4-30-2018

Biostatistics News

Georgia Southern University

Follow this and additional works at: https://digitalcommons.georgiasouthern.edu/biostat-news-online

Recommended Citation

https://digitalcommons.georgiasouthern.edu/biostat-news-online/58

This article is brought to you for free and open access by the Biostatistics, Epidemiology, and Environmental Health Sciences Department Publications at Digital Commons@Georgia Southern. It has been accepted for inclusion in Biostatistics News (through 6/2018) by an authorized administrator of Digital Commons@Georgia Southern. For more information, please contact digitalcommons@georgiasouthern.edu.
The mode is a measure of the central tendency as well as the most probable value. Additionally, the mode is not influenced by the tail of the distribution. In the literature the properties and the application of mode estimation is only considered under simple random sampling (SRS). However, ranked set sampling (RSS) is a structural sampling method which improves the efficiency of parameter estimation in many circumstances and typically leads to a reduction in sample size. In this paper we investigate some of the asymptotic properties of kernel density based mode estimation using RSS. We demonstrate that kernel density based mode estimation using RSS is consistent and asymptotically normal with smaller variance than that under SRS.

Improved performance of the mode estimation using RSS compared to SRS is supported through a simulation study. An illustration of the computational aspect using a Duchenne muscular dystrophy data set is provided.

“Notes on kernel density based mode estimation using more efficient sampling designs,” was recently published in Computational Statistics.

Dr. Hani Samawi, Professor of Biostatistics at the Jiann-Ping Hsu College of Public Health Georgia Southern University (JPHCOPH) was the lead author. Dr. Haresh Rochani, Assistant Professor and Director of the Karl E. Peace Center for Biostatistics, Dr. JingJing Ying, Assistant Professor of Biostatistics and Dr. Robert Vogel, Department Chair at the at JPHCOPH were co-authors.