Training Workshop in CRVS evaluation
Amman, 28-30 June 2022
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Lecture 1 – Life Tables
Exercises

Part A

Convert the figure below into a life table, showing the following columns:

x=0, 1, 5, 10, 20, 30, 40, 50, 60, 70, 80
l_x, ${}_nd_x$, ${}_nq_x$, ${}_np_x$, ${}_nL_x$, T_x, e_x, ${}_nm_x$, ${}_na_x$
$l_0 = 10$

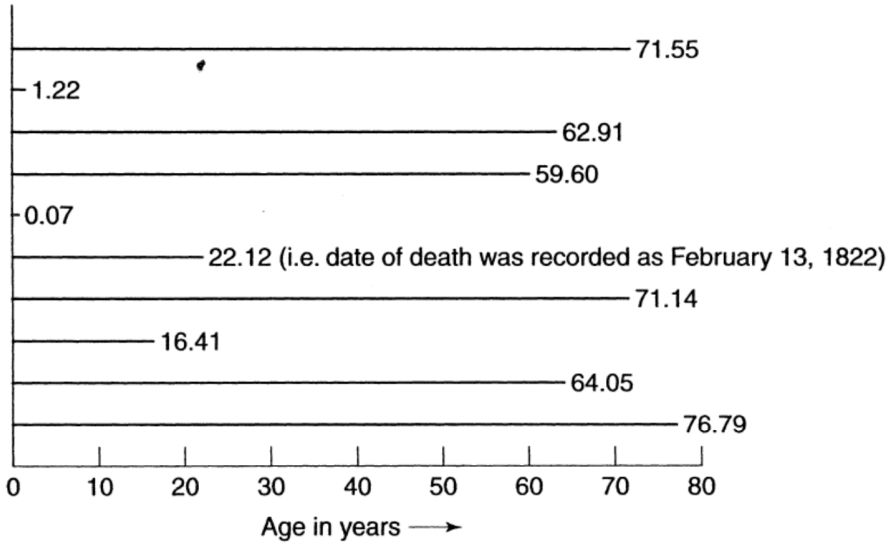

Figure 3.1 Age at death and life-lines of a hypothetical cohort of births (10 in all); date of birth: January 1, 1800

Part B

You are provided with a data set that contains deaths by age among Greek females in 1985. It also contains mid-year population estimates. You are to compute a life table for that population. Compute a full life table with all columns, following the procedure discussed in the lecture. Answer the following questions:

1. What was life expectancy at birth (give units)?

2. What was life expectancy at age 35?

3. Give a verbal interpretation of the number you presented in (2).

4. What was the probability of surviving from birth to age 25?

5. What was the probability that a female who survived to age 25 would die before age 50?

6. How many years, on average, were lived in the age interval 1-4 by females who died in that interval?

7. Prepare figures for the following life table columns: ${}_nM_x$, l_x, ${}_nd_x$, e_x

Part C

From DHS survey data, it is estimated that IMR (1q0) for males in Jordan in 2012-2017 is 17 per 1000.

a) Using MORTPAK, estimate life expectancies at birth corresponding to various model life tables. Produce nine estimates that correspond to the nine patterns available (five for United Nations models and four for Coale and Demeny models).

b) Compare your e_0 estimates. Is the IMR value sufficient information to estimate e_0 with confidence using model life tables? Which additional information would you use to help you select among these estimates?