WSS Short Course
Applications of Hot Deck Imputation Methods to Survey Data

Date: Friday, April 26, 2019
Time: 9:00 am – 4:30 pm
Instructor: Dr. Rebecca Andridge, Ohio State University College of Public Health,
            Katherine Jenny Thompson, U.S. Census Bureau
Place: Bureau of Labor Statistics
            Conference and Training Center Room 1-3, 2 Massachusetts Avenue NE,
Washington, DC

Course Content:

This continuing education course will provide an introduction to the use of hot deck imputation with survey data. Hot deck imputation is a commonly used procedure for handling missing data in which each missing value (recipient) is replaced with an observed value from a "similar" unit (donor). Each step of hot deck imputation will be explored in this course, from different ways in which to select a donor unit through methods for obtaining valid variance estimates. Classical hot deck methods will be presented alongside more cutting-edge approaches, including fractional hot deck imputation. All steps will be illustrated with simulated and real data examples from both business and household surveys, highlighting the issues unique to different populations. The course will also present some challenges that arise in the implementation of the hot deck, such as having fewer donors than recipients, and discuss various methods for overcoming these challenges. Attendees will be exposed to both the theoretical and practical sides to hot deck imputation, and examples will be illustrated using both SAS and R. Participants should have some familiarity with survey sampling concepts.

About the Instructor:

Dr. Rebecca Andridge, Associate Professor, has worked in the area of missing data for almost 10 years. Her review paper on hot deck imputation is highly cited (180+ citations since publication in 2010) and she has many publications in the area of novel imputation approaches, including hot deck methods. She has taught both undergraduate and graduate statistics courses at The Ohio State University College of Public Health, and won the College's Teaching Award in 2011. She has also taught in the "short course" format in the College's Summer Program, a program geared toward working professionals. Katherine Jenny Thompson, U.S. Census Bureau, is a survey statistician with over twenty years of professional experience in official statistics, currently serving as Methodology Director of the Complex Survey Methods and Analysis Group in the Economic Directorate of the U.S. Census Bureau. She has published papers on statistical data editing and missing data treatment, among other survey sampling and estimation-related topics. Her research is motivated by "real world" survey problems, and her proposed methods have been adopted by numerous ongoing programs; a recent example includes the implementation of hot deck imputation for product estimates in the 2017 Economic Census. She has taught in the "short course" format in the International Statistics Program and Economic University programs of the U.S. Census Bureau and has given two workshops in statistical editing and imputation methods in workshops co-sponsored by Statistics Japan and Hosei University. Dr. Andridge and Ms. Thompson have published together in the area of missing data and are currently collaborating on a project involving hot deck imputation for survey data.

Course Schedule:

8:15 - 9:00   Coffee, breakfast, and check in

9:00 - 10:15   What is the hot deck, and why is it "hot"?

10:15 - 10:30   Break

10:30 - 12:00   Donor selection methods

12:10 - 1:00   Lunch (provided)

1:00 - 2:30   Choosing what to impute (direct substitution, ratio, rate-of-change, fractional imputation)

2:30 - 2:45   Break

2:45 – 4:00   Variance estimation and Challenges when implementing the hot deck

4:00 – 4:30   Discussion

Advance registration: In addition to your RSVP here, please go to https://www.eventbrite.com/e/wss-short-course-applications-of-hot-deck-imputation-methods-to-survey-data-tickets-58032020335 to register and pay for the class. Online registration will close on April 19, 2019; earlier if the course fills up. **NO late registration or onsite registration after April 19, 2019!**

Registration Fee:
Full-time students (at most 8): $63.69
WSS members: $187.89 advance
All others: $218.94 advance

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