

10th GESIS Summer School in Survey Methodology

[2nd Virtual GESIS Summer School]

28 July – 20 August 2021

Syllabus for Course 6: Design and Implementation of Web Surveys

Instructors:	Christopher Antoun	Frederick Conrad	Florian Keusch
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Date: 09-13 August 2021

Time: 11:00-13:00 + 14:00-18:00

Time zone: CEST/CEDT, course starts Monday at 11:00 am

Venue: Online via Zoom

About the Instructors:

Christopher Antoun is an Assistant Research Professor at the College of Information Studies (iSchool) and Joint Program in Survey Methodology (JPSM) at the University of Maryland. His research focuses on using smartphones to collect population data, either through text messaging, mobile questionnaires, or apps and sensors. Before coming to UMD, Chris obtained his PhD in Survey Methodology from the University of Michigan and was a postdoctoral fellow at the U.S. Census Bureau. He is currently an associate editor for the *Journal of Survey Statistics and Methodology* and a member of the advisory board for the International Program in Survey and Data Science.

Frederick Conrad is a survey methodologist who explores and evaluates new methods of collecting data for social research. His current research includes a study of video technology for survey interviews and a study of social media's potential for measuring trust in government statistics. With Tourangeau and Couper he co-authored *The Science of Web Surveys* (2013) and with Schober he co-edited *Envisioning the Survey Interview of the Future* (2008). He is a research professor in the Michigan Program in Survey Methodology which he also directs and is a professor in the Psychology Department, both at the University of Michigan.

Florian Keusch is Professor of Statistics and Methodology (interim) in the Department of Sociology at the University of Mannheim and Adjunct Assistant Professor in the Joint Program in Survey Methodology (JPSM) at the University of Maryland. He currently serves on the board of the German Society for Online Research (DGOF) and is Associate Editor of *Public Opinion Research* and *Survey Research Methods*. His research focuses on nonresponse and measurement error in Web and mobile Web surveys, passive mobile data collection, and visual design effects in questionnaires.

Selected Publications:

- Antoun, C., Couper, M.P., & Conrad, F. G. (2017). Effects of mobile versus PC web on survey response quality: A crossover experiment in a probability web panel. *Public Opinion Quarterly*, 81, 280-306.
- Antoun, C., Katz, J., Argueta, J. & Wang L. (2017). Design heuristics for effective smartphone questionnaires. *Social Science Computer Review*, 36, 557-574.
- Couper, M.P., Antoun, C., & Mavletova, A. (2017). Mobile web surveys: A total survey error perspective. In P. Biemer, S. Eckman, B. Edwards, E. de Leeuw, F. Kreuter, L. Lyberg, C. Tucker, and B. West (eds.), *Total Survey Error in Practice*. New York: Wiley, pp. 133-154.
- Conrad, F.G., Gagnon-Bartsch, J., Ferg, R., Schober, M.F., Pasek, J., Hou, E. (2019). Social media as an alternative to surveys of opinion about the economy. *Social Science Computer Review*. Online first.
- Conrad, F.G., Schober, M.F., Antoun, C., Yan, H.Y., Hupp, A.L., Johnston, M., Ehlen, P., Vickers, L., Zhang, C. (2017). Respondent mode choice in a smartphone survey. *Public Opinion Quarterly*, 81, 307-337.

- Tourangeau, R., Conrad, F.G., Couper, M.P. (2013). *The Science of Web Surveys*. Oxford: Oxford University Press.
- Keusch, F., Struminskaya, B., Antoun, C., Couper, M.P., & Kreuter, F. (2019). Willingness to participate in passive mobile data collection. *Public Opinion Quarterly*, 83, 210-235.
- Keusch, F. & Zhang, C. (2017). A review of issues in gamified survey design. *Social Science Computer Review*, 35, 147-166.
- 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.

Short Course Description:

This course introduces students to the design and implementation of online survey data collection instruments. The course is both hands-on and conceptual. It begins by discussing what is unique about web surveys and when their use is most appropriate, followed by an introduction to survey errors that can affect the quality of web survey data. Small groups of students will each develop a research problem and a questionnaire to address their problem, designed for online administration. They will pretest the question wording, program the questionnaire using a web survey development platform (no programming experience is required), and assess users' (respondents') experience while interacting with the web-based instrument. Students will also develop basic plans for data collection and analysis. Finally, each group will present its problem, online questionnaire, evaluation, and plans to the rest of the class.

Keywords:

web surveys; online data collection; survey methodology; questionnaire design

Course Prerequisites:

- Some familiarity with survey research.
- Plans to use a web survey in a project is helpful but certainly not essential.

Target Group:

Participants will find the course useful if:

- Anyone (whether in government, business, academia, or non-profit organizations) who wants to collect survey data online can benefit from this course.
- This includes people who are new to web surveys but also people who have used web surveys in the past but feel that they need to improve the design of their surveys.

Course and Learning Objectives:

By the end of the course participants will:

- have an understanding of what should go into creating a web-based questionnaire
- be able to weigh the pros and cons of different web questionnaire features
- have implemented a functioning web survey instrument
- be able to evaluate survey questions and their usability in an online questionnaire

Organizational Structure of the Course:

Each day will consist of about 4 hours of lecture and discussion on various aspects of Web survey design, and 2 hours of lab including demonstrations and hands-on experience, implementing group projects in LimeSurvey. The instructors will be available for individual and group consultations on participants' projects, and, provide support in designing and implementing a web survey during the course.

Software and Hardware Requirements:

We will conduct all sessions via Zoom. Participants should join with a laptop/desktop computer (rather than a mobile device) with a camera. Participants will develop a web survey instrument using the LimeSurvey platform. They should register for a free LimeSurvey account at www.limesurvey.org prior to the start of the course.

Long Course Description:

This course introduces students to the design and implementation of online survey data collection instruments with a focus on maximizing the quality of the data they are used to collect. The course is both hands-on and conceptual.

Lectures and class discussion will focus on the scientific literature and what is known about designing and implementing effective web surveys, which is relevant regardless of the software being used. The course begins by discussing what is unique about web surveys and when their use is most appropriate, followed by an introduction to survey errors that can affect the quality of web survey data. We will discuss what decisions researchers need to make when selecting sampling strategies for web surveys and what influence these decisions have on errors of representation (such as coverage bias).

Next, the course covers some of the considerations for writing survey questions and designing their visual display to minimize measurement errors. We will introduce and discuss some of the interactive features possible in online questionnaires (e.g., progress indicators and prompts for speeding). We introduce some of the techniques required for programming questionnaires (such as skip patterns) and evaluating questionnaires (e.g., logic checks and measuring user experience). We will address the role of the different devices that different respondents might use when completing web surveys (especially computers vs. smartphones) and what implications the device might have on the design of the questionnaire. The course will also cover issues of recruiting participants for web surveys, focusing on strategies that maximise participation.

Finally, we will discuss data preparation and processing steps that are needed before one can analyse web survey data. We will emphasize the importance of ethical considerations researchers must weigh when designing and implementing online survey data collection.

In the daily lab sessions, small groups of students will work under the guidance of the instructors on their own projects. Students will first define a research problem and identify the target population of interest for their study. They will then formulate survey questions to address their research problem. Students will program them in an interactive online questionnaire using the web survey development platform LimeSurvey (no programming experience is required), and they will have the chance to assess users' (respondents') experience while interacting with the web-based instrument. Students will also develop basic plans for data collection and analysis. Finally, each group will present to the rest of the class its research problem, the online questionnaire developed to collect data relevant to the problem, its plans to evaluate the online questionnaire and preliminary evaluation results, and next steps.

Day-to-day Schedule and Literature:

Day	Topic(s)
1	<p>Introduction to web surveys; Samples and representation; Lab 1 (Identify research question and target population)</p> <p><u>Compulsory reading (have to be read before the session):</u></p> <ul style="list-style-type: none"> ▪ Couper, M. P. and Miller, P. V. (2008). Web survey methods: Introduction. <i>Public Opinion Quarterly</i>, 72, 831-835. <p><u>Suggested reading (suggested, yet do not have to be read before the session):</u></p> <ul style="list-style-type: none"> ▪ Tourangeau, R. Conrad, F., & Couper M. (2013). Chapter 2: Sampling and coverage issues for web surveys. <i>The Science of Web Surveys</i>. New York: Oxford University Press, 11-35
2	<p>Writing effective survey questions; Interactivity in web surveys; Visual aspects of web survey design; Lab 2 (Formulate survey questions)</p> <p><u>Compulsory reading:</u></p> <ul style="list-style-type: none"> ▪ Tourangeau, R. Conrad, F., & Couper M. (2013). Chapter 4: Introduction to measurement and design in web surveys. <i>The Science of Web Surveys</i>. New York: Oxford University Press, 57-76. <p><u>Suggested reading:</u></p> <ul style="list-style-type: none"> ▪ Couper, M. P., Kennedy, C., Conrad, F. G., & Tourangeau, R. (2011). Designing input fields for non-narrative open-ended responses in web surveys. <i>Journal of Official Statistics</i>, 27, 65-85.

	<ul style="list-style-type: none"> Tourangeau, R., Conrad, F.G., & Couper, M.P. (2013). Chapter 5: The web as a visual medium (p. 77-98) AND Chapter 6: Interactive features and measurement error (p. 99-128). <i>The Science of Web Surveys</i>. New York: Oxford University Press.
3	<p>Group presentations of questionnaires; Programming the questionnaire; Paradata; Questionnaire evaluation and user experience; Lab 3 (Program questionnaire in Lime Survey)</p> <p><u>Compulsory reading:</u></p> <ul style="list-style-type: none"> Toepoel, V. (2016). Chapter 9: Programming the questionnaire. <i>Doing Surveys Online</i>. London: Sage, 136-159. <p><u>Suggested reading:</u></p> <ul style="list-style-type: none"> Antoun, C., Katz, J., Argueta, J. & Wang L. (2017). Design heuristics for effective smartphone questionnaires. <i>Social Science Computer Review</i>, 36, 557-574. Callegaro, M., Lozar Manfreda, K., & Vehovar, V. (2015). Chapter 5.3: Web survey software. <i>Web Survey Methodology</i>. London: Sage, 215-226. Geisen, E. & Romano Bergstrom J. (2017). Chapter 1: Usability and usability testing. <i>Usability Testing for Survey Research</i>. Cambridge: Morgan Kaufmann, 1-20. McClain, C. A., Couper, M. P., Hupp, A. L., Keusch, F., Peterson, G., Piskorowski, A. D., & West, B. T. (2019). A typology of web survey paradata for assessing total survey error. <i>Social Science Computer Review</i>, 37, 196-213.
4	<p>Lab 4 (Evaluate questionnaire); Recruiting participants; Monitoring data collection; Lab 5 (Develop recruitment plan)</p> <p><u>Compulsory reading:</u></p> <ul style="list-style-type: none"> Callegaro, M., Lozar Manfreda, K., & Vehovar, V. (2015). Chapter 2.5.5-2.5.8: Nonresponse Strategy (p 149-159) AND Chapter 3: Fielding (p165-174). <i>Web Survey Methodology</i>. London: Sage. <p><u>Suggested reading:</u></p> <ul style="list-style-type: none"> Keusch, F. (2015). Why do people participate in Web surveys? Applying survey participation theory to Internet survey data collection. <i>Management Review Quarterly</i>, 65, 183-216. Toepoel, V. (2016). Chapter 10: Fieldwork. <i>Doing Surveys Online</i>. London: Sage, 165-174.
5	<p>Data preparation and processing; Ethical considerations; Group presentations</p> <p><u>Compulsory reading:</u></p> <ul style="list-style-type: none"> Toepoel, V. (2016). Chapter 11: Processing and cleaning the data. <i>Doing Surveys Online</i>. London: Sage, 175-191. Singer, E., & Couper, M.P. (2010). Ethical considerations in Internet surveys. In Das, M., Esther, P., & Kaczmirek, L. (Eds.) <i>Social and Behavioral Research and the Internet: Advances in Applied Methods and Research Strategies</i>. New York: Routledge: 133-162. <p><u>Suggested reading:</u></p> <ul style="list-style-type: none"> Callegaro, M., Lozar Manfreda, K., & Vehovar, V. (2015). Chapter 4.1: Data preparation. <i>Web Survey Methodology</i>. London: Sage, 176-185.

Preparatory Reading:

- Groves, R. M., Fowler Jr, F.J., Couper, M.P., Lepkowski, J.M., Singer, E., & Tourangeau, R. (2009). *Survey Methodology*. Hoboken: John Wiley & Sons.
- Krosnick, J. & Presser, S., (2010). Question and questionnaire design. In Marsden, P.V., & Wright, J.D. (Eds.). *Handbook of survey research*. Bingley: Emerald Group Publishing, 263-314.
- LimeSurvey Manual. Available at <https://manual.limesurvey.org/>

Additional Recommended Literature:

None