Section 02: Life tables & parametric survival models fundamentals – in-class examples

1. Using LTAM:

Using LTAM Standard Ultimate Life table find:

$$d_{40} = \ell_{40} - \ell_{41} = 99{,}338.3 - 99{,}285.9 = 52.4$$

$$_2d_{40} = \ell_{40} - \ell_{42} = 99{,}338.3 - 99{,}229.8 = 108.5$$

$$_{80}p_{20} = \frac{\ell_{20+80}}{\ell_{20}} = \frac{\ell_{100}}{\ell_{20}} = \frac{6{,}248.2}{100{,}000.0} = 0.062482 \approx 6.2\%$$

$$_{35}q_{65} = 1 - {}_{35}p_{65} = 1 - \frac{\ell_{65+35}}{\ell_{65}} = 1 - \frac{\ell_{100}}{\ell_{65}} = 1 - \frac{6{,}248.2}{94{,}579.7} \approx 0.93394$$

$$_{45|35}q_{20} = {}_{45}p_{20} \times {}_{35}q_{20+45} = \frac{\ell_{20+45}}{\ell_{20}} \times {}_{35}q_{65}$$