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

**Contact person:** Daniel Yang, 202-691-7530, yang.daniel@bls.gov