Washington Statistical Society Statistical Seminar Event

Title: Estimation from Web-Based Surveys: Choosing the Right Variables to Reduce Selection Bias

Speaker: Dr. Katherine Irimata, PhD, Mathematical Statistician, National Center for Health Statistics
Chair: Dr. Yan Li, WSS Methodology Program Chair, Washington Statistical Society (WSS)
Date: Tuesday, May 10, 2022
Time: 11:00AM – 12:00PM EST

Abstract:

While web-based surveys are becoming increasingly available and can be used to evaluate time-sensitive priority topics, national estimates derived from these surveys, including nonprobability and probability-sampled surveys, may be biased if the samples are not representative of the population. To adjust for selection bias, propensity score-based adjustment methods have been used to calibrate the web sample weights (if available) to a higher-quality reference sample, such as from a large-scale national probability-based survey. However, the bias reduction depends on the outcome of interest and variables collected in both the web and reference samples. A central issue is identifying the variables to include in the propensity score model for the weight adjustment. While past literature generally recommends including all available variables, our research demonstrates that only certain types of variables are needed for the adjustment. This talk presents the types of variables needed for reducing selection bias in the estimates from these surveys and illustrates this finding by evaluating the prevalence of asthma in the US from the National Center for Health Statistics' Research and Development Survey.

About the speaker: Katherine Irimata is a mathematical statistician at the National Center for Health Statistics (NCHS) in the Division of Research and Methodology's Collaborating Center for Statistical Research and Survey Design. She received her PhD in statistics from Arizona State University. Her research at NCHS has included work on correlated data, segmented regression, and survey methods. Katherine's primary focus is on NCHS' Research and Development Survey (RANDS), a series of web-based commercial survey panels, including conducting methodological research on estimation and calibration weighting for panel surveys.

For additional information, please contact Yan Li (yli6@umd.edu), WSS Methodology Program Chair.

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