

Proficient Estimation Procedure for a Rare Sensitive Attribute Using Poisson Distribution

Authors : S. Suman, G. N. Singh

Abstract : The present manuscript addresses the estimation procedure of population parameter using Poisson probability distribution when characteristic under study possesses a rare sensitive attribute. The generalized form of unrelated randomized response model is suggested in order to acquire the truthful responses from respondents. The resultant estimators have been proposed for two situations when the information on an unrelated rare non-sensitive characteristic is known as well as unknown. The properties of the proposed estimators are derived, and the measure of confidentiality of respondent is also suggested for respondents. Empirical studies are carried out in the support of discussed theory.

Keywords : Poisson distribution, randomized response model, rare sensitive attribute, non-sensitive attribute

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