TRUNCATED PROBABILITY MODELS OF AGE DEPENDENT FIRST CONCEPTION DELAY AND THEIR APPLICATIONS TO ESTIMATE FERTILITY PARAMETERS

D.C. Nath[†1], P. Sultana[2], P.K. Talukdar[2]

[1]*Gauhati University, Guwahati, India*
[2]*Karimganj College, Karimganj, India*

[†] E-mail: *dcnath@rediffmail.com*

The estimation of population fecundity is a difficult problem, as because, it is not an event and not measurable by popular demographic techniques. Dependence on age is a natural phenomenon when constructing models of maternity histories. In this paper, two truncated probability models for first conception delay have been derived under the assumption that the risk of first conception depends on female's age for a finite duration of observation. Two types of risk of conception function have been proposed. The maximum likelihood estimations of the fertility parameters involved in these models have been outlined. These models have been applied to two different sets of first birth interval data of Indian married women. The first set of birth interval data were collected from a survey entitled "A fertility survey on scheduled caste population in Assam" collected during 1987-88 from rural areas of Assam, India. The second data set was collected from Gauhati Medical College and Hospital, Gauhati during the year 1999-2000, through a survey under the title "A survey on Induced abortion and its effect on reproductive health" from 1031 married women. Proposed models provide "good fit" to first birth interval data for these two survey-populations. It is found that the risk of first conception is highest at the age of 18 (17) years for first (second) group of married women. Estimation of fertility parameters from these models will provide input for policy makers for stabilizing Indian population growth.