82	56.16	41.76	28.26	16.67	79.72	65.04	50.23	35.67	22.15
12 Małopolskie	73.03	58.39	43.88	29.95	17.79	80.72	66.08	51.26	36.66	22.92
14 Mazowieckie	70.42	55.83	41.58	28.13	16.57	79.49	64.77	50.01	35.54	22.03
16 Opolskie	72.10	57.61	43.27	29.49	17.40	80.48	65.77	50.96	36.37	22.73
18 Podkarpackie	72.08	57.64	43.21	29.48	17.49	80.53	65.93	51.14	36.59	22.87
20 Podlaskie	70.42	56.13	41.98	28.49	16.67	79.94	65.32	50.58	36.07	22.44
22 Pomorskie	71.96	57.34	42.92	29.13	17.01	79.12	64.52	49.71	35.16	21.72
24 Śląskie	71.66	56.96	42.52	28.71	16.75	79.20	64.54	49.82	35.35	21.82
26 Świętokrzyskie	71.24	56.48	42.04	28.48	16.90	79.87	65.15	50.36	35.86	22.34
28 Warmińsko-mazurskie	69.97	55.40	41.14	27.67	15.94	78.83	64.34	49.56	34.99	21.44
30 Wielkopolskie	71.73	57.16	42.77	28.97	16.94	79.02	64.49	49.73	35.22	21.66
32 Zachodniopomorskie	71.15	56.47	42.10	28.59	16.84	78.54	63.83	49.05	34.54	21.23

Table C. LIFE EXPECTANCY IN POLAND BY SUBREGIONS IN 2021

	Males					Females				
	By age					By age				
	0	15	30	45	60	0	15	30	45	60
1 Jeleniogórski	70.02	55.68	41.45	28.00	16.49	79.14	64.37	49.61	35.21	22.04
2 Legnicko-Głogowski	71.98	57.49	43.00	29.23	17.27	79.08	64.48	49.75	35.35	22.13
3 Wałbrzyski	69.92	55.60	41.29	27.71	16.24	78.28	63.81	49.15	34.83	21.75
4 Wrocławski	71.96	57.43	43.02	29.18	17.18	79.99	65.32	50.56	36.06	22.57
5 Miasto Wrocław	73.26	58.75	44.34	30.53	18.67	81.07	66.40	51.63	37.14	23.77
6 Bydgosko-Toruński	72.56	58.10	43.65	29.83	17.74	79.49	65.01	50.28	35.78	22.35
7 Grudziądzki	70.68	56.18	41.77	28.14	16.34	78.37	63.97	49.23	34.80	21.43
8 Włocławski	70.20	55.71	41.42	28.12	16.74	78.11	63.56	48.94	34.64	21.49
9 Bialski	70.43	55.84	41.52	28.07	16.38	78.53	64.08	49.40	35.09	21.80
10 Chełmsko-Zamojski	71.09	56.50	42.04	28.42	16.73	79.54	64.99	50.28	35.83	22.26
11 Lubelski	72.22	57.65	43.29	29.64	17.68	79.59	65.10	50.37	35.91	22.44
12 Puławski	70.89	56.47	42.18	28.76	17.28	79.92	65.38	50.67	36.22	22.63
13 Gorzowski	70.25	55.78	41.38	27.81	16.26	78.73	64.02	49.28	34.86	21.65
14 Zielonogórski	70.67	56.09	41.88	28.33	16.80	79.13	64.50	49.73	35.28	21.99
15 Łódzki	70.74	56.00	41.54	28.06	16.66	79.18	64.45	49.67	35.18	21.87
16 Miasto Łódź	70.45	55.96	41.70	28.32	16.90	78.42	63.70	48.96	34.60	21.57
17 Piotrkowski	70.01	55.41	41.10	27.87	16.59	79.16	64.57	49.81	35.37	21.96
18 Sieradzki	71.57	56.87	42.45	28.87	17.23	79.78	65.25	50.47	35.96	22.48
19 Skierniewicki	70.35	55.82	41.49	28.04	16.48	78.99	64.42	49.68	35.26	21.93
20 Krakowski	73.50	58.71	44.13	30.17	18.03	81.06	66.42	51.59	36.93	23.09
21 Miasto Kraków	74.77	60.09	45.53	31.44	19.16	81.76	67.06	52.28	37.73	24.11
22 Nowosądecki	73.26	58.58	44.07	30.25	18.05	80.60	66.07	51.29	36.74	23.06
23 Oświęcimski	71.84	57.23	42.79	29.08	17.19	79.90	65.16	50.34	35.80	22.36
24 Tarnowski	73.73	59.10	44.53	30.51	18.03	80.96	66.24	51.46	36.92	23.19
25 Ciechanowski	69.80	55.45	41.32	27.90	16.30	78.65	64.08	49.35	34.93	21.65
26 Ostrołęcki	70.06	55.46	41.20	27.85	16.34	80.07	65.41	50.64	36.14	22.50
27 Radomski	70.65	55.89	41.54	28.09	16.57	79.78	64.99	50.18	35.67	22.16
28 Miasto Warszawa	73.64	59.01	44.74	30.91	18.90	81.08	66.39	51.65	37.11	23.60
29 Warszawski Wschodni	71.56	56.93	42.53	28.81	17.03	79.32	64.86	50.14	35.65	22.17
30 Warszawski Zachodni	71.74	57.22	42.94	29.35	17.55	80.03	65.29	50.49	35.95	22.39
31 Nyski	71.02	56.56	42.28	28.68	16.88	79.13	64.47	49.73	35.30	21.99
32 Opolski	73.25	58.85	44.45	30.53	18.35	81.10	66.33	51.53	36.95	23.25
33 Krośnieński	72.57	58.15	43.73	29.99	17.86	80.61	66.14	51.33	36.72	22.97
34 Przemyski	72.04	57.52	43.14	29.42	17.33	80.62	65.89	51.10	36.54	22.83
35 Rzeszowski	73.44	58.83	44.31	30.37	18.18	80.70	66.04	51.26	36.75	23.11
36 Tarnobrzeski	72.60	58.04	43.55	29.81	17.83	80.56	65.94	51.14	36.59	22.91
37 Białostocki	72.03	57.74	43.37	29.75	17.74	80.74	66.11	51.36	36.80	23.13
38 Łomżyński	71.18	56.69	42.42	28.88	17.03	80.35	65.77	50.97	36.42	22.82

Table C. LIFE EXPECTANCY IN POLAND BY SUBREGIONS IN 2021 (cont.)

	Males					Females				
	By age					By age				
	0	15	30	45	60	0	15	30	45	60
39 Suwalski	71.22	56.87	42.63	29.05	17.07	79.98	65.22	50.41	35.91	22.43
40 Gdański	72.37	57.86	43.51	29.70	17.46	80.19	65.53	50.73	36.14	22.46
41 Słupski	71.89	57.23	42.77	28.96	17.05	79.41	64.79	50.02	35.49	22.16
42 Starogardzki	71.40	56.82	42.33	28.53	16.65	78.46	63.97	49.23	34.80	21.56
43 Trójmiejski	74.12	59.44	44.89	30.89	18.71	81.27	66.66	51.90	37.32	23.70
44 Bielski	71.81	57.15	42.74	28.91	16.89	79.35	64.67	49.89	35.45	22.08
45 Bytomski	70.92	56.23	41.87	28.30	16.74	78.66	64.37	49.61	35.18	21.99
46 Częstochowski	71.18	56.49	42.00	28.46	16.85	79.04	64.49	49.78	35.40	22.02
47 Gliwicki	71.91	57.41	42.92	29.24	17.56	79.61	65.01	50.28	35.85	22.59
48 Katowicki	70.65	56.11	41.78	28.22	16.69	78.27	63.74	49.02	34.68	21.56
49 Rybnicki	71.71	57.16	42.69	28.84	16.79	78.73	64.09	49.33	34.87	21.55
50 Sosnowiecki	70.07	55.59	41.16	27.69	16.38	78.30	63.72	49.00	34.63	21.51
51 Tyski	72.36	57.74	43.35	29.56	17.41	79.32	64.73	50.01	35.48	21.88
52 Kielecki	71.65	56.85	42.34	28.68	17.08	79.82	65.26	50.49	36.01	22.54
53 Sandomiersko-Jędrzejowski	71.58	56.94	42.52	28.96	17.29	80.22	65.48	50.70	36.18	22.57
54 Elbląski	70.66	56.07	41.65	28.09	16.33	79.03	64.36	49.58	35.11	21.69
55 Ełcki	70.73	56.11	41.81	28.37	16.59	79.66	65.01	50.20	35.67	22.18
56 Olsztyński	70.86	56.42	42.19	28.69	16.92	79.64	65.29	50.60	36.10	22.60
57 Kaliski	71.67	57.03	42.63	28.93	17.08	79.43	64.90	50.16	35.72	22.23
58 Koniński	71.90	57.38	43.04	29.34	17.41	79.41	64.88	50.16	35.71	22.25
59 Leszczyński	71.65	57.06	42.59	28.84	16.80	78.86	64.18	49.37	34.85	21.41
60 Pilski	70.91	56.34	42.10	28.57	16.69	78.63	64.07	49.30	34.80	21.42
61 Poznański	72.65	58.03	43.58	29.60	17.33	79.62	65.00	50.22	35.64	21.98
62 Miasto Poznań	73.60	59.01	44.58	30.53	18.33	81.20	66.51	51.65	37.02	23.44
63 Koszaliński	72.32	57.51	43.02	29.24	17.34	78.45	64.26	49.63	35.27	22.04
64 Szczecinecko-Pyrzycki	70.92	56.33	41.91	28.38	16.78	78.68	64.11	49.33	34.85	21.64
65 Miasto Szczecin	71.70	57.14	42.80	29.04	17.35	79.77	65.12	50.37	35.94	22.64
66 Szczeciński	71.30	56.74	42.37	28.81	17.15	79.48	64.75	50.00	35.52	22.21
67 Inowrocławski	70.41	56.25	41.89	28.21	16.34	78.69	63.96	49.20	34.80	21.58
68 Świecki	71.66	56.96	42.46	28.69	16.81	79.07	64.54	49.75	35.24	21.80
69 Nowotarski	73.06	58.38	43.83	30.02	17.98	81.13	66.49	51.68	37.08	23.25
70 Płocki	70.38	55.84	41.54	28.27	16.85	78.79	64.29	49.56	35.19	21.88
71 Siedlecki	70.40	55.81	41.51	28.02	16.56	79.62	65.03	50.29	35.76	22.11
72 Chojnicki	72.35	57.74	43.25	29.37	17.29	79.17	64.87	50.12	35.63	22.15
73 Żyrardowski	69.71	55.32	41.15	27.64	16.06	77.99	63.43	48.68	34.29	21.08

Table D. LIFE TABLE FOR BOTH SEXES COMBINED FOR POLAND IN 2021

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	0.00385	100000	385	99654	7559640	75.60
1	0.00026	99615	26	99602	7459987	74.89
2	0.00019	99589	19	99580	7360385	73.91
3	0.00017	99570	17	99562	7260805	72.92
4	0.00012	99553	12	99547	7161244	71.93
5	0.00011	99541	11	99536	7061697	70.94
6	0.00009	99530	9	99526	6962161	69.95
7	0.00009	99521	9	99517	6862636	68.96
8	0.00009	99512	9	99508	6763119	67.96
9	0.00008	99503	8	99499	6663612	66.97
10	0.00008	99495	8	99491	6564113	65.97
11	0.00010	99487	10	99482	6464622	64.98
12	0.00011	99477	11	99472	6365140	63.99
13	0.00013	99466	13	99460	6265668	62.99
14	0.00016	99453	16	99445	6166209	62.00
15	0.00021	99437	21	99427	6066764	61.01
16	0.00027	99416	27	99403	5967337	60.02
17	0.00032	99389	32	99373	5867935	59.04
18	0.00039	99357	39	99338	5768562	58.06
19	0.00045	99318	45	99296	5669224	57.08
20	0.00051	99273	51	99248	5569929	56.11
21	0.00055	99222	55	99195	5470681	55.14
22	0.00058	99167	58	99138	5371487	54.17
23	0.00063	99109	62	99078	5272349	53.20
24	0.00066	99047	65	99015	5173271	52.23
25	0.00069	98982	68	98948	5074256	51.26
26	0.00073	98914	72	98878	4975308	50.30
27	0.00077	98842	76	98804	4876430	49.34
28	0.00081	98766	80	98726	4777626	48.37
29	0.00087	98686	86	98643	4678900	47.41
30	0.00094	98600	93	98554	4580257	46.45
31	0.00101	98507	99	98458	4481704	45.50
32	0.00108	98408	106	98355	4383246	44.54
33	0.00117	98302	115	98245	4284891	43.59
34	0.00126	98187	124	98125	4186647	42.64
35	0.00137	98063	134	97996	4088522	41.69
36	0.00147	97929	144	97857	3990526	40.75
37	0.00160	97785	156	97707	3892669	39.81

Table D. LIFE TABLE FOR BOTH SEXES COMBINED FOR POLAND IN 2021 (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	0.00172	97629	168	97545	3794962	38.87
39	0.00187	97461	182	97370	3697417	37.94
40	0.00201	97279	196	97181	3600047	37.01
41	0.00221	97083	215	96976	3502866	36.08
42	0.00243	96868	235	96751	3405890	35.16
43	0.00265	96633	256	96505	3309140	34.24
44	0.00292	96377	281	96237	3212635	33.33
45	0.00322	96096	309	95942	3116398	32.43
46	0.00352	95787	337	95619	3020457	31.53
47	0.00388	95450	370	95265	2924838	30.64
48	0.00427	95080	406	94877	2829573	29.76
49	0.00469	94674	444	94452	2734696	28.89
50	0.00515	94230	485	93988	2640244	28.02
51	0.00565	93745	530	93480	2546257	27.16
52	0.00621	93215	579	92926	2452777	26.31
53	0.00681	92636	631	92321	2359851	25.47
54	0.00746	92005	686	91662	2267531	24.65
55	0.00818	91319	747	90946	2175869	23.83
56	0.00895	90572	811	90167	2084923	23.02
57	0.00984	89761	883	89320	1994757	22.22
58	0.01079	88878	959	88399	1905437	21.44
59	0.01187	87919	1044	87397	1817039	20.67
60	0.01308	86875	1136	86307	1729642	19.91
61	0.01438	85739	1233	85123	1643335	19.17
62	0.01580	84506	1335	83839	1558212	18.44
63	0.01734	83171	1442	82450	1474374	17.73
64	0.01898	81729	1551	80954	1391924	17.03
65	0.02070	80178	1660	79348	1310970	16.35
66	0.02252	78518	1768	77634	1231622	15.69
67	0.02438	76750	1871	75815	1153988	15.04
68	0.02634	74879	1972	73893	1078174	14.40
69	0.02836	72907	2068	71873	1004281	13.77
70	0.03049	70839	2160	69759	932408	13.16
71	0.03283	68679	2255	67552	862649	12.56
72	0.03539	66424	2351	65249	795097	11.97
73	0.03822	64073	2449	62849	729849	11.39
74	0.04132	61624	2546	60351	667000	10.82
75	0.04481	59078	2647	57755	606649	10.27

Table D. LIFE TABLE FOR BOTH SEXES COMBINED FOR POLAND IN 2021 (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	0.04857	56431	2741	55061	548895	9.73
77	0.05275	53690	2832	52274	493834	9.20
78	0.05730	50858	2914	49401	441560	8.68
79	0.06245	47944	2994	46447	392159	8.18
80	0.06821	44950	3066	43417	345712	7.69
81	0.07490	41884	3137	40316	302295	7.22
82	0.08259	38747	3200	37147	261980	6.76
83	0.09148	35547	3252	33921	224833	6.32
84	0.10147	32295	3277	30657	190912	5.91
85	0.11255	29018	3266	27385	160255	5.52
86	0.12457	25752	3208	24148	132870	5.16
87	0.13724	22544	3094	20997	108722	4.82
88	0.15059	19450	2929	17986	87725	4.51
89	0.16434	16521	2715	15164	69740	4.22
90	0.17876	13806	2468	12572	54576	3.95
91	0.19377	11338	2197	10240	42004	3.70
92	0.20928	9141	1913	8185	31765	3.47
93	0.22537	7228	1629	6414	23580	3.26
94	0.24219	5599	1356	4921	17167	3.07
95	0.25901	4243	1099	3694	12246	2.89
96	0.27672	3144	870	2709	8552	2.72
97	0.29376	2274	668	1940	5843	2.57
98	0.31196	1606	501	1356	3903	2.43
99	0.32851	1105	363	924	2548	2.31
100	0.34636	742	257	614	1624	2.19

Table E. LIFE EXPECTANCY FOR BOTH SEXES COMBINED IN 2021 (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	557.4	556.4	555.5	554.5	553.6	552.6	551.7	550.7	549.7	548.8	547.8	546.9
31	546.0	545.0	544.1	543.1	542.2	541.2	540.3	539.3	538.4	537.4	536.5	535.5
32	534.5	533.5	532.6	531.6	530.7	529.7	528.8	527.8	526.9	525.9	525.0	524.0
33	523.1	522.2	521.2	520.3	519.3	518.4	517.4	516.5	515.5	514.6	513.6	512.7
34	511.7	510.8	509.8	508.9	507.9	507.0	506.0	505.1	504.1	503.2	502.2	501.3
35	500.3	499.4	498.4	497.5	496.5	495.6	494.6	493.7	492.8	491.8	490.9	489.9
36	489.0	488.1	487.1	486.2	485.2	484.3	483.4	482.4	481.5	480.5	479.6	478.7
37	477.7	476.8	475.8	474.9	474.0	473.0	472.1	471.1	470.2	469.3	468.3	467.4
38	466.5	465.6	464.6	463.7	462.8	461.8	460.9	460.0	459.0	458.1	457.2	456.2
39	455.2	454.3	453.3	452.4	451.5	450.6	449.6	448.7	447.8	446.8	445.9	445.0
40	444.1	443.2	442.2	441.3	440.4	439.5	438.5	437.6	436.7	435.8	434.8	433.9
41	433.0	432.1	431.2	430.2	429.3	428.4	427.5	426.6	425.6	424.7	423.8	422.9
42	421.9	421.0	420.1	419.2	418.2	417.3	416.4	415.5	414.6	413.7	412.7	411.8
43	410.9	410.0	409.1	408.2	407.3	406.3	405.4	404.5	403.6	402.7	401.8	400.9
44	400.0	399.1	398.2	397.3	396.4	395.5	394.6	393.7	392.8	391.9	391.0	390.1
45	389.2	388.3	387.4	386.5	385.6	384.7	383.8	382.9	382.0	381.1	380.2	379.3
46	378.4	377.5	376.6	375.7	374.8	373.9	373.1	372.2	371.3	370.4	369.5	368.6
47	367.7	366.8	365.9	365.1	364.2	363.3	362.4	361.5	360.6	359.8	358.9	358.0
48	357.1	356.2	355.4	354.5	353.6	352.7	351.9	351.0	350.1	349.2	348.4	347.5
49	346.6	345.7	344.9	344.0	343.1	342.3	341.4	340.5	339.7	338.8	337.9	337.1
50	336.2	335.3	334.5	333.6	332.8	331.9	331.1	330.2	329.3	328.5	327.6	326.8
51	325.9	325.1	324.2	323.4	322.5	321.7	320.8	320.0	319.1	318.3	317.4	316.6
52	315.8	315.0	314.1	313.3	312.4	311.6	310.8	309.9	309.1	308.3	307.4	306.6
53	305.7	304.9	304.0	303.2	302.4	301.6	300.7	299.9	299.1	298.2	297.4	296.6
54	295.7	294.9	294.1	293.2	292.4	291.6	290.8	290.0	289.2	288.3	287.5	286.7
55	285.9	285.1	284.3	283.5	282.7	281.9	281.1	280.2	279.4	278.6	277.8	277.0
56	276.2	275.4	274.6	273.8	273.0	272.2	271.4	270.6	269.8	269.0	268.2	267.4
57	266.7	265.9	265.1	264.3	263.6	262.8	262.0	261.2	260.4	259.6	258.9	258.1
58	257.3	256.5	255.8	255.0	254.2	253.4	252.7	251.9	251.1	250.4	249.6	248.8
59	248.0	247.2	246.5	245.7	245.0	244.2	243.5	242.7	241.9	241.2	240.4	239.7
60	238.9	238.2	237.4	236.7	235.9	235.2	234.4	233.7	233.0	232.2	231.5	230.7
61	230.0	229.3	228.5	227.8	227.1	226.4	225.6	224.9	224.2	223.5	222.7	222.0
62	221.3	220.6	219.9	219.2	218.5	217.7	217.0	216.3	215.6	214.9	214.2	213.5
63	212.7	212.0	211.3	210.6	209.9	209.2	208.5	207.8	207.1	206.4	205.7	205.0
64	204.4	203.7	203.0	202.4	201.7	201.0	200.3	199.6	199.0	198.3	197.6	196.9
65	196.2	195.5	194.9	194.2	193.5	192.9	192.2	191.5	190.9	190.2	189.6	188.9
66	188.2	187.5	186.9	186.2	185.6	184.9	184.3	183.6	183.0	182.3	181.7	181.0

Table E. LIFE EXPECTANCY FOR BOTH SEXES COMBINED IN 2021 (cont.)
(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
67	180.4	179.8	179.1	178.5	177.9	177.2	176.6	175.9	175.3	174.7	174.0	173.4
68	172.8	172.2	171.6	170.9	170.3	169.7	169.1	168.4	167.8	167.2	166.6	165.9
69	165.3	164.7	164.1	163.5	162.9	162.2	161.6	161.0	160.4	159.8	159.2	158.6
70	157.9	157.3	156.7	156.1	155.5	154.9	154.3	153.7	153.1	152.5	151.9	151.3
71	150.7	150.1	149.5	148.9	148.3	147.7	147.2	146.6	146.0	145.4	144.8	144.2
72	143.6	143.0	142.4	141.9	141.3	140.7	140.1	139.5	139.0	138.4	137.8	137.2
73	136.7	136.1	135.6	135.0	134.4	133.9	133.3	132.7	132.2	131.6	131.0	130.5
74	129.9	129.3	128.8	128.2	127.7	127.1	126.6	126.0	125.5	124.9	124.3	123.8
75	123.2	122.7	122.1	121.6	121.0	120.5	119.9	119.4	118.9	118.3	117.8	117.2
76	116.7	116.2	115.6	115.1	114.6	114.1	113.5	113.0	112.5	111.9	111.4	110.9
77	110.4	109.9	109.4	108.9	108.3	107.8	107.3	106.8	106.3	105.8	105.2	104.7
78	104.2	103.7	103.2	102.7	102.2	101.7	101.2	100.7	100.2	99.7	99.2	98.7
79	98.2	97.7	97.2	96.7	96.2	95.8	95.3	94.8	94.3	93.8	93.3	92.8
80	92.3	91.8	91.4	90.9	90.4	89.9	89.5	89.0	88.5	88.0	87.6	87.1
81	86.6	86.1	85.7	85.2	84.8	84.3	83.9	83.4	83.0	82.5	82.0	81.6
82	81.1	80.7	80.2	79.8	79.4	78.9	78.5	78.0	77.6	77.2	76.7	76.3
83	75.9	75.5	75.1	74.7	74.2	73.8	73.4	73.0	72.6	72.2	71.8	71.4
84	70.9	70.5	70.1	69.7	69.3	69.0	68.6	68.2	67.8	67.4	67.0	66.6
85	66.3	65.9	65.6	65.2	64.8	64.5	64.1	63.8	63.4	63.0	62.7	62.3
86	61.9	61.6	61.2	60.9	60.6	60.2	59.9	59.5	59.2	58.9	58.5	58.2
87	57.9	57.6	57.3	57.0	56.7	56.3	56.0	55.7	55.4	55.1	54.8	54.5
88	54.1	53.8	53.5	53.2	52.9	52.7	52.4	52.1	51.8	51.5	51.2	50.9
89	50.7	50.4	50.2	49.9	49.6	49.4	49.1	48.8	48.6	48.3	48.0	47.7
90	47.4	47.2	46.9	46.7	46.4	46.2	45.9	45.7	45.4	45.2	44.9	44.7