



September 26th 2022

LIFE TABLES – NUTS 2

LIFE EXPECTANCIES – NUTS 3

2019-2021

LIFE EXPECTANCY AT BIRTH DECREASED IN ALL MAINLAND REGIONS

Life expectancy at birth in Portugal, in 2019-2021, was estimated at 80.72 years, 77.67 years for men and 83.37 years for women, which accounted for a decrease of around 4.8 months for men and 3.6 months for women vis-à-vis 2018-2020.

In the 2019-2021 triennium, as a result of the increase in the number of deaths in the context of the COVID-19 disease pandemic, there were also decreases in life expectancy for most regions NUTS 2 and 3. The impact of the COVID-19 pandemic on the regions was, however, differentiated.

By NUTS 2, there were decreases in life expectancy at birth in all regions, except for the Autonomous Regions of Açores and Madeira. The greatest reduction was observed in Alentejo (about 7 months).

By NUTS 3, there were reductions in all mainland regions, the largest in Lezíria do Tejo (-7.44 months) and the smallest in Alto Tâmega (about 1 month).

Life expectancy at age 65 in Portugal, in 2019-2021, was estimated at 19.35 years. At age 65, men could expect to live 17.38 years and women 20.80 years, which corresponded to a fall of, respectively, 4.6 and 3.7 months compared to 2018-2020.

By NUTS 2, in the 2019-2021 triennium, there were reductions in life expectancy at age 65 in all regions, except for the Região Autónoma da Madeira, where it increased slightly. The greatest reduction was observed in Alentejo (about 7 months).

By NUTS 3, there were reductions in life expectancy at age 65 in all regions, except for the Região Autónoma da Madeira, where there were slight gains in life expectancy, of around half a month. The greatest reduction was observed in Alto Alentejo (-1.12 years).

Statistics Portugal, following the release, in May 2022, of the 2019-2021 complete life table for Portugal, releases, on the website – www.ine.pt – the complete life tables 2019-2021 for regions NUTS 2, by sex and both sexes, and life expectancy at birth and at age 65 for NUTS 3 regions for both sexes. In this press release, the analysis is carried out in comparison with the 2018-2020 and the 2008-2010 results, the latter being the first period for which life expectancies at birth and at age 65 are available for the regions NUTS 3, version of NUTS 2013. The indicators published and analyzed in this Press Release are available at the Statistics Portugal website and the links to them can be found in the Excel file released together with this Press Release.

LIFE TABLES – 2019-2021



In the 2019-2021 triennium, life expectancy at birth, for Portugal, was estimated at 80.72 years, which accounted for a reduction of 0.34 years (4.1 months) in comparison with the values estimated for the previous triennium (81.06 years). At birth, men could expect to live 77.67 years and women 83.37 years, which accounted for a decrease of 0.40 years (4.8 months) and 0.30 years (3.6 months), respectively, in comparison with the values estimated for 2018-2020.

Life expectancy at age 65 was estimated at 19.35, which corresponded to a decrease of 0.34 years (4.1 months) compared to the previous three-year period. Men aged 65 years may expect to live, on average, 17.38 years longer and women 20.80 years longer, a reduction of 0.38 years (4.6 months) for men and 0.31 years (3.7 months) for women, vis-à-vis the previous three-year period. The gap between male and female longevity at age 65, in 2019-2021, was of 3.42 years.

Figure 1: Life expectancy at birth and at age 65, Portugal, 2008-2010 to 2019-2021

	Life expectancy at birth (years)			Life expectancy at age 65 (years)		
	Total	Males	Females	Total	Males	Females
2008 - 2010	79.29	76.17	82.19	18.59	16.74	20.03
2009 - 2011	79.55	76.47	82.43	18.75	16.92	20.20
2010 - 2012	79.78	76.67	82.59	18.84	16.94	20.27
2011 - 2013	80.00	76.91	82.79	18.97	17.07	20.40
2012 - 2014	80.24	77.16	83.03	19.12	17.23	20.55
2013 - 2015	80.41	77.36	83.23	19.19	17.32	20.67
2014 - 2016	80.62	77.61	83.33	19.31	17.44	20.73
2015 - 2017	80.78	77.74	83.41	19.45	17.55	20.81
2016 - 2018	80.80	77.78	83.43	19.49	17.58	20.88
2017 - 2019	80.93	77.95	83.51	19.61	17.70	21.00
2018 - 2020	81.06	78.07	83.67	19.69	17.76	21.11
2019 - 2021	80.72	77.67	83.37	19.35	17.38	20.80

Source: Statistics Portugal, Life tables.

In the 2019-2021 triennium, as a result of the increase in the number of deaths in the context of the COVID-19 disease pandemic, there were also reductions in life expectancy for most NUTS 2 and 3 regions. The impact of the COVID-19 pandemic on the regions was, however, differentiated.



Life expectancy at birth in regions NUTS 2

The region Norte maintained the highest values of life expectancy at birth

In the 2019-2021 triennium, there were decreases in life expectancy at birth in all regions NUTS 2, with the exception of the Autonomous Regions of Açores and Madeira, with increases of 0.18 and 0.03 years (2.2 and 0.4 months), respectively. The greatest fall in life expectancy at birth was observed in Alentejo, corresponding to around 7 months (0.59 years less).

The region Norte recorded the highest values of life expectancy at birth for total population (81.13 years), for men (78.15 years) and for women (83.81 years). By contrast, the Autonomous Regions of Madeira and Açores recorded the lowest values for life expectancy at birth, for total population and for men and women.

The greatest differences in longevity between men and women, in 2019-2021, were recorded in the Autonomous Regions of Açores and Madeira, where women could expect to live, on average, 7.10 and 6.67 years longer than men, respectively. The Área Metropolitana de Lisboa and Norte showed the lowest differences in longevity between the two sexes (5.63 and 5.66 years, respectively).

Despite the reductions observed in 2019-2021, in the last eleven trienniums, life expectancy at birth improved in all regions. The largest increases occurred in the Autonomous Regions of Madeira and Açores, with longevity gains of more than 2 years.

Life expectancy at age 65 in regions NUTS 2

Área Metropolitana de Lisboa maintained the highest value of life expectancy at age 65

In the 2019-2021 triennium, there were decreases in life expectancy at age 65 in all regions NUTS 2, with the exception of the Região Autónoma da Madeira, where it increased slightly (0.04 years; 0.48 months). The greatest reduction was registered in Alentejo, around 7 months (0.57 years less).

In this triennium, Área Metropolitana de Lisboa recorded the highest values of life expectancy at age 65 for the total population (19.60 years), for women (21.18 years) and for men (17.65 years), jointly with the region Norte.

The largest differences in longevity at age 65 between men and women, in 2019-2021, were recorded in the Autonomous Regions of Madeira and Açores, where women could expect to live, on average 4.49 and 4.47 years more than men, respectively. The Norte experienced the lowest difference in longevity at age 65 between the two sexes (3.27 years).

In comparison to 2008-2010, it was the Região Autónoma dos Açores that recorded the greatest increase in this indicator, for the total population and for women: from 16.18 to 17.58 years and from 17.71 to 19.57 years, respectively. The greatest increase in life expectancy at age 65 for men occurred in Região Autónoma da Madeira: from 13.86 years in 2008-2010 to 15.06 years in 2019-2021.



Figure 2: Life expectancy at birth, NUTS 2, 2008-2010 to 2019-2021

	Norte	Centro	A.M. Lisboa	Alentejo	Algarve	R.A. Açores	R.A. Madeira
Life expectancy at birth (years) - Total							
2008 - 2010	79.64	79.59	79.29	78.58	78.90	75.86	76.13
2009 - 2011	79.97	79.90	79.52	79.01	79.43	76.01	76.54
2010 - 2012	80.14	80.09	79.65	79.26	79.67	76.32	77.03
2011 - 2013	80.32	80.24	80.00	79.45	80.02	76.49	77.49
2012 - 2014	80.55	80.55	80.32	79.81	80.22	76.82	77.68
2013 - 2015	80.69	80.80	80.50	80.03	80.38	77.15	77.76
2014 - 2016	80.99	80.98	80.71	80.04	80.34	77.28	78.02
2015 - 2017	81.13	81.07	80.85	80.19	80.17	77.48	78.18
2016 - 2018	81.18	81.11	80.94	80.24	79.93	77.85	78.30
2017 - 2019	81.33	81.23	81.01	80.35	79.99	77.87	78.36
2018 - 2020	81.46	81.36	81.14	80.42	80.14	78.00	78.52
2019 - 2021	81.13	80.98	80.75	79.83	79.78	78.18	78.55
Life expectancy at birth (years) - Males							
2008 - 2010	76.65	76.52	75.92	75.47	75.62	72.21	71.85
2009 - 2011	76.94	76.84	76.21	75.95	76.05	72.28	72.67
2010 - 2012	77.05	77.05	76.53	76.40	76.36	72.80	73.19
2011 - 2013	77.36	77.12	76.85	76.29	76.74	72.80	73.41
2012 - 2014	77.52	77.42	77.14	76.91	77.17	73.05	73.62
2013 - 2015	77.70	77.71	77.43	77.05	77.19	73.38	73.65
2014 - 2016	78.07	78.05	77.65	77.07	76.99	73.72	73.96
2015 - 2017	78.21	78.15	77.95	77.27	76.72	73.89	74.25
2016 - 2018	78.25	78.16	77.99	77.31	76.46	74.26	74.34
2017 - 2019	78.44	78.27	78.11	77.37	76.49	74.27	74.39
2018 - 2020	78.55	78.39	78.26	77.38	76.66	74.51	74.63
2019 - 2021	78.15	77.98	77.78	76.66	76.34	74.43	74.80
Life expectancy at birth (years) - Females							
2008 - 2010	82.43	82.43	82.34	81.49	82.22	79.41	79.68
2009 - 2011	82.82	82.71	82.38	81.89	82.59	79.73	79.74
2010 - 2012	82.90	82.94	82.54	82.02	82.90	79.88	80.27
2011 - 2013	83.01	83.07	82.77	82.24	83.01	79.99	80.91
2012 - 2014	83.24	83.37	83.10	82.57	83.03	80.27	81.12
2013 - 2015	83.42	83.54	83.19	82.70	83.31	80.65	81.19
2014 - 2016	83.64	83.66	83.30	82.72	83.48	80.75	81.41
2015 - 2017	83.74	83.74	83.42	82.83	83.37	81.00	81.43
2016 - 2018	83.77	83.74	83.49	82.90	83.14	81.31	81.44
2017 - 2019	83.85	83.87	83.54	83.03	83.24	81.33	81.48
2018 - 2020	83.99	84.00	83.67	83.27	83.32	81.33	81.52
2019 - 2021	83.81	83.73	83.41	82.77	82.93	81.53	81.47

Source: Statistics Portugal, Life tables.



Figure 3: Life expectancy at age 65, NUTS 2, 2008-2010 to 2019-2021

	Norte	Centro	A.M. Lisboa	Alentejo	Algarve	R.A. Açores	R.A. Madeira
Life expectancy at age 65 (years) - Total							
2008 - 2010	18.61	18.63	18.83	18.20	18.79	16.18	16.40
2009 - 2011	18.88	18.89	18.91	18.32	19.03	16.07	16.65
2010 - 2012	18.95	19.03	18.86	18.48	19.09	16.30	17.11
2011 - 2013	19.04	19.08	19.11	18.65	19.17	16.62	17.45
2012 - 2014	19.21	19.32	19.35	18.74	19.33	16.66	17.53
2013 - 2015	19.25	19.45	19.43	18.87	19.66	16.84	17.67
2014 - 2016	19.45	19.55	19.52	19.05	19.66	17.06	17.67
2015 - 2017	19.65	19.61	19.66	19.18	19.46	17.12	17.75
2016 - 2018	19.71	19.75	19.81	19.20	19.08	17.24	17.69
2017 - 2019	19.78	19.75	19.91	19.31	19.36	17.52	17.65
2018 - 2020	19.86	19.79	19.97	19.42	19.58	17.63	17.72
2019 - 2021	19.51	19.43	19.60	18.85	19.21	17.58	17.76
Life expectancy at age 65 (years) - Males							
2008 - 2010	16.84	16.74	16.74	16.33	16.89	14.22	13.86
2009 - 2011	17.12	16.94	16.85	16.45	16.87	13.99	14.11
2010 - 2012	17.08	17.08	16.97	16.69	17.03	14.19	14.97
2011 - 2013	17.24	17.16	17.16	16.77	17.31	14.37	15.07
2012 - 2014	17.38	17.33	17.36	16.84	17.34	14.44	15.08
2013 - 2015	17.48	17.43	17.49	16.99	17.66	14.76	15.15
2014 - 2016	17.70	17.60	17.57	17.26	17.67	14.98	14.99
2015 - 2017	17.89	17.78	17.85	17.28	17.34	14.92	15.12
2016 - 2018	17.92	17.82	17.91	17.35	16.92	15.07	15.04
2017 - 2019	17.98	17.79	18.00	17.43	17.25	15.46	15.00
2018 - 2020	18.02	17.82	18.05	17.68	17.50	15.48	15.08
2019 - 2021	17.65	17.34	17.65	16.96	16.88	15.10	15.06
Life expectancy at age 65 (years) - Females							
2008 - 2010	20.08	20.15	20.39	19.68	20.44	17.71	18.05
2009 - 2011	20.31	20.41	20.38	19.83	20.69	17.67	18.24
2010 - 2012	20.42	20.58	20.34	19.98	20.82	18.06	18.51
2011 - 2013	20.46	20.56	20.63	20.14	20.75	18.23	18.89
2012 - 2014	20.55	20.81	20.81	20.20	20.89	18.29	18.99
2013 - 2015	20.64	20.95	20.86	20.28	20.99	18.41	19.17
2014 - 2016	20.83	20.99	21.03	20.48	21.04	18.69	19.35
2015 - 2017	21.00	21.03	21.11	20.69	21.06	18.84	19.40
2016 - 2018	21.01	21.14	21.37	20.70	21.09	18.93	19.37
2017 - 2019	21.13	21.24	21.48	20.85	21.12	18.97	19.39
2018 - 2020	21.26	21.37	21.54	20.85	21.27	19.24	19.46
2019 - 2021	20.92	21.05	21.18	20.32	21.09	19.57	19.55

Source: Statistics Portugal, Life tables.



Life expectancy at birth in regions NUTS 3

Life expectancy at birth decreased in all mainland regions NUTS 3

In the 2019-2021 triennium, there were decreases in life expectancy at birth in all mainland regions NUTS 3. The greatest decrease in life expectancy at birth was recorded in Lezíria do Tejo (-0.62 years; -7.44 months) and the smallest in Alto Tâmega (-0.09 years; -1.08 months).

Life expectancy at birth estimates shows that, out of 25 regions NUTS 3, nine exceeded the national value (80.72 years). Of these, six regions (Cávado, Região de Leiria, Ave, Região de Coimbra, Área Metropolitana do Porto and Região de Aveiro) recorded values of life expectancy at birth over 81 years. By contrast, the lowest life expectancies at birth were recorded in Região Autónoma dos Açores, in Baixo Alentejo e in Região Autónoma da Madeira, where the expected longevity did not reach 79 years.

In the last eleven trienniums, life expectancy at birth improved in all regions NUTS 3. The highest gains in longevity at birth occurred in Região Autónoma da Madeira (2.42 years) and the lowest in Terras de Trás-os-Montes (0.62 years; 7.44 months).

Life expectancy at age 65 in regions NUTS 3

Except for Região Autónoma da Madeira, life expectancy at age 65 has decreased in all regions NUTS 3

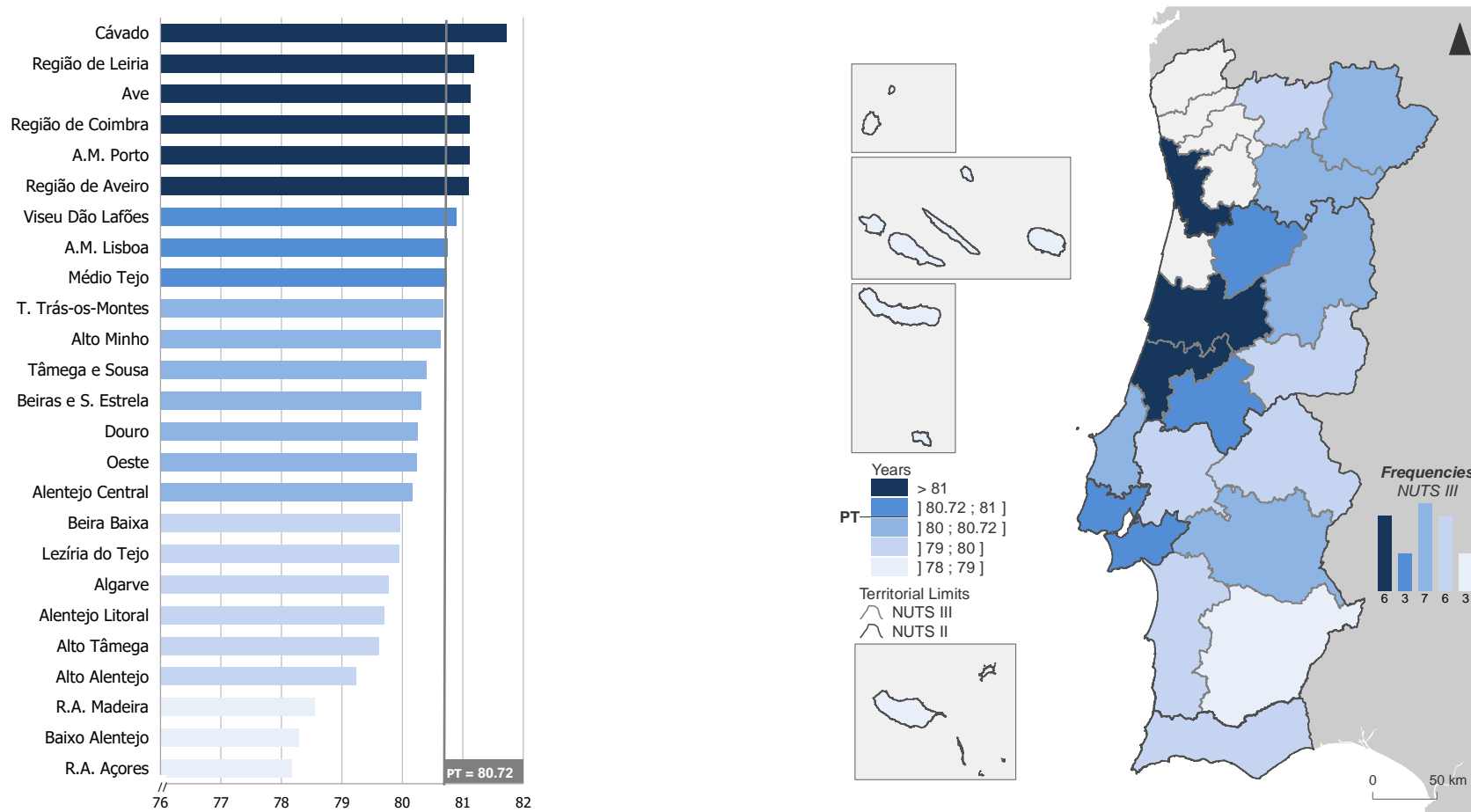
In the 2019-2021 triennium, there were decreases in life expectancy at age 65 in all regions NUTS 3, except for the Região Autónoma da Madeira, with gains in life expectancy of 0.04 years (0.48 months). The greatest decrease in life expectancy at age 65 was recorded in Alto Alentejo (-1.12 years).

The results for the 2019-2021 period show that seventeen regions NUTS 3 exceeded the national value (19.35 years). The regions Cávado and Viseu Dão Lafões recorded the highest values of life expectancy at age 65, 19.93 and 19.82 years, respectively.

The lowest life expectancies at age 65, below eighteen years, were recorded in Região Autónoma dos Açores (17.58 years), Região Autónoma da Madeira (17.76 years) and Baixo Alentejo (17.78 years).

Between 2008-2010 and 2019-2021, with the exception of Alto Alentejo, where there was a decrease of 0.23 years (2.76 months), all regions NUTS 3 recorded improvements in longevity at age 65, with the largest increase occurring in the Região Autónoma dos Açores (1.40 years).

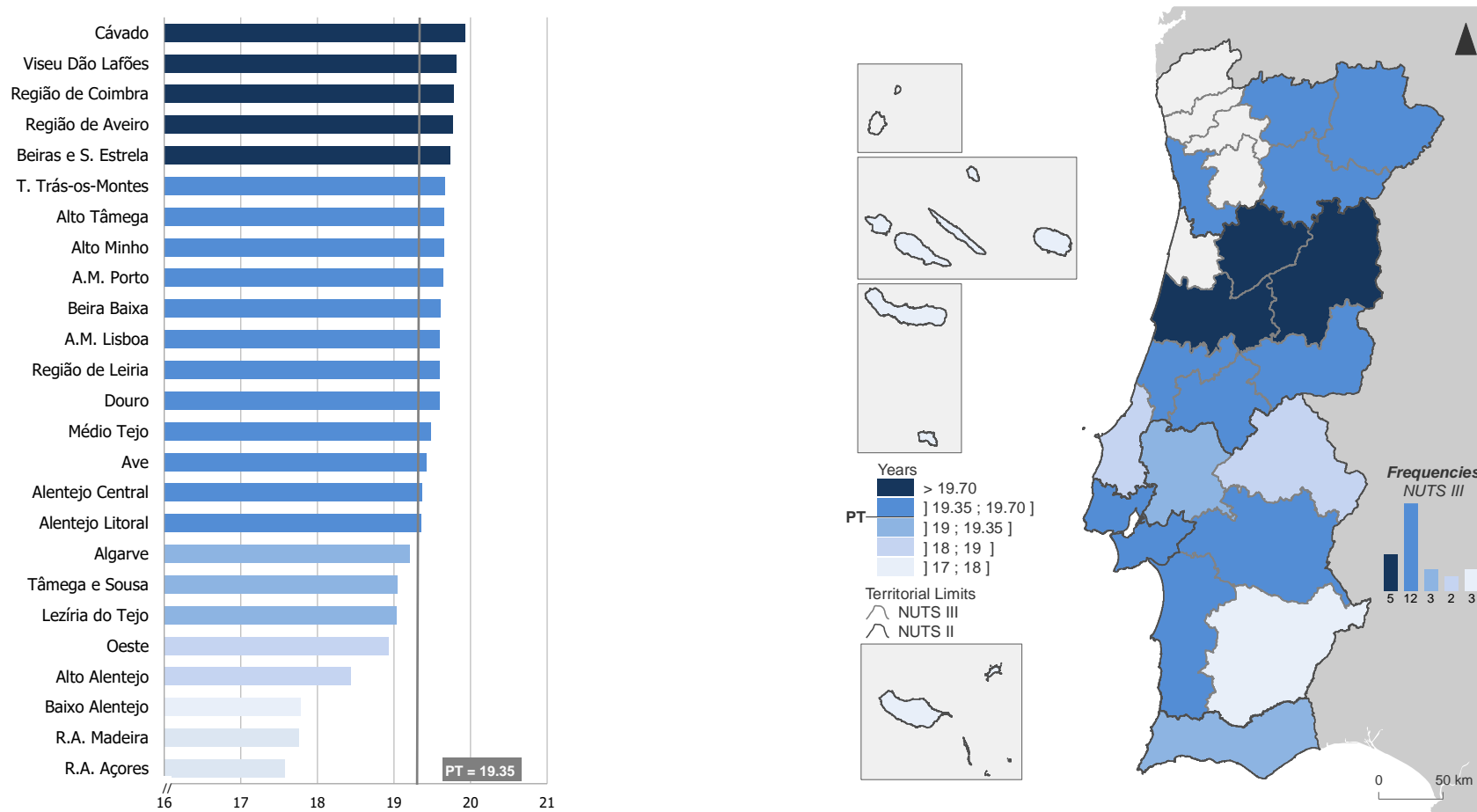
Figure 4: Life expectancy at birth, NUTS 3, 2019-2021



Source: Statistics Portugal, Life tables.



Figure 5: Life expectancy at age 65, NUTS 3, 2019-2021



Source: Statistics Portugal, Life tables.



Figure 6: Life expectancy at birth and at age 65, Portugal, NUTS 1, NUTS 2 and NUTS 3, 2008-2010, 2018-2020 and 2019-2021

	Life expectancy at birth (years)			Life expectancy at age 65 (years)		
	2008 - 2010	2018 - 2020	2019 - 2021	2008 - 2010	2018 - 2020	2019 - 2021
Portugal	79.29	81.06	80.72	18.59	19.69	19.35
Continente	79.38	81.23	80.84	18.60	19.82	19.44
Norte	79.64	81.46	81.13	18.61	19.86	19.51
Alto Minho	79.37	81.00	80.64	18.75	20.06	19.66
Cávado	80.07	82.10	81.73	18.71	20.20	19.93
Ave	79.49	81.48	81.13	18.44	19.79	19.42
Área Metropolitana do Porto	79.72	81.46	81.11	18.79	19.96	19.64
Alto Tâmega	78.09	79.70	79.61	18.55	20.25	19.66
Tâmega e Sousa	78.90	80.93	80.40	18.23	19.40	19.05
Douro	78.79	80.51	80.25	18.38	19.79	19.60
Terras de Trás-os-Montes	80.06	81.01	80.68	19.42	20.28	19.67
Centro	79.59	81.36	80.98	18.63	19.79	19.43
Oeste	78.79	80.75	80.24	17.78	19.17	18.93
Região de Aveiro	79.64	81.44	81.10	19.00	19.92	19.77
Região de Coimbra	79.87	81.58	81.12	18.83	20.39	19.78
Região de Leiria	79.16	81.57	81.18	18.66	20.22	19.60
Viseu Dão Lafões	79.87	81.46	80.89	19.08	20.23	19.82
Beira Baixa	77.72	80.29	79.96	18.98	19.86	19.61
Médio Tejo	79.47	81.15	80.73	18.96	19.95	19.48
Beiras e Serra da Estrela	79.11	80.77	80.32	18.81	20.10	19.73
Área Metropolitana de Lisboa	79.29	81.14	80.75	18.83	19.97	19.60
Área Metropolitana de Lisboa	79.29	81.14	80.75	18.83	19.97	19.60
Alentejo	78.58	80.42	79.83	18.20	19.42	18.85
Alentejo Litoral	78.36	80.29	79.70	18.29	20.02	19.36
Baixo Alentejo	77.12	78.74	78.29	17.43	18.47	17.78
Lezíria do Tejo	78.62	80.57	79.95	18.04	19.60	19.03
Alto Alentejo	77.97	79.84	79.24	18.67	19.56	18.44
Alentejo Central	79.10	80.65	80.17	18.91	19.92	19.37
Algarve	78.90	80.14	79.78	18.79	19.58	19.21
Algarve	78.90	80.14	79.78	18.79	19.58	19.21
Região Autónoma dos Açores	75.86	78.00	78.18	16.18	17.63	17.58
Região Autónoma dos Açores	75.86	78.00	78.18	16.18	17.63	17.58
Região Autónoma dos Açores	75.86	78.00	78.18	16.18	17.63	17.58
Região Autónoma da Madeira	76.13	78.52	78.55	16.40	17.72	17.76
Região Autónoma da Madeira	76.13	78.52	78.55	16.40	17.72	17.76
Região Autónoma da Madeira	76.13	78.52	78.55	16.40	17.72	17.76

Source: Statistics Portugal, Life tables.



TECHNICAL NOTE

The life table is the result of a mathematical model of demographic analysis composed by a set of basic functions which provide a basis for measuring longevity in a given population. Statistics Portugal calculates complete, that is, by single years of age, life tables for Portugal, NUTS 1, 2 and 3 regions with a reference period of three consecutive years. Regarding NUTS 3 from the mainland ('Continente'), only life expectancy at birth and at age 65 are released.

In the construction of complete life table for Portugal and NUTS 1 the probabilities of dying are estimated based on the observed number of deaths for a period of three consecutive years and on the respective estimates for the population exposed-to-the risk of death. The calculation of the population exposed to risk is based on information from the Provisional Estimates of Resident Population 2019 and 2020, based on the definitive results of the 2011 Census.

Due to the variability in the probabilities of dying at advanced ages (over 85 years) the method proposed by Denuit and Goderniaux (2005) is applied for smoothing and extrapolation to the last applicable age (closing age of the life table).

Given the rarity of mortality at some ages in small regions, the complete life tables for NUTS 2 regions are calculated by applying graduation and smoothing methods to mortality rates. For the 'Continente' NUTS 3 sub-regions the Brass relational model (1971, 1974) is applied for obtaining these rates. In both cases, the same method of closing and extrapolating old age mortality rates is applied.

Values for life expectancy and other life table functions correspond to estimates calculated from statistical data and models and should not be interpreted as deterministic indicators. However, assuming that the empirical mortality conditions observed in the reference period for the life table remain constant, it is possible, in a given population, to make probabilistic judgments on the evolution of mortality.

REFERENCES:

Brass, W. (1971). On the scale of mortality. In: Biological Aspects of Demography, London Taylor and Francis.

Brass, W. (1974). Mortality models and their uses in demography. Transactions of the Faculty of Actuaries, 33, 123-132.

Denuit, M. and Goderniaux, A. (2005). Closing and projecting life tables using log-linear models. Bulletin de l'Association Suisse des Actuaries, 1, 29-49.

DEFINITIONS

Life expectancy at birth: The mean number of years that a newborn child can expect to live if subjected throughout his life to the current mortality conditions (age specific probabilities of dying).

Life expectancy at age 65: The mean number of years still to be lived by a person who has reached the exact age 65, if subjected throughout the rest of his life to the current age specific probabilities of dying.

Detailed methodological information available at: www.ine.pt, option Products, Metadata system.

Detailed statistical information available at: www.ine.pt, option Products, Statistical data, database, theme Population, subtheme Mortality and life expectancy.