Spatial statistical analysis of infant mortality distribution in Ethiopia

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Abstract:

Infant mortality study importance comes from two sides; represents 75% of children under five years of age mortality, in addition to the majority of these deaths can be avoided. Infant mortality combat costs huge budgets in developing and particularly Sub-Saharan African countries supported by United Nations programs to decline the current rate, which is more than five times higher compared to European countries. An accurate and realistic statistical estimate of related factors that may affect the infant mortality risk is might highly helpful to control this risk. In this paper, to estimate these factors effect in Ethiopia, a generalized linear mixed model with spatial covariance structure is adapted. This model advantage regards dealing with normal and non-normal distributed data as well as spatially auto correlated variables. Some geographic, economic and demographic factors are used to estimate the model. The results showed the distribution is much spatially associated. Several examined variables are significantly affecting in the model, in contrast, others insignificantly impact. The results highlight the role of improving education to decrease the risk of infant mortality rate. Male and children with extra weight at birth are higher exposed, and the risk is highly different from one zone to another.