

Life expectancy tables of Poland 2020

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supervised by
Dorota Szałtys

Editorial team

Maciej Potyra, Katarzyna Góral-Radziszewska, Kamil Waśkiewicz, Karolina Kuczyńska

Typesetting and graphics

Anna Bińkowska, Andrzej Paluchowski

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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 1950–2020, 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
Demographic Surveys Department



Dorota Szaftys

President
Statistics Poland



Dominik Rozkrut, Ph.D.

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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 disability¹, as well as analyses of the population ageing process.

In 2020, the average life expectancy for men in Poland was 72.6 years, while for women 80.7 years. In comparison to the previous year, life expectancy decreased by 1.5 and 1.1 years respectively. The decline was related to the COVID-19 epidemic. Taking into account 1990, life expectancy increased by 6.4 and 5.5 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 2020. 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 2020.

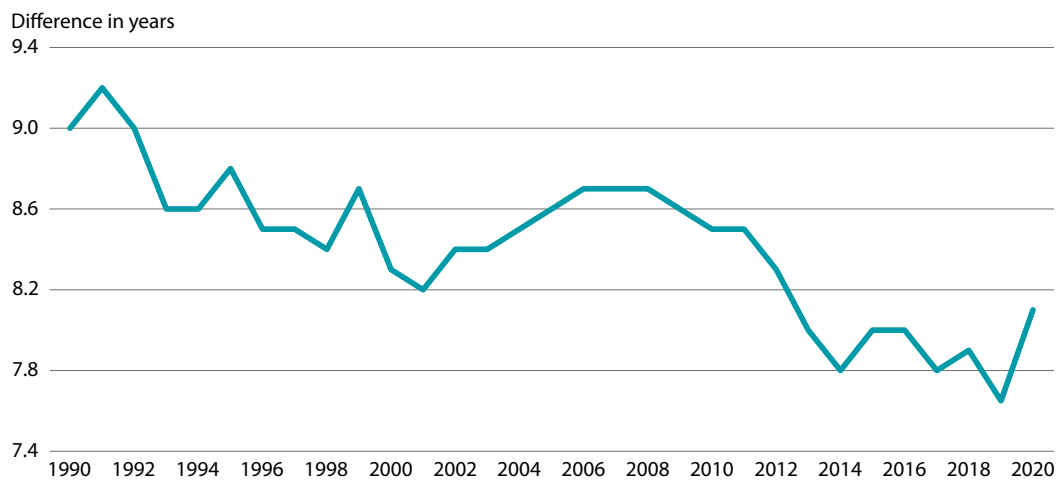
¹ Góral-Radziszewska, K. Waśkiewicz K., Potyra M., Kuczyńska K. [2020], Healthy Life Years in Poland in 2009–2019, „Analizy Statystyczne”, Statistics Poland, Warsaw, <https://stat.gov.pl/en/topics/population/life-expectancy/healthy-life-years-in-poland-in-20092019,3,1.html>

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 2020 it amounted to 8.1 years (Chart 1).

Chart 1. Difference in life expectancy between males and females 1990–2020



Higher mortality among men compared to women is observed in almost all age groups. In 2020, the age of 18 would not be reached by 0.7% of men (in 1990 – 3.0%) and 0.5% of women (in 1990 – 2.2%). The difference between men and women increases with age. 5.2% of men and 1.9% 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 49.9% of men and 25.8% of women (63.9% and 37.5% in 1990).

In 2020, the life expectancy of 15-year-olds was 58 years for males and 66.1 for females (in 1990 it was 4.9 years more for males and 4.3 years for females). Life expectancy of the 45-year-olds was 29.9 years for men and 36.8 for women, which in comparison to 1990 means an increase in the life expectancy by 3.8 years for both males and females.

Table 1. Life expectancy by age in Poland 1960–2020²

Age	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 1960–2020 (cont.)

Age	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

The value of e_0 for a male newborn is 72.6 years (Table 1). This means that if during the life of a man born in 2020 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 2020 – the average life expectancy for a man at the age of 30 is 43.6 years, i.e. on average he would live to 73.6 years – thus more than a boy born in 2020. The chances of reaching the next birthday increase with age. For a man aged 60, the average life expectancy is 17.9 years, so on average he would live to 77.9 years.

In 2020, the life expectancy for males living in urban areas was 72.9 years, which is a 0.8 year longer than for males in rural areas. Females in urban areas live on average 80.8 years which is 0.2 year longer than in rural areas. Nowadays females in urban areas live 7.9 years longer than males (in 1991 it was almost 9; in 2001 – 7.8) while in rural areas the difference is 8.5 years (in 1991 – 9.7; in 2001 – 8.8).

The mortality in Poland was very high directly after the Second World War. In 1950 the life expectancy for male was slightly above 56 years, while for female it was almost 62 years. In the 1950s Poland experienced

a sharp drop in mortality rates and consequently a significant growth of life expectancy. This positive tendency continued also in the next decade although the progress was much slower. Over a period of next 20 years (during the 1970s and 1980s) the life expectancy for men hardly changed – even some drops were recorded periodically – while life expectancy for women increased by only 2 years.

The 1990s brought a change of this negative tendency. Between 1991 and 2019 life expectancy increased by 8.2 years for males and by 6.7 years for females (Chart 2). Such a significant growth was achieved thanks to the crucial progress in lowering the mortality both for men and women and particularly by strengthening the tendency of decreasing infant mortality.

In 2019, males in Poland lived on average 18 years longer than in the middle of the last century, while women lived 20 years longer.

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

As the result of the COVID-19 epidemic and increased number of deaths related to it, life expectancy in 2020, compared to 2019, was reduced by 1.5 years for men and by 1.1 years for women.

Chart 2. Life expectancy at birth in Poland 1960–2020

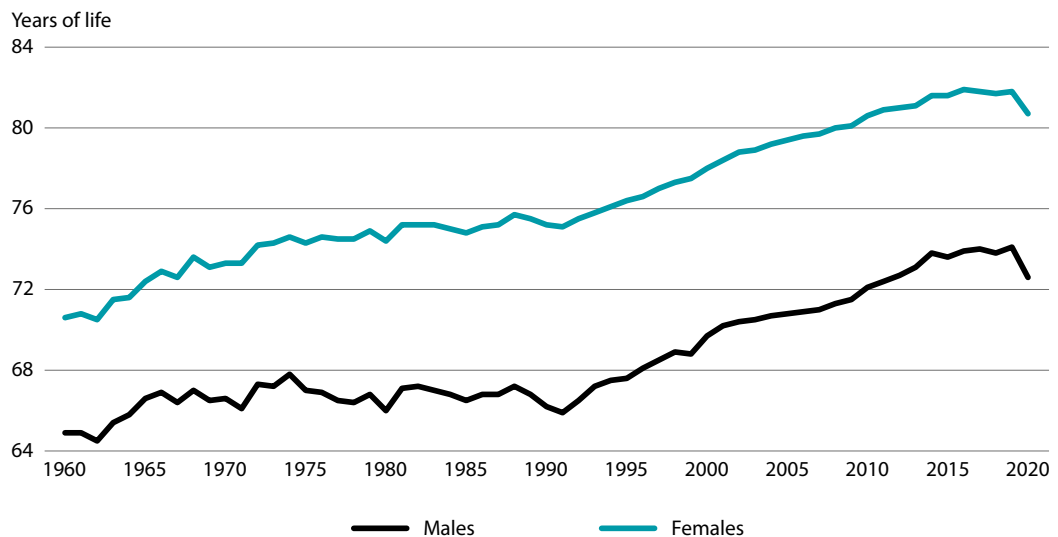
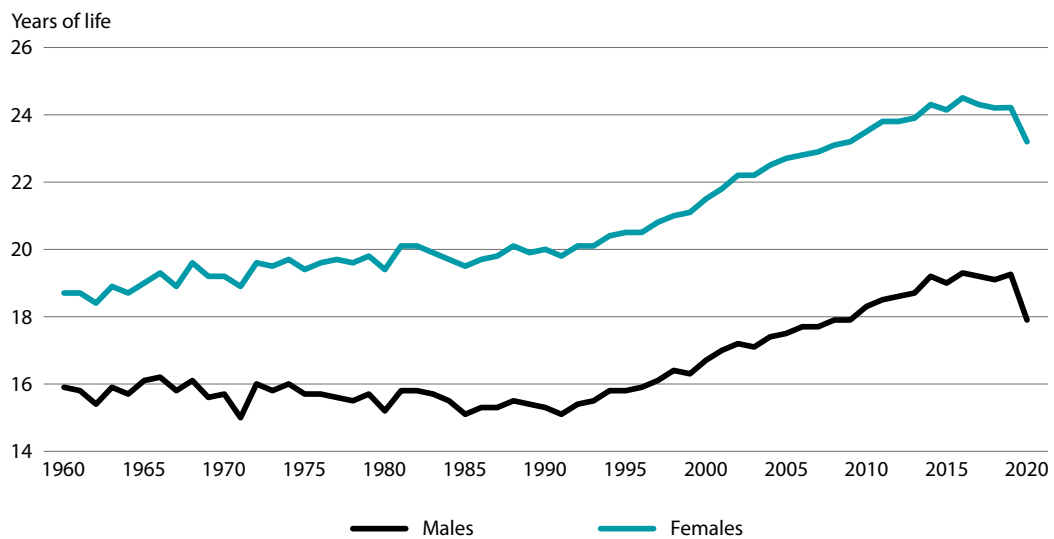


Chart 3. Life expectancy at age 60 in Poland 1960–2020



Chapter 3.

Spatial diversity of life expectancy

3.1. Macroregions

In 2020 the longest life expectancy for males was recorded in the Eastern and Southern macroregions (respectively 73 and 72.9 years). Among females, the highest was in Eastern macroregion – 81.6 years (Table 2, Map 1). The Central macroregion is characterized by the shortest life expectancy for men (71.4 years) and women (80 years).

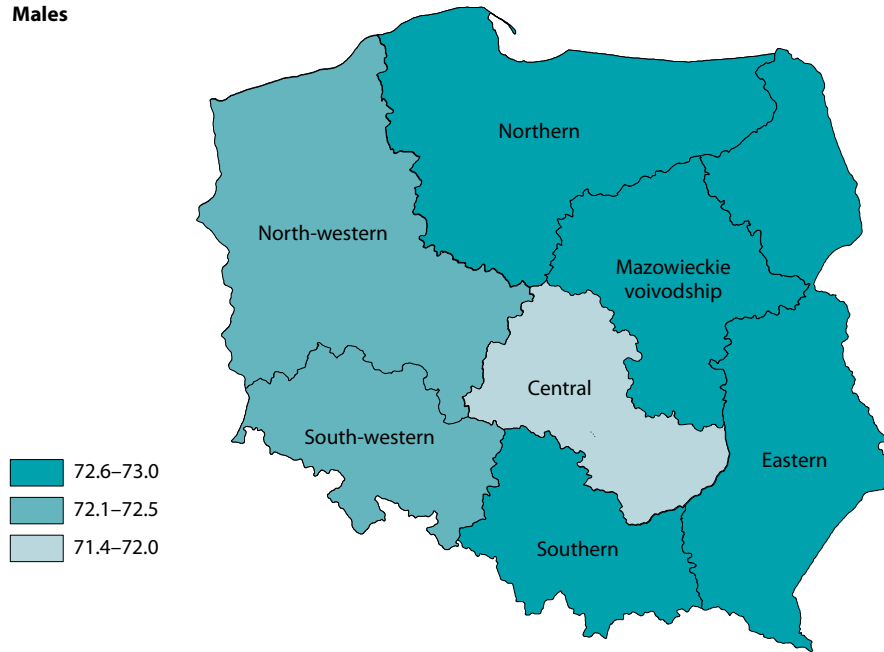
In urban areas men live on average longer than in rural areas. In Mazowieckie voivodeship macroregion this difference is the biggest – 2.2 years. The only macroregion in which life expectancy for men is longer in rural areas (by 0.4 year) is the Southern macroregion. In Southern and Central macroregions women from urban areas live shorter than rural areas dwellers (by 0.6 and 0.4 years). In the others macroregions the life expectancy is longer for women in urban areas (by 0.3 to 0.9 years).

Table 2. Life expectancy in Poland by macroregions in 2020

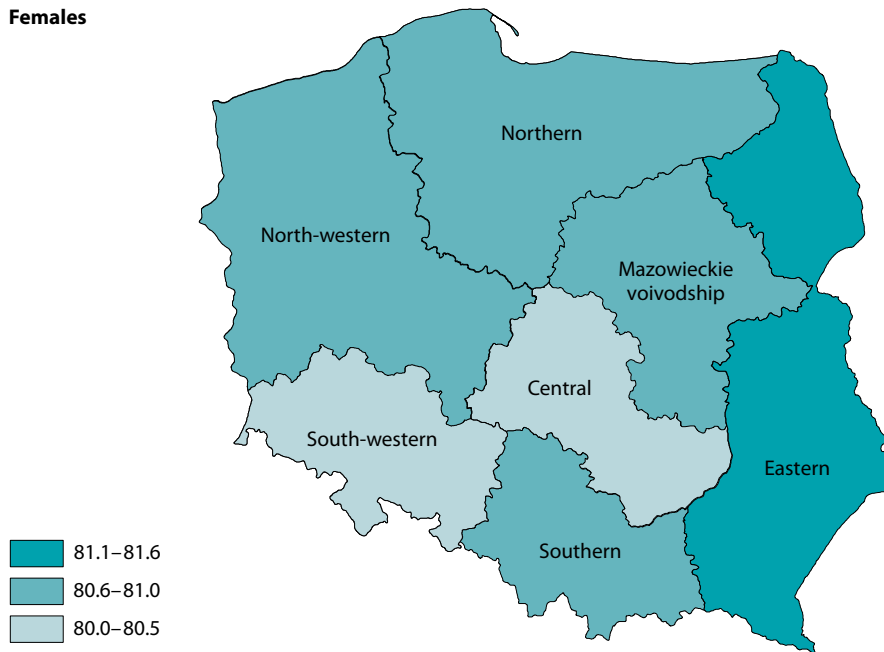
	Males					Females				
	By age									
	0	15	30	45	60	0	15	30	45	60
Total	72,6	58,0	43,6	29,9	17,9	80,7	66,1	51,3	36,8	23,2
Southern	72,9	58,3	43,9	30,0	18,1	80,6	65,9	51,2	36,6	23,1
North-western	72,5	57,9	43,5	29,7	17,7	80,5	65,8	51,0	36,5	23,0
South-western	72,4	57,8	43,4	29,6	17,6	80,7	66,0	51,2	36,7	23,2
Northern	72,7	58,1	43,8	30,0	18,0	80,7	66,1	51,3	36,8	23,2
Central	71,4	56,7	42,4	29,0	17,4	80,0	65,4	50,6	36,2	22,8
Eastern	73,0	58,4	44,0	30,2	18,2	81,6	67,0	52,2	37,6	23,9
Mazowieckie voivod.	72,8	58,1	43,8	30,0	18,2	80,9	66,2	51,4	36,9	23,4
Urban areas	72,9	58,3	43,9	30,2	18,2	80,8	66,1	51,4	36,8	23,4
Southern	72,8	58,2	43,8	30,0	18,1	80,4	65,7	51,0	36,5	23,1
North-western	72,9	58,2	43,8	30,0	18,0	80,7	66,0	51,2	36,7	23,2
South-western	72,5	58,0	43,6	29,9	18,0	81,0	66,3	51,5	37,0	23,5
Northern	73,0	58,4	44,0	30,2	18,2	80,9	66,3	51,5	36,9	23,5
Central	71,6	57,0	42,6	29,2	17,6	79,9	65,2	50,4	36,1	22,8
Eastern	73,8	59,2	44,8	31,0	18,8	81,7	67,1	52,4	37,8	24,1
Mazowieckie voivod.	73,6	58,9	44,5	30,7	18,8	81,1	66,4	51,6	37,1	23,6
Rural areas	72,1	57,5	43,1	29,4	17,4	80,6	66,0	51,2	36,6	23,0
Southern	73,2	58,5	44,0	30,1	18,0	81,0	66,4	51,6	36,9	23,2
North-western	71,8	57,3	42,9	29,2	17,1	80,1	65,4	50,6	36,0	22,5
South-western	71,9	57,3	42,9	29,1	16,9	80,1	65,4	50,6	36,1	22,6
Northern	72,2	57,6	43,3	29,6	17,5	80,3	65,7	50,9	36,3	22,7
Central	71,1	56,4	42,1	28,7	17,1	80,3	65,7	50,9	36,4	22,9
Eastern	72,3	57,6	43,2	29,5	17,7	81,4	66,9	52,1	37,4	23,7
Mazowieckie voivod.	71,4	56,7	42,4	28,8	17,2	80,4	65,8	51,0	36,5	22,9

Map 1. Life expectancy at birth in Poland by macroregions in 2020

Males

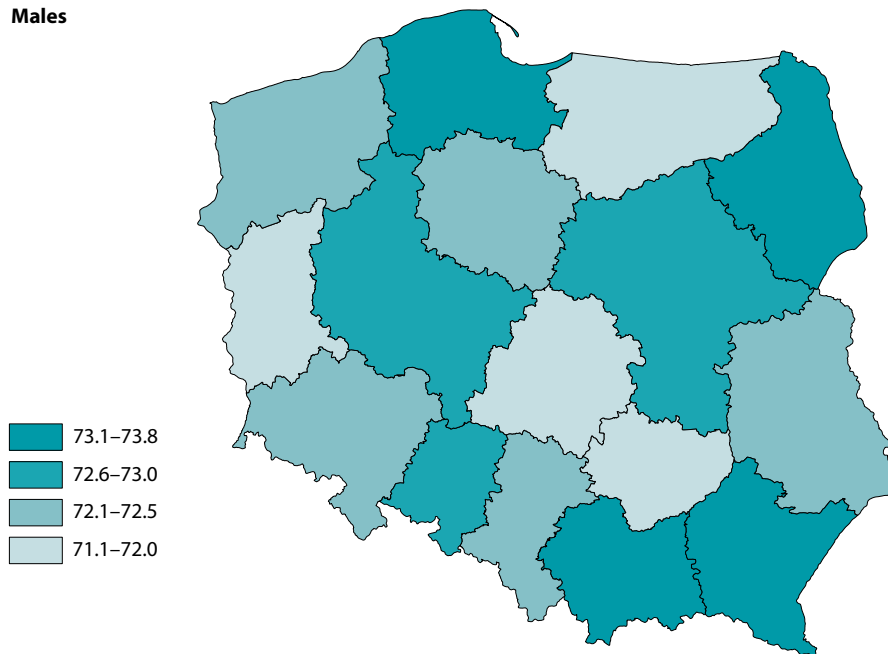


Females

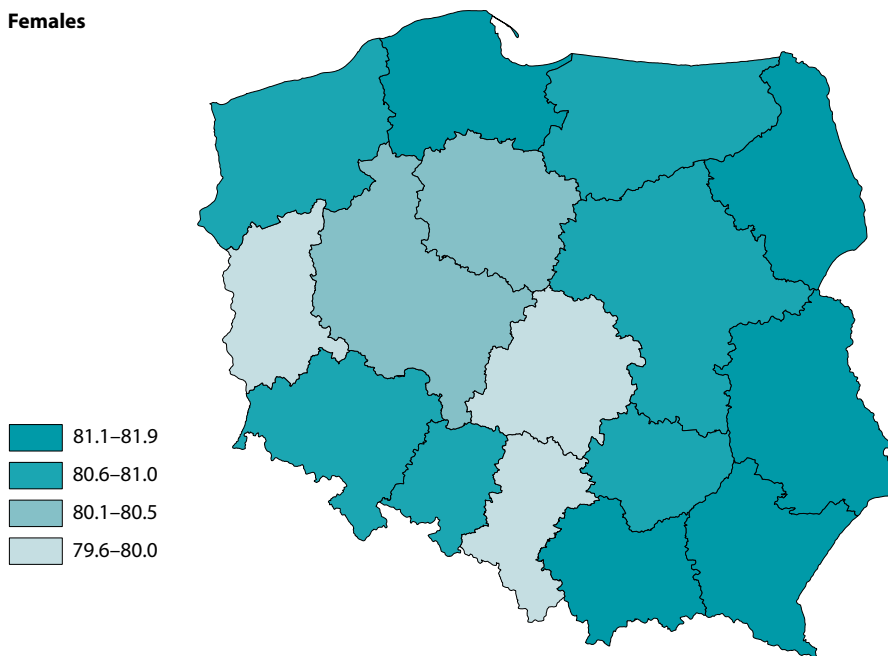


Map 2. Life expectancy at birth in Poland by voivodships in 2020

Males



Females



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, 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 highest decrease was recorded in Świętokrzyskie (1.8 years), and the lowest in Warmińsko-Mazurskie (by one year). For women, the decrease was the highest in Łódzkie and Podkarpackie (1.4 years), and the lowest in Kujawsko-Pomorskie, Pomorskie and Zachodniopomorskie (0.6 years).

In Poland there is a high diversity of life expectancy between voivodships. In 2020 the span between the highest and the lowest parameters for males among 16 voivodships was 2.7 years. The shortest life expectancy was observed among men living in the Łódzkie (71.1 years) and the longest was in the Małopolskie and Podkarpackie (73.8 and 73.7 years). Among females the diversity is smaller and amounts to 2.3 years. Generally, it can be stated, that in all voivodships in eastern and south-eastern Poland, life expectancy for women is higher than the national one (Map 2). Women in the Łódzkie have the shortest life expectancy – 79.6 years. On the other hand, Podlaskie and Podkarpackie have the longest life expectancy for women – 81.9 and 81.8 years respectively.

Higher mortality among men compared to women is clearly visible in all voivodships. In 2020, the disproportion between the average life expectancy of men and women was the highest in Świętokrzyskie (8.8 years), the lowest in Pomorskie and Śląskie (7.7 years).

Table 3. Life expectancy at birth by voivodships in selected years³

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

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

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

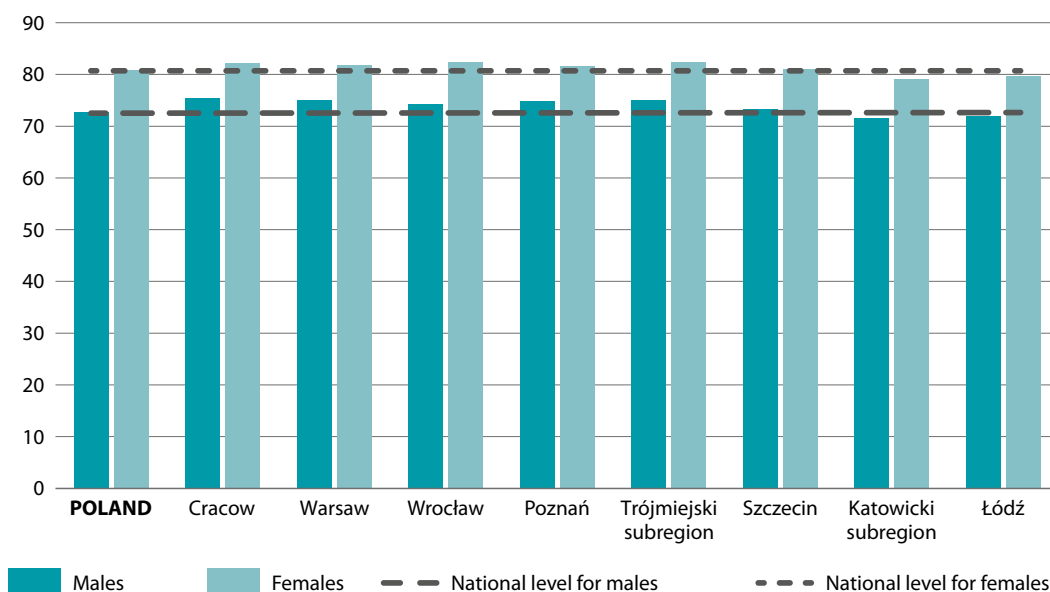
Voivodships	Males							Females						
	1990	2000	2005	2010	2015	2019	2020	1990	2000	2005	2010	2015	2019	2020
Urban areas	66,2	70,0	71,2	72,6	74,0	74,5	72,9	74,9	77,8	79,3	80,6	81,5	81,7	80,8
Dolnośląskie	65,9	69,2	70,7	72,1	73,4	73,7	72,3	74,5	77,5	79,1	80,2	81,1	81,4	80,9
Kujawsko-pomorskie	65,9	70,0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

3.3. Subregions

In 2020, the range between the extreme values of life expectancy in Polish subregions was 5.4 years for men and 3.5 years for women. Men lived the shortest in Piotrowski subregion (70 years), and the longest in the subregion of the city of Cracow (75.4 years). Women, on the other hand, lived the shortest in the Katowice subregion (79.1 years), and the longest in the Białostocki (82.6 years).

Among the subregions, the subregions formed by the largest cities in the country, with 6.3 million inhabitants (i.e. 16.3% 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. Among them, in as many as six subregions, both men and women lived longer than at the national level. Last year, the longest life expectancy among women was recorded in Wrocław (82.3 years), and the longest among men in Cracow (75.4 years). The largest difference between the life expectancy of men and women was observed in Wrocław (8.1 years). Compared to other large cities, the Katowice subregion looks very unfavorable, where the life expectancy of men is lower than the national level by 1.2 years, and that of women by 1.6 years (Chart 4).

Chart 4. Life expectancy at birth in 2020 in selected subregions



Chapter 4.

International comparison

This chapter presents the results of comparative analyzes of life expectancy in selected European countries in 2019.

In terms of life expectancy for men, Poland (74.1 years) was only 29th out of 36 countries included in Eurostat data, ahead of Montenegro, Serbia, Hungary, Romania, Bulgaria, Lithuania and Latvia. In case of women, Poland (81.9 years) was slightly higher in this ranking, i.e. on the 24th place, because apart from the above-mentioned countries, the average life expectancy was longer than in Turkey, Croatia, Slovakia, Albania and North Macedonia (Table 4).

In Europe, there was a large diversity in life expectancy (Map 3). The longest life expectancy for men was recorded in Liechtenstein – 82.6 years, and the shortest in Latvia – 70.9 years. Among women, the longest life expectancy was recorded in Spain – 86.7 years, and the shortest in Serbia and North Macedonia – 78.6 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 (9.6 years), Latvia (9.2 years), Estonia (8.5 years) and Poland (7.8 years), and with the smallest were: Iceland (3.0 years), Albania (3.1 years) and the Netherlands (3.1 years).

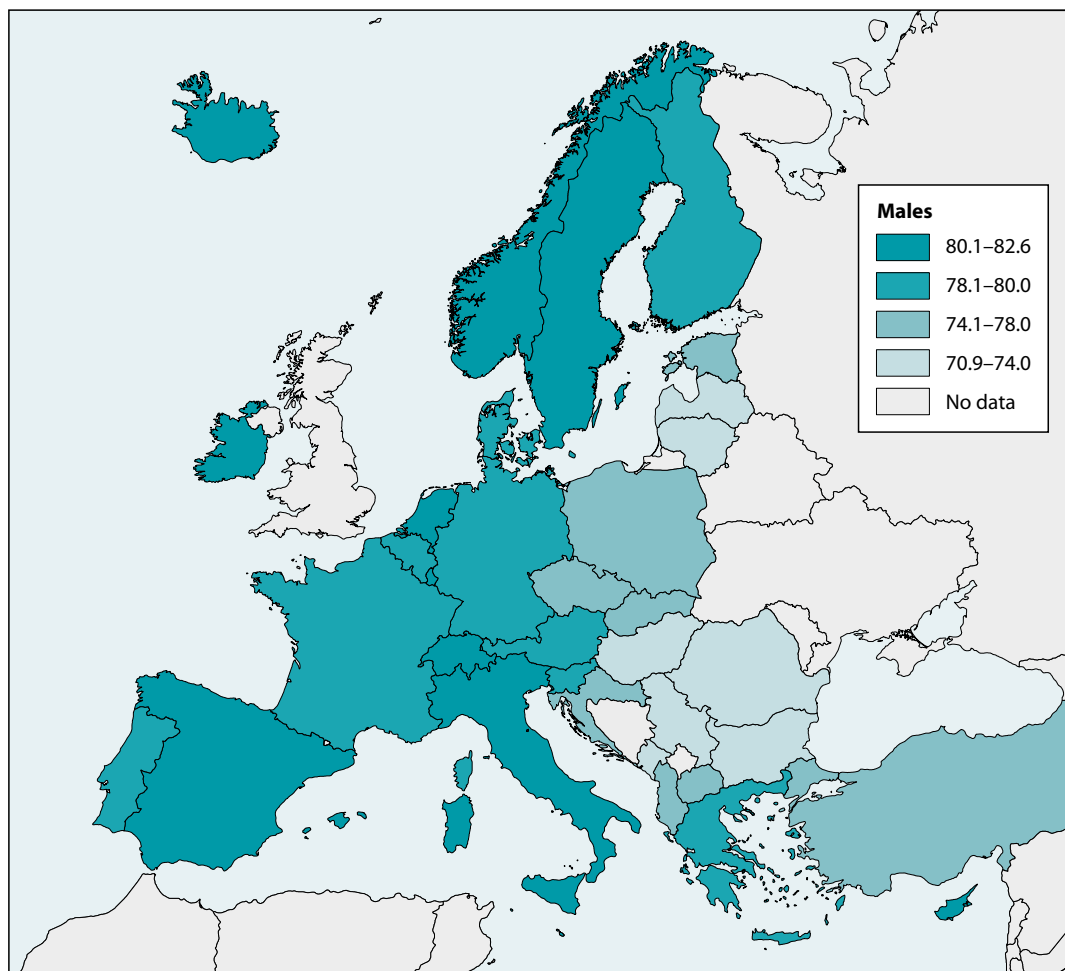
Table 4. Average life expectancy of a newborn in selected European countries in 2019

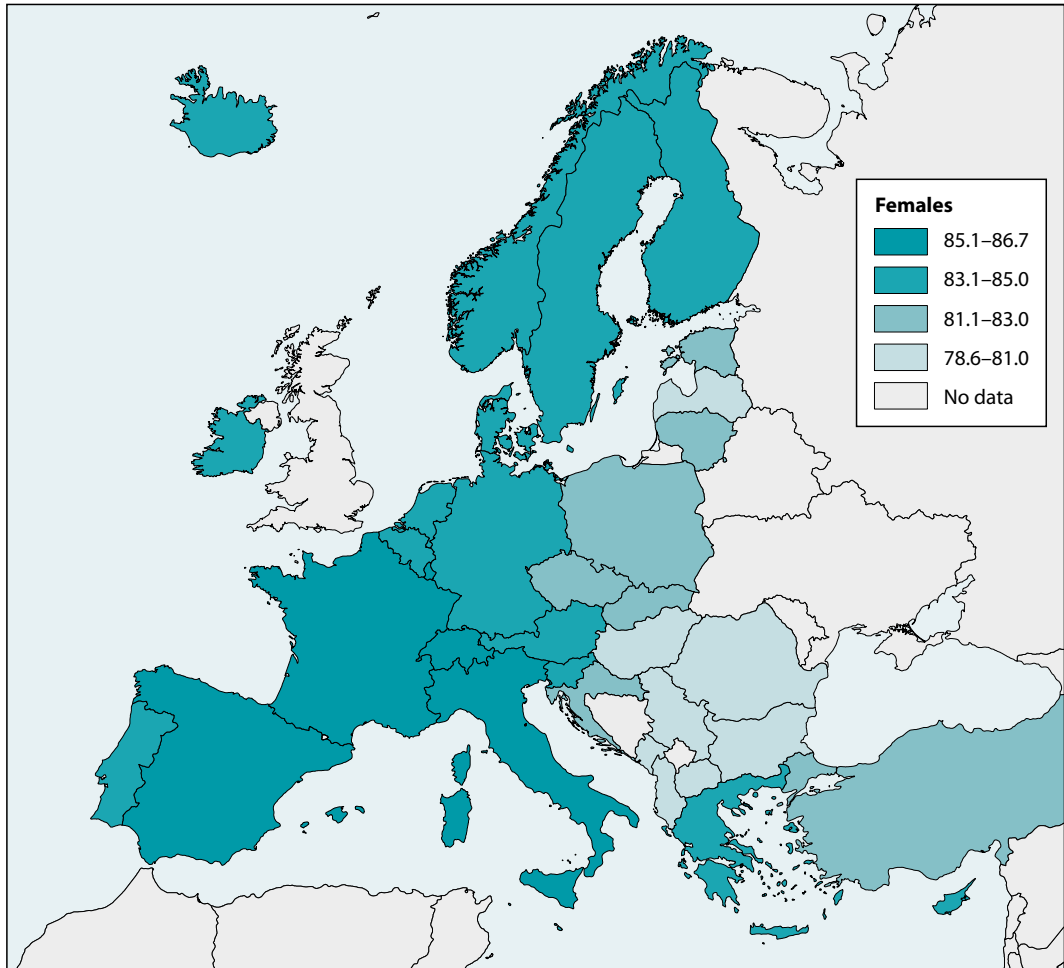
Country	Males	Females	Difference
Albania	77,6	80,7	3,1
Austria	79,7	84,2	4,5
Belgium	79,8	84,3	4,5
Bulgaria	71,6	78,8	7,2
Croatia	75,5	81,6	6,1
Cyprus	80,3	84,4	4,1
Montenegro	74,0	79,5	5,5
Czechia	76,4	82,2	5,8
Denmark	79,5	83,5	4,0
Estonia	74,5	83,0	8,5
Finland	79,3	84,8	5,5
France	79,9	85,9	6,0
Greece	79,2	84,2	5,0
Spain	81,1	86,7	5,6
Netherlands	80,6	83,7	3,1
Ireland	80,8	84,7	3,9
Iceland	81,7	84,7	3,0
Lichtenstein	82,6	85,8	3,2
Lithuania	71,6	81,2	9,6
Luxemburg	80,2	85,2	5,0
Latvia	70,9	80,1	9,2
North Macedonia	74,7	78,6	3,9
Malta	81,2	84,6	3,4

Table 4. Average life expectancy of a newborn in selected European countries in 2019 (cont.)

Country	Males	Females	Difference
Germany	79,0	83,7	4,7
Norway	81,3	84,7	3,4
Poland	74,1	81,9	7,8
Portugal	78,7	84,8	6,1
Romania	71,9	79,5	7,6
Serbia	73,4	78,6	5,2
Slovakia	74,3	81,2	6,9
Slovenia	78,7	84,5	5,8
Switzerland	82,1	85,8	3,7
Sweden	81,5	84,8	3,3
Turkey	76,4	81,8	5,4
Hungary	73,1	79,7	6,6
Italy	81,4	85,7	4,3

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

Map 3. Life expectancy at birth in European countries in 2019



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

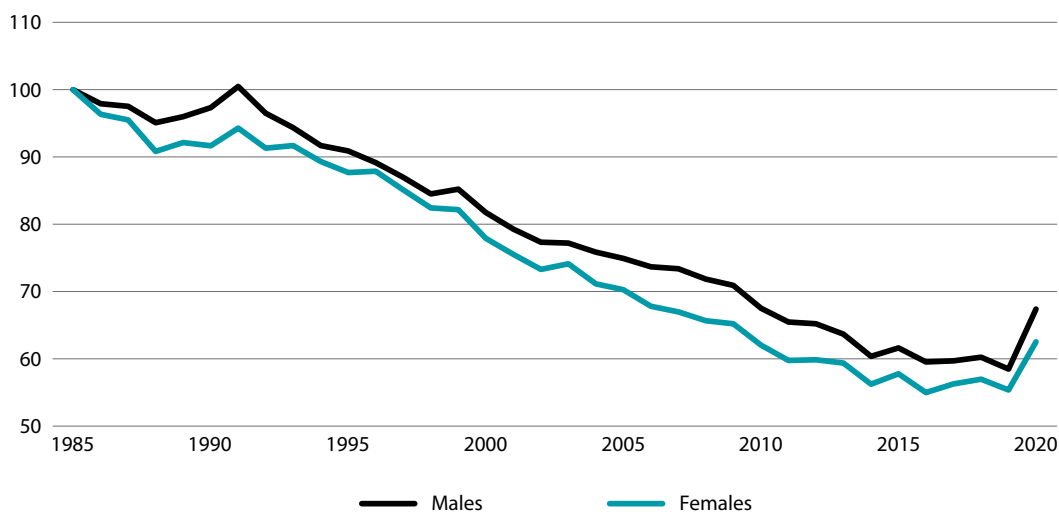
Chapter 5.

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.

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. Standardized death rates for males and females 1985–2020 (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.

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

5.1. Mortality by age and selected groups of death causes 1985–2019

In Poland the main causes of deaths are cardiovascular diseases, neoplasms and respiratory diseases (Table 6). In 2019, they were responsible for almost 73% 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	105,0	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
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

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
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
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

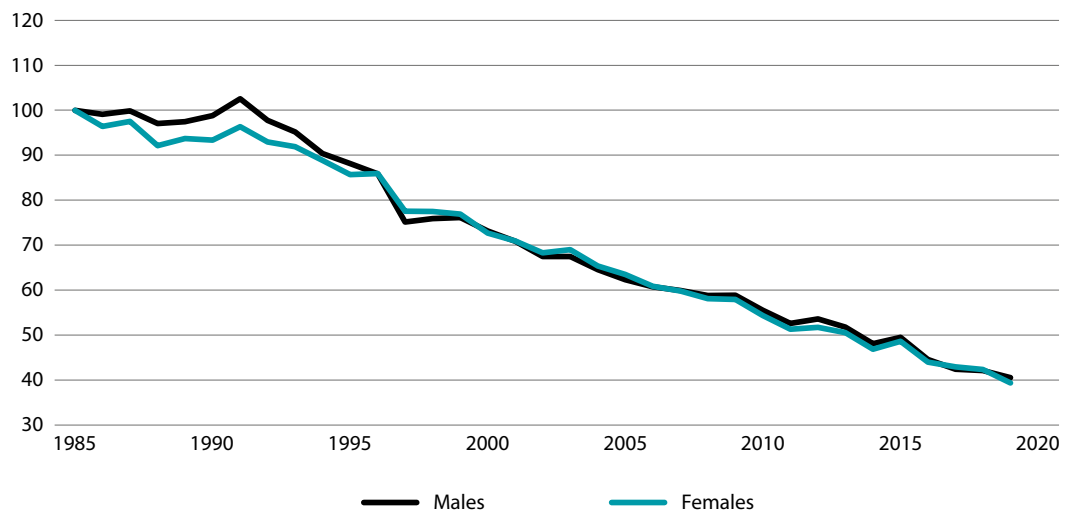
The primary cause of death in Poland are cardiovascular diseases, almost 40% of deaths are due to these diseases. Since 1992 the share of these diseases in total number of deaths has decreased from 52% to the current one (Chart 6). The decrease is mainly due to the reduction of risk factors: reduction 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 therapy⁴.

In 2019, the standardized death rate from cardiovascular disease was 330 per 100,000 persons – about 25% less than in 2000 – yet the frequency of deaths as a result of these diseases is still very high

The cardiovascular disease mortality rate among men aged less than 45 is more than 3.7 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 20 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.

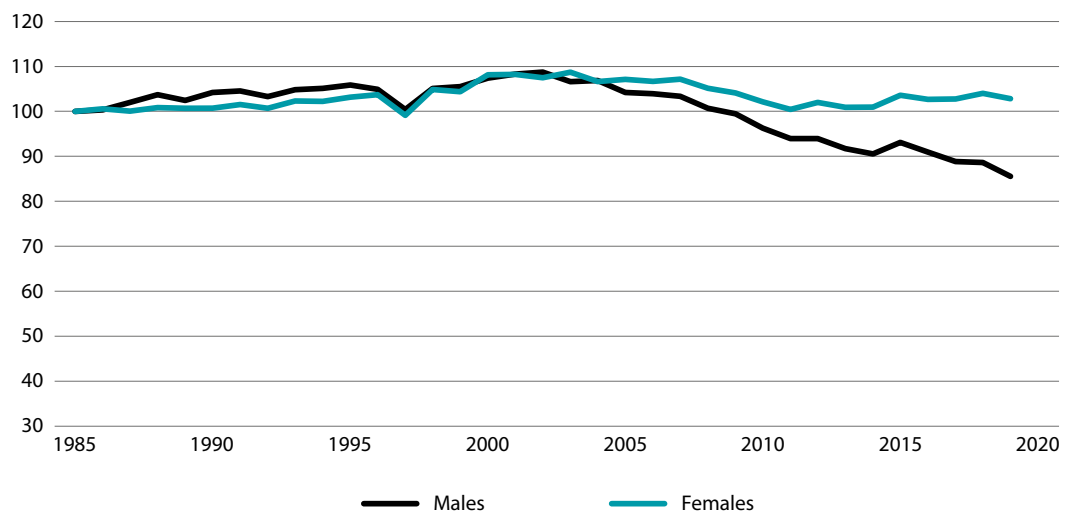
4 *Bandosz P. et al. (2015) IMPACT-PI Research*

Chart 6. Standardized death rates due to cardiovascular diseases for males and females 1985–2019 (1985 year = 100)



The second highest cause of deaths are neoplasms, causing – 26.5% of all deaths in 2019. 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. Standardized death rates due to neoplasms for males and females 1985–2019 (1985 year = 100)



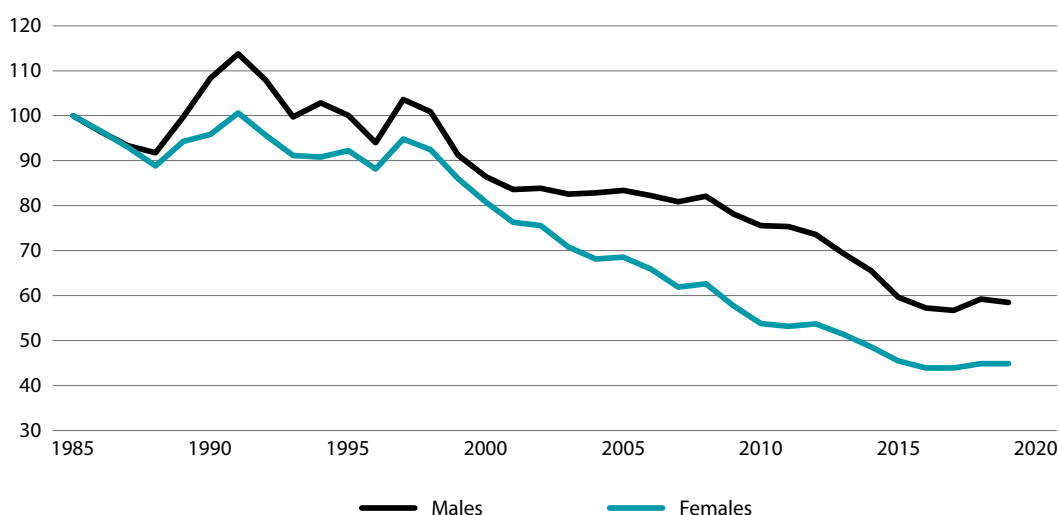
A rapid decline in neoplasm mortality observed from 1991 till 1997 among men aged 45-59 decelerated in the following years. Since 2002 a decline of frequency of neoplasms mortality can be observed again. In case of women, the cancer death rate has remained fairly stable for almost twenty five years. 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 2019, standardized death rate from neoplasms was 1272 per 100 thousand males. Among women over 60, the level of deaths caused by neoplasms has increased by 26 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 3.7 times.

Deaths due to external reasons (mainly accidents and injuries) make up 4.9% of all deaths. A positive tendency of decreasing the mortality from these causes slowed down slightly in 2018 (Chart 8). In 2019 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.

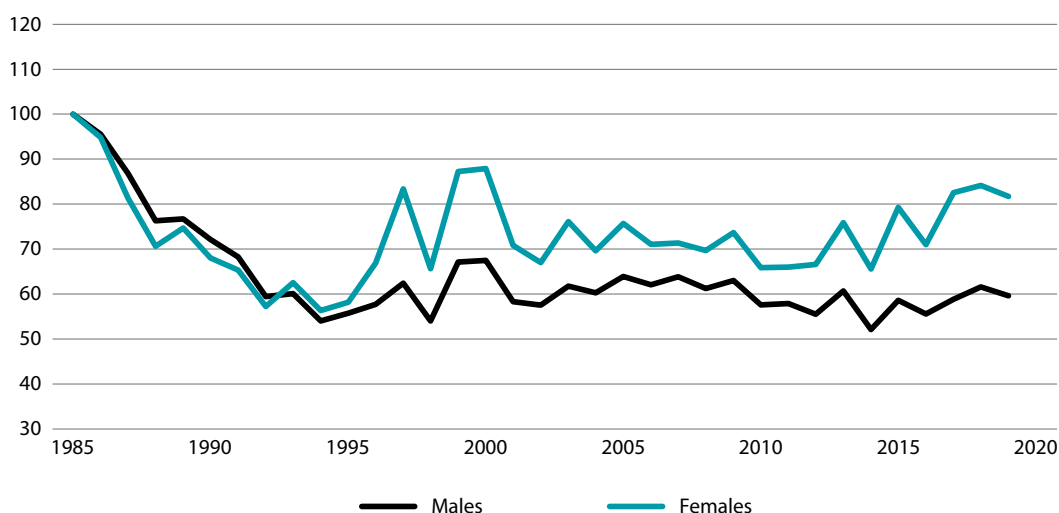
External causes are the most frequent reasons of death among young men aged below 45 (Table 6). In fact, in 2019 it comprised almost 40% of all deaths among males at this age. The death rate among men aged 0–44 is above five times higher than among women. Similarly in age group 45–59 (above six time 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 5.3% for males and 2% for females.

Chart 8. Standardized death rates due to external causes for males and females 1985–2019 (1985 year = 100)



In Poland, in 2019, respiratory diseases were responsible for 6.6% of all deaths. 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).

Chart 9. Standardized death rates due to diseases of the respiratory system for males and females 1985–2019 (1985 year = 100)

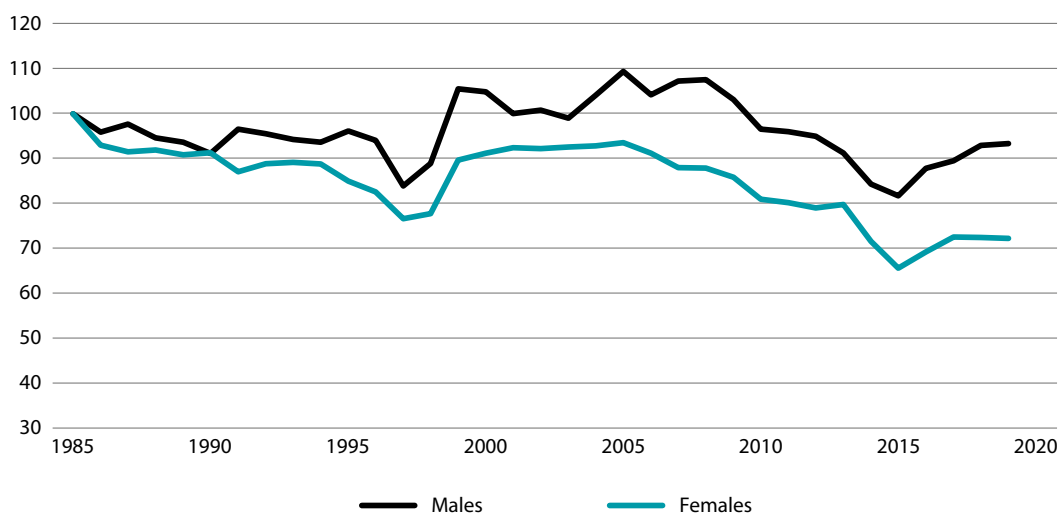


In Poland, in 2019, respiratory diseases were responsible for 6.6% of all deaths. After the decline in mortality due to these diseases for several years, the death rate has remained at a similar level since 2015 (Chart 9).

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 13 times higher in case of women (Table 6).

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 2019 this rate was 40. 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. Standardized death rates due to digestive system for males and females 1985–2019 (1985 year = 100)



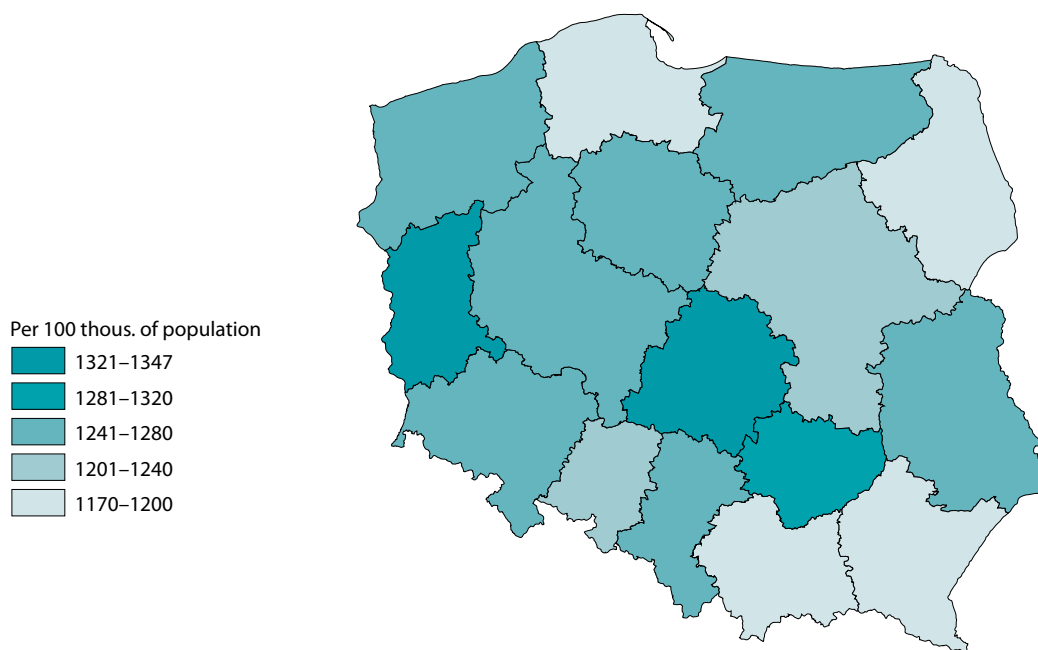
5.2. Mortality by voivodships in 2020

In order to analyse mortality at regional level in 2020 the standardized death rates for individual voivodships have been counted. For calculation of such death rates a nationwide population structure (according to age, in 2020) was used.

On the basis of recent results, the highest mortality rate for 2020 was noted in Łódzkie and Lubuskie (Table 7, Map 4) where standardized death rates were 1347 and 1327 per each 100 thousand persons. A rather low death rates – in comparison to other regions of Poland – were observed in Podkarpackie, Małopolskie and Podlaskie (respectively 1170, 1171 and 1173 persons). In 2020, in all voivodships, higher death rates were registered in rural than in urban areas. The largest difference was noted in Pomorskie and Mazowieckie (respectively 218 and 215 more deaths in the rural areas per 100,000 population) and the smallest in Kujawsko-Pomorskie (36 more deaths per 100,000 population).

Table 7. Standardized death rates by voivodships in 2020

Voivodships	Total	Urban Areas	Rural Areas
00 Total	1245	1201	1324
02 Dolnośląskie	1260	1219	1384
04 Kujawsko-pomorskie	1274	1264	1300
06 Lubelskie	1241	1156	1320
08 Lubuskie	1327	1282	1431
10 Łódzkie	1347	1324	1390
12 Małopolskie	1171	1111	1242
14 Mazowieckie	1219	1150	1365
16 Opolskie	1213	1146	1302
18 Podkarpackie	1170	1089	1234
20 Podlaskie	1173	1121	1245
22 Pomorskie	1184	1127	1345
24 Śląskie	1274	1264	1314
26 Świętokrzyskie	1285	1233	1334
28 Warmińsko-mazurskie	1273	1212	1386
30 Wielkopolskie	1267	1213	1353
32 Zachodniopomorskie	1255	1217	1365

Map 4. Standardized death rates by voivodships in 2020

5.3. Mortality by selected groups of death causes and voivodships in 2019

The analysis of mortality by selected groups of causes of death and voivodships is based on the 2019 data. For a calculation of standardized death rates for individual voivodships a nationwide population age structure from 2019 was used.

Distribution of death rates by causes is different between urban and rural areas (Table 8). In 2019 residents of rural areas died more often from cardiovascular diseases. They are also more frequent victims of accidents, injuries and poisonings. However, the mortality caused by cancers and digestive disorders is higher among urban inhabitants.

In 2019, as in previous years, the highest mortality related to cardiovascular diseases was noted in the Świętokrzyskie voivodship (Chart 15), where standardized death rate was 513 for each 100 thousand people. This rate is 54% higher than in Mazowieckie in which the lowest rate was noted (333). Death rates from cardiovascular diseases were higher in rural areas in all voivodships. In Mazowieckie and Pomorskie, that difference was the largest and it amounted to 129 and 119 persons (per 100 thousand).

In 2019 Kujawsko-Pomorskie, Warmińsko-Mazurskie and Wielkopolskie (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 Lubelskie (243 per 100 thousand persons). In most voivodships, frequency of deaths caused by neoplasms was higher in rural areas. The largest difference was observed in Śląskie (36 more deaths in urban areas) and Zachodniopomorskie (29 more deaths in the rural areas).

The highest frequency of deaths caused by external reasons was noted in Łódzkie and Podlaskie Voivodships (Chart 11). Death rate in these areas was respectively 61 and 58 deaths per 100 thousand persons. The voivodship with the lowest death rate due to external causes was Małopolskie, the value of this indicator was 41. In 2019, the rate of deaths caused by accidents and injuries was higher in rural areas in all voivodships. The greatest disproportions were observed in Mazowieckie and Łódzkie in which the rate in rural areas was higher by respectively 28 and 23.

In 2019 the lowest level of mortality related to respiratory diseases was in Świętokrzyskie and Lubelskie (41 deaths each per 100 thousand people). On the other hand highest mortality rate was noted in Warmińsko-Mazurskie (89) and Łódzkie (93) (Chart 11). In most voivodships, frequency of deaths caused by respiratory diseases was higher in rural areas. Maximal difference was observed in Warmińsko-Mazurskie (16 deaths per 100 thousand people more in rural areas).

In 2019, the highest death rates caused by digestive disorders were noted in Łódzkie and Śląskie (61 and 59 deaths per 100 thousand people). The lowest – in Lubelskie and Świętokrzyskie (Chart 11) where 26 per 100 thousand people died from digestive disorders. In all voivodships frequency of deaths related to digestive disorders was similar in urban and rural areas. The biggest differences were noted in Śląskie, where this rate was higher for urban areas by 16 persons.

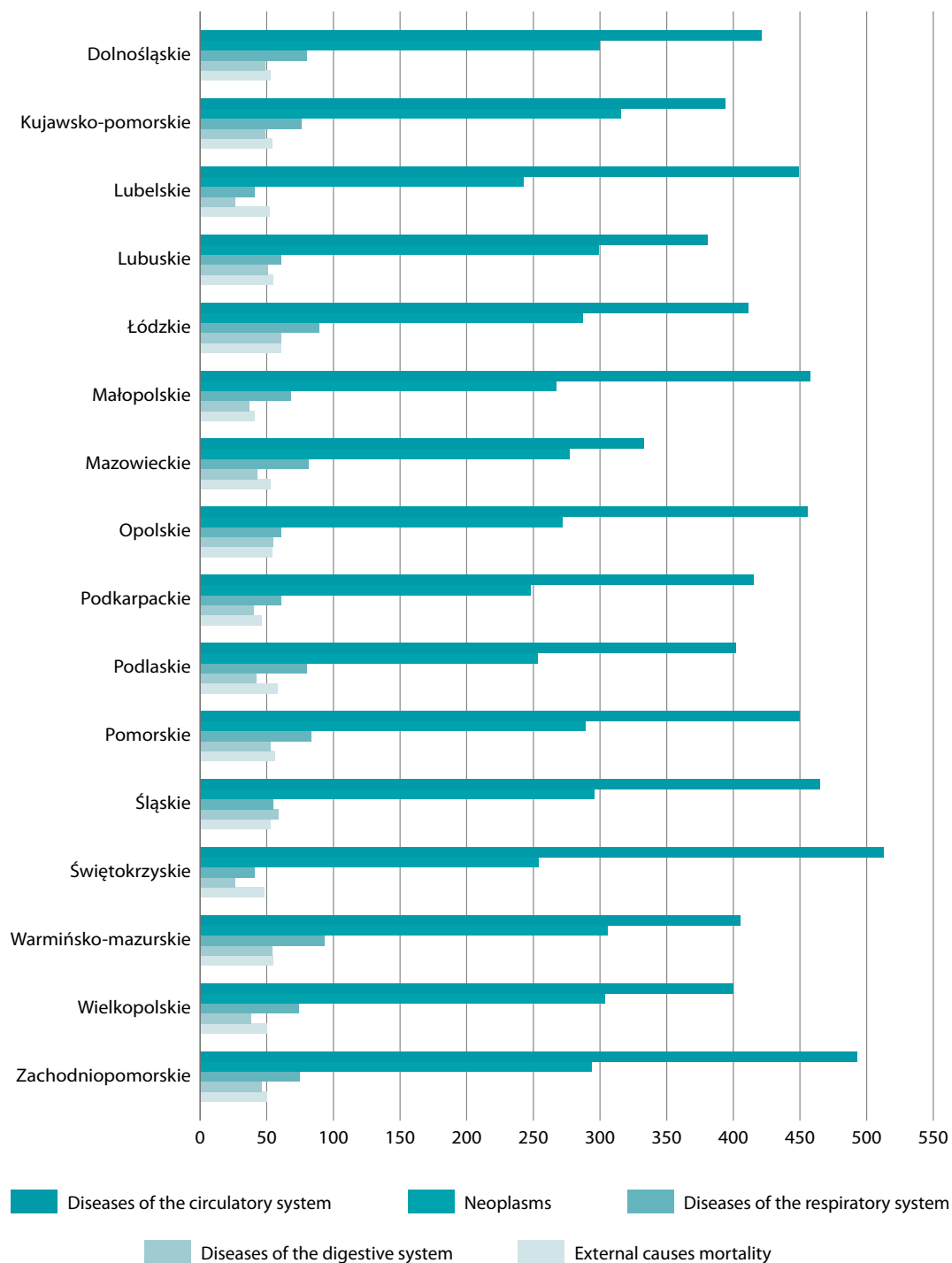
Table 8. Standardized death rates by selected groups of causes and voivodships in 2019

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
00 Total	1067	421	283	52	71	46
02 Dolnośląskie	1095	421	300	53	80	49
04 Kujawsko-pomorskie	1103	394	316	54	76	49
06 Lubelskie	1045	449	243	52	41	26
08 Lubuskie	1161	381	299	55	61	51
10 Łódzkie	1145	411	287	61	89	61
12 Małopolskie	997	458	267	41	68	37
14 Mazowieckie	1037	333	277	53	81	43
16 Opolskie	1027	456	272	54	61	55
18 Podkarpackie	973	415	248	46	61	40
20 Podlaskie	1000	402	253	58	80	42
22 Pomorskie	1039	450	289	56	83	53
24 Śląskie	1102	465	296	53	55	59
26 Świętokrzyskie	1073	513	254	48	41	26
28 Warmińsko-mazurskie	1128	405	306	55	93	54
30 Wielkopolskie	1083	400	304	50	74	38
32 Zachodniopomorskie	1103	493	294	50	75	46
00 Urban areas	1032	392	286	47	71	48
02 Dolnośląskie	1066	407	297	50	79	50
04 Kujawsko-pomorskie	1076	370	318	47	77	53
06 Lubelskie	980	409	248	39	43	26
08 Lubuskie	1106	357	291	50	57	52
10 Łódzkie	1121	376	291	53	90	64
12 Małopolskie	954	434	267	38	64	37
14 Mazowieckie	979	292	274	44	83	43
16 Opolskie	993	432	270	52	62	56
18 Podkarpackie	905	377	247	38	59	40
20 Podlaskie	944	369	260	53	74	39
22 Pomorskie	989	419	285	50	79	52
24 Śląskie	1104	452	304	52	55	62
26 Świętokrzyskie	1002	478	251	39	38	29
28 Warmińsko-mazurskie	1061	373	300	47	87	54
30 Wielkopolskie	1035	370	304	46	72	40
32 Zachodniopomorskie	1062	465	286	48	72	46
00 Rural areas	1130	473	279	60	71	42
02 Dolnośląskie	1185	465	310	61	84	45
04 Kujawsko-pomorskie	1156	438	311	63	75	41
06 Lubelskie	1104	483	240	64	40	26

Table 8. Standardized death rates by selected groups of causes and voivodships in 2019 (cont.)

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
08 Lubuskie	1284	437	314	65	70	49
10 Łódzkie	1188	474	278	76	88	54
12 Małopolskie	1047	486	268	44	74	37
14 Mazowieckie	1160	421	282	72	77	44
16 Opolskie	1070	487	275	56	60	54
18 Podkarpackie	1025	443	250	53	63	41
20 Podlaskie	1081	444	244	67	88	47
22 Pomorskie	1173	538	298	67	94	56
24 Śląskie	1096	515	268	57	55	46
26 Świętokrzyskie	1137	546	257	57	43	24
28 Warmińsko-mazurskie	1247	462	316	68	103	54
30 Wielkopolskie	1160	449	304	55	77	37
32 Zachodniopomorskie	1227	574	315	55	84	46

Chart 11. Standardized death rates by selected groups of causes in 2019



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 COVID-19 epidemic has caused its sudden large decline, and its effects can be felt for many years. It is not known when it will end and how quickly life expectancy rates will return to pre-epidemic levels

Currently, there are also other phenomena that can potentially contribute to the inhibition of the increase of life expectancy in Poland. In particular, the organizational and staffing problems of the health service should be mentioned, which are reflected, among other problems, in a reduction in the number of beds in hospitals per 10 thousand people. There is also a marked increase in the number of obese people in Poland (in 2004 the share of overweight men was 19.8% and obese 2.6%. In 2014 – 44.1% and 18.1%, respectively). Air pollution leading to possible increase in the incidence of respiratory diseases may also be an important factor.

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

Chapter 7.

List of publication containing Polish complete and abridged 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. Zasepa), „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. Aleksyńska), „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. Aleksyńska 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
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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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11. Statistics Poland [1986]; Trwanie życia i umieralność według przyczyn w 1985 r., (*Life expectancy tables and mortality by causes in 1985*), (ed. L. Nowak), „Opracowania Statystyczne”, Warsaw
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
19. Statistics Poland [1992]; Trwanie życia i umieralność według przyczyn w 1991 r., (*Life expectancy tables and mortality by causes in 1991*), (ed. L. Nowak), „Materiały i Opracowania Statystyczne”, Warsaw
20. Statistics Poland [1993]; Trwanie życia i umieralność według przyczyn w 1992 r., (*Life expectancy tables and mortality by causes in 1992*), (ed. A. Glazer, L. Bolesławski), „Informacje i Opracowania Statystyczne”, Warsaw
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23. Bolesławski L. [1996]; Trwanie życia i umieralność według przyczyn w 1995 r., (*Life expectancy tables and mortality by causes in 1995*), „Studia i Analizy Statystyczne”, Statistics Poland, Warsaw
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Life expectancy tables

1. Bolesławski L. [1998]; Trwanie życia w 1997 r., (*Life expectancy tables of Poland 1997*), „Informacje i Opracowania Statystyczne”, Statistics Poland, Warsaw
2. Bolesławski L. [1999]; Trwanie życia w 1998 r., (*Life expectancy tables of Poland 1998*), „Informacje i Opracowania Statystyczne”, Statistics Poland, Warsaw
3. Bolesławski L. [2000]; Trwanie życia w 1999 r., (*Life expectancy tables of Poland 1999*), „Informacje i Opracowania Statystyczne”, Statistics Poland, Warsaw
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Chapter 8.

Methodological notes

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

The following data is used to build complete life tables:

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

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

$$m_x = \frac{D_x}{E_x} \quad (1)$$

where:

D_x – numer of deaths at age x ,

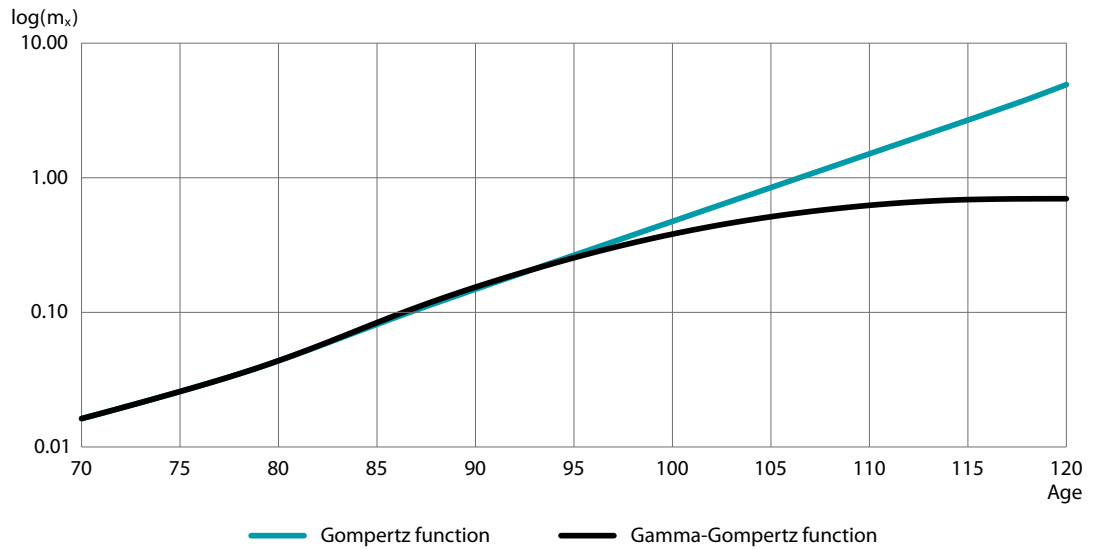
E_x – population on 30th June at age x .

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

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

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

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



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

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

where:

b – parameter defining the rate of increase of mortality,

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

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

The model parameters (b, Γ, M) are estimated using the maximum likelihood⁵ 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 2020. The use of a moving average allowed to smooth out the m_x 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.

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

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

where:

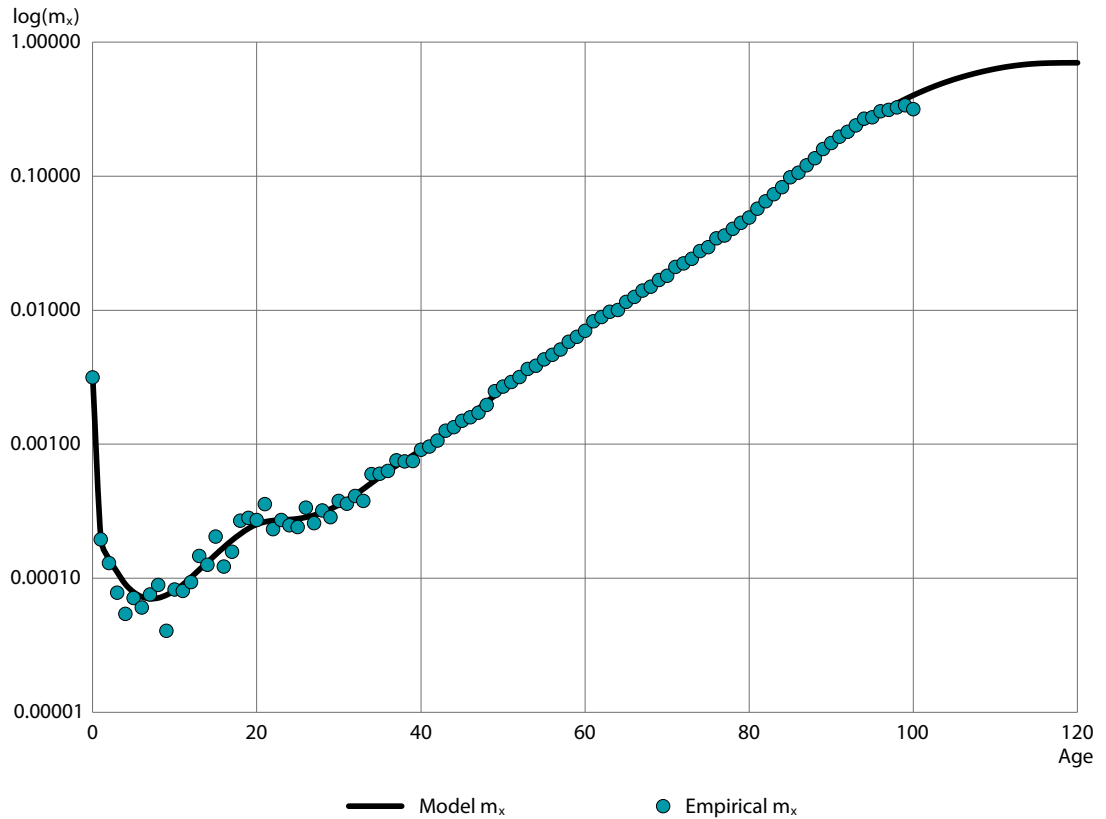
\propto – mathematical symbol meaning "is proportional to",

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 2020 (logarithmic scale)



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

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

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

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

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

$$d_x = l_x q_x \quad (5)$$

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

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

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

$$T_x = \sum_{i=x}^{120} L_i \quad (7)$$

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

$$e_x = \frac{T_x}{l_x} \quad (8)$$

The above formulas (4-8) are presented together with exemplary results in Table 9.

Table 9. Life table for males in 2020

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	0,00389	100000	389 $l_0 \times q_0$	99650 $l_1 + 0,1 \times d_0$	7260673 sum L_0 do L_{120}	72,61 T_0/l_0
1	0,00028	99611 $l_0 \times (1 - q_0)$	28 $l_1 \times q_1$	99597 $(l_1 + l_2)/2$	7161024 sum L_1 do L_{120}	71,89 T_1/l_1
2	0,00019	99583 $l_1 \times (1 - q_1)$	18 $l_2 \times q_2$	99574 $(l_2 + l_3)/2$	7061427 sum L_2 do L_{120}	70,91 T_2/l_2
3	0,00015	99565 $l_2 \times (1 - q_2)$	15 $l_3 \times q_3$	99558 $(l_3 + l_4)/2$	6961853 sum L_3 do L_{120}	69,92 T_3/l_3
...

The new model aims to simplify the procedure of calculating the life expectancy, as well as to achieve greater compliance with the methods described in the literature on the subject and used by other institutions. For 2020, calculations were performed using both procedures (the previous and the current one). The results for the ages up to 95 obtained using the proposed methodology do not differ by more than a month.

Life expectancy table for both sexes combined

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

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

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

Duration of life on lower territorial levels

To calculate life expectancy at the regional level, the methodology using TOPALS [9] (tools for projecting age-specific rates using linear splines) was used. It enables life expectancy to be calculated for small areas where significant year-to-year fluctuations in death rates and zero deaths (in some ages, mostly younger ones) occur (Chart 13). To ensure comparability of results, the TOPALS model is used at all administrative levels. The starting point in TOPALS is the model distribution of the death rates calculated at the national level, the so-called $m_{x_standard}$. Differences between the empirical death rates at a given administrative level and the pattern are modeled. For their modeling spline regression is used:

$$\hat{m}_x = m_{x_standard} + B \times v, \quad (9)$$

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]:

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

where:

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

n – number of knots (w modelu Statistics Poland $n=9$),

i – order of knot $i \in \{1, 2, \dots, 9\}$,

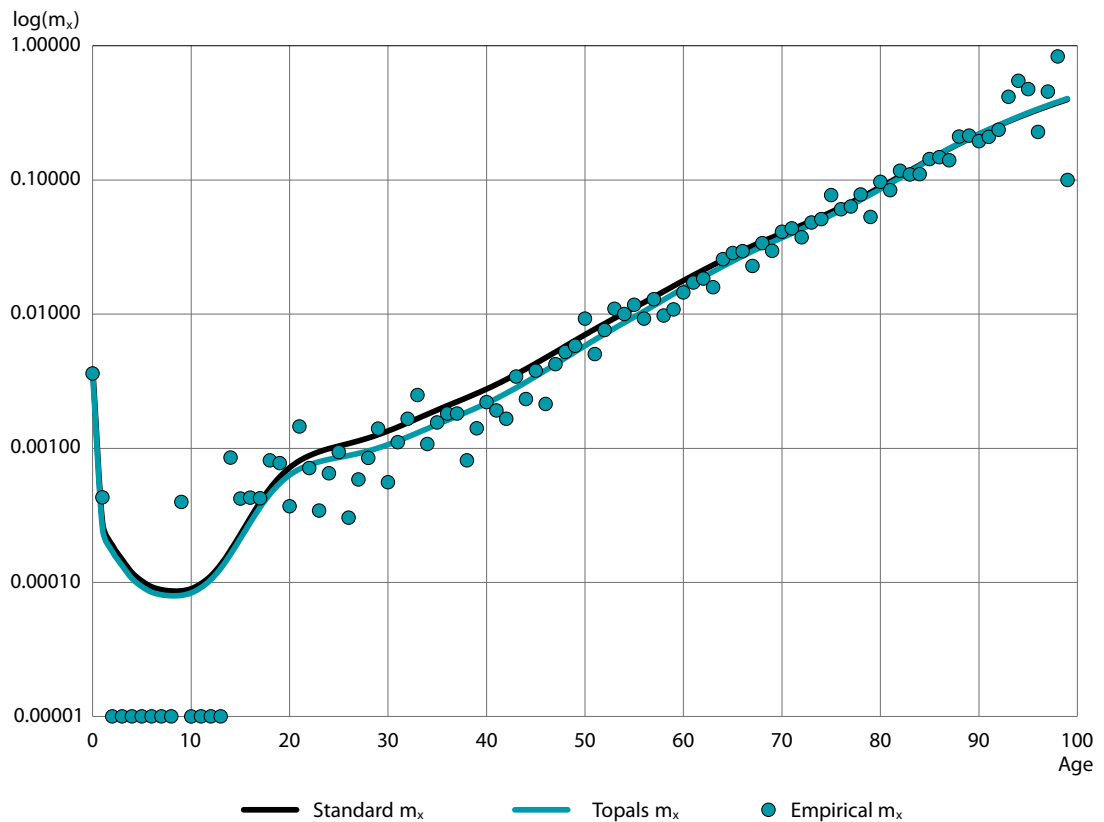
v_i – regression parameter in the interval $[i-1, i]$.

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 Tarnowski subregion in 2020. This subregion 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 m_x 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 the Tarnowski subregion in 2020



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 2020

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	0,00389	100000	389	99650	7260673	72,61
1	0,00028	99611	28	99597	7161024	71,89
2	0,00019	99583	18	99574	7061427	70,91
3	0,00015	99565	15	99558	6961853	69,92
4	0,00012	99550	12	99544	6862295	68,93
5	0,00010	99538	10	99533	6762751	67,94
6	0,00009	99528	9	99524	6663218	66,95
7	0,00009	99519	9	99515	6563695	65,95
8	0,00009	99510	9	99506	6464180	64,96
9	0,00009	99501	8	99497	6364675	63,97
10	0,00009	99493	9	99489	6265178	62,97
11	0,00010	99484	10	99479	6165689	61,98
12	0,00011	99474	11	99469	6066210	60,98
13	0,00014	99463	14	99456	5966742	59,99
14	0,00017	99449	17	99441	5867286	59,00
15	0,00023	99432	23	99421	5767845	58,01
16	0,00030	99409	30	99394	5668425	57,02
17	0,00040	99379	39	99360	5569031	56,04
18	0,00050	99340	50	99315	5469671	55,06
19	0,00061	99290	61	99260	5370356	54,09
20	0,00072	99229	71	99194	5271097	53,12
21	0,00081	99158	80	99118	5171903	52,16
22	0,00088	99078	88	99034	5072785	51,20
23	0,00094	98990	93	98944	4973751	50,24
24	0,00099	98897	98	98848	4874808	49,29
25	0,00104	98799	103	98748	4775960	48,34
26	0,00109	98696	107	98643	4677212	47,39
27	0,00114	98589	112	98533	4578570	46,44
28	0,00119	98477	118	98418	4480037	45,49
29	0,00126	98359	124	98297	4381619	44,55
30	0,00135	98235	132	98169	4283322	43,60
31	0,00144	98103	142	98032	4185153	42,66
32	0,00155	97961	151	97886	4087121	41,72
33	0,00167	97810	163	97729	3989235	40,79
34	0,00179	97647	176	97559	3891507	39,85
35	0,00193	97471	188	97377	3793948	38,92
36	0,00207	97283	202	97182	3696571	38,00

Table A. LIFE TABLE FOR POLAND 2020 (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	0,00222	97081	215	96974	3599389	37,08
38	0,00238	96866	231	96751	3502415	36,16
39	0,00256	96635	248	96511	3405665	35,24
40	0,00276	96387	266	96254	3309154	34,33
41	0,00299	96121	288	95977	3212900	33,43
42	0,00326	95833	312	95677	3116923	32,52
43	0,00356	95521	339	95352	3021246	31,63
44	0,00390	95182	371	94997	2925894	30,74
45	0,00429	94811	407	94608	2830898	29,86
46	0,00472	94404	445	94182	2736290	28,98
47	0,00521	93959	490	93714	2642109	28,12
48	0,00575	93469	537	93201	2548395	27,26
49	0,00635	92932	591	92637	2455194	26,42
50	0,00700	92341	646	92018	2362558	25,59
51	0,00771	91695	707	91342	2270540	24,76
52	0,00847	90988	771	90603	2179198	23,95
53	0,00928	90217	837	89799	2088596	23,15
54	0,01015	89380	907	88927	1998797	22,36
55	0,01111	88473	983	87982	1909871	21,59
56	0,01217	87490	1064	86958	1821889	20,82
57	0,01335	86426	1154	85849	1734931	20,07
58	0,01466	85272	1250	84647	1649082	19,34
59	0,01610	84022	1353	83346	1564435	18,62
60	0,01765	82669	1459	81940	1481090	17,92
61	0,01930	81210	1567	80427	1399150	17,23
62	0,02107	79643	1678	78804	1318724	16,56
63	0,02297	77965	1791	77070	1239920	15,90
64	0,02500	76174	1904	75222	1162850	15,27
65	0,02714	74270	2016	73262	1087628	14,64
66	0,02941	72254	2125	71192	1014366	14,04
67	0,03177	70129	2228	69015	943175	13,45
68	0,03417	67901	2320	66741	874160	12,87
69	0,03665	65581	2404	64379	807419	12,31
70	0,03925	63177	2480	61937	743040	11,76
71	0,04201	60697	2549	59423	681103	11,22
72	0,04501	58148	2617	56840	621680	10,69
73	0,04833	55531	2684	54189	564841	10,17

Table A. LIFE TABLE FOR POLAND 2020 (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	0,05200	52847	2748	51473	510652	9,66
75	0,05609	50099	2810	48694	459179	9,17
76	0,06064	47289	2868	45855	410485	8,68
77	0,06571	44421	2919	42962	364630	8,21
78	0,07137	41502	2962	40021	321668	7,75
79	0,07772	38540	2995	37043	281647	7,31
80	0,08480	35545	3015	34038	244605	6,88
81	0,09269	32530	3015	31023	210567	6,47
82	0,10144	29515	2994	28018	179545	6,08
83	0,11107	26521	2946	25048	151527	5,71
84	0,12154	23575	2865	22143	126479	5,36
85	0,13280	20710	2751	19335	104336	5,04
86	0,14477	17959	2600	16659	85002	4,73
87	0,15730	15359	2416	14151	68343	4,45
88	0,17024	12943	2203	11842	54192	4,19
89	0,18356	10740	1972	9754	42350	3,94
90	0,19722	8768	1729	7904	32596	3,72
91	0,21122	7039	1487	6296	24693	3,51
92	0,22555	5552	1252	4926	18397	3,31
93	0,24025	4300	1034	3783	13471	3,13
94	0,25524	3266	833	2850	9688	2,97
95	0,27045	2433	658	2104	6839	2,81
96	0,28581	1775	508	1521	4735	2,67
97	0,30122	1267	382	1076	3214	2,54
98	0,31662	885	280	745	2138	2,42
99	0,33192	605	201	505	1393	2,30
100	0,34704	404	140	334	888	2,20

Table A. LIFE TABLE FOR POLAND 2020 (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	0,00315	100000	315	99717	8070814	80,71
1	0,00019	99685	20	99675	7971098	79,96
2	0,00014	99665	13	99659	7871423	78,98
3	0,00011	99652	11	99647	7771764	77,99
4	0,00009	99641	9	99637	7672118	77,00
5	0,00008	99632	8	99628	7572481	76,00
6	0,00007	99624	7	99621	7472853	75,01
7	0,00007	99617	7	99614	7373233	74,02
8	0,00007	99610	7	99607	7273619	73,02
9	0,00007	99603	8	99599	7174013	72,03
10	0,00008	99595	8	99591	7074414	71,03
11	0,00009	99587	9	99583	6974823	70,04
12	0,00010	99578	10	99573	6875240	69,04
13	0,00012	99568	11	99563	6775667	68,05
14	0,00013	99557	14	99550	6676105	67,06
15	0,00015	99543	14	99536	6576555	66,07
16	0,00017	99529	17	99521	6477019	65,08
17	0,00019	99512	20	99502	6377498	64,09
18	0,00021	99492	21	99482	6277996	63,10
19	0,00023	99471	23	99460	6178515	62,11
20	0,00025	99448	25	99436	6079055	61,13
21	0,00026	99423	26	99410	5979620	60,14
22	0,00027	99397	27	99384	5880210	59,16
23	0,00027	99370	27	99357	5780826	58,17
24	0,00027	99343	27	99330	5681470	57,19
25	0,00028	99316	28	99302	5582140	56,21
26	0,00028	99288	28	99274	5482838	55,22
27	0,00029	99260	29	99246	5383564	54,24
28	0,00031	99231	31	99216	5284319	53,25
29	0,00033	99200	32	99184	5185103	52,27
30	0,00035	99168	35	99151	5085919	51,29
31	0,00038	99133	38	99114	4986769	50,30
32	0,00042	99095	42	99074	4887655	49,32
33	0,00046	99053	46	99030	4788581	48,34
34	0,00051	99007	50	98982	4689551	47,37
35	0,00057	98957	57	98929	4590569	46,39
36	0,00063	98900	62	98869	4491640	45,42

Table A. LIFE TABLE FOR POLAND 2020 (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	0,00069	98838	68	98804	4392771	44,44
38	0,00075	98770	75	98733	4293967	43,47
39	0,00082	98695	81	98655	4195235	42,51
40	0,00090	98614	89	98570	4096580	41,54
41	0,00099	98525	97	98477	3998011	40,58
42	0,00109	98428	107	98375	3899534	39,62
43	0,00120	98321	118	98262	3801160	38,66
44	0,00133	98203	131	98138	3702898	37,71
45	0,00148	98072	145	98000	3604760	36,76
46	0,00164	97927	161	97847	3506761	35,81
47	0,00184	97766	180	97676	3408914	34,87
48	0,00206	97586	200	97486	3311238	33,93
49	0,00230	97386	224	97274	3213752	33,00
50	0,00258	97162	251	97037	3116478	32,08
51	0,00288	96911	278	96772	3019442	31,16
52	0,00319	96633	308	96479	2922670	30,25
53	0,00352	96325	340	96155	2826191	29,34
54	0,00388	95985	372	95799	2730036	28,44
55	0,00427	95613	409	95409	2634237	27,55
56	0,00471	95204	448	94980	2538828	26,67
57	0,00520	94756	493	94510	2443848	25,79
58	0,00576	94263	543	93992	2349339	24,92
59	0,00638	93720	598	93421	2255347	24,06
60	0,00707	93122	659	92793	2161926	23,22
61	0,00783	92463	723	92102	2069134	22,38
62	0,00863	91740	792	91344	1977032	21,55
63	0,00949	90948	864	90516	1885688	20,73
64	0,01042	90084	938	89615	1795172	19,93
65	0,01142	89146	1018	88637	1705557	19,13
66	0,01252	88128	1103	87577	1616920	18,35
67	0,01375	87025	1197	86427	1529344	17,57
68	0,01510	85828	1296	85180	1442917	16,81
69	0,01662	84532	1404	83830	1357737	16,06
70	0,01829	83128	1521	82368	1273907	15,32
71	0,02014	81607	1643	80786	1191540	14,60
72	0,02219	79964	1775	79077	1110754	13,89
73	0,02445	78189	1911	77234	1031678	13,19

Table A. LIFE TABLE FOR POLAND 2020 (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.)						
73	0,02445	78189	1911	77234	1031678	13,19
74	0,02694	76278	2055	75251	954444	12,51
75	0,02970	74223	2205	73121	879194	11,85
76	0,03277	72018	2360	70838	806073	11,19
77	0,03621	69658	2522	68397	735235	10,55
78	0,04011	67136	2693	65790	666838	9,93
79	0,04461	64443	2875	63006	601049	9,33
80	0,04987	61568	3070	60033	538043	8,74
81	0,05600	58498	3276	56860	478010	8,17
82	0,06316	55222	3488	53478	421150	7,63
83	0,07148	51734	3698	49885	367672	7,11
84	0,08092	48036	3887	46093	317787	6,62
85	0,09144	44149	4037	42131	271695	6,15
86	0,10299	40112	4131	38047	229564	5,72
87	0,11544	35981	4154	33904	191518	5,32
88	0,12863	31827	4094	29780	157614	4,95
89	0,14258	27733	3954	25756	127834	4,61
90	0,15728	23779	3740	21909	102078	4,29
91	0,17271	20039	3461	18309	80169	4,00
92	0,18888	16578	3131	15013	61860	3,73
93	0,20577	13447	2767	12064	46848	3,48
94	0,22329	10680	2385	9488	34784	3,26
95	0,24130	8295	2002	7294	25297	3,05
96	0,25969	6293	1634	5476	18003	2,86
97	0,27829	4659	1297	4011	12527	2,69
98	0,29696	3362	998	2863	8516	2,53
99	0,31554	2364	746	1991,0	5653	2,39
100	0,33387	1618	541	1347,5	3662	2,26

Table A. LIFE TABLE FOR POLAND 2020 (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	0,00398	100000	399	99641	7293763	72,94
1	0,00031	99601	31	99586	7194123	72,23
2	0,00021	99570	20	99560	7094537	71,25
3	0,00016	99550	16	99542	6994977	70,27
4	0,00012	99534	12	99528	6895435	69,28
5	0,00010	99522	10	99517	6795907	68,29
6	0,00009	99512	8	99508	6696390	67,29
7	0,00008	99504	8	99500	6596882	66,30
8	0,00008	99496	8	99492	6497382	65,30
9	0,00008	99488	7	99485	6397890	64,31
10	0,00008	99481	8	99477	6298406	63,31
11	0,00008	99473	9	99469	6198929	62,32
12	0,00010	99464	9	99460	6099460	61,32
13	0,00012	99455	12	99449	6000001	60,33
14	0,00015	99443	14	99436	5900552	59,34
15	0,00019	99429	19	99420	5801116	58,34
16	0,00026	99410	26	99397	5701696	57,36
17	0,00035	99384	35	99367	5602299	56,37
18	0,00045	99349	45	99327	5502933	55,39
19	0,00057	99304	56	99276	5403606	54,41
20	0,00068	99248	67	99215	5304330	53,45
21	0,00077	99181	77	99143	5205116	52,48
22	0,00085	99104	84	99062	5105973	51,52
23	0,00091	99020	91	98975	5006911	50,56
24	0,00097	98929	96	98881	4907937	49,61
25	0,00102	98833	100	98783	4809056	48,66
26	0,00106	98733	105	98681	4710273	47,71
27	0,00112	98628	111	98573	4611592	46,76
28	0,00118	98517	116	98459	4513020	45,81
29	0,00125	98401	122	98340	4414561	44,86
30	0,00133	98279	131	98214	4316221	43,92
31	0,00142	98148	139	98079	4218007	42,98
32	0,00152	98009	148	97935	4119929	42,04
33	0,00164	97861	160	97781	4021994	41,10
34	0,00176	97701	172	97615	3924213	40,17
35	0,00189	97529	185	97437	3826598	39,24
36	0,00203	97344	197	97246	3729161	38,31

Table A. LIFE TABLE FOR POLAND 2020 (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	0,00217	97147	212	97041	3631916	37,39
38	0,00233	96935	225	96823	3534875	36,47
39	0,00250	96710	242	96589	3438052	35,55
40	0,00269	96468	260	96338	3341463	34,64
41	0,00291	96208	280	96068	3245125	33,73
42	0,00317	95928	305	95776	3149057	32,83
43	0,00348	95623	332	95457	3053282	31,93
44	0,00382	95291	364	95109	2957825	31,04
45	0,00421	94927	400	94727	2862716	30,16
46	0,00465	94527	440	94307	2767989	29,28
47	0,00514	94087	483	93846	2673682	28,42
48	0,00568	93604	531	93339	2579836	27,56
49	0,00627	93073	584	92781	2486498	26,72
50	0,00691	92489	639	92170	2393717	25,88
51	0,00761	91850	699	91501	2301547	25,06
52	0,00835	91151	761	90771	2210047	24,25
53	0,00916	90390	828	89976	2119276	23,45
54	0,01003	89562	899	89113	2029300	22,66
55	0,01099	88663	974	88176	1940188	21,88
56	0,01204	87689	1056	87161	1852012	21,12
57	0,01321	86633	1144	86061	1764851	20,37
58	0,01449	85489	1239	84870	1678790	19,64
59	0,01589	84250	1339	83581	1593920	18,92
60	0,01738	82911	1441	82191	1510340	18,22
61	0,01896	81470	1544	80698	1428149	17,53
62	0,02064	79926	1649	79102	1347451	16,86
63	0,02245	78277	1758	77398	1268350	16,20
64	0,02438	76519	1865	75587	1190952	15,56
65	0,02644	74654	1974	73667	1115365	14,94
66	0,02863	72680	2080	71640	1041698	14,33
67	0,03090	70600	2182	69509	970058	13,74
68	0,03322	68418	2273	67282	900549	13,16
69	0,03562	66145	2356	64967	833268	12,60
70	0,03814	63789	2433	62573	768301	12,04
71	0,04079	61356	2503	60105	705728	11,50
72	0,04366	58853	2569	57569	645624	10,97
73	0,04683	56284	2636	54966	588055	10,45

Table A. LIFE TABLE FOR POLAND 2020 (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	0,05031	53648	2699	52299	533089	9,94
75	0,05417	50949	2760	49569	480791	9,44
76	0,05845	48189	2817	46781	431222	8,95
77	0,06320	45372	2867	43939	384441	8,47
78	0,06848	42505	2911	41050	340503	8,01
79	0,07439	39594	2945	38122	299453	7,56
80	0,08098	36649	2968	35165	261332	7,13
81	0,08833	33681	2975	32194	226167	6,71
82	0,09652	30706	2964	29224	193973	6,32
83	0,10560	27742	2930	26277	164749	5,94
84	0,11551	24812	2866	23379	138472	5,58
85	0,12622	21946	2770	20561	115093	5,24
86	0,13764	19176	2639	17857	94532	4,93
87	0,14963	16537	2475	15300	76676	4,64
88	0,16202	14062	2278	12923	61376	4,36
89	0,17479	11784	2060	10754	48453	4,11
90	0,18792	9724	1827	8811	37699	3,88
91	0,20140	7897	1591	7102	28889	3,66
92	0,21526	6306	1357	5628	21787	3,45
93	0,22953	4949	1136	4381	16160	3,27
94	0,24415	3813	931	3348	11779	3,09
95	0,25907	2882	747	2509	8431	2,93
96	0,27420	2135	586	1842	5923	2,77
97	0,28949	1549	448	1325	4081	2,63
98	0,30484	1101	336	933	2756	2,50
99	0,32019	765	245	643	1823	2,38
100	0,33546	520	175	433	1180	2,27

Table A. LIFE TABLE FOR POLAND 2020 (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	0,00288	100000	289	99740	8076722	80,77
1	0,00017	99711	17	99703	7976983	80,00
2	0,00013	99694	13	99688	7877280	79,01
3	0,00011	99681	10	99676	7777593	78,02
4	0,00009	99671	9	99667	7677917	77,03
5	0,00008	99662	8	99658	7578250	76,04
6	0,00007	99654	7	99651	7478592	75,05
7	0,00007	99647	7	99644	7378942	74,05
8	0,00007	99640	8	99636	7279298	73,06
9	0,00008	99632	7	99629	7179662	72,06
10	0,00008	99625	8	99621	7080034	71,07
11	0,00009	99617	9	99613	6980413	70,07
12	0,00010	99608	10	99603	6880800	69,08
13	0,00011	99598	12	99592	6781197	68,09
14	0,00013	99586	13	99580	6681605	67,09
15	0,00015	99573	14	99566	6582026	66,10
16	0,00017	99559	18	99550	6482460	65,11
17	0,00020	99541	19	99532	6382910	64,12
18	0,00023	99522	23	99511	6283378	63,14
19	0,00026	99499	25	99487	6183868	62,15
20	0,00028	99474	28	99460	6084381	61,17
21	0,00030	99446	30	99431	5984921	60,18
22	0,00031	99416	31	99401	5885490	59,20
23	0,00031	99385	31	99370	5786090	58,22
24	0,00031	99354	31	99339	5686720	57,24
25	0,00032	99323	32	99307	5587382	56,25
26	0,00032	99291	32	99275	5488075	55,27
27	0,00033	99259	33	99243	5388800	54,29
28	0,00035	99226	34	99209	5289557	53,31
29	0,00036	99192	36	99174	5190348	52,33
30	0,00039	99156	38	99137	5091174	51,35
31	0,00041	99118	41	99098	4992037	50,36
32	0,00045	99077	45	99055	4892940	49,39
33	0,00049	99032	49	99008	4793885	48,41
34	0,00054	98983	53	98957	4694878	47,43
35	0,00060	98930	59	98901	4595921	46,46
36	0,00066	98871	65	98839	4497021	45,48

Table A. LIFE TABLE FOR POLAND 2020 (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	0,00072	98806	71	98771	4398182	44,51
38	0,00079	98735	78	98696	4299412	43,54
39	0,00086	98657	85	98615	4200716	42,58
40	0,00094	98572	93	98526	4102101	41,62
41	0,00103	98479	101	98429	4003576	40,65
42	0,00113	98378	111	98323	3905147	39,70
43	0,00125	98267	123	98206	3806825	38,74
44	0,00138	98144	135	98077	3708619	37,79
45	0,00154	98009	151	97934	3610543	36,84
46	0,00172	97858	168	97774	3512609	35,89
47	0,00193	97690	188	97596	3414835	34,96
48	0,00216	97502	211	97397	3317239	34,02
49	0,00242	97291	235	97174	3219843	33,09
50	0,00269	97056	261	96926	3122669	32,17
51	0,00298	96795	289	96651	3025744	31,26
52	0,00329	96506	317	96348	2929093	30,35
53	0,00361	96189	348	96015	2832746	29,45
54	0,00397	95841	380	95651	2736731	28,55
55	0,00436	95461	417	95253	2641080	27,67
56	0,00480	95044	456	94816	2545827	26,79
57	0,00530	94588	501	94338	2451011	25,91
58	0,00585	94087	551	93812	2356674	25,05
59	0,00648	93536	606	93233	2262862	24,19
60	0,00717	92930	667	92597	2169629	23,35
61	0,00793	92263	731	91898	2077033	22,51
62	0,00874	91532	801	91132	1985135	21,69
63	0,00961	90731	872	90295	1894004	20,87
64	0,01054	89859	947	89386	1803709	20,07
65	0,01154	88912	1026	88399	1714323	19,28
66	0,01264	87886	1111	87331	1625924	18,50
67	0,01385	86775	1202	86174	1538594	17,73
68	0,01518	85573	1299	84924	1452420	16,97
69	0,01666	84274	1404	83572	1367496	16,23
70	0,01829	82870	1515	82113	1283924	15,49
71	0,02009	81355	1635	80538	1201812	14,77
72	0,02210	79720	1762	78839	1121274	14,07
73	0,02432	77958	1896	77010	1042435	13,37

Table A. LIFE TABLE FOR POLAND 2020 (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	0,02678	76062	2037	75044	965425	12,69
75	0,02951	74025	2184	72933	890382	12,03
76	0,03253	71841	2337	70673	817449	11,38
77	0,03586	69504	2492	68258	746776	10,74
78	0,03959	67012	2653	65686	678518	10,13
79	0,04382	64359	2821	62949	612833	9,52
80	0,04871	61538	2997	60040	549884	8,94
81	0,05440	58541	3185	56949	489845	8,37
82	0,06105	55356	3379	53667	432896	7,82
83	0,06884	51977	3578	50188	379230	7,30
84	0,07777	48399	3764	46517	329042	6,80
85	0,08782	44635	3920	42675	282525	6,33
86	0,09892	40715	4028	38701	239850	5,89
87	0,11095	36687	4070	34652	201149	5,48
88	0,12369	32617	4035	30600	166497	5,10
89	0,13715	28582	3920	26622	135897	4,75
90	0,15131	24662	3731	22797	109275	4,43
91	0,16616	20931	3478	19192	86479	4,13
92	0,18173	17453	3172	15867	67287	3,86
93	0,19805	14281	2829	12867	51420	3,60
94	0,21503	11452	2462	10221	38553	3,37
95	0,23258	8990	2091	7945	28332	3,15
96	0,25056	6899	1729	6035	20388	2,96
97	0,26886	5170	1390	4475	14353	2,78
98	0,28732	3780	1086	3237	9878	2,61
99	0,30580	2694	824	2282	6641	2,47
100	0,32415	1870	606	1567	4359	2,33

Table A. LIFE TABLE FOR POLAND 2020 (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	0,00375	100000	375	99663	7209438	72,09
1	0,00022	99625	23	99614	7109776	71,37
2	0,00016	99602	15	99595	7010162	70,38
3	0,00013	99587	13	99581	6910568	69,39
4	0,00011	99574	11	99569	6810987	68,40
5	0,00010	99563	10	99558	6711419	67,41
6	0,00010	99553	10	99548	6611861	66,42
7	0,00010	99543	10	99538	6512313	65,42
8	0,00010	99533	9	99529	6412775	64,43
9	0,00010	99524	10	99519	6313246	63,43
10	0,00010	99514	11	99509	6213727	62,44
11	0,00011	99503	11	99498	6114219	61,45
12	0,00013	99492	13	99486	6014721	60,45
13	0,00016	99479	15	99472	5915236	59,46
14	0,00020	99464	20	99454	5815764	58,47
15	0,00026	99444	27	99431	5716310	57,48
16	0,00035	99417	34	99400	5616880	56,50
17	0,00045	99383	45	99361	5517480	55,52
18	0,00056	99338	55	99311	5418119	54,54
19	0,00066	99283	66	99250	5318809	53,57
20	0,00076	99217	75	99180	5219559	52,61
21	0,00084	99142	84	99100	5120379	51,65
22	0,00091	99058	90	99013	5021279	50,69
23	0,00097	98968	96	98920	4922266	49,74
24	0,00102	98872	101	98822	4823346	48,78
25	0,00106	98771	105	98719	4724525	47,83
26	0,00111	98666	109	98612	4625806	46,88
27	0,00115	98557	113	98501	4527195	45,93
28	0,00121	98444	120	98384	4428694	44,99
29	0,00128	98324	126	98261	4330310	44,04
30	0,00137	98198	134	98131	4232049	43,10
31	0,00147	98064	145	97992	4133918	42,16
32	0,00159	97919	155	97842	4035927	41,22
33	0,00171	97764	168	97680	3938085	40,28
34	0,00185	97596	180	97506	3840405	39,35
35	0,00199	97416	194	97319	3742899	38,42
36	0,00214	97222	208	97118	3645580	37,50

Table A. LIFE TABLE FOR POLAND 2020 (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	0,00230	97014	223	96903	3548462	36,58
38	0,00247	96791	239	96672	3451560	35,66
39	0,00266	96552	257	96424	3354888	34,75
40	0,00287	96295	276	96157	3258465	33,84
41	0,00310	96019	298	95870	3162308	32,93
42	0,00337	95721	323	95560	3066438	32,04
43	0,00368	95398	351	95223	2970878	31,14
44	0,00401	95047	381	94857	2875656	30,26
45	0,00439	94666	416	94458	2780799	29,37
46	0,00482	94250	454	94023	2686341	28,50
47	0,00530	93796	498	93547	2592318	27,64
48	0,00585	93298	546	93025	2498771	26,78
49	0,00646	92752	599	92453	2405746	25,94
50	0,00713	92153	656	91825	2313294	25,10
51	0,00785	91497	718	91138	2221469	24,28
52	0,00861	90779	782	90388	2130331	23,47
53	0,00943	89997	849	89573	2039943	22,67
54	0,01030	89148	918	88689	1950370	21,88
55	0,01126	88230	993	87734	1861681	21,10
56	0,01233	87237	1076	86699	1773948	20,33
57	0,01354	86161	1167	85578	1687249	19,58
58	0,01488	84994	1265	84362	1601671	18,84
59	0,01639	83729	1372	83043	1517310	18,12
60	0,01804	82357	1486	81614	1434267	17,42
61	0,01982	80871	1603	80070	1352653	16,73
62	0,02173	79268	1722	78407	1272583	16,05
63	0,02379	77546	1845	76624	1194176	15,40
64	0,02599	75701	1967	74718	1117553	14,76
65	0,02830	73734	2087	72691	1042835	14,14
66	0,03074	71647	2203	70546	970145	13,54
67	0,03328	69444	2311	68289	899599	12,95
68	0,03584	67133	2406	65930	831311	12,38
69	0,03849	64727	2491	63482	765381	11,82
70	0,04128	62236	2570	60951	701899	11,28
71	0,04428	59666	2642	58345	640948	10,74
72	0,04755	57024	2711	55669	582603	10,22
73	0,05118	54313	2780	52923	526935	9,70

Table A. LIFE TABLE FOR POLAND 2020 (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	0,05523	51533	2846	50110	474012	9,20
75	0,05974	48687	2908	47233	423902	8,71
76	0,06477	45779	2966	44296	376669	8,23
77	0,07039	42813	3013	41307	332373	7,76
78	0,07671	39800	3053	38274	291066	7,31
79	0,08382	36747	3081	35207	252793	6,88
80	0,09176	33666	3089	32122	217586	6,46
81	0,10062	30577	3077	29039	185465	6,07
82	0,11041	27500	3036	25982	156426	5,69
83	0,12114	24464	2964	22982	130444	5,33
84	0,13272	21500	2853	20074	107462	5,00
85	0,14512	18647	2706	17294	87389	4,69
86	0,15820	15941	2522	14680	70095	4,40
87	0,17185	13419	2306	12266	55415	4,13
88	0,18587	11113	2066	10080	43149	3,88
89	0,20024	9047	1812	8141	33069	3,66
90	0,21490	7235	1555	6458	24928	3,45
91	0,22982	5680	1305	5028	18470	3,25
92	0,24498	4375	1072	3839	13443	3,07
93	0,26039	3303	860	2873	9604	2,91
94	0,27596	2443	674	2106	6731	2,76
95	0,29161	1769	516	1511	4625	2,61
96	0,30724	1253	385	1061	3114	2,48
97	0,32277	868	281	728	2053	2,37
98	0,33810	587	198	488	1326	2,26
99	0,35316	389	138	320	838	2,15
100	0,36786	251	92	205	518	2,06

Table A. LIFE TABLE FOR POLAND 2020 (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	0,00352	100000	353	99682	8061382	80,61
1	0,00022	99647	22	99636	7961700	79,90
2	0,00015	99625	15	99618	7862064	78,92
3	0,00011	99610	11	99605	7762446	77,93
4	0,00009	99599	9	99595	7662842	76,94
5	0,00008	99590	8	99586	7563247	75,94
6	0,00007	99582	6	99579	7463661	74,95
7	0,00007	99576	7	99573	7364082	73,95
8	0,00007	99569	6	99566	7264510	72,96
9	0,00007	99563	7	99560	7164944	71,96
10	0,00008	99556	8	99552	7065384	70,97
11	0,00008	99548	8	99544	6965832	69,97
12	0,00010	99540	10	99535	6866288	68,98
13	0,00011	99530	11	99525	6766753	67,99
14	0,00013	99519	13	99513	6667229	66,99
15	0,00015	99506	15	99499	6567716	66,00
16	0,00017	99491	16	99483	6468218	65,01
17	0,00018	99475	18	99466	6368735	64,02
18	0,00019	99457	19	99448	6269269	63,03
19	0,00020	99438	20	99428	6169821	62,05
20	0,00021	99418	21	99408	6070393	61,06
21	0,00021	99397	22	99386	5970986	60,07
22	0,00022	99375	21	99365	5871600	59,09
23	0,00022	99354	22	99343	5772235	58,10
24	0,00022	99332	21	99322	5672892	57,11
25	0,00022	99311	23	99300	5573571	56,12
26	0,00023	99288	23	99277	5474271	55,14
27	0,00024	99265	24	99253	5374995	54,15
28	0,00026	99241	26	99228	5275742	53,16
29	0,00028	99215	27	99202	5176514	52,17
30	0,00030	99188	30	99173	5077312	51,19
31	0,00033	99158	33	99142	4978139	50,20
32	0,00037	99125	36	99107	4878998	49,22
33	0,00042	99089	41	99069	4779891	48,24
34	0,00047	99048	47	99025	4680822	47,26
35	0,00052	99001	51	98976	4581798	46,28
36	0,00058	98950	58	98921	4482822	45,30

Table A. LIFE TABLE FOR POLAND 2020 (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	0,00063	98892	62	98861	4383901	44,33
38	0,00069	98830	68	98796	4285040	43,36
39	0,00075	98762	75	98725	4186244	42,39
40	0,00082	98687	81	98647	4087520	41,42
41	0,00091	98606	89	98562	3988873	40,45
42	0,00101	98517	100	98467	3890312	39,49
43	0,00113	98417	111	98362	3791845	38,53
44	0,00125	98306	123	98245	3693483	37,57
45	0,00138	98183	136	98115	3595239	36,62
46	0,00153	98047	150	97972	3497124	35,67
47	0,00169	97897	165	97815	3399152	34,72
48	0,00189	97732	185	97640	3301337	33,78
49	0,00212	97547	207	97444	3203698	32,84
50	0,00240	97340	233	97224	3106254	31,91
51	0,00270	97107	262	96976	3009031	30,99
52	0,00303	96845	293	96699	2912055	30,07
53	0,00338	96552	326	96389	2815356	29,16
54	0,00374	96226	360	96046	2718967	28,26
55	0,00413	95866	396	95668	2622921	27,36
56	0,00456	95470	436	95252	2527253	26,47
57	0,00505	95034	479	94795	2432001	25,59
58	0,00560	94555	530	94290	2337207	24,72
59	0,00622	94025	584	93733	2242917	23,85
60	0,00689	93441	644	93119	2149184	23,00
61	0,00763	92797	708	92443	2056065	22,16
62	0,00842	92089	775	91702	1963622	21,32
63	0,00926	91314	846	90891	1871920	20,50
64	0,01017	90468	919	90009	1781029	19,69
65	0,01116	89549	1000	89049	1691021	18,88
66	0,01227	88549	1087	88006	1601972	18,09
67	0,01352	87462	1183	86871	1513966	17,31
68	0,01492	86279	1287	85636	1427096	16,54
69	0,01651	84992	1404	84290	1341460	15,78
70	0,01828	83588	1528	82824	1257170	15,04
71	0,02023	82060	1660	81230	1174346	14,31
72	0,02237	80400	1799	79501	1093116	13,60
73	0,02471	78601	1942	77630	1013616	12,90

Table A. LIFE TABLE FOR POLAND 2020 (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	0,02727	76659	2090	75614	935986	12,21
75	0,03007	74569	2243	73448	860372	11,54
76	0,03324	72326	2404	71124	786924	10,88
77	0,03687	69922	2578	68633	715800	10,24
78	0,04108	67344	2767	65961	647167	9,61
79	0,04606	64577	2974	63090	581207	9,00
80	0,05198	61603	3202	60002	518117	8,41
81	0,05893	58401	3442	56680	458115	7,84
82	0,06700	54959	3682	53118	401435	7,30
83	0,07626	51277	3910	49322	348317	6,79
84	0,08662	47367	4103	45316	298995	6,31
85	0,09799	43264	4240	41144	253679	5,86
86	0,11032	39024	4305	36872	212535	5,45
87	0,12350	34719	4288	32575	175664	5,06
88	0,13748	30431	4184	28339	143089	4,70
89	0,15229	26247	3997	24249	114750	4,37
90	0,16793	22250	3736	20382	90501	4,07
91	0,18436	18514	3414	16807	70119	3,79
92	0,20154	15100	3043	13579	53312	3,53
93	0,21939	12057	2645	10735	39734	3,30
94	0,23776	9412	2238	8293	28999	3,08
95	0,25652	7174	1841	6254	20706	2,89
96	0,27550	5333	1469	4599	14453	2,71
97	0,29452	3864	1138	3295	9854	2,55
98	0,31343	2726	855	2299	6559	2,41
99	0,33205	1871	621	1561	4261	2,28
100	0,35022	1250	438	1031	2700	2,16

Table B. LIFE EXPECTANCY IN POLAND BY VOIVODSHIPS IN 2020

	Males					Females				
	By age									
	0	15	30	45	60	0	15	30	45	60
Total	72,61	58,01	43,60	29,86	17,92	80,71	66,07	51,29	36,76	23,22
02 Dolnośląskie	72,14	57,54	43,21	29,45	17,57	80,61	65,94	51,15	36,62	23,22
04 Kujawsko-pomorskie	72,44	57,92	43,58	29,77	17,76	80,35	65,68	50,88	36,34	22,91
06 Lubelskie	72,26	57,64	43,33	29,68	17,82	81,14	66,61	51,82	37,29	23,66
08 Lubuskie	71,84	57,23	42,83	29,15	17,33	80,01	65,28	50,53	36,06	22,63
10 Łódzkie	71,08	56,42	42,17	28,78	17,29	79,63	64,98	50,23	35,85	22,62
12 Małopolskie	73,83	59,27	44,76	30,79	18,60	81,57	66,90	52,08	37,45	23,69
14 Mazowieckie	72,76	58,10	43,75	30,01	18,20	80,86	66,20	51,44	36,92	23,35
16 Opolskie	72,97	58,42	43,98	30,04	17,78	80,97	66,31	51,52	36,95	23,33
18 Podkarpackie	73,71	59,08	44,53	30,63	18,40	81,78	67,24	52,42	37,79	23,99
20 Podlaskie	73,06	58,41	44,06	30,43	18,50	81,89	67,26	52,51	37,91	24,15
22 Pomorskie	73,33	58,78	44,37	30,50	18,37	81,18	66,57	51,78	37,19	23,56
24 Śląskie	72,33	57,70	43,29	29,56	17,71	79,95	65,31	50,55	36,07	22,73
26 Świętokrzyskie	71,95	57,33	42,89	29,31	17,58	80,85	66,28	51,47	36,90	23,29
28 Warmińsko-mazurskie	72,02	57,45	43,13	29,57	17,66	80,58	65,91	51,15	36,68	23,22
30 Wielkopolskie	72,82	58,22	43,79	29,93	17,80	80,50	65,79	51,01	36,47	22,92
32 Zachodniopomorskie	72,13	57,58	43,24	29,51	17,71	80,62	66,00	51,28	36,74	23,25
Urban areas	72,94	58,34	43,92	30,16	18,22	80,77	66,10	51,35	36,84	23,35
02 Dolnośląskie	72,30	57,73	43,38	29,64	17,81	80,89	66,23	51,44	36,91	23,50
04 Kujawsko-pomorskie	72,21	57,77	43,46	29,72	17,83	80,08	65,40	50,61	36,15	22,85
06 Lubelskie	73,48	58,93	44,56	30,85	18,73	81,07	66,52	51,76	37,29	23,72
08 Lubuskie	72,19	57,56	43,11	29,39	17,58	80,26	65,58	50,84	36,36	22,91
10 Łódzkie	71,31	56,64	42,33	28,89	17,38	79,57	64,85	50,13	35,81	22,62
12 Małopolskie	74,45	59,87	45,33	31,28	18,99	81,66	66,93	52,14	37,55	23,91
14 Mazowieckie	73,59	58,94	44,53	30,73	18,79	81,08	66,40	51,64	37,11	23,56
16 Opolskie	73,50	59,00	44,56	30,67	18,49	81,23	66,55	51,77	37,22	23,67
18 Podkarpackie	74,50	59,87	45,38	31,42	18,87	82,18	67,62	52,82	38,23	24,43
20 Podlaskie	73,50	58,90	44,52	30,80	18,75	81,99	67,43	52,68	38,07	24,26
22 Pomorskie	73,88	59,30	44,81	30,85	18,70	81,56	66,95	52,16	37,55	23,94
24 Śląskie	72,09	57,51	43,13	29,47	17,73	79,84	65,19	50,46	36,01	22,74
26 Świętokrzyskie	72,45	57,84	43,40	29,85	18,08	80,64	66,09	51,33	36,81	23,30
28 Warmińsko-mazurskie	72,44	57,81	43,46	29,87	17,97	81,03	66,38	51,61	37,11	23,61
30 Wielkopolskie	73,29	58,65	44,16	30,26	18,17	80,72	65,96	51,19	36,68	23,17
32 Zachodniopomorskie	72,56	57,95	43,58	29,82	18,03	80,74	66,16	51,47	36,94	23,39

Table B. LIFE EXPECTANCY IN POLAND BY VOIVODSHIPS IN 2020 (cont.)

	Males					Females				
	By age									
	0	15	30	45	60	0	15	30	45	60
Rural areas	72,09	57,48	43,10	29,37	17,42	80,61	66,00	51,19	36,62	23,00
02 Dolnośląskie	71,69	57,04	42,72	28,93	16,94	79,78	65,10	50,31	35,79	22,38
04 Kujawsko-pomorskie	72,69	58,06	43,67	29,79	17,61	80,78	66,12	51,30	36,69	23,02
06 Lubelskie	71,28	56,62	42,32	28,72	17,04	81,23	66,72	51,91	37,32	23,62
08 Lubuskie	71,17	56,60	42,29	28,64	16,82	79,41	64,63	49,86	35,38	21,98
10 Łódzkie	70,72	56,09	41,90	28,58	17,12	79,75	65,20	50,42	35,96	22,61
12 Małopolskie	73,24	58,67	44,20	30,30	18,18	81,45	66,83	51,99	37,32	23,45
14 Mazowieckie	71,36	56,71	42,41	28,78	17,15	80,39	65,79	51,02	36,52	22,92
16 Opolskie	72,34	57,74	43,28	29,31	16,96	80,61	65,96	51,17	36,57	22,89
18 Podkarpackie	73,14	58,51	43,94	30,07	18,05	81,48	66,93	52,10	37,45	23,65
20 Podlaskie	72,47	57,76	43,45	29,93	18,16	81,74	67,02	52,22	37,66	23,99
22 Pomorskie	72,26	57,74	43,43	29,69	17,56	80,17	65,54	50,76	36,20	22,54
24 Śląskie	73,07	58,30	43,77	29,82	17,64	80,33	65,73	50,90	36,34	22,72
26 Świętokrzyskie	71,52	56,90	42,48	28,84	17,13	81,04	66,44	51,60	37,00	23,30
28 Warmińsko-mazurskie	71,38	56,91	42,64	29,07	17,15	79,79	65,09	50,34	35,89	22,51
30 Wielkopolskie	72,22	57,67	43,30	29,46	17,29	80,15	65,50	50,70	36,12	22,53
32 Zachodniopomorskie	71,11	56,68	42,36	28,71	16,84	80,21	65,53	50,73	36,21	22,86

Table C. LIFE EXPECTANCY IN POLAND BY SUBREGIONS IN 2020

	Males					Females				
	By age									
	0	15	30	45	60	0	15	30	45	60
1 Jeleniogórski	71,53	56,83	42,53	28,86	17,12	80,03	65,43	50,66	36,17	22,74
2 Legnicko-Głogowski	72,18	57,53	43,13	29,45	17,60	80,29	65,59	50,80	36,32	22,98
3 Wałbrzyski	70,81	56,40	42,20	28,52	16,81	79,55	64,96	50,22	35,81	22,60
4 Wrocławski	72,20	57,53	43,10	29,28	17,37	80,67	65,97	51,19	36,65	23,12
5 Miasto Wrocław	74,20	59,66	45,22	31,35	19,09	82,27	67,57	52,72	38,08	24,51
6 Bydgosko-Toruński	73,48	59,09	44,71	30,80	18,62	81,03	66,34	51,53	36,95	23,43
7 Grudziądzki	72,07	57,55	43,26	29,56	17,63	80,03	65,38	50,58	36,06	22,64
8 Włocławski	71,34	56,65	42,26	28,60	16,82	79,85	65,28	50,53	36,11	22,71
9 Białski	71,68	57,07	42,69	29,06	17,18	80,42	65,79	51,04	36,60	23,02
10 Chełmsko-Zamojski	72,00	57,48	43,11	29,42	17,56	81,25	66,73	51,92	37,36	23,73
11 Lubelski	73,10	58,45	44,08	30,45	18,47	81,20	66,60	51,81	37,26	23,64
12 Puławski	71,80	57,16	42,96	29,35	17,62	81,39	66,97	52,20	37,66	23,94
13 Gorzowski	71,67	57,06	42,78	29,14	17,21	79,67	65,04	50,29	35,79	22,38
14 Zielonogórski	71,94	57,34	42,87	29,15	17,41	80,21	65,44	50,69	36,22	22,78
15 Łódzki	71,48	56,82	42,52	29,03	17,45	79,47	64,71	49,96	35,56	22,25
16 Miasto Łódź	71,81	57,15	42,75	29,19	17,57	79,64	64,99	50,27	35,96	22,88
17 Piotrkowski	70,02	55,36	41,09	27,97	16,83	79,32	64,75	50,00	35,61	22,37
18 Sieradzki	71,15	56,54	42,46	28,98	17,25	80,37	65,73	50,94	36,43	22,93
19 Skierniewicki	71,01	56,40	42,18	28,77	17,28	79,26	64,68	49,98	35,58	22,34
20 Krakowski	73,29	58,77	44,36	30,44	18,33	81,49	66,86	52,01	37,35	23,49
21 Miasto Kraków	75,40	60,71	46,17	32,10	19,71	82,08	67,30	52,48	37,87	24,17
22 Nowosądecki	73,31	58,82	44,28	30,40	18,15	81,56	66,89	52,06	37,42	23,65
23 Oświęcimski	73,12	58,41	43,79	29,85	17,94	80,75	66,15	51,38	36,82	23,22
24 Tarnowski	73,90	59,27	44,79	30,80	18,46	81,71	67,06	52,22	37,56	23,75
25 Ciechanowski	70,56	56,17	42,05	28,56	16,84	79,74	65,08	50,30	35,79	22,33
26 Ostrołęcki	71,36	56,75	42,43	28,88	17,19	80,31	65,89	51,18	36,70	23,19
27 Radomski	70,89	56,20	41,80	28,40	17,01	80,81	66,11	51,35	36,87	23,26
28 Miasto Warszawa	75,08	60,42	45,99	32,05	19,83	81,77	67,12	52,36	37,78	24,13
29 Warszawski Wschodni	72,64	57,95	43,50	29,59	17,78	80,73	65,96	51,15	36,62	23,02
30 Warszawski Zachodni	73,32	58,60	44,20	30,41	18,47	80,67	65,95	51,18	36,68	23,15
31 Nyski	72,08	57,49	43,12	29,30	17,29	80,29	65,69	50,92	36,37	22,84
32 Opolski	73,52	59,00	44,50	30,50	18,09	81,37	66,68	51,88	37,29	23,63
33 Krośnieński	73,94	59,38	44,88	30,99	18,64	81,80	67,19	52,41	37,82	24,07
34 Przemyski	72,87	58,14	43,50	29,57	17,53	80,76	66,07	51,31	36,82	23,26
35 Rzeszowski	73,93	59,26	44,73	30,92	18,74	82,24	67,74	52,87	38,15	24,23
36 Tarnobrzesci	73,84	59,24	44,77	30,79	18,43	82,01	67,46	52,65	38,02	24,14
37 Białostocki	73,97	59,22	44,69	30,89	18,86	82,58	67,83	53,04	38,40	24,55
38 Łomżyński	72,58	58,07	43,76	30,18	18,36	81,30	66,71	51,95	37,42	23,76

Table C. LIFE EXPECTANCY IN POLAND BY SUBREGIONS IN 2020 (cont.)

	Males					Females				
	By age									
	0	15	30	45	60	0	15	30	45	60
39 Suwalski	72,08	57,51	43,40	29,94	18,01	81,45	67,01	52,26	37,67	23,97
40 Gdański	73,24	58,71	44,28	30,36	18,17	80,54	65,94	51,16	36,59	22,88
41 Słupski	72,03	57,39	43,03	29,43	17,52	80,53	65,98	51,23	36,69	23,15
42 Starogardzki	72,09	57,67	43,31	29,50	17,45	80,37	65,68	50,87	36,31	22,75
43 Trójmiejski	75,06	60,39	45,85	31,79	19,45	82,30	67,68	52,88	38,25	24,61
44 Bielski	73,14	58,50	43,89	29,89	17,78	80,46	65,86	51,03	36,45	22,85
45 Bytomski	71,45	56,84	42,48	28,96	17,43	79,46	64,83	50,08	35,63	22,38
46 Częstochowski	72,06	57,39	43,15	29,55	17,65	80,45	65,71	50,91	36,40	22,92
47 Gliwicki	73,24	58,61	44,13	30,20	18,26	80,39	65,79	51,00	36,54	23,28
48 Katowicki	71,41	56,83	42,56	29,03	17,42	79,05	64,45	49,74	35,33	22,25
49 Rybnicki	72,80	58,19	43,83	30,06	18,02	80,30	65,60	50,84	36,32	22,83
50 Sosnowiecki	71,45	56,96	42,51	28,91	17,32	79,41	64,82	50,10	35,76	22,58
51 Tyski	73,64	58,84	44,28	30,30	18,05	80,56	65,95	51,20	36,63	23,02
52 Kielecki	71,99	57,40	43,04	29,44	17,70	80,66	66,09	51,29	36,74	23,16
53 Sandomiersko- -Jędrzejowski	71,89	57,22	42,71	29,11	17,39	81,16	66,57	51,75	37,16	23,50
54 Elbląski	71,74	57,26	42,93	29,38	17,53	79,89	65,27	50,53	36,09	22,69
55 Elcki	71,70	57,13	42,81	29,29	17,40	80,55	65,97	51,18	36,68	23,31
56 Olsztyński	72,42	57,79	43,50	29,86	17,90	81,19	66,43	51,67	37,18	23,62
57 Kaliski	71,83	57,38	42,91	29,30	17,47	80,23	65,56	50,80	36,32	22,80
58 Koniński	72,09	57,50	43,16	29,48	17,53	80,44	65,72	50,93	36,45	22,97
59 Leszczyński	72,55	57,88	43,45	29,53	17,36	79,79	65,08	50,26	35,70	22,21
60 Piłski	72,02	57,54	43,12	29,33	17,21	79,92	65,29	50,55	36,03	22,49
61 Poznański	73,73	59,10	44,68	30,63	18,21	80,62	65,97	51,14	36,51	22,82
62 Miasto Poznań	74,79	60,04	45,46	31,33	19,01	81,62	66,82	52,02	37,45	23,92
63 Koszaliński	71,93	57,44	43,13	29,41	17,68	80,69	66,13	51,42	36,92	23,43
64 Szczecinecko-Pyrzycki	71,20	56,78	42,51	28,82	16,95	80,28	65,66	50,88	36,33	22,92
65 Miasto Szczecin	73,25	58,60	44,11	30,30	18,49	81,00	66,41	51,67	37,19	23,71
66 Szczeciński	72,13	57,53	43,16	29,49	17,68	80,45	65,80	51,04	36,49	22,95
67 Inowrocławski	71,60	57,02	42,67	29,01	17,18	79,71	64,94	50,16	35,62	22,24
68 Świecki	72,99	58,38	43,95	29,94	17,61	80,24	65,61	50,82	36,32	22,90
69 Nowotarski	73,51	59,13	44,73	30,83	18,53	81,51	66,81	52,01	37,40	23,64
70 Płocki	71,17	56,59	42,31	28,72	17,04	79,28	64,52	49,77	35,33	21,96
71 Siedlecki	71,58	56,94	42,58	29,01	17,41	80,69	66,16	51,39	36,85	23,25
72 Chojnicki	72,01	57,57	43,28	29,65	17,67	80,50	65,83	51,03	36,46	22,83
73 Żyrardowski	70,89	56,36	41,97	28,39	17,00	79,32	64,83	50,11	35,65	22,21

Table D. LIFE TABLE FOR BOTH SEXES COMBINED FOR POLAND IN 2020

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	0,00353	100000	353	99682	7653594	76,54
1	0,00024	99647	24	99635	7553912	75,81
2	0,00016	99623	16	99615	7454277	74,82
3	0,00013	99607	13	99601	7354662	73,84
4	0,00010	99594	10	99589	7255061	72,85
5	0,00009	99584	9	99580	7155472	71,85
6	0,00008	99575	8	99571	7055893	70,86
7	0,00008	99567	8	99563	6956322	69,87
8	0,00009	99559	9	99555	6856759	68,87
9	0,00008	99550	8	99546	6757204	67,88
10	0,00008	99542	8	99538	6657658	66,88
11	0,00010	99534	10	99529	6558120	65,89
12	0,00010	99524	10	99519	6458591	64,89
13	0,00013	99514	13	99508	6359072	63,90
14	0,00015	99501	15	99494	6259565	62,91
15	0,00019	99486	19	99477	6160071	61,92
16	0,00023	99467	23	99456	6060595	60,93
17	0,00030	99444	30	99429	5961139	59,94
18	0,00036	99414	36	99396	5861710	58,96
19	0,00043	99378	43	99357	5762314	57,98
20	0,00048	99335	48	99311	5662958	57,01
21	0,00054	99287	54	99260	5563647	56,04
22	0,00059	99233	59	99204	5464387	55,07
23	0,00062	99174	61	99144	5365183	54,10
24	0,00064	99113	63	99082	5266040	53,13
25	0,00068	99050	67	99017	5166958	52,17
26	0,00070	98983	69	98949	5067942	51,20
27	0,00072	98914	71	98879	4968993	50,24
28	0,00077	98843	76	98805	4870115	49,27
29	0,00080	98767	79	98728	4771310	48,31
30	0,00086	98688	85	98646	4672582	47,35
31	0,00093	98603	92	98557	4573937	46,39
32	0,00099	98511	98	98462	4475380	45,43
33	0,00108	98413	106	98360	4376918	44,47
34	0,00117	98307	115	98250	4278558	43,52
35	0,00127	98192	125	98130	4180308	42,57
36	0,00137	98067	134	98000	4082179	41,63
37	0,00147	97933	144	97861	3984179	40,68

Table D. LIFE TABLE FOR BOTH SEXES COMBINED FOR POLAND IN 2020 (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	0,00159	97789	155	97712	3886318	39,74
39	0,00171	97634	167	97551	3788606	38,80
40	0,00185	97467	180	97377	3691056	37,87
41	0,00200	97287	195	97190	3593679	36,94
42	0,00219	97092	213	96986	3496489	36,01
43	0,00239	96879	232	96763	3399504	35,09
44	0,00263	96647	254	96520	3302741	34,17
45	0,00290	96393	280	96253	3206221	33,26
46	0,00320	96113	308	95959	3109968	32,36
47	0,00354	95805	339	95636	3014009	31,46
48	0,00392	95466	374	95279	2918373	30,57
49	0,00434	95092	413	94886	2823094	29,69
50	0,00480	94679	454	94452	2728209	28,82
51	0,00530	94225	499	93976	2633757	27,95
52	0,00584	93726	547	93453	2539781	27,10
53	0,00640	93179	596	92881	2446329	26,25
54	0,00699	92583	647	92260	2353448	25,42
55	0,00767	91936	705	91584	2261188	24,60
56	0,00839	91231	765	90849	2169605	23,78
57	0,00921	90466	833	90050	2078756	22,98
58	0,01012	89633	907	89180	1988707	22,19
59	0,01112	88726	987	88233	1899527	21,41
60	0,01221	87739	1071	87204	1811295	20,64
61	0,01336	86668	1158	86089	1724091	19,89
62	0,01459	85510	1248	84886	1638002	19,16
63	0,01593	84262	1342	83591	1553116	18,43
64	0,01731	82920	1435	82203	1469525	17,72
65	0,01880	81485	1532	80719	1387323	17,03
66	0,02037	79953	1629	79139	1306604	16,34
67	0,02206	78324	1728	77460	1227465	15,67
68	0,02381	76596	1824	75684	1150005	15,01
69	0,02566	74772	1919	73813	1074321	14,37
70	0,02766	72853	2015	71846	1000509	13,73
71	0,02977	70838	2109	69784	928663	13,11
72	0,03214	68729	2209	67625	858880	12,50
73	0,03471	66520	2309	65366	791255	11,89
74	0,03756	64211	2412	63005	725890	11,30
75	0,04071	61799	2516	60541	662885	10,73

Table D. LIFE TABLE FOR BOTH SEXES COMBINED FOR POLAND IN 2020 (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	0,04423	59283	2622	57972	602344	10,16
77	0,04813	56661	2727	55298	544372	9,61
78	0,05249	53934	2831	52519	489074	9,07
79	0,05747	51103	2937	49635	436556	8,54
80	0,06316	48166	3042	46645	386921	8,03
81	0,06961	45124	3141	43554	340276	7,54
82	0,07703	41983	3234	40366	296723	7,07
83	0,08542	38749	3310	37094	256357	6,62
84	0,09484	35439	3361	33759	219263	6,19
85	0,10521	32078	3375	30391	185504	5,78
86	0,11643	28703	3342	27032	155114	5,40
87	0,12850	25361	3259	23732	128082	5,05
88	0,14116	22102	3120	20542	104350	4,72
89	0,15457	18982	2934	17515	83808	4,42
90	0,16849	16048	2704	14696	66293	4,13
91	0,18315	13344	2444	12122	51597	3,87
92	0,19853	10900	2164	9818	39475	3,62
93	0,21451	8736	1874	7799	29657	3,39
94	0,23113	6862	1586	6069	21858	3,19
95	0,24829	5276	1310	4621	15789	2,99
96	0,26576	3966	1054	3439	11168	2,82
97	0,28365	2912	826	2499	7729	2,65
98	0,30105	2086	628	1772	5230	2,51
99	0,31893	1458	465	1226	3458	2,37
100	0,33736	993	335	826	2233	2,25

Table E. LIFE EXPECTANCY FOR BOTH SEXES COMBINED IN 2020
(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	568,2	567,2	566,3	565,3	564,4	563,4	562,4	561,5	560,5	559,6	558,6	557,6
31	556,6	555,6	554,7	553,7	552,8	551,8	550,9	549,9	548,9	548,0	547,0	546,1
32	545,2	544,2	543,3	542,3	541,4	540,4	539,5	538,5	537,6	536,6	535,6	534,7
33	533,7	532,7	531,8	530,8	529,9	528,9	528,0	527,0	526,1	525,1	524,2	523,2
34	522,3	521,4	520,4	519,5	518,5	517,6	516,6	515,7	514,7	513,8	512,8	511,9
35	510,9	510,0	509,0	508,1	507,1	506,2	505,2	504,3	503,3	502,4	501,4	500,5
36	499,5	498,6	497,6	496,7	495,7	494,8	493,8	492,9	492,0	491,0	490,1	489,1
37	488,2	487,3	486,3	485,4	484,4	483,5	482,6	481,6	480,7	479,7	478,8	477,9
38	476,9	476,0	475,0	474,1	473,1	472,2	471,3	470,3	469,4	468,5	467,5	466,6
39	465,6	464,7	463,7	462,8	461,9	460,9	460,0	459,1	458,1	457,2	456,3	455,3
40	454,4	453,5	452,5	451,6	450,7	449,7	448,8	447,9	447,0	446,0	445,1	444,2
41	443,3	442,4	441,4	440,5	439,6	438,7	437,7	436,8	435,9	435,0	434,0	433,1
42	432,1	431,2	430,3	429,3	428,4	427,5	426,6	425,6	424,7	423,8	422,9	422,0
43	421,1	420,2	419,3	418,3	417,4	416,5	415,6	414,7	413,8	412,8	411,9	411,0
44	410,1	409,2	408,3	407,4	406,5	405,5	404,6	403,7	402,8	401,9	401,0	400,1
45	399,1	398,2	397,3	396,4	395,5	394,6	393,7	392,8	391,9	391,0	390,1	389,1
46	388,3	387,4	386,5	385,6	384,7	383,8	382,9	382,0	381,1	380,2	379,3	378,4
47	377,5	376,6	375,7	374,8	373,9	373,0	372,2	371,3	370,4	369,5	368,6	367,7
48	366,8	365,9	365,0	364,2	363,3	362,4	361,5	360,6	359,7	358,9	358,0	357,1
49	356,3	355,4	354,6	353,7	352,8	351,9	351,1	350,2	349,3	348,4	347,6	346,7
50	345,8	344,9	344,1	343,2	342,3	341,5	340,6	339,8	338,9	338,0	337,2	336,3
51	335,4	334,5	333,7	332,8	332,0	331,1	330,3	329,4	328,6	327,7	326,9	326,0
52	325,2	324,4	323,5	322,7	321,8	321,0	320,1	319,3	318,4	317,6	316,8	315,9
53	315,0	314,2	313,3	312,5	311,7	310,8	310,0	309,2	308,3	307,5	306,7	305,8
54	305,0	304,2	303,4	302,5	301,7	300,9	300,1	299,2	298,4	297,6	296,8	295,9
55	295,1	294,3	293,5	292,7	291,8	291,0	290,2	289,4	288,6	287,8	287,0	286,1
56	285,4	284,6	283,8	283,0	282,2	281,4	280,6	279,8	279,0	278,2	277,4	276,6
57	275,7	274,9	274,1	273,3	272,5	271,7	271,0	270,2	269,4	268,6	267,8	267,0
58	266,2	265,4	264,6	263,9	263,1	262,3	261,5	260,8	260,0	259,2	258,4	257,6
59	256,9	256,1	255,4	254,6	253,8	253,1	252,3	251,5	250,8	250,0	249,3	248,5
60	247,7	246,9	246,2	245,4	244,7	243,9	243,2	242,4	241,7	240,9	240,2	239,4
61	238,7	238,0	237,2	236,5	235,8	235,0	234,3	233,5	232,8	232,1	231,3	230,6
62	229,9	229,2	228,5	227,7	227,0	226,3	225,6	224,8	224,1	223,4	222,7	221,9
63	221,2	220,5	219,8	219,1	218,4	217,7	216,9	216,2	215,5	214,8	214,1	213,4
64	212,7	212,0	211,3	210,6	209,9	209,2	208,5	207,8	207,1	206,4	205,7	205,0
65	204,3	203,6	202,9	202,2	201,6	200,9	200,2	199,5	198,8	198,1	197,5	196,8
66	196,1	195,4	194,8	194,1	193,4	192,7	192,1	191,4	190,7	190,1	189,4	188,7

Table E. LIFE EXPECTANCY FOR BOTH SEXES COMBINED IN 2020 (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	188,1	187,4	186,8	186,1	185,5	184,8	184,2	183,5	182,8	182,2	181,5	180,9
68	180,2	179,6	178,9	178,3	177,6	177,0	176,3	175,7	175,0	174,4	173,7	173,1
69	172,4	171,8	171,1	170,5	169,9	169,2	168,6	168,0	167,3	166,7	166,1	165,4
70	164,8	164,2	163,6	162,9	162,3	161,7	161,1	160,4	159,8	159,2	158,6	157,9
71	157,3	156,7	156,1	155,5	154,8	154,2	153,6	153,0	152,4	151,8	151,2	150,6
72	150,0	149,4	148,8	148,2	147,6	147,0	146,4	145,8	145,2	144,6	144,0	143,4
73	142,7	142,1	141,5	140,9	140,3	139,7	139,2	138,6	138,0	137,4	136,8	136,2
74	135,7	135,1	134,5	134,0	133,4	132,8	132,2	131,7	131,1	130,5	129,9	129,3
75	128,7	128,1	127,6	127,0	126,4	125,9	125,3	124,7	124,2	123,6	123,0	122,5
76	121,9	121,3	120,8	120,2	119,7	119,1	118,6	118,0	117,5	116,9	116,4	115,8
77	115,3	114,8	114,2	113,7	113,1	112,6	112,1	111,5	111,0	110,4	109,9	109,4
78	108,8	108,3	107,7	107,2	106,7	106,2	105,6	105,1	104,6	104,1	103,5	103,0
79	102,5	102,0	101,5	101,0	100,5	100,0	99,4	98,9	98,4	97,9	97,4	96,9
80	96,4	95,9	95,4	94,9	94,4	93,9	93,4	93,0	92,5	92,0	91,5	91,0
81	90,5	90,0	89,6	89,1	88,6	88,1	87,7	87,2	86,7	86,2	85,8	85,3
82	84,8	84,3	83,9	83,4	83,0	82,5	82,1	81,6	81,2	80,7	80,3	79,8
83	79,4	79,0	78,5	78,1	77,7	77,3	76,8	76,4	76,0	75,5	75,1	74,7
84	74,2	73,8	73,4	73,0	72,6	72,2	71,8	71,4	71,0	70,6	70,2	69,8
85	69,4	69,0	68,6	68,3	67,9	67,5	67,1	66,7	66,4	66,0	65,6	65,2
86	64,8	64,4	64,1	63,7	63,4	63,0	62,7	62,3	62,0	61,6	61,3	60,9
87	60,6	60,3	59,9	59,6	59,3	59,0	58,6	58,3	58,0	57,6	57,3	57,0
88	56,7	56,4	56,1	55,8	55,5	55,2	54,9	54,6	54,3	53,9	53,6	53,3
89	53,0	52,7	52,4	52,1	51,9	51,6	51,3	51,0	50,7	50,4	50,2	49,9
90	49,6	49,3	49,1	48,8	48,5	48,3	48,0	47,8	47,5	47,2	47,0	46,7