

Probability Models for Tracking the Changes in the Pattern of Infant Mortality in Egypt during the Period 1980- 2005

Abstract

Infant mortality rate is considered a sensitive index that can be used to monitor the improvements or changes in the level of health status and standard of living in a specific country and to make cross-country comparisons of these measures. The main objective of this thesis is to search for the probability model(s) that best describes the distribution of infant deaths -by age at death- in Egypt during the period (1980-2005). Using the mixture distribution analysis, the pattern of infant mortality in Egypt is studied. Three mixture models are applied; a mixture of Weibull and gamma distributions, a mixture of two Weibull distributions, and a mixture of two gamma distributions. The main result of the thesis is that there is a remarkable change in the pattern of infant mortality during the period of interest, however much more efforts should be done. The achieved situation could be considered comparable to the situation in developed countries in the mid-seventies.

Key words

Infant mortality rate
Mixture distribution
Post-neonatal mortality rate

Mixdist package
Neonatal mortality rate
pattern of infant mortality

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