

SUMMARY

Survey Sampling has been a major tool for number of researchers since last so many years. Tremendous development has been made in this field. Unequal probability sampling is new technique within the framework of survey sampling. The model based sampling is also very powerful methodology in unequal probability sampling. In this thesis the model based study of modified Murthy estimator given by Shahbaz (2004) has been carried out. A brief summary of the thesis is given below.

A brief review of sampling, especially with reference to unequal probability sampling, has been given in chapter 1 of the thesis. The design and model based behavior of various unequal probability sampling estimators have been discuss in the same chapter. A review of literature is given in chapter 2 of the thesis.

The anticipated variance of modified Murthy estimator given by Shahbaz (2004) has been developed along with the empirical study in chapter 3. It is found that the anticipated variance of the modified Murthy estimator given by Shahbaz (2004) is always equal to the anticipated variance of Horvitz and Thompson (1952) estimator under the strict probability proportional to size selection procedures. It is also found that the anticipated variance of modified Murthy estimator given by Shahbaz (2004) achieves the Godambe—Joshi (1965) lower bound to the sampling variance of any estimator. Further, it is found that the model based variance of modified Murthy estimator given by Shahbaz (2004) is less than the model based variance of Murthy (1957) estimator for selected value of parameter of super population model.

Chapter 4 is reserved for the study of stability of variance estimator of modified Murthy estimator given by Shahbaz (2004). In the chapter the anticipated variance of variance estimator is obtained. It is found that the variance estimator of modified Murthy estimator given by Shahbaz (2004) is stable.