

## Data Collection Methods

Summer Institute in Survey Research Techniques  
June/July 2018

### Course Numbers and Class Dates

SURVMETH 623  
June 6 – July 27, 2018

### Instructors

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### Overview and Goals of Course

This course will present research conducted to increase our understanding of how data collection decisions affect survey errors. This is not a “how-to-do-it” course on data collection, but instead reviews the literature on survey design decisions and data quality in order to sensitize students to how alternative survey designs might impact the data obtained from those surveys.

This course reviews a range of survey data collection methods that are both interview-based (face-to-face and telephone) and self-administered (paper questionnaires that are mailed and those that are implemented online, i.e. as web surveys). Mixed mode designs are also covered as well as several hybrid modes for collecting sensitive information e.g., self-administering the sensitive questions in what is otherwise a face-to-face interview. The course also covers newer methods such as mobile web and SMS (text message) interviews, and examines alternative data sources such as social media. It concentrates on the impact these techniques have on the quality of survey data, including error from measurement, nonresponse, and coverage, and assesses the tradeoffs between these error sources when researchers choose a mode or survey design.

### Class Structure and Course Concept

This course uses a flipped classroom design. In this course, you are responsible for watching video recorded lectures and reading the required literature for each unit and then attending one-hour online meetings twice a week where students have the chance to discuss the materials from

a unit with the instructor. Just like in an on-site course, homework will be assigned and graded and there will be a final exam at the end of the course.

Although this is an online course where students have more freedom in when they engage with the course materials, students are expected to spend the same amount of time overall on all activities in the course – including preparatory activities (readings, studying), in-class-activities (watching videos, participating in online meetings), and follow-up activities (working on assignments and exams) – as in an on-site course.

## **Online Meetings**

Monday and Wednesday, 3-4 PM (ET)

Meetings will be held online through BlueJeans. To join the meetings online, go to <https://bluejeans.com/661066560> and log in with a webcam (no audio-only participation). All meetings will also be live broadcasted in room G300 Perry on the University of Michigan Ann Arbor campus. Students who are in Ann Arbor during the time of the meetings are strongly encouraged to join the meetings there. We will designate some sessions when one of us will be in the classroom; this will be students' opportunity to be in the same physical location as the instructors.

In preparation for the online meetings, students are expected to watch the lecture videos and read the assigned literature before the start of the meeting. We will treat the online meetings as an opportunity to discuss the material so it complements but does not replace the video lectures and reading, i.e., this is not “either or.” It will be up to you to come to class with questions or topics for discussion; usually, we will not prepare additional material for discussion.

## **Technical Equipment Needs**

The learning experience in this course will mainly rely on the online interaction between students and the instructor during the online meetings. Therefore we encourage all students in this course to use a web camera and a headset. Decent quality headsets and web cams are available for less than \$20 each. In addition, we suggest that students use a strong and stable internet connection, when connecting to the online meetings.

## **Course Materials**

All course materials will be made available online on the class website at <https://canvas.umich.edu/gateway/>. Course materials on the website includes pre-recorded video lectures available for streaming, required and recommended readings for downloading, homework assignments, and the final exam.

## **Evaluation**

Grading will be based on:

- Participation in online discussion demonstrating understanding of the required readings (10% of grade).

- Four short exercises (3-5 pages each) reviewing specific aspects of the material covered (60% of grade). Exercise 2 will be worth twice as much as the remaining exercises in the assignment total.
- A final exam (30% of grade)

Dates of when exercises will be handed out and when they are due are indicated in the syllabus. Late assignments will not be accepted without prior arrangement with the instructors. Assignments should be submitted as a MS Word documents on the course website on the due date before class starts.

## **Accommodations for Students with Disabilities**

### **University of Michigan**

If you think you need an accommodation for a disability, please contact Services for Students with Disabilities (SSD) office to help us determine appropriate academic accommodations. SSD (734-763-3000; <http://ssd.umich.edu>) typically recommends accommodations through a Verified Individualized Services and Accommodations (VISA) form. Any information you provide is private and confidential and will be treated as such.

### **Academic conduct**

Clear definitions of the forms of academic misconduct, including cheating and plagiarism, as well as information about disciplinary sanctions for academic misconduct may be found at the Rackham web site for the University of Michigan

[http://www.rackham.umich.edu/policies/academic\\_and\\_professional\\_integrity/statement\\_on\\_academic\\_integrity](http://www.rackham.umich.edu/policies/academic_and_professional_integrity/statement_on_academic_integrity)

Knowledge of these rules is the responsibility of the student and ignorance of them does not excuse misconduct. The student is expected to be familiar with these guidelines before submitting any written work or taking any exams in this course. Lack of familiarity with these rules in no way constitutes an excuse for acts of misconduct. Charges of plagiarism and other forms of academic misconduct will be dealt with very seriously and may result in oral or written reprimands, a lower or failing grade on the assignment, a lower or failing grade for the course, suspension, and/or, in some cases, expulsion from the university.

## **Course Outline and Readings**

Dates in the outline denote dates of online meetings. Materials will be available in advance on the course website.

### **June 6: Overview of course; Introduction to errors in surveys; Methods of data collection (Conrad)**

Readings:

Biemer, P.P., & Lyberg, L.E. (2003). The survey process and data quality. Chapter 2 in *Introduction to Survey Quality*, New York: Wiley, 26-62.

Groves, R.M. et al. (2009). Methods of data collection. Chapter 5 in *Survey Methodology*, 2<sup>nd</sup> ed. New York: Wiley, 150-181.

## **Module A: Modes of Survey Data Collection**

### **June 11: Classic modes of data collection: Phone, Face-to-Face, Mail (Keusch)**

#### Readings:

Biemer, P.P., & Lyberg, L.E. (2003). Data collection modes and associated errors. Chapter 6 in *Introduction to Survey Quality*, New York: Wiley, 188-214.

Dillman, D.A., & Parsons, N. (2008). Self-administered paper questionnaires. In W. Donsbach, & M.W. Traugott (eds.), *Handbook for Public Opinion Research*. London: Sage Publications, 262-270.

Tucker, C., & Lepkowski, J.M. (2008). Telephone survey methods: Adapting to change. In J.M. Lepkowski et al. (eds.), *Advances in Telephone Survey Methodology*. New York: Wiley, 3-26.

#### Recommended:

Couper, M.P. (2005). Technology trends in survey data collection. *Social Science Computer Review*, 23, 486-501.

Couper, M.P. (2008). Technology and the survey interview/questionnaire. In F.G. Conrad, & M.F. Schober (eds.), *Envisioning the Survey Interview of the Future*. New York: Wiley, 58-76.

Steiger, D.M., & Conroy, B. (2008). IVR: Interactive voice response. In E.D. de Leeuw, J.J. Hox, & D.A. Dillman (eds.), *International Handbook of Survey Methodology*, New York: Lawrence Erlbaum, 285-298.

### **June 13: Web and mobile Web (Keusch)**

- Assignment 1 handed out (due on June 20 before start of class)

#### Readings:

Callegaro, M., Villar, A. Yeager, D.S., & Krosnick, J.A. (2014). A critical review of studies investigating the quality of data obtained with online panels based on probability and nonprobability samples. In M. Callegaro et al. (eds.), *Online Panel Research. A Data Quality Perspective*. Chichester: Wiley, 23-53.

Couper, M.P. (2000). Web surveys: A review of issues and approaches. *Public Opinion Quarterly*, 64, 464-494.

#### Recommended:

Couper, M.P., & Miller, P. V. (2008). Web survey methods: Introduction. *Public Opinion Quarterly*, 72, 831-835.

Keusch, F. (2015). Why do people participate in Web surveys? Applying survey participation theory to Internet survey data collection. *Management Review Quarterly*, 65, 183-216.

### **June 18: Web and mobile Web (continued) (Keusch)**

#### Readings:

de Bruijne, M. & Wijnat, A. (2014). Improving response rates and questionnaire design for mobile Web surveys. *Public Opinion Quarterly*, 78, 951-962.

Mavletova, A. & Couper, M.P. (2014). Mobile Web survey design: Scrolling versus paging, SMS versus e-mail invitations. *Journal of Survey Statistics and Methodology*, 2, 498-518.

#### Recommended:

Lugtig, P. & Toepoel, V. (2016). The use of PCs, smartphones, and tablets in a probability-based panel survey: Effects on survey measurement error. *Social Science Computer Review*, 34, 78-94.

Peytchev, A., & Hill, C.A. (2010). Experiments in mobile web survey design: Similarities to other modes and unique considerations. *Social Science Computer Review*, 28, 319-325.

### **June 20: Mixed mode studies; Mode comparison (Keusch)**

- Assignment 1 due
- Assignment 2 handed out (due on June 27 before start of class)

#### Readings:

DeLeeuw, E. D. (2005). To mix or not to mix data collection modes in surveys. *Journal of Official Statistics*, 21, 233-255.

Kreuter, F., Presser, S., & Tourangeau, R. (2008). Social desirability bias in CATI, IVR, and web surveys: The effects of mode and question sensitivity. *Public Opinion Quarterly*, 72, 847-865.

Tourangeau, R., & Smith, T.W. (1996). Asking sensitive questions: The impact of data collection mode, question format, and question context. *Public Opinion Quarterly*, 60, 275-304.

#### Recommended:

Béland, Y., & St-Pierre, M. (2008). Mode effects in the Canadian Community Health Survey: A comparison of CATI and CAPI. In J.M. Lepkowski et al. (eds.), *Advances in Telephone Survey Methodology*. New York: Wiley, 297-314.

Fowler, F.J., Roman, A.M., & Di, Z.X. (1998). Mode effects in a survey of medicare prostate surgery patients. *Public Opinion Quarterly*, 62, 29-46.

Olson, K., Smyth, J. D., & Wood, H., M. (2012). Does giving people their preferred survey mode actually increase survey participation rates? An experimental examination. *Public Opinion Quarterly*, 76, 611-635.

## **Module B: Interviewers**

### **June 25: The role of the interviewer in survey data collection; Respondent selection (Conrad)**

#### Readings:

Conrad, F.G., Broom, J.S., Benki, J.R., Kreuter, F., Groves, R.M., Vannette, D., & McClain, C. (2013). Interviewer speech and the success of survey invitations. *Journal of the Royal Statistical Society, Series A*, 176, 191-210.

Gaziano, C. (2005). Comparative analysis of within-household respondent selection techniques. *Public Opinion Quarterly*, 69, 124-157.

### **June 27: Interviewing technique; Interviewer training and evaluation (Conrad)**

- Assignment 2 due

#### Readings:

Conrad, F.G., & Schober, M.F. (2000). Clarifying question meaning in a household telephone survey. *Public Opinion Quarterly*, 64, 1-28.

Dijkstra, W. (1987). Interviewing style and respondent behavior: An experimental study of the survey-interview. *Sociological Methods & Research*, 16, 309-334.

Groves, R.M., & McGonagle, K. (2001). A theory-guided interviewer training protocol regarding survey participation. *Journal of Official Statistics*, 17, 249-266.

#### Recommended:

Dykema, J., Lepkowski, J.M., & Blixt, S. (1997). The effect of interviewer and respondent behavior on data quality: An analysis of interaction coding in a validation study. In L.E. Lyberg et al. (eds.), *Survey Measurement and Process Quality*, New York: Wiley, 287-310.

Forsman, G., & Schreiner, I. (1991). The design and analysis of reinterview: An overview. In P.P. Biemer et al. (eds.), *Measurement Errors in Surveys*, New York: Wiley, 279-302.

### **July 2: Interviewer effects (Conrad)**

- Assignment 3 handed out (due July 9 before start of class)

#### Readings:

Biemer, P.P., & Lyberg, L.E. (2003). Errors due to interviewers and interviewing. Chapter 5 in *Introduction to Survey Quality*, Hoboken, NJ: Wiley, 149-187.

Davis, R.E., Couper, M.P., Janz, N.K., Caldwell, C.H., & Resnicow, K. (2009). Interviewer effects in public health surveys. *Health Education Research*, 25, 14-26.

#### Recommended:

Johnson, T.P., Fendrich, M., Shaligram, C., Garcy, A., & Gillespie, S. (2000). An evaluation of the effects of interviewer characteristics in an RDD telephone survey of drug abuse. *Journal of Drug Issues*, 30, 77-102.

O'Muircheartaigh, C., & Campanelli, P. (1998). The relative impact of interviewer effects and sample design effects on survey precision. *Journal of the Royal Statistical Society Series A*, 161, 63-77.

#### **July 4: No class (Independence Day)**

#### **Module C: Nonresponse error**

#### **July 9: Nonresponse error; Response rates (Keusch)**

- Assignment 3 due

#### Readings:

Beatty, P., & Herrmann, D. (2002). To answer or not to answer: Decision processes related to survey item nonresponse. In R.M. Groves et al. (eds.) *Survey Nonresponse*, New York: Wiley, 71-86.

Groves, R.M., & Couper, M.P. (1998). A conceptual framework for survey participation. Chapter 2 in *Nonresponse in Household Interview Surveys*, New York: Wiley, 25-46.

#### Recommended:

American Association for Public Opinion Research (2016). *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*, 9<sup>th</sup> ed. AAPOR

De Leeuw, E., & de Heer, W. (2002). Trends in household survey nonresponse: A longitudinal and international perspective. In R.M. Groves et al. (eds.) *Survey Nonresponse*, New York: Wiley, 41-54.

Groves, R.M. (2006). Nonresponse rates and nonresponse error in household surveys. *Public Opinion Quarterly*, 70, 646-675.

#### **July 11: Nonresponse error; Nonresponse reduction (Keusch)**

- Assignment 4 handed out (due July 18 before start of class)

#### Readings:

De Leeuw, E.D. (2001). Reducing missing data in surveys: An overview of methods. *Quality & Quantity*, 35, 147-160.

Groves, R. M., Singer, E., & Corning, A. (2000). Leverage-saliency theory of survey participation: description and an illustration. *Public Opinion Quarterly*, 64, 299-308.

#### Recommended:

Keeter, S., Kennedy, C., Dimock, M., Best, J., & Craighill, P. (2006). Gauging the impact of growing nonresponse on estimates from a national RDD telephone survey. *Public Opinion Quarterly*, 70, 759-779.

Keeter, S., Miller, C., Kohut, A., Groves, R., & Presser, S. (2000). Consequences of reducing nonresponse in a national telephone survey. *Public Opinion Quarterly*, 64, 125-148.

Groves, R.M., & Couper, M.P. (1998). How survey design features affect participation. Chapter 10 in *Nonresponse in Household Interview Surveys*, New York: Wiley, 269-293.

Redline, C., & Dillman, D. (2002). The influence of alternative visual designs on respondents' performance with branching instructions in self-administered questionnaires. In R.M. Groves et al. (eds.) *Survey Nonresponse*, New York: Wiley, 179-195.

## **Module D: Variations on a theme**

### **July 16: Biomarker data collection (Guest lecturer: Colter Mitchell)**

#### Readings:

Halpern, C. T., Mullan Harris, K. & Whitsel, E. A. (2014). Studying family transitions from a systems perspective: The role of biomarkers. In McHale, S. M., Amato, P. & Booth, A. (Eds.) *Emerging Methods in Family Research*. Springer International Publishing, 127-144.

#### Recommended:

Guo, G., Hardie, J. H., Owen, C., Daw, J. K., Fu, Y., Lee, H., Lucas, A., McKendry-Smith, E., & Duncan, G. (2009). DNA collection in a randomized social science study of college peer effects. *Sociological Methodology*, 39, 1-29.

### **July 18: New modes and new data (Conrad)**

#### Readings:

Schober, M.F., Conrad, F.G., Antoun, C., Ehlen, P., Fail, S., Hupp, A.L., Johnston, M., Vickers, L., Yan, H., & Zhang, C. (2015). Precision and disclosure in text and voice interviews on smartphones. *PLOS ONE*, 10(6): e0128337.  
doi:10.1371/journal.pone.0128337

Schober, M.F., Pasek, J., Guggenheim, L., Lampe, C., & Conrad, F.G. (2016). Social media analyses for social measurement. *Public Opinion Quarterly*, 80, 180-211.

#### Recommended:

Couper, M. (2013). Is the sky falling? New technology, changing media, and the future of surveys. *Survey Research Methods*, 7, 145-156.

Antoun, C., Couper, M.P., & Conrad, F.G. (under review). Effects of mobile versus PC Web on survey response quality: a crossover experiment in a probability Web panel

### **July 23: Longitudinal surveys; Establishment surveys (Keusch)**

- Assignment 4 due

#### Readings:

Lynn, P. (2009). Methods for longitudinal surveys. In P. Lynn (ed.) *Methodology of Longitudinal Surveys*. Chichester, UK: Wiley, 1-20.



Willimack, D. K., & Nichols, E. (2010). A hybrid response process model for business surveys. *Journal of Official Statistics*, 26, 3-24.

Recommended:

Hedlin, D., Lindkvist, H., Bäckström, H., & Erikson, J. (2008). An experiment on perceived survey response burden among businesses. *Journal of Official Statistics*, 24, 301-318.

Kalton, G., Kasprzyk, D., & McMillen, D. (1989). Nonsampling error in panel surveys. In D. Kasprzyk et al. (eds.), *Panel Surveys*, New York: Wiley, 249-270.

Lepkowski, J., & Couper, M.P. (2002). Nonresponse in the second wave of longitudinal household surveys. In R.M. Groves et al. (eds.), *Survey Nonresponse*, New York: Wiley, 259-273.

Moore, J., Bates, N., Pascale, J., & Okon, A. (2009). Tackling the seam bias through questionnaire design. In P. Lynn (ed.) *Methodology of Longitudinal Surveys*. Chichester, UK: Wiley, 73-92.

Silberstein, A.R., & Scott, S. (1991). Expenditure diary surveys and their associated errors. In P.P. Biemer et al. (eds.), *Measurement Errors in Surveys*, New York: Wiley, 303-326.

**July 27: Final Exam due**