

# Model for the Waiting Time of First conception Bayesian Approach to Probability

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## ABSTRACT

Model of measurement fertility indices are of rather recent origin. The first systematic study was started from the paper of Gini (1942) presented at the International Mathematics Congress, Toronto where the notion of fecund-ability, was referred for the first time. Louis Henry (1953) first formulated a model that incorporated the notion of fecundability by Gini. Henry's (1953, 1957, 1961) work on models of human reproductive process comprised of both discrete and continuous models postulating both homogeneity and heterogeneity of the population. A historical review of the models reveals that the models differ only in -treatment of time as "Discrete" or "Continuous". In many of the models, the probability of conception is held constant and further assumption is made in regard to all conceptions which lead to live births and which are associated with a fixed non-susceptible period covering the gestation period and the period of post-partum amenorrhoea. However, introducing further the notion of time when conception is recorded has also evolved new type of more flexible and realistic probability models. Uniform prior density, the Baye's estimate of the parameter ' $\theta$ ' has been calculated as 1.0270, which is equal to the maximum likelihood estimate. If the prior information exists, then corresponding values of  $\alpha$ ,  $\beta$ , and  $\lambda$  can be substitute in the above expressions to obtain exact posterior estimates of the desired functions. Hence, find. Bayesian estimates can be obtained and the complete Bayesian analysis of the model can be performed.

**Key Words:** amenorrhoea, Baye's estimate, fecundability, fecund-ability