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Georgia Southern Examines Regression Estimators for Different Stratified Sampling Schemes

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Two types of stratified regression estimators for the population mean, the separate and the combined estimators, are investigated using stratified random sampling scheme (SSRS) and stratified ranked set sampling (SRSS). We derived mean and variance of the proposed estimators. In addition, we compared the performance of the regression estimators using SRSS with respect to SSRS by simulation. Our derivations and simulations revealed that our proposed estimators are unbiased and using SRSS is more efficient than using SSRS. The procedure are illustrated by using the bilirubin levels in babies in a neonatal intensive care unit data.


Dr. Arpita Chatterjee, Department of Mathematics at Georgia Southern University was the lead author and biostatistics faculty from the Jian-Ping Hsu College of Public Health Georgia Southern University Drs. Hani Samawi, Lili Yu, Daniel Linder (former), Jingxian Cai, and Robert Vogel were co-authors.