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Kernel density estimation is probably the most widely used non-parametric statistical method for estimating probability densities. In this paper, we investigate the performance of kernel density estimator based on stratified simple and ranked set sampling. Some asymptotic properties of kernel estimator are established under both sampling schemes. Simulation studies are designed to examine the performance of the proposed estimators under varying distributional assumptions. These findings are also illustrated with the help of a dataset on bilirubin levels in babies in a neonatal intensive care unit.

"On kernel density estimation based on different stratified sampling with optimal allocation," was recently published in Communications in Statistics – Theory and Methods.

Dr. Hani Samawi, Professor of Biostatistics at the Jiann-Ping Hsu College of Public Health Georgia Southern University (JPHCOPH) was the lead author, Drs. Jingjing Yin and Haresch Rochani, Assistant Professors of Biostatistics were two of the co-authors.