Re-thinking the Life Tables for Assured Lives in Kenya

Carolyn Ndigwako Njenga, PhD
Strathmore University,
Ole Sangale Rd, Madaraka Estate.
PO Box 59857-00200, Nairobi, Kenya.
Author's Email: cnjenga@strathmore.edu
Telephone: +254 708 339 759

March 27, 2015

Abstract

The Kenyan life insurance industry grew by 18.9% from 2012 to 2014. Ordinary life insurance, the class that comprises all Individual Life policies, is considered in this study. The cost of life insurance has been identified as a significant factor that affects the uptake of life insurance. The premium to charge is based on the actuarial present value of the sum assured. This value (per unit sum assured) is affected by the interest rate selected and the life table used to portray the uncertainty regarding the time until the death of the life insured. Kenyan life tables have been published twice (in 2007 and in 2015). The tables published in 2007 were developed using data whose quality was questionable in part because the period of study was too short. The tables published in 2015 are based on better quality data. However, the sample size is still relatively small. Parametric graduation and graduation with reference to a standard life table are two standard actuarial techniques used to produce life tables. Parametric graduation is the technique that is currently employed in developing the Kenyan life table. In this paper, graduation with reference to a standard life table is employed as an alternative. Additionally, the graduation parameters are estimated using the maximum likelihood technique as well as the more common weighted least squares estimation technique. The resulting life table is found to provide a better fit to the data with a lower degree of bias.

KEY WORDS: Mortality Risk, Graduation, Life tables, Life Insurance.