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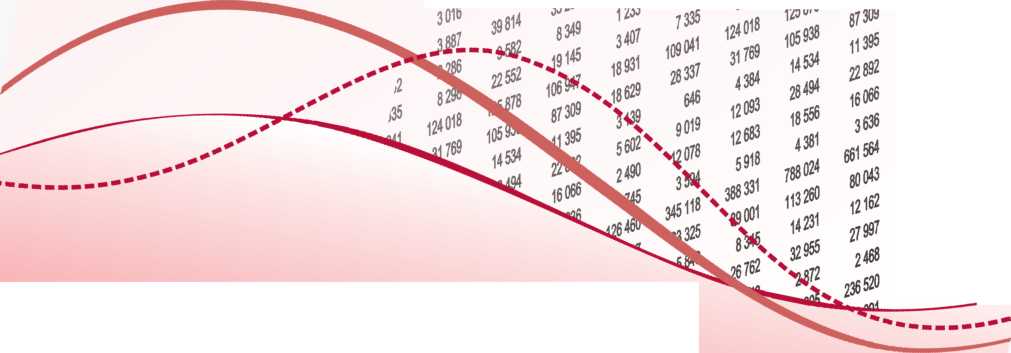
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DRŽAVNI ZAVOD ZA STATISTIKU REPUBLIKE HRVATSKE

CROATIAN BUREAU OF STATISTICS

**Tablice mortaliteta Republike Hrvatske od 2010. do 2012.**

***Life tables for the Republic of Croatia, 2010*** *-* ***2012***

Zagreb, 2014.

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**PREDGOVOR**

FOREWORD

Potpune tablice smrtnosti Hrvatske, za čiju je izradu potrebno raspolagati podacima o stanovništvu prema spolu i pojedinačnim godinama starosti, podacima o broju živorođenih prema spolu i podacima o umrlim osobama prema spolu i pojedinačnim godinama starosti prvi put su u ovom zavodu objavljene nakon Popisa stanovništva 1953. Temeljile su se na rezultatima popisa stanovništva i podacima vitalne statistike koji se na posebnim individualnim statističkim listićima evidentiraju i prikupljaju redovitim statističkim istraživanjem od 1950.

Za isto razdoblje (1952. - 1954.) godine 1960. izrađene su tablice mortaliteta za bivšu državu i sve njezine federalne jedinice. Prema istoj metodologiji u statističkoj službi bivše SFRJ izrađene su tablice mortaliteta Hrvatske za razdoblja 1960. - 1962., 1970. - 1972. i 1980. - 1982. Kako su podaci vitalne statistike za 1991. i 1992. bili nepotpuni, posebno za 1992., jer su nedostajali podaci za privremeno zaposjednuta područja, prve tablice mortaliteta Republike Hrvatske kao neovisne države izra đene su za razdoblje 1988. - 1990. Nakon Popisa stanovništva 2001. objavljene su tablice mortaliteta za razdoblje 2000. - 2002.

U ovoj publikaciji objavljuju se sedme detaljne tablice mortaliteta Republike Hrvatske. Tablice za 2010. - 2012. izrađene su na temelju rezultata Popisa stanovništva 2011. i statistike prirodnoga kretanja stanovništva za

1. 2011. i 2012. Premda su pri izradi novih projekcija stanovništva analizirane potpune tablice smrtnosti i za međupopisne godine, pri izradi ovih, kao i pri izradi prethodnih tablica, nisu uzete u obzir migracije te je primijenjena Becker- Zeunerova metoda. Primjenom iste metode omogućena je uporedivost pokazatelja u tablicama.

Complete life tables for Croatia, since their compilation requires data on population by sex and individual age, data on the number of live births by sex and data on deaths by sex and individual age, were for the first time issued by the Croatian Bureau of Statistics after the 1953 Population Census. They were based on the population census data as well as on the vital statistics data, which have been recorded and collected on special individual statistical sheets in the regular statistical surveys since 1950.

Life tables were compiled in 1960 for the same period (1952 - 1954) for former Yugoslavia and all its federal units. Using the same methodology, the ex-Yugoslav statistics compiled the life tables for Croatia for the periods from 1960 to 1962, from 1970 to 1972 and from 1980 to 1982. Disposing with incomplete vital statistics data for 1991 and especially for 1992, since no information was provided for temporarily occupied areas, the first life tables for the Republic of Croatia as the independent country were compiled for the period from 1988 to 1990. After the 2001 Population Census, life tables were issued for the period from 2000 to 2002.

This publication provides the seventh detailed life tables for the Republic of Croatia. Tables for the period from 2010 to 2012 were compiled on the basis of the 2011 Census of Population results and the natural change in population statistics for 2010, 2011 and 2012. Although complete life tables were also analysed for intercensus years during the compilation of new population projections, migrations were not included in the compilation of both these and earlier tables and the Becker-Zeuner method was applied. The use of the same method enables the comparability of indicators in the tables.

Marko Krištof

Marko Krištof

ravnatelj Državnog zavoda za statistiku

Director General of the Croatian Bureau of Statistics

INTRODUCTION

UVOD

Izrada tablica mortaliteta jedna je od najstarijih tehnika u demografskoj analizi. Tablice sadržavaju niz demografskih pokazatelja od kojih je osnovni pokazatelj vjerojatnost smrti, na temelju koje se izračunavaju ostale biometrijske funkcije: vjerojatnost doživljenja, broj živih, broj umrlih, očekivano trajanje života i dr. Primjenjuju se u analizi smrtnosti, izradi projekcija stanovništva, definiranju neto stopa reprodukcije ženskog stanovništva itd. Posebno su važne za izračunavanje i određivanje visine premije na području životnog osiguranja, u starosnome i invalidskom osiguranju. Tablice omogućuju najkompletnije i najtočnije usporedbe smrtnosti različitih populacija ili dijelova populacija.

Za izradu tablica mortaliteta primjenjuju se različite metode i postupci. Od sredine prošlog stoljeća detaljne tablice mortaliteta za Republiku Hrvatsku izrađuju se na temelju podataka popisa stanovništva i podataka vitalne statistike prema Becker-Zeunerovoj metodi. Primjenom iste metode omogućena je usporedivost pokazatelja u tablicama.

Razina i smjer promjene smrtnosti po starosti neposredno određuje dužinu očekivanog trajanja života na dan rođenja kao sintetičkog pokazatelja smrtnosti stanovništva. Očekivano trajanje života jedan je od najboljih pokazatelja razvijenosti društva. Od sredine prošlog stoljeća povećalo se 14,9 godina za muškarce i 17,2 godine za žene i u promatranom razdoblju (2010. - 2012.) iznosi za muško stanovništvo 73,94 godine, a za žensko 80,36 godina. Ako Hrvatsku usporedimo sa zemljama Europske unije, Hrvatska se nalazi u donjoj sredini ljestvice. Očekivano trajanje života u Hrvatskoj niže je za nekoliko godina od prosjeka zemalja Europske unije (77,4 godine za muškarce i 83,2 godine za žene).

The life tables design is one of the most long -established techniques used in the demographic analysis. The tables consist of a set of demographic indicators, with probability of dying as the main one on the basis of which all other biometrical functions are calculated: probability of surviving, number of survivors, number of deaths, life expectancy etc. They are applied in the mortality analysis, calculation of population projections, defining of net reproduction rate of female population etc. They are especially important for the calculation and definition of the amount of life insurance premiums as well as in the old-age and disability insurance. The tables provide for the most comprehensive and the most accurate comparisons of mortality of different populations or parts of populations.

Various methods and procedures are used in creation of life tables. Since the last century, detailed life tables for the Republic of Croatia have been created on the basis of population census and vital statistics data according to the Becker-Zeuner method. The use of the same method enables the comparability of indicators in the tables.

The level and direction of the mortality change by age directly determines the duration of life expectancy at birth as a synthetic indicator of population mortality. Life expectancy is one of the best indicators of the degree of development of a society. Since mid-20th century, it increased by 14.9 years for men and 17.2 years for women and therefore amounted to 73.94 years for men and 80.36 years for women in the reference period (2010 - 2012). Compared to the EU countries, Croatia is situated at the bottom middle of the scale. The life expectancy in Croatia is by several years lower than the EU average (77.4 years for men and 83.2 years for women).

U odnosu na europske zemlje koje su postigle najveće rezultate u snižavanju smrtnosti, Hrvatska znatno zaostaje. Tako je, na primjer, 2011. u većini razvijenih europskih zemalja duljina očekivanog trajanja života iznosila više od 78 godina za muško stanovništvo - najdulje na Islandu (80,7 godina), Švicarskoj (80,5 godina) i Italiji (80,1 godinu) i više od 83 godine za žensko stanovništvo - najdulje u Francuskoj (85,7 godina), Italiji (85,6 godina) i Ujedinjenoj Kraljevini (85,3 godine). U većini tranzicijskih zemalja očekivano trajanje života niže je nego u Hrvatskoj. Od članica Europske unije niže očekivano trajanje života za oba spola imaju Bugarska, Rumunjska, Mađarska, Litva, Letonija i Slovačka. Očekivano trajanje života muškaraca u Litvi (68,1 godinu) i žena u Bugarskoj (77,8 godina) najniže je u Europskoj uniji.

In relation to European countries that achieved the highest results in reducing the mortality, Croatia is significantly lagging behind. Therefore in 2011, for example, the life expectancy in most developed European countries exceeded 78 years for male population (the most in Island with 80.7 years, followed by Switzerland with 80.5 years and Italy with 80.1 years) and 83 years for female population (the most in France with 85.7 years, followed by Italy with 85.6 years and the United Kingdom with 85.3 years). The life expectancy in most transition countries is lower than in Croatia. Regarding the EU Member States, the lower life expectancy for both sexes was recorded in Bulgaria, Romania, Hungary, Lithuania, Latvia and Slovakia. The life expectancy for men in Lithuania (68.1 years) and for women in Bulgaria (77.8 years) is the lowest in the European Union.

1. TEHNIKA IZRADE DETALJNIH TABLICA MORTALITETA ZA 2010. - 2012.

1. THE TECHNIQUE OF COMPILING DETAILED LIFE TABLES, 2010 - 2012

Sedme detaljne tablice mortaliteta prema pojedinačnim godinama starosti i spolu za 2010. - 2012. izrađene su na temelju Popisa stanovništva od 31. ožujka 2011. i rezultata vitalne statistike za 2010., 2011. i 2012., i to:

* broja stanovnika prema kalendarskim godinama rođenja i spolu iz popisa stanovništva od 31. ožujka 2011.;
* broja živorođene djece prema spolu u 2010. i 2011.;
* broja umrlih prema kalendarskim godinama rođenja i spolu: broja umrlih poslije rođendana u 2010., broja umrlih prije i poslije rođendana i broja umrlih prije i poslije Popisa stanovništva u

1. te broja umrlih prije rođendana 2012.

Iako su pri izradi hipoteza o budućem kretanju mortaliteta analizirane promjene u smrtnosti stanovništva prema spolu prema pojedinačnim godinama starosti s migracijama za ukupno stanovništvo, pri izradi ovih detaljnih tablica nisu korišteni podaci o vanjskim migracijama. Podaci o migracijama nisu korišteni ni pri izradi prijašnjih detaljnih tablica smrtnosti. Rezultati Popisa stanovništva od 31. ožujka 2011. nisu potpuno usporedivi s prijašnjim popisima. Premda su tablice mortaliteta, zbog načina izračuna, mnogo manje osjetljive na metodološke promjene u odnosu na druge demografske pokazatelje, poredbene demografske analize za prošla razdoblja detaljnije će se analizirati u našim idućim publikacijama.

1. Formiranje skupina živih (Vx) i skupina umrlih (Mx)

Skupina živih (Vx) jest broj osoba rođenih u godini n i godini n + 1 koje su u 2010. i 2011. navršile x godina.

The 7th life tables in a row by individua! age and sex for the period from 2010 to 2012 have been compiled on the basis of the Census of Population of 31 March 2011 and vital statistics results for 2010, 2011 and 2012, in particular:

* the number of population by calendar birth years and sex pursuant to the Census of Population of 31 March 2011;
* the number of live births by sex in 2010 and 2011;
* the number of deaths by calendar birth years and sex: the number of deaths after birthday in 2010, the number of deaths before and after birthday and the number of deaths before and after the 2011 Census of Population, and the number of deaths before birthday in 2012.

Although the hypothesis on future mortality changes included the analyses of population mortality changes by sex and individual age together with migrations for the total population, in the compilation of these detailed tables external migrations were not taken into account. Data on migrations were neither used in the compilation of earlier detailed life tables. The results of the Census of Population of 31 March 2011 are not fully comparable with the previous censuses. Albeit life tables, due to the compilation method, are less sensitive to changes in methodology in relation to other demographic indicators, comparative demographic analyses for previous periods will be done in more detail in the future publications of the Croatian Bureau of Statistics.

1. Forming of the number of persons surviving (Vx) and the number of persons dying (Mx )

The number of persons surviving (Vx) is the number of persons born in year n and in year n + 1 who in 2010 and 2011 turned age x.

Skupina umrlih Mx jest broj osoba rođenih u godini n i godini n + 1 koje su umrle u dobi od x godina.

Skupine živih i umrlih računaju se prema jedinstvenim formulama za sve dobne skupine, osim za dojenčad i djecu staru jednu godinu. Ti se podaci za dojenčad računaju na temelju podataka o umrloj dojenčadi prema spolu u razdoblju od 2010. do 2012. i broju živorođene djece prema spolu u 2010. i

1. dok su za djecu staru jednu godinu korišteni podaci o umrloj djeci te dobi i broju djece koja su navršila jednu godinu starosti u 2010. i 2011.

The number of persons dying Mx is the number of persons born in year n and in year n + 1 who died at the exact age x.

The number of persons surviving and persons dying are calculated by using uniform formulas for all age groups, except for infants and children aged 1. Data on infants were calculated on the basis of data on infant deaths by sex in the period from

1. to 2012 and on the number of live births by sex in the period in 2010 and 2011, while, regarding the children aged one year, the data on deaths at that age and on the number of children who turned 1 year of age in 2010 and 2011 were used.
2. Skupine živih i umrlih za 0 godina a) The number of persons surviving and računaju se prema ovim formulama: persons dying at age 0 are calculated by

using the following formulas:

V0 N2010 + N2011

M0 = ZU1 M0

*M,*

M0

2010,,2010 , 2010, ,2011 , 2011,,2011 , 2011,,2012

gdje je

Nx - broj živorođenih u godini x

M - broj umrle dojenčadi u godini n, a rođenih u godini m

where:

Nx - number of live births in year x

M - number of infant deaths in year n and births in year m

1. Skupine živih i umrlih za djecu staru 1 b) The number of persons surviving and godinu računaju se prema formulama: persons dying for children aged 1 are

calculated by using the following formulas:

p , 2009, ,2010 , 2009,, do/ until 31/3/2011 ,, 2010,,2010 2010,,2011

P2009 + M1 + M1 +N2010 “ M 0 - M 0

M1 = 2009m12010 + 2009m12011 + 2010m2011 + 2010m12012

gdje je

*where:*

P2009 - broj stanovnika 31. ožujka 2011. rođenih u 2009.

”Mf - broj umrlih u dobi od jedne godine,

umrlih u godini n, a rođenih u godini m

c) Za stanovništvo staro x = 2, 3, 4, ..., 105 godina skupine živih i umrlih računaju se prema sljedećim formulama:

P2009 - population number as on 31 March

1. born in 2009

M - number of deaths at age 1, deaths in year n and born in year m

1. For the population aged x = 2, 3, 4, ...,105, the number of persons surviving and persons dying are calculated by using the following formulas:

*MX*

*+*

2010-x '

2011-x

2011-*xMdo* / *until31/3/2011* 2011-*xMod* / *afteri1/3/2011*

2010-x, ,2010 , 2010-x, ,2011 , 2011-x, ,2011 , 2011-xw 2012

*MX*

*Mx*

gdje je

x - starost

P - broj stanovnika 31. ožujka 2011.

donji indeks uz P - godina rođenja

gornji lijevi indeks uz M - godina rođenja

gornji desni indeks uz M - godina smrti (prije/poslije popisa stanovništva).

M - broj umrlih where:

*x* - indicates age

*P* - indicates population number as on 31 March 2011

lower index at *P* - indicates birth year

upper left index at *M* - indicates birth year

upper right index at *M* - indicates death year (before/after the population census)

*M* - indicates number of deaths

1. Izračunavanje sirovih vjerojatnosti smrti (q'x)

Sirove vjerojatnosti smrti računaju se za ukupno, muško i žensko stanovništvo za sve dobne skupine (x = 0, 1, 2, ..., 105) prema formuli:

1. The calculation of crude probabilities of dying (q'x)

Crude probabilities of dying are calculated for total, male and female population for all age groups (x = 0, 1, 2, ..., 105) by using the following formula:

q x = Mx 1 Vx

gdje je Mx skupina umrlih, a Vx skupina živih starih x godina (tj. starih od x do x + 1 godina).

1. Izglađivanje sirovih vjerojatnosti smrti

Izglađivanje je postupak tranformacije sirovih vjerojatnosti smrti da bi se otklonile posljedice pogrešaka slučajne naravi. Te pogreške najčešće su posljedica nedovoljno velikih skupina živih i umrlih za pojedine dobne skupine te nedovoljne točnosti osnovnih podataka, posebno o godinama starosti umrlih.

Sirove vjerojatnosti smrti se izglađuju prema raznim metodama. Standardno se za izglađivanje sirovih vjerojatnosti primjenjuju Karupove formule različite jačine.

Opći oblik Karupove formule glasi: where Mx is the number of persons dying and Vx is the number of persons surviving aged x years (that is, aged from x to x + 1 years).

1. The smoothing of crude probabilities of dying

Smoothing is a procedure of transformation of probabilities of dying in order to eliminate the effects of random errors. These errors are mostly caused by scanty number of persons surviving and persons dying in certain age groups as well as by inadequate accuracy of basic data, particularly on the age of persons dying.

Various methods are applied in smoothing of crude probabilities of dying. As a standard, the Karup's formulas of different strength are used in smoothing of crude probabilities.

The general form of the Karup’s formula is given below:

*Vx,n* = 1/2n 4 E *(kvZv + k n+vZ v+n* ) v=0

gdje je

*where:*

*q*x n - izglađena vjerojatnost za starost x *q*x n - indicates smoothed probability for

pri čemu indeks n označava jačinu Karupove formule age x, where index n indicates the strength of the Karup's formula

kv = *'*In3 — 5n v2 + 3f3, *n =* 1,2,3,4...

kn+v = -v(n - v)2, n = 1,2,3,4...

z0 *= qx*

zv q x-v + q x+v > v *0*

Za izglađivanje sirovih vjerojatnosti smrti The following formulas were applied in primjenjene su sljedeće formule: smoothing of crude probabilities of dying:

qx,i =

qx,2 = 1/32(16q'x+9zi-z3)

qx3 = 1/162(54qx + 42z1 + 18z2 - 4z4 - 2z5)

qx4 = 1/512(128qx + 111z1 + 72z2 + 29z3 -9z5 -8z6 -3z7)

qx 5 = 1/1250(250qx + 228z1 + 174z2 + 106z3 + 42z4 - 16z6 - 18z7 - 12z8 - 4z9)

qx6 = 1/2592(432qx + 405z1 + 336z2 + 243z3 + 144z4 + 57z5 - 25z7 - 32z8 - 27z9 - 16z10 - 5z11)

qx 7 = 1/4802(686qx + 654z1 + 570z2 + 452z3 + 318z4 + 186z5 + 74z6 - 36z8 - 50z9 - 48z10 - 36z11 - 20z12 - 6z13)

Za svaku starost x izračunane su vrijednosti For each age x values qxJ to qx,7 were qx1 do qx 7 i potom je izabrana ona vrijednost calculated prior to selecting the value qxk for qx k za koju je which:

Vxqxt -Mx = min(Vxqx, n -Mx)

Iz navedenih formula vidi se da se Karupove formule ne mogu primjeniti za starosti x = 0, 1, 2, 3, a za x = 4, 5, ..., 12 ne može se primijeniti svih sedam formula. Također, te formule ne daju dobre rezultate za starost od 90 do 105 godina, zbog slučajnih pogrešaka u podacima o mortalitetu tih godišta, što narušava pravilan rast vjerojatnosti smrti s povećanjem starosti, a to je posljedica i malog broja slučajeva iz kojih se izračunavaju sirove vjerojatnosti smrti. Pokazalo se da su vjerojatnosti smrti izračunane Karupovim formulama neregularno male za spomenute dobne skupine. Zbog toga se morao primijeniti drugi postupak izglađivanja.

The mentioned formulas show that the Karup’s formulas cannot be applied for ages x = 0, 1, 2, 3, and for x = 4, 5,..., 12 neither of seven formulas can be applied. In the same way, these formulas do not make good results for ages from 90 to 105 years due to random errors in data on the mortality in these ages, which corrupts the regular growth of the probability of dying parallel to the growth of age, which is caused by few number of cases used in the calculation of crude probabilities of dying. It showed that the probabilities of dying calculated by applying the Karup’s formulas irregularly scanty for the mentioned age groups. This is the reason why another smoothing method had to be applied.

Najprije je iskušan postupak s pomoću Gompertz-Makehamove formule, koji je u prijašnjim detaljnim tablicama najčešće primijenjen. Formula ima oblik:

The first to be tested was a procedure by applying the Gompertz-Makeham’s formula, which had been the most frequently used in earlier detailed tables. The formula has the following form:

x-80

log px = a + bc

gdje je px vjerojatnost doživljenja, a parametri a, b i c računaju se prema formulama where px is the probability of surviving, while parameters a, b, and c are calculated by using the following formulas:

(i i

log P90 - log P80

c =

log P80 - log P70

log P90 - log P8

b =

c10 -1 a = log P80 - b

No, ta formula također nije dala dobre rezultate jer su i tako izglađene vjerojatnosti za spomenute starosti male.

Zatim je iskušana metoda izglađivanja s pomoću modela eksponencijalne krivulje oblika:

*q*x

gdje je b = qx (izglađeno Karupovim formulama). Ta metoda pokazala je zadovoljavajuće rezultate.

However, neither this formula gave good results, because the probabilities for the mentioned ages smoothed that way were also few.

The next tested smoothing method was the exponential curve model, which has the following form:

= bcx-90

where b = q*x* (smoothed by applying the Karup’s formulas). This method finally gave satisfactory results.

1. Izračunavanje biometrijskih funkcija u tablicama

Iz izglađenih vjerojatnosti smrti (qx) izračunane su sve ostale vrijednosti u tablicama. Ta vjerojatnost primijenjena je na fiktivnu masu od 100 000 osoba rođenih istodobno kako bi se dobile vrijednosti broja živih i vrijednosti ostalih biometrijskih funkcija.

Funkcija px (vjerojatnost doživljenja) definirana je kao px = 1 - qx. To je vjerojatnost da će osoba stara x godina doživjeti starost od x + 1 godina.

Funkcija lx (broj živih) polazi od početne vrijednosti l0 = 100 000, s tim da je lx = lx-1xpx-1 i smanjuje se zbog smrtnosti s povećanjem starosti, a znači broj živih starih točno x godina.

Funkcija dx (broj umrlih) definirana je kao dx = lx - lx+1 i pokazuje koliko od broja živih starosti x umire prije nego što dostigne starost x + 1 godina.

Funkcija Lx (srednji broj živih) definirana je kao Lx = (lx + lx+1)/2 i znači broj živih u starosti od x do x + 1 godina.

Funkcija ex (očekivano trajanje života) definirana je kao ex = NJlx gdje je Nx = YLx (zbroj srednjih brojeva živih). x

1. Calculation of biometrical functions in tables

The smoothed probabilities of dying (qj were the basis for the calculation of all the other values in the tables. This probability was applied to the fictive mass of 100 000 persons born at the same time aimed at obtaining the values of the number of survivors as well as values of other biometrical functions.

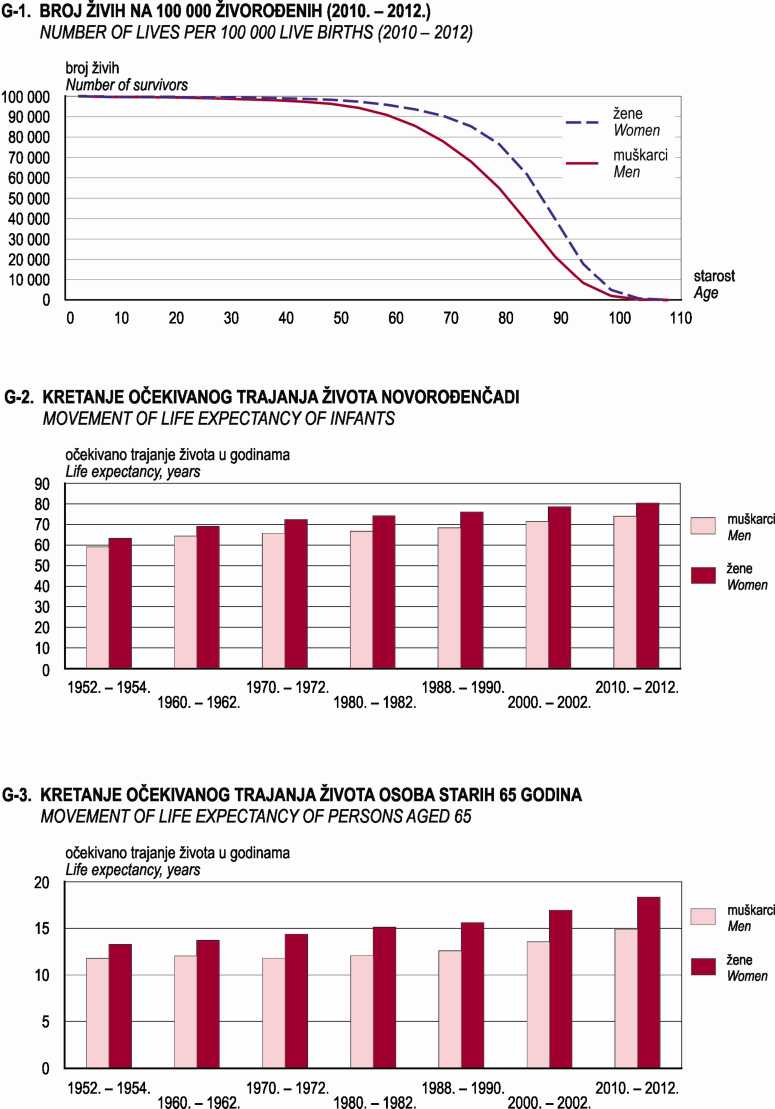
The function px (the probability of surviving) is defined as px = 1 - qx. It means the probability that a person aged x will live to the age of x + 1 years.

The function lx (total number of persons) starts with the initial value l0 = 100 000, where lx = lx-1xpx-1 which decline due to the mortality related to age and means the number of living aged exactly x years.

The function dx (number of deaths) is defined as dx = lx - lx+1 and shows how many of the number of living aged x die before reaching the age x + 1 years.

The function Lx (mean number of living) is defined as Lx = (lx + lx+1)/2 and indicates the number of living aged x to x + 1 years.

The function ex (life expectancy) is defined as ex = NJlx where Nx = YLx (the sum of mean numbers of living). x



|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Starost  Age | Skupine živih Number of persons surviving  Vx | Skupine  umrlih  Number  ofpersons  dying  Mx | Sirove  vjerojatnosti  smrti  Crude  probabiiities  ofdying  qx' | Izglađene  vjerojatnosti  smrti  Smoothed  probabiiities  ofdying | Vjerojatnosti  doživljenja  Probabiiities  ofsurviving  Px | Broj  živih  Numberf  ofsurvivors  lx | Broj mrtvih Numberf of deaths  dx | Zbroj  brojeva  živih  Numberf  ofperson  -yearsf  Nx | Očekivano  trajanje  života  Life  expectancy  ex |
| 0 | 43 600 | 127 | 0,002913 | 0,002913 | Muškarci  Men  0,997087 | 100 000 | 291 | 7 443 829 | 73,94 |
| 1 | 44 832 | 13 | 0,000290 | 0,000290 | 0,999710 | 99 709 | 29 | 7 343 829 | 73,15 |
| 2 | 44 671 | 9 | 0,000201 | 0,000201 | 0,999799 | 99 680 | 20 | 7244121 | 72,17 |
| 3 | 43 321 | 7 | 0,000162 | 0,000162 | 0,999838 | 99 660 | 16 | 7 144 441 | 71,19 |
| 4 | 42 490 | 5 | 0,000118 | 0,000118 | 0,999882 | 99 644 | 12 | 7 044 781 | 70,20 |
| 5 | 42 997 | 4 | 0,000093 | 0,000054 | 0,999946 | 99 632 | 5 | 6945138 | 69,21 |
| 6 | 42 533 | 2 | 0,000047 | 0,000067 | 0,999933 | 99 627 | 7 | 6 845 506 | 68,21 |
| 7 | 41 295 | 4 | 0,000097 | 0,000077 | 0,999923 | 99 620 | 8 | 6 745 879 | 67,22 |
| 8 | 41 100 | 5 | 0,000122 | 0,000110 | 0,999890 | 99 612 | 11 | 6 646 259 | 66,22 |
| 9 | 41 836 | 6 | 0,000143 | 0,000114 | 0,999886 | 99 601 | 11 | 6 546 647 | 65,23 |
| 10 | 43 671 | 7 | 0,000160 | 0,000142 | 0,999858 | 99 590 | 14 | 6 447 046 | 64,24 |
| 11 | 45 666 | 8 | 0,000175 | 0,000157 | 0,999843 | 99 576 | 16 | 6 347 456 | 63,25 |
| 12 | 47 457 | 9 | 0,000190 | 0,000184 | 0,999816 | 99 560 | 18 | 6 247 880 | 62,25 |
| 13 | 49 866 | 10 | 0,000201 | 0,000202 | 0,999798 | 99 542 | 20 | 6 148320 | 61,27 |
| 14 | 51 766 | 12 | 0,000232 | 0,000257 | 0,999743 | 99 522 | 26 | 6 048 779 | 60,28 |
| 15 | 51 186 | 19 | 0,000371 | 0,000322 | 0,999678 | 99 496 | 32 | 5 949 257 | 59,29 |
| 16 | 49 411 | 18 | 0,000364 | 0,000393 | 0,999607 | 99 464 | 39 | 5 849 761 | 58,31 |
| 17 | 49 400 | 23 | 0,000466 | 0,000475 | 0,999525 | 99 425 | 47 | 5 750 297 | 57,34 |
| 18 | 49 266 | 30 | 0,000609 | 0,000548 | 0,999452 | 99 378 | 54 | 5 650 872 | 56,36 |
| 19 | 50 613 | 29 | 0,000573 | 0,000610 | 0,999390 | 99 323 | 61 | 5 551 495 | 55,39 |
| 20 | 52 225 | 40 | 0,000766 | 0,000667 | 0,999333 | 99 263 | 66 | 5452172 | 54,43 |
| 21 | 51 969 | 41 | 0,000789 | 0,000714 | 0,999286 | 99 196 | 71 | 5 352 909 | 53,46 |
| 22 | 53 355 | 42 | 0,000787 | 0,000752 | 0,999248 | 99 125 | 75 | 5253713 | 52,50 |
| 23 | 54 354 | 38 | 0,000699 | 0,000741 | 0,999259 | 99 051 | 73 | 5 154 588 | 51,54 |
| 24 | 54 590 | 44 | 0,000806 | 0,000739 | 0,999261 | 98 978 | 73 | 5 055 537 | 50,58 |
| 25 | 56 186 | 38 | 0,000676 | 0,000813 | 0,999187 | 98 904 | 80 | 4 956 559 | 49,61 |
| 26 | 58 571 | 62 | 0,001059 | 0,000827 | 0,999173 | 98 824 | 82 | 4 857 655 | 48,65 |
| 27 | 59 539 | 50 | 0,000840 | 0,000836 | 0,999164 | 98 742 | 83 | 4 758 831 | 47,69 |
| 28 | 59 568 | 48 | 0,000806 | 0,000815 | 0,999185 | 98 660 | 80 | 4 660 088 | 46,73 |
| 29 | 59 898 | 48 | 0,000801 | 0,000848 | 0,999152 | 98 579 | 84 | 4 561 429 | 45,77 |
| 30 | 60 685 | 61 | 0,001005 | 0,000872 | 0,999128 | 98 496 | 86 | 4 462 849 | 44,81 |
| 31 | 61 249 | 55 | 0,000898 | 0,000883 | 0,999117 | 98 410 | 87 | 4364354 | 43,85 |
| 32 | 60 522 | 56 | 0,000925 | 0,000897 | 0,999103 | 98 323 | 88 | 4 265 944 | 42,89 |
| 33 | 59 733 | 53 | 0,000887 | 0,000882 | 0,999118 | 98 235 | 87 | 4167621 | 41,93 |
| 34 | 58 834 | 53 | 0,000901 | 0,000992 | 0,999008 | 98 148 | 97 | 4 069 387 | 40,96 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Starost  Age | Skupine živih Number of persons surviving  Vx | Skupine  umrlih  Number  ofpersons  dying  Mx | Sirove  vjerojatnosti  smrti  Crude  probabilities  ofdying  qx' | Izglađene  vjerojatnosti  smrti  Smoothed  probabilities  ofdying  qx | Vjerojatnosti  doživljenja  Probabilities  ofsurviving  Px | Broj  živih  Numberf  ofsurvivors  lx | Broj  mrtvih  Numberf  ofdeaths  dx | Zbroj  brojeva  živih  Numberf  ofperson  -yearsf  Nx | Očekivano  trajanje  života  Life  expectancy  ex |
| 35 | 58 039 | 77 | 0,001327 | 0,001168 | Muškarci  Men  0,998832 | 98 051 | 115 | 3 971 239 | 40,00 |
| 36 | 57 723 | 81 | 0,001403 | 0,001279 | 0,998721 | 97 936 | 125 | 3873188 | 39,05 |
| 37 | 57 403 | 97 | 0,001690 | 0,001395 | 0,998605 | 97 811 | 136 | 3 775 252 | 38,10 |
| 38 | 57 333 | 85 | 0,001483 | 0,001527 | 0,998473 | 97 674 | 149 | 3 677 441 | 37,15 |
| 39 | 57 338 | 87 | 0,001517 | 0,001531 | 0,998469 | 97 525 | 149 | 3 579 767 | 36,21 |
| 40 | 55 748 | 94 | 0,001686 | 0,001719 | 0,998281 | 97 376 | 167 | 3 482 242 | 35,26 |
| 41 | 55 306 | 115 | 0,002079 | 0,002035 | 0,997965 | 97 208 | 198 | 3384866 | 34,32 |
| 42 | 56 878 | 136 | 0,002391 | 0,002275 | 0,997725 | 97 011 | 221 | 3 287 657 | 33,39 |
| 43 | 58 414 | 154 | 0,002636 | 0,002542 | 0,997458 | 96 790 | 246 | 3190647 | 32,46 |
| 44 | 60 434 | 185 | 0,003061 | 0,002854 | 0,997146 | 96 544 | 276 | 3 093 857 | 31,55 |
| 45 | 61 903 | 193 | 0,003118 | 0,003130 | 0,996870 | 96 268 | 301 | 2997313 | 30,64 |
| 46 | 60 994 | 202 | 0,003312 | 0,003432 | 0,996568 | 95 967 | 329 | 2 901 045 | 29,73 |
| 47 | 59 972 | 245 | 0,004085 | 0,004015 | 0,995985 | 95 638 | 384 | 2 805 078 | 28,83 |
| 48 | 60 940 | 286 | 0,004693 | 0,004603 | 0,995397 | 95 254 | 438 | 2 709 440 | 27,94 |
| 49 | 62 176 | 332 | 0,005340 | 0,005224 | 0,994776 | 94 815 | 495 | 2 614 187 | 27,07 |
| 50 | 62 947 | 351 | 0,005576 | 0,005920 | 0,994080 | 94 320 | 558 | 2519372 | 26,21 |
| 51 | 63 531 | 454 | 0,007146 | 0,006651 | 0,993349 | 93 761 | 624 | 2 425 052 | 25,36 |
| 52 | 63 449 | 469 | 0,007392 | 0,007437 | 0,992563 | 93 138 | 693 | 2 331 290 | 24,53 |
| 53 | 62 692 | 505 | 0,008055 | 0,008221 | 0,991779 | 92 445 | 760 | 2238152 | 23,71 |
| 54 | 63 552 | 596 | 0,009378 | 0,009183 | 0,990817 | 91 685 | 842 | 2145707 | 22,90 |
| 55 | 64 660 | 670 | 0,010362 | 0,010108 | 0,989892 | 90 843 | 918 | 2 054 022 | 22,11 |
| 56 | 64 986 | 725 | 0,011156 | 0,011017 | 0,988983 | 89 925 | 991 | 1 963 179 | 21,33 |
| 57 | 63 450 | 734 | 0,011568 | 0,011862 | 0,988138 | 88 934 | 1 055 | 1 873 254 | 20,56 |
| 58 | 60 866 | 810 | 0,013308 | 0,013337 | 0,986663 | 87 879 | 1 172 | 1 784319 | 19,80 |
| 59 | 57 763 | 883 | 0,015287 | 0,014508 | 0,985492 | 86 707 | 1 258 | 1 696 440 | 19,07 |
| 60 | 55 903 | 911 | 0,016296 | 0,015732 | 0,984268 | 85 449 | 1 344 | 1 609 732 | 18,34 |
| 61 | 55 310 | 932 | 0,016850 | 0,017019 | 0,982981 | 84 105 | 1 431 | 1 524283 | 17,62 |
| 62 | 51 548 | 949 | 0,018410 | 0,018242 | 0,981758 | 82 674 | 1 508 | 1 440178 | 16,92 |
| 63 | 48 306 | 946 | 0,019583 | 0,019685 | 0,980315 | 81 166 | 1 598 | 1 357 504 | 16,23 |
| 64 | 45 232 | 967 | 0,021379 | 0,021346 | 0,978654 | 79 568 | 1 698 | 1 276 338 | 15,54 |
| 65 | 37 518 | 879 | 0,023429 | 0,022996 | 0,977004 | 77 869 | 1 791 | 1 196 770 | 14,87 |
| 66 | 33 294 | 840 | 0,025230 | 0,024789 | 0,975211 | 76 079 | 1 886 | 1 118901 | 14,21 |
| 67 | 35 732 | 967 | 0,027063 | 0,026757 | 0,973243 | 74 193 | 1 985 | 1 042 822 | 13,56 |
| 68 | 38 739 | 1 127 | 0,029092 | 0,028945 | 0,971055 | 72 208 | 2 090 | 968 629 | 12,91 |
| 69 | 38 753 | 1 245 | 0,032127 | 0,031415 | 0,968585 | 70 118 | 2 203 | 896 421 | 12,28 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Starost  Age | Skupine živih Number of persons surviving  Vx | Skupine  umrlih  Number  ofpersons  dying  Mx | Sirove  vjerojatnosti  smrti  Crude  probabilities  ofdying  qx' | Izglađene  vjerojatnosti  smrti  Smoothed  probabilities  ofdying  qx | Vjerojatnosti  doživljenja  Probabilities  ofsurviving  Px | Broj  živih  Numberf  ofsurvivors  lx | Broj mrtvih Numberf of deaths  dx | Zbroj  brojeva  živih  Numberf  ofperson  -yearsf  Nx | Očekivano  trajanje  života  Life  expectancy  ex |
| 70 | 37 814 | 1 243 | 0,032871 | 0,034214 | Muškarci  Men  0,965786 | 67 915 | 2 324 | 826 304 | 11,67 |
| 71 | 37 829 | 1 477 | 0,039044 | 0,037399 | 0,962601 | 65 591 | 2 453 | 758 389 | 11,06 |
| 72 | 36 216 | 1 468 | 0,040535 | 0,040966 | 0,959034 | 63 138 | 2 587 | 692 797 | 10,47 |
| 73 | 35 170 | 1 568 | 0,044583 | 0,044704 | 0,955296 | 60 552 | 2 707 | 629 659 | 9,90 |
| 74 | 34 108 | 1 685 | 0,049402 | 0,049723 | 0,950277 | 57 845 | 2 876 | 569107 | 9,34 |
| 75 | 32 072 | 1 825 | 0,056903 | 0,055094 | 0,944906 | 54 969 | 3 028 | 511 262 | 8,80 |
| 76 | 30 049 | 1 784 | 0,059370 | 0,060888 | 0,939112 | 51 940 | 3 163 | 456 294 | 8,28 |
| 77 | 27 822 | 1 902 | 0,068363 | 0,068093 | 0,931907 | 48 778 | 3 321 | 404 354 | 7,79 |
| 78 | 25 326 | 1 956 | 0,077233 | 0,075622 | 0,924378 | 45 456 | 3 437 | 355 576 | 7,32 |
| 79 | 22 911 | 1 932 | 0,084326 | 0,083508 | 0,916492 | 42 019 | 3 509 | 310120 | 6,88 |
| 80 | 20 850 | 1 978 | 0,094868 | 0,092007 | 0,907993 | 38 510 | 3 543 | 268 101 | 6,46 |
| 81 | 18 154 | 1 788 | 0,098491 | 0,100487 | 0,899513 | 34 967 | 3 514 | 229 591 | 6,07 |
| 82 | 15 329 | 1 693 | 0,110444 | 0,110518 | 0,889482 | 31 453 | 3 476 | 194624 | 5,69 |
| 83 | 12 603 | 1 554 | 0,123304 | 0,120707 | 0,879293 | 27 977 | 3 377 | 163171 | 5,33 |
| 84 | 10 227 | 1 338 | 0,130830 | 0,131390 | 0,868610 | 24 600 | 3 232 | 135194 | 5,00 |
| 85 | 8 179 | 1 157 | 0,141460 | 0,143680 | 0,856320 | 21 368 | 3 070 | 110594 | 4,68 |
| 86 | 6 508 | 1 051 | 0,161494 | 0,158332 | 0,841668 | 18 298 | 2 897 | 89 227 | 4,38 |
| 87 | 5 249 | 909 | 0,173176 | 0,171651 | 0,828349 | 15 400 | 2 644 | 70 929 | 4,11 |
| 88 | 4 203 | 782 | 0,186058 | 0,185581 | 0,814419 | 12 757 | 2 367 | 55 529 | 3,85 |
| 89 | 3 309 | 675 | 0,203989 | 0,200152 | 0,799848 | 10 390 | 2 079 | 42 772 | 3,62 |
| 90 | 2 499 | 523 | 0,209284 | 0,213885 | 0,786115 | 8 310 | 1 777 | 32 382 | 3,40 |
| 91 | 1 837 | 428 | 0,232989 | 0,229082 | 0,770918 | 6 533 | 1 497 | 24 072 | 3,18 |
| 92 | 987 | 251 | 0,254306 | 0,245358 | 0,754642 | 5 036 | 1 236 | 17 539 | 2,98 |
| 93 | 470 | 124 | 0,263830 | 0,262791 | 0,737209 | 3 800 | 999 | 12 503 | 2,79 |
| 94 | 325 | 92 | 0,283077 | 0,281462 | 0,718538 | 2 802 | 789 | 8 703 | 2,61 |
| 95 | 277 | 68 | 0,245487 | 0,301460 | 0,698540 | 2 013 | 607 | 5 901 | 2,43 |
| 96 | 279 | 99 | 0,354839 | 0,322879 | 0,677121 | 1 406 | 454 | 3 888 | 2,26 |
| 97 | 237 | 78 | 0,329114 | 0,345819 | 0,654181 | 952 | 329 | 2 482 | 2,11 |
| 98 | 177 | 60 | 0,338983 | 0,370390 | 0,629610 | 623 | 231 | 1 529 | 1,96 |
| 99 | 88 | 40 | 0,454545 | 0,396706 | 0,603294 | 392 | 156 | 906 | 1,81 |
| 100 | 49 | 18 | 0,367347 | 0,424892 | 0,575108 | 237 | 101 | 514 | 1,67 |
| 101 | 24 | 7 | 0,291667 | 0,455080 | 0,544920 | 136 | 62 | 278 | 1,54 |
| 102 | 14 | 6 | 0,428571 | 0,487414 | 0,512586 | 74 | 36 | 142 | 1,41 |
| 103 | 7 | 5 | 0,714286 | 0,522044 | 0,477956 | 38 | 20 | 67 | 1,27 |
| 104 | 4 | 3 | 0,750000 | 0,559136 | 0,440864 | 18 | 10 | 29 | 1,12 |
| 105 | 2 | 1 | 0,500000 | 0,598862 | 0,401138 | 8 | 5 | 11 | 0,90 |

(nastavak)

*(continued)*

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Starost  Age | Skupine živih Number of persons surviving  Vx | Skupine  umrlih  Number  ofpersons  dying  Mx | Sirove  vjerojatnosti  smrti  Crude  probabilities  ofdying  qx' | Izglađene  vjerojatnosti  smrti  Smoothed  probabilities  ofdying  qx | Vjerojatnosti doživljenja Probabilities of surviving  Px | Broj  živih  Numberf  ofsurvivors  lx | Broj  mrtvih  Numberf  ofdeaths  dx | Zbroj  brojeva  živih  Numberf  ofperson  -years  Nx | Očekivano  trajanje  života  Life  expectancy  ex |
| 0 | 40 958 | 93 | 0,002271 | 0,002271 | Žene  Women  0,997729 | 100 000 | 227 | 8 086 313 | 80,36 |
| 1 | 42 487 | 12 | 0,000282 | 0,000282 | 0,999718 | 99 773 | 28 | 7 986 313 | 79,54 |
| 2 | 42 611 | 9 | 0,000211 | 0,000211 | 0,999789 | 99 745 | 21 | 7 886 540 | 78,57 |
| 3 | 41 144 | 8 | 0,000194 | 0,000194 | 0,999806 | 99 724 | 19 | 7 786 795 | 77,58 |
| 4 | 40 059 | 6 | 0,000150 | 0,000153 | 0,999847 | 99 704 | 15 | 7 687 072 | 76,60 |
| 5 | 40 585 | 5 | 0,000123 | 0,000137 | 0,999863 | 99 689 | 14 | 7 587 367 | 75,61 |
| 6 | 40 190 | 7 | 0,000174 | 0,000124 | 0,999876 | 99 675 | 12 | 7 487 678 | 74,62 |
| 7 | 38 950 | 3 | 0,000077 | 0,000090 | 0,999910 | 99 663 | 9 | 7 388 003 | 73,63 |
| 8 | 39 172 | 3 | 0,000077 | 0,000076 | 0,999924 | 99 654 | 8 | 7 288 340 | 72,64 |
| 9 | 39 875 | 3 | 0,000075 | 0,000060 | 0,999940 | 99 646 | 6 | 7 188 686 | 71,64 |
| 10 | 41 379 | 3 | 0,000073 | 0,000055 | 0,999945 | 99 640 | 5 | 7 089 040 | 70,65 |
| 11 | 43 316 | 2 | 0,000046 | 0,000043 | 0,999957 | 99 635 | 4 | 6 989 399 | 69,65 |
| 12 | 45 371 | 1 | 0,000022 | 0,000041 | 0,999959 | 99 631 | 4 | 6 889 764 | 68,65 |
| 13 | 47 770 | 4 | 0,000084 | 0,000079 | 0,999921 | 99 627 | 8 | 6 790 133 | 67,66 |
| 14 | 49 131 | 7 | 0,000142 | 0,000116 | 0,999884 | 99 619 | 12 | 6 690 507 | 66,66 |
| 15 | 48 493 | 7 | 0,000144 | 0,000142 | 0,999858 | 99 607 | 14 | 6 590 888 | 65,67 |
| 16 | 47 679 | 7 | 0,000147 | 0,000163 | 0,999837 | 99 593 | 16 | 6 491 281 | 64,68 |
| 17 | 47 564 | 16 | 0,000336 | 0,000183 | 0,999817 | 99 577 | 18 | 6 391 688 | 63,69 |
| 18 | 46 746 | 7 | 0,000150 | 0,000200 | 0,999800 | 99 559 | 20 | 6 292 111 | 62,70 |
| 19 | 47 908 | 11 | 0,000230 | 0,000196 | 0,999804 | 99 539 | 19 | 6 192 552 | 61,71 |
| 20 | 49 826 | 9 | 0,000181 | 0,000205 | 0,999795 | 99 519 | 20 | 6 093 013 | 60,72 |
| 21 | 49 927 | 12 | 0,000240 | 0,000218 | 0,999782 | 99 499 | 22 | 5 993 494 | 59,74 |
| 22 | 50 945 | 12 | 0,000236 | 0,000234 | 0,999766 | 99 477 | 23 | 5 893 995 | 58,75 |
| 23 | 52 025 | 12 | 0,000231 | 0,000247 | 0,999753 | 99 454 | 25 | 5 794 518 | 57,76 |
| 24 | 52 745 | 15 | 0,000284 | 0,000254 | 0,999746 | 99 429 | 25 | 5 695 064 | 56,78 |
| 25 | 54 464 | 16 | 0,000294 | 0,000260 | 0,999740 | 99 404 | 26 | 5 595 635 | 55,79 |
| 26 | 56 418 | 17 | 0,000301 | 0,000267 | 0,999733 | 99 378 | 27 | 5 496 231 | 54,81 |
| 27 | 57 087 | 12 | 0,000210 | 0,000267 | 0,999733 | 99 352 | 27 | 5 396 853 | 53,82 |
| 28 | 57 083 | 19 | 0,000333 | 0,000272 | 0,999728 | 99 325 | 27 | 5 297 501 | 52,83 |
| 29 | 57 527 | 16 | 0,000278 | 0,000277 | 0,999723 | 99 298 | 28 | 5198176 | 51,85 |
| 30 | 58 150 | 14 | 0,000241 | 0,000280 | 0,999720 | 99 271 | 28 | 5 098 878 | 50,86 |
| 31 | 58 520 | 22 | 0,000376 | 0,000331 | 0,999669 | 99 243 | 33 | 4 999 608 | 49,88 |
| 32 | 58 122 | 20 | 0,000344 | 0,000371 | 0,999629 | 99 210 | 37 | 4 900 365 | 48,89 |
| 33 | 57 398 | 33 | 0,000575 | 0,000404 | 0,999596 | 99 173 | 40 | 4 801 155 | 47,91 |
| 34 | 57 195 | 21 | 0,000367 | 0,000440 | 0,999560 | 99 133 | 44 | 4 701 982 | 46,93 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Starost  Age | Skupine živih Number of persons surviving  Vx | Skupine  umrlih  Number  ofpersons  dying  Mx | Sirove  vjerojatnosti  smrti  Crude  probabiHties  ofdying  qX | Izglađene  vjerojatnosti  smrti  Smoothed  probabiHties  ofdying  qx | Vjerojatnosti doživljenja ProbabiHties of surviving  Px | Broj  živih  Numberf  ofsurvivors  lx | Broj  mrtvih  Numberf  ofdeaths  dx | Zbroj  brojeva  živih  Numberf  ofperson  -years  Nx | Očekivano trajanje života L ife expectancy  ex |
| 35 | 56 786 | 27 | 0,000475 | 0,000477 | Žene  Women  0,999523 | 99 089 | 47 | 4 602 849 | 45,95 |
| 36 | 56 095 | 25 | 0,000446 | 0,000514 | 0,999486 | 99 042 | 51 | 4 503 759 | 44,97 |
| 37 | 56 223 | 40 | 0,000711 | 0,000590 | 0,999410 | 98 991 | 58 | 4 404 717 | 44,00 |
| 38 | 56 368 | 34 | 0,000603 | 0,000659 | 0,999341 | 98 933 | 65 | 4 305 726 | 43,02 |
| 39 | 56 147 | 44 | 0,000784 | 0,000724 | 0,999276 | 98 868 | 72 | 4 206 793 | 42,05 |
| 40 | 54 828 | 40 | 0,000730 | 0,000823 | 0,999177 | 98 796 | 81 | 4 107 925 | 41,08 |
| 41 | 54 902 | 66 | 0,001202 | 0,000917 | 0,999083 | 98 715 | 91 | 4 009 129 | 40,11 |
| 42 | 56 972 | 52 | 0,000913 | 0,000998 | 0,999002 | 98 624 | 98 | 3 910 415 | 39,15 |
| 43 | 58 510 | 59 | 0,001008 | 0,001130 | 0,998870 | 98 526 | 111 | 3 811 790 | 38,19 |
| 44 | 60 807 | 74 | 0,001217 | 0,001263 | 0,998737 | 98 414 | 124 | 3 713 265 | 37,23 |
| 45 | 62 525 | 105 | 0,001679 | 0,001526 | 0,998474 | 98 290 | 150 | 3614850 | 36,28 |
| 46 | 61 515 | 117 | 0,001902 | 0,001718 | 0,998282 | 98 140 | 169 | 3 516 560 | 35,33 |
| 47 | 60 664 | 124 | 0,002044 | 0,001924 | 0,998076 | 97 972 | 189 | 3 418 420 | 34,39 |
| 48 | 61 976 | 124 | 0,002001 | 0,002050 | 0,997950 | 97 783 | 200 | 3 320 448 | 33,46 |
| 49 | 63 730 | 142 | 0,002228 | 0,002200 | 0,997800 | 97 583 | 215 | 3 222 665 | 32,52 |
| 50 | 64 727 | 158 | 0,002441 | 0,002572 | 0,997428 | 97 368 | 250 | 3 125 083 | 31,60 |
| 51 | 65 052 | 208 | 0,003197 | 0,002889 | 0,997111 | 97 117 | 281 | 3 027 715 | 30,68 |
| 52 | 64 816 | 215 | 0,003317 | 0,003166 | 0,996834 | 96 837 | 307 | 2 930 597 | 29,76 |
| 53 | 64 470 | 228 | 0,003537 | 0,003461 | 0,996539 | 96 530 | 334 | 2 833 760 | 28,86 |
| 54 | 65 735 | 236 | 0,003590 | 0,003755 | 0,996245 | 96 196 | 361 | 2 737 230 | 27,95 |
| 55 | 66 767 | 290 | 0,004343 | 0,003994 | 0,996006 | 95 835 | 383 | 2 641 034 | 27,06 |
| 56 | 65 487 | 273 | 0,004169 | 0,004224 | 0,995776 | 95 452 | 403 | 2545199 | 26,16 |
| 57 | 64 082 | 281 | 0,004385 | 0,004585 | 0,995415 | 95 049 | 436 | 2 449 746 | 25,27 |
| 58 | 63 238 | 342 | 0,005408 | 0,005180 | 0,994820 | 94 613 | 490 | 2 354 697 | 24,39 |
| 59 | 60 264 | 395 | 0,006554 | 0,005580 | 0,994420 | 94 123 | 525 | 2 260 084 | 23,51 |
| 60 | 59 239 | 358 | 0,006043 | 0,006014 | 0,993986 | 93 598 | 563 | 2 165 961 | 22,64 |
| 61 | 60 774 | 430 | 0,007075 | 0,006501 | 0,993499 | 93 035 | 605 | 2 072 363 | 21,78 |
| 62 | 58 542 | 392 | 0,006696 | 0,006855 | 0,993145 | 92 430 | 634 | 1 979 327 | 20,91 |
| 63 | 55 921 | 398 | 0,007117 | 0,007201 | 0,992799 | 91 797 | 661 | 1 886 897 | 20,06 |
| 64 | 53 142 | 435 | 0,008186 | 0,008016 | 0,991984 | 91 136 | 731 | 1 795 100 | 19,20 |
| 65 | 44 939 | 403 | 0,008968 | 0,009331 | 0,990669 | 90 405 | 844 | 1 703 965 | 18,35 |
| 66 | 40 878 | 463 | 0,011326 | 0,010346 | 0,989654 | 89 562 | 927 | 1 613 560 | 17,52 |
| 67 | 44 965 | 546 | 0,012143 | 0,011516 | 0,988484 | 88 635 | 1 021 | 1 523 998 | 16,69 |
| 68 | 49 202 | 652 | 0,013251 | 0,012874 | 0,987126 | 87 614 | 1 128 | 1 435 363 | 15,88 |
| 69 | 49 479 | 742 | 0,014996 | 0,014455 | 0,985545 | 86 486 | 1 250 | 1 347 749 | 15,08 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Starost  Age | Skupine živih Number of persons surviving  Vx | Skupine  umrlih  Number  ofpersons  dying  Mx | Sirove  vjerojatnosti  smrti  Crude  probabiiities  ofdying  qx' | Izglađene  vjerojatnosti  smrti  Smoothed  probabiiities  ofdying  qx | Vjerojatnosti doživljenja Probabiiities of surviving  px | Broj  živih  Numberf  ofsurvivors  lx | Broj mrtvih Numberf of deaths  dx | Zbroj  brojeva  živih  Numberf  ofperson  -years  Nx | Očekivano trajanje života L ife expectancy  ex |
| 70 | 49 257 | 795 | 0,016140 | 0,016287 | Žene  Women  0,983713 | 85 236 | 1 388 | 1 261 263 | 14,30 |
| 71 | 50 229 | 927 | 0,018455 | 0,018132 | 0,981868 | 83 848 | 1 520 | 1 176 026 | 13,53 |
| 72 | 49 829 | 1 006 | 0,020189 | 0,020694 | 0,979306 | 82 328 | 1 704 | 1 092 179 | 12,77 |
| 73 | 49 917 | 1 214 | 0,024320 | 0,023928 | 0,976072 | 80 624 | 1 929 | 1 009 851 | 12,03 |
| 74 | 49 443 | 1 423 | 0,028781 | 0,027431 | 0,972569 | 78 695 | 2 159 | 929 227 | 11,31 |
| 75 | 48 066 | 1 480 | 0,030791 | 0,031527 | 0,968473 | 76 536 | 2 413 | 850 532 | 10,61 |
| 76 | 46 573 | 1 706 | 0,036631 | 0,035937 | 0,964063 | 74 123 | 2 664 | 773 996 | 9,94 |
| 77 | 44 979 | 1 830 | 0,040686 | 0,041521 | 0,958479 | 71 459 | 2 967 | 699 873 | 9,29 |
| 78 | 43 305 | 2 118 | 0,048909 | 0,047881 | 0,952119 | 68 492 | 3 279 | 628 414 | 8,67 |
| 79 | 40 773 | 2 245 | 0,055061 | 0,054979 | 0,945021 | 65 213 | 3 585 | 559 922 | 8,09 |
| 80 | 37 956 | 2 406 | 0,063389 | 0,062616 | 0,937384 | 61 627 | 3 859 | 494 709 | 7,53 |
| 81 | 33 990 | 2 388 | 0,070256 | 0,071325 | 0,928675 | 57 769 | 4 120 | 433 082 | 7,00 |
| 82 | 29 875 | 2 460 | 0,082343 | 0,082669 | 0,917331 | 53 648 | 4 435 | 375 313 | 6,50 |
| 83 | 26 000 | 2 540 | 0,097692 | 0,093766 | 0,906234 | 49 213 | 4 615 | 321 665 | 6,04 |
| 84 | 23 150 | 2 416 | 0,104363 | 0,105809 | 0,894191 | 44 599 | 4 719 | 272 452 | 5,61 |
| 85 | 20 892 | 2 474 | 0,118419 | 0,117991 | 0,882009 | 39 880 | 4 705 | 227 853 | 5,21 |
| 86 | 17 814 | 2 364 | 0,132705 | 0,131238 | 0,868762 | 35 174 | 4 616 | 187 973 | 4,84 |
| 87 | 15 133 | 2 166 | 0,143131 | 0,147403 | 0,852597 | 30 558 | 4 504 | 152 799 | 4,50 |
| 88 | 12 618 | 2 148 | 0,170233 | 0,163530 | 0,836470 | 26 054 | 4 261 | 122 241 | 4,19 |
| 89 | 10 250 | 1 844 | 0,179902 | 0,180211 | 0,819789 | 21 793 | 3 927 | 96 187 | 3,91 |
| 90 | 8 019 | 1 566 | 0,195286 | 0,195286 | 0,804714 | 17 866 | 3 489 | 74 394 | 3,66 |
| 91 | 5 653 | 1 214 | 0,214753 | 0,209825 | 0,790175 | 14 377 | 3 017 | 56 528 | 3,43 |
| 92 | 3 027 | 725 | 0,239511 | 0,225447 | 0,774553 | 11 360 | 2 561 | 42 152 | 3,21 |
| 93 | 1 537 | 388 | 0,252440 | 0,242231 | 0,757769 | 8 799 | 2 131 | 30 791 | 3,00 |
| 94 | 1 093 | 289 | 0,264410 | 0,260265 | 0,739735 | 6 668 | 1 735 | 21 992 | 2,80 |
| 95 | 899 | 269 | 0,299221 | 0,279642 | 0,720358 | 4 932 | 1 379 | 15 325 | 2,61 |
| 96 | 1 013 | 322 | 0,317868 | 0,300462 | 0,699538 | 3 553 | 1 068 | 10 392 | 2,42 |
| 97 | 859 | 295 | 0,343423 | 0,322831 | 0,677169 | 2 485 | 802 | 6 839 | 2,25 |
| 98 | 534 | 211 | 0,395131 | 0,346866 | 0,653134 | 1 683 | 584 | 4 354 | 2,09 |
| 99 | 333 | 109 | 0,327327 | 0,372690 | 0,627310 | 1 099 | 410 | 2 671 | 1,93 |
| 100 | 212 | 84 | 0,396226 | 0,400437 | 0,599563 | 690 | 276 | 1 571 | 1,78 |
| 101 | 111 | 55 | 0,495495 | 0,430249 | 0,569751 | 413 | 178 | 882 | 1,63 |
| 102 | 46 | 18 | 0,391304 | 0,462281 | 0,537719 | 236 | 109 | 468 | 1,49 |
| 103 | 29 | 15 | 0,517241 | 0,496698 | 0,503302 | 127 | 63 | 233 | 1,34 |
| 104 | 13 | 9 | 0,692308 | 0,533677 | 0,466323 | 64 | 34 | 106 | 1,17 |
| 105 | 7 | 4 | 0,571429 | 0,573410 | 0,426590 | 30 | 17 | 42 | 0,93 |

MOVEMENT OF BASIC INDICATORS IN LIFE TABLES, 1952 - 2012

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Starost | 1952. - 1954. | 1960. - 1962. | 1970. - 1972. | 1980. - 1982. | 1988. - 1990. | 2000. - 2002. | 2010. - 2012. |
| Age |  |  |  |  |  |  |  |

MUŠKARCI

MEN

Vjerojatnosti smrti (1 000q\*)

Probabiiities ofdying (1000q*x*)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 114,09 | 68,41 | 34,10 | 21,85 | 13,67 | 5,12 | 2,91 |
| 5 | 1,64 | 0,92 | 0,65 | 0,51 | 0,41 | 0,24 | 0,05 |
| 10 | 0,97 | 0,56 | 0,53 | 0,50 | 0,31 | 0,13 | 0,14 |
| 15 | 1,09 | 0,75 | 0,73 | 0,74 | 0,51 | 0,46 | 0,32 |
| 20 | 1,57 | 1,33 | 1,61 | 1,36 | 1,43 | 1,07 | 0,67 |
| 25 | 2,28 | 1,59 | 1,76 | 1,70 | 1,46 | 1,22 | 0,81 |
| 30 | 2,33 | 1,88 | 2,11 | 1,89 | 1,68 | 1,19 | 0,87 |
| 35 | 2,76 | 2,58 | 3,08 | 2,88 | 2,34 | 1,49 | 1,17 |
| 40 | 3,71 | 3,38 | 4,56 | 4,29 | 3,65 | 2,58 | 1,72 |
| 45 | 5,77 | 5,12 | 6,71 | 6,94 | 5,79 | 4,61 | 3,13 |
| 50 | 8,92 | 7,14 | 9,50 | 10,95 | 10,03 | 7,56 | 5,92 |
| 55 | 14,53 | 12,40 | 13,90 | 15,81 | 15,40 | 11,87 | 10,11 |
| 60 | 23,42 | 19,38 | 22,10 | 23,13 | 23,53 | 17,89 | 15,73 |
| 65 | 35,56 | 34,58 | 35,46 | 33,12 | 33,29 | 28,65 | 23,00 |
| 70 | 56,46 | 53,46 | 52,02 | 50,56 | 50,14 | 43,84 | 34,21 |
| 75 | 86,23 | 83,42 | 90,86 | 85,91 | 74,46 | 64,89 | 55,09 |
| 80 | 135,88 | 132,31 | 136,78 | 131,21 | 120,58 | 100,68 | 92,01 |

Broj živih (lx)

Number ofsurvivors (.X)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 100 000 | 100 000 | 100 000 | 100 000 | 100 000 | 100 000 | 100 000 |
| 5 | 86 736 | 92 382 | 96 116 | 97 503 | 98 404 | 99 336 | 99 632 |
| 10 | 86 185 | 92 060 | 95 831 | 97 254 | 98 235 | 99 243 | 99 590 |
| 15 | 85 786 | 91 793 | 95 595 | 97 031 | 98 057 | 99 141 | 99 496 |
| 20 | 85 236 | 91 314 | 95 104 | 96 523 | 97 674 | 98 781 | 99 263 |
| 25 | 84 446 | 90 665 | 94 279 | 95 785 | 96 944 | 98 213 | 98 904 |
| 30 | 83 460 | 89 897 | 93 356 | 94 938 | 96 198 | 97 644 | 98 496 |
| 35 | 82 443 | 88 983 | 92 201 | 93 821 | 95 272 | 97 060 | 98 051 |
| 40 | 81 175 | 87 723 | 90 588 | 92 284 | 93 939 | 96 171 | 97 376 |
| 45 | 79 394 | 85 981 | 88 190 | 89 852 | 91 870 | 94 603 | 96 268 |
| 50 | 76 654 | 83 582 | 84 922 | 86 107 | 88 646 | 91 939 | 94 320 |
| 55 | 72 609 | 79 790 | 80 044 | 80 698 | 83 518 | 87 783 | 90 843 |
| 60 | 66 316 | 73 997 | 73 648 | 73 682 | 76 013 | 81 771 | 85 449 |
| 65 | 57 570 | 65 106 | 64 111 | 64 142 | 66 231 | 73 229 | 77 869 |
| 70 | 46 174 | 52 727 | 51 640 | 52 496 | 54 415 | 61 506 | 67 915 |
| 75 | 32 693 | 37 885 | 36 302 | 37 749 | 40 043 | 47 188 | 54 969 |
| 80 | 18 637 | 22 134 | 20 419 | 21 891 | 24 625 | 31 630 | 38 510 |

MOVEMENT OF BASIC INDICATORS IN LIFE TABLES, 1952 - 2012

(nastavak)

*(continued)*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Starost | 1952. - 1954. | 1960. - 1962. | 1970. - 1972. | 1980. - 1982. | 1988. - 1990. | 2000. - 2002. | 2010. - 2012. |
| Agef |  |  |  |  |  |  |  |

MUŠKARCI

MEN

Očekivano trajanje života (ex)

L iie expectancy(e*x*)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 59,05 | 64,28 | 65,65 | 66,64 | 68,25 | 71,35 | 73,94 |
| 5 | 62,97 | 64,52 | 63,27 | 63,32 | 64,34 | 66,82 | 69,21 |
| 10 | 58,36 | 59,74 | 58,45 | 58,48 | 59,45 | 61,88 | 64,24 |
| 15 | 53,62 | 54,90 | 53,59 | 53,61 | 54,55 | 56,94 | 59,29 |
| 20 | 48,94 | 50,18 | 48,85 | 48,88 | 49,75 | 52,14 | 54,43 |
| 25 | 44,38 | 45,52 | 44,26 | 44,23 | 45,11 | 47,43 | 49,61 |
| 30 | 39,87 | 40,89 | 39,67 | 39,60 | 40,44 | 42,69 | 44,81 |
| 35 | 35,33 | 36,28 | 35,13 | 35,04 | 35,81 | 37,93 | 40,00 |
| 40 | 30,84 | 31,76 | 30,71 | 30,58 | 31,28 | 33,26 | 35,26 |
| 45 | 26,48 | 27,35 | 26,47 | 26,34 | 26,92 | 28,76 | 30,64 |
| 50 | 22,33 | 23,06 | 22,39 | 22,37 | 22,80 | 24,52 | 26,21 |
| 55 | 18,42 | 19,03 | 18,59 | 18,69 | 19,04 | 20,55 | 22,11 |
| 60 | 14,92 | 15,31 | 14,98 | 15,22 | 15,66 | 16,87 | 18,34 |
| 65 | 11,79 | 12,04 | 11,82 | 12,10 | 12,59 | 13,53 | 14,87 |
| 70 | 9,05 | 9,25 | 9,05 | 9,21 | 9,76 | 10,61 | 11,67 |
| 75 | 6,74 | 6,88 | 6,77 | 6,80 | 7,35 | 8,05 | 8,80 |
| 80 | 4,96 | 5,00 | 5,13 | 4,93 | 5,39 | 5,78 | 6,46 |

MOVEMENT OF BASIC INDICATORS IN LIFE TABLES, 1952 - 2012

(nastavak)

*(continued)*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Starost | 1952. - 1954. | 1960. - 1962. | 1970. - 1972. | 1980. - 1982. | 1988. - 1990. | 2000. - 2002. | 2010. - 2012. |
| Age |  |  |  |  |  |  |  |

ŽENE

WOMEN

Vjerojatnosti smrti (1 000q\*)

Probabilities ofdying (1000q*x*)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 99,59 | 58,18 | 27,02 | 17,17 | 5,84 | 1,73 | 2,27 |
| 5 | 1,51 | 0,56 | 0,56 | 0,46 | 0,26 | 0,14 | 0,14 |
| 10 | 0,65 | 0,31 | 0,33 | 0,35 | 0,23 | 0,09 | 0,06 |
| 15 | 0,96 | 0,51 | 0,44 | 0,41 | 0,14 | 0,14 | 0,14 |
| 20 | 1,40 | 0,72 | 0,60 | 0,52 | 0,40 | 0,33 | 0,21 |
| 25 | 1,54 | 0,80 | 0,66 | 0,54 | 0,57 | 0,29 | 0,26 |
| 30 | 1,91 | 1,07 | 0,85 | 0,68 | 0,61 | 0,40 | 0,28 |
| 35 | 2,33 | 1,49 | 1,18 | 1,09 | 0,94 | 0,61 | 0,48 |
| 40 | 2,70 | 2,22 | 1,88 | 1,70 | 1,47 | 1,09 | 0,82 |
| 45 | 3,61 | 3,04 | 2,93 | 2,63 | 2,70 | 1,82 | 1,53 |
| 50 | 5,22 | 4,48 | 5,03 | 4,24 | 3,91 | 2,92 | 2,57 |
| 55 | 9,22 | 6,99 | 6,96 | 6,58 | 6,30 | 4,79 | 3,99 |
| 60 | 14,22 | 11,14 | 11,00 | 10,36 | 9,52 | 7,60 | 6,01 |
| 65 | 25,93 | 21,56 | 18,04 | 16,04 | 16,01 | 13,02 | 9,33 |
| 70 | 42,99 | 38,57 | 30,48 | 29,06 | 29,53 | 23,51 | 16,29 |
| 75 | 70,27 | 68,36 | 65,93 | 54,26 | 50,38 | 41,41 | 31,53 |
| 80 | 119,00 | 117,06 | 113,22 | 94,85 | 89,14 | 65,78 | 62,62 |

Broj živih (lx)

Number of survivors (lx)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 100 000 | 100 000 | 100 000 | 100 000 | 100 000 | 100 000 | 100 000 |
| 5 | 88 157 | 93 517 | 96 907 | 98 013 | 99 264 | 99 754 | 99 689 |
| 10 | 87 704 | 93 322 | 96 696 | 97 825 | 99 139 | 99 696 | 99 640 |
| 15 | 87 410 | 93 166 | 96 540 | 97 656 | 99 041 | 99 652 | 99 607 |
| 20 | 86 903 | 92 881 | 96 309 | 97 428 | 99 867 | 99 529 | 99 519 |
| 25 | 86 250 | 92 544 | 96 009 | 97 173 | 98 663 | 99 373 | 99 404 |
| 30 | 85 519 | 92 120 | 95 664 | 96 897 | 98 382 | 99 235 | 99 271 |
| 35 | 84 647 | 91 581 | 95 213 | 96 497 | 98 011 | 98 991 | 99 089 |
| 40 | 83 615 | 90 785 | 94 554 | 95 919 | 97 453 | 98 597 | 98 796 |
| 45 | 82 344 | 89 643 | 93 483 | 94 946 | 96 559 | 97 942 | 98 290 |
| 50 | 80 670 | 88 086 | 91 786 | 93 430 | 95 121 | 96 885 | 97 368 |
| 55 | 78 012 | 85 738 | 89 189 | 91 051 | 92 911 | 95 211 | 95 835 |
| 60 | 73 822 | 82 132 | 85 562 | 87 462 | 89 584 | 92 478 | 93 598 |
| 65 | 67 304 | 76 206 | 79 871 | 82 097 | 84 355 | 88 208 | 90 405 |
| 70 | 57 058 | 66 243 | 70 908 | 73 850 | 76 354 | 81 059 | 85 236 |
| 75 | 43 634 | 51 586 | 56 261 | 60 603 | 62 733 | 69 577 | 76 536 |
| 80 | 27 620 | 32 941 | 36 485 | 42 166 | 44 869 | 53 370 | 61 627 |

MOVEMENT OF BASIC INDICATORS IN LIFE TABLES, 1952 - 2012

(nastavak)

*(continued)*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Starost | 1952. - 1954. | 1960. - 1962. | 1970. - 1972. | 1980. - 1982. | 1988. - 1990. | 2000. - 2002. | 2010. - 2012. |
| Agef |  |  |  |  |  |  |  |

ŽENE

WOMEN

Očekivano trajanje života (ex)

L iie expectancy(e*x*)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 63,20 | 69,02 | 72,33 | 74,15 | 75,93 | 78,52 | 80,36 |
| 5 | 66,58 | 68,76 | 69,62 | 70,64 | 71,49 | 73,71 | 75,61 |
| 10 | 61,92 | 63,90 | 64,76 | 65,77 | 66,57 | 68,75 | 70,65 |
| 15 | 57,12 | 59,00 | 59,86 | 60,88 | 61,64 | 63,78 | 65,67 |
| 20 | 52,43 | 54,17 | 55,00 | 56,01 | 56,74 | 58,86 | 60,72 |
| 25 | 47,81 | 49,36 | 50,16 | 51,16 | 51,85 | 53,95 | 55,79 |
| 30 | 43,20 | 44,58 | 45,34 | 46,29 | 46,99 | 49,02 | 50,86 |
| 35 | 38,62 | 39,83 | 40,54 | 41,47 | 42,16 | 44,13 | 45,95 |
| 40 | 34,06 | 35,15 | 35,80 | 36,71 | 37,39 | 39,30 | 41,08 |
| 45 | 29,55 | 30,57 | 31,18 | 32,06 | 32,71 | 34,54 | 36,28 |
| 50 | 25,10 | 26,06 | 26,71 | 27,53 | 28,16 | 29,89 | 31,60 |
| 55 | 20,87 | 21,70 | 22,41 | 23,18 | 23,77 | 25,37 | 27,06 |
| 60 | 16,90 | 17,53 | 18,25 | 19,02 | 19,55 | 21,04 | 22,64 |
| 65 | 13,28 | 13,68 | 14,36 | 15,09 | 15,60 | 16,93 | 18,35 |
| 70 | 10,19 | 10,34 | 10,83 | 11,48 | 11,96 | 13,18 | 14,30 |
| 75 | 7,52 | 7,53 | 7,93 | 8,40 | 8,97 | 9,92 | 10,61 |
| 80 | 5,42 | 5,35 | 5,85 | 5,94 | 6,52 | 7,14 | 7,53 |