ABSTRACT

The main purpose of this particular Research work is to propose some Trigonometric estimators for estimating population mean by using simple random sampling(SRS). The core objective behind the introduction of Trigonometric estimators is to deal with such practical situations in which there exists both negative and positive values in any data set with efficacy. In order to meet this objective, the estimators proposed in this Thesis are; Trigonometric Ratio, TrigonometricProduct, Trigonometric Generalized Ratio and Trigonometric Generalized Product estimators.Trigonometric Ratio , Trigonometric Product estimators are estimated by using the concept proposed by Bahl and Tuteja (1991).Whereas, Trigonometric Generalized Ratio and Trigonometric Generalized Product estimators are established by making use of the concept given by Upadhyaya et al. (2011). Results obtained from the data clearly show that the proposed Trigonometric Ratios and Trigonometric Product estimators outperform the estimators proposed by Bahl and Tuteja (1991) in respect of both Mean Square Error(MSE) as well as Percentage Relative Efficiency(PRE), similarly, the proposed Trigonometric Generalized Ratio and Trigonometric Generalized Product estimators, when compared in respect of both Mean Square Error(MSE) as well as Percentage Relative Efficiency(PRE) , have shown significantly better results than that of the results of the estimators proposed by Upadhyaya et al. (2011). Hence it has been proved from this study and the obtained results that the proposed Trigonometric estimators are more efficient than Exponential estimators in the conditions in which thereexists lower level of correlation between the study and its corresponding Auxiliary variable.