

Paradata and Sensor Data in Web Surveys (8h)

Description of the course:

This workshop deals with the collection of paradata and sensor data in web surveys and addresses the following aspects:

- Technical essentials to collect paradata and sensor data in web surveys.
- Introduction to JavaScript codes to autonomously collect paradata and sensor data in web surveys.
- Methodological essentials to interpret and analyze paradata and sensor data.
- Presentation of empirical studies and findings on paradata and sensor data.
- Merits and limits of collecting paradata and sensor data in web surveys.

The open-source tool “Embedded Client Side Paradata (ECSP)” builds the basis for this workshop. ECSP allows the passive collection of a variety of paradata and sensor data. ECSP is licensed under the Creative Commons Attribution 4.0 International License (see <http://creativecommons.org/licenses/by/4.0/>). ECSP is based on different program languages, such as JavaScript and HTML. In general, ECSP can be implemented in web-based survey software solutions that provide access to the source code. Paradata and sensor data can be collected across different device types, Internet browsers, and operating systems to investigate respondents’ completion and response behavior in web surveys. Paradata and sensor data are collected at the page-level. All JavaScript codes can be customized to suit individual needs. In other words, only paradata and sensor data types that are deemed necessary can be collected without affecting the collection of the remaining paradata and sensor data types.

I encourage participants to prepare their own research examples and/or research questions to increase the practical relevance and the interaction between the instructor and participants.

Course prerequisites: Previous knowledge on paradata and sensor data is helpful but not necessary. The same applies to previous knowledge in JavaScript and HTML. However, some statistical knowledge is preferable.

Software used: All statistical examples will be in R so that it is helpful being familiar with the software.

Detailed schedule of the course by day/time slot:

Day	Time slot	Topic
1	9h00-11h00	Web surveys and the collection of paradata and sensor data.
	11h00-11h15	Break
	11h15-13h00	Introduction to JavaScript codes for collecting paradata and sensor data.
2	9h00-11h00	Preparing, analyzing, and interpreting paradata and sensor data. Empirical studies and findings on paradata and sensor data.
	11h00-11h15	Break
	11h15-13h00	Merits and limits of collecting paradata and sensor data. Discussion of prepared research examples and research questions.

Main references:

- Callegaro, M. (2013). Paradata in web surveys. In F. Kreuter (Ed.), *Improving surveys with paradata. Analytic uses of process information* (pp. 261–280). Hoboken, NJ: John Wiley & Sons.
- Heergwegh, D. (2011). Internet survey paradata. In M. Das, P. Ester, and L. Kaczmirek (Eds.), *Social and Behavioral Research and the Internet. Advances in Applied Methods and Research Strategies* (pp. 325–348). New York, NY: Routledge.
- Höhne, J. K., & Schlosser, S. (2019). SurveyMotion: What can we learn from sensor data about respondents' completion and response behavior in mobile web surveys? *International Journal of Social Research Methodology*, 22, 379–391.
- McClain, C. A., Couper, M. P., Hupp, A. L., Keusch, F., Peterson, G. J., Piskorowski, A. D., & West, B. (2019). A typology of web survey paradata for assessing total survey error. *Social Science Computer Review*, 37, 196–213.
- Schlosser, S., & Höhne, J. K. (2018). ECSP – Embedded Client Side Paradata. *Zenodo*. DOI: 10.5281/zenodo.1218941
- Yan, T., & Olson, K. (2013). Analyzing paradata to investigate measurement error. In F. Kreuter (Ed.), *Improving surveys with paradata. Analytic uses of process information* (pp. 73–96). Hoboken, NJ: John Wiley & Sons.

Suggestions for further reading:

- Conrad, F. G., Couper, M. P., Tourangeau, R., & Zhang, C. (2017). Reducing speeding in web surveys by providing immediate feedback. *Survey Research Methods*, 11, 45–61.
- Couper, M. P. (2000). Usability evaluation of computer-assisted survey instruments. *Social Science Computer Review*, 18, 384–396.
- Couper, M. P., & Kreuter, F. (2013). Using paradata to explore item level response times in surveys. *Journal of the Royal Statistical Society*, 176, 271–286.
- Couper, M. P., Peterson, G. J. (2017). Why do web surveys take longer on smartphones? *Social Science Computer Review*, 35, 357–377.

- Diedenhofen, B., & Musch, J. (2017). PageFocus: Using paradata to detect and prevent cheating on online achievement tests. *Behavior Research Methods*, *49*, 1444–1459.
- Höhne, J. K., Revilla, M., & Lenzner, T. (2018). Comparing the performance of agree/disagree and item-specific questions across PCs and smartphones. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*, *14*, 109–118
- Höhne, J. K., Revilla, M., & Schlosser, S. (2019). Motion instructions in surveys: Compliance, acceleration, and response quality. *International Journal of Market Research*. DOI: 10.1177/1470785319858587
- Höhne, J. K., & Schlosser, S. (2018). Investigating the adequacy of response time outlier definitions in computer-based web surveys using paradata SurveyFocus. *Social Science Computer Review*, *36*, 369–378
- Höhne, J. K., Schlosser, S., & Krebs, D. (2017). Investigating cognitive effort and response quality of question formats in web surveys using Paradata. *Field Methods*, *29*, 365–382
- Revilla, M., & Couper, M. P. (2018). Comparing grids with vertical and horizontal item-by-item formats for PCs and smartphones. *Social Science Computer Review*, *36*, 349–368.
- Revilla, M., & Couper, M. P. (2018). Testing different order-by-click question layouts for PC and smartphone respondents. *International Journal of Social Research Methodology*, *21*, 695–712.
- Schlosser, S. & Mays, A. (2018). Mobile and dirty: Does using mobile devices affect the data quality and the response process of online surveys? *Social Science Computer Review*, *36*, 212–230.
- Sendelbah, A., Vehovar, V., Slavec, A., & Petrovčič, A. (2016). Investigating respondent multitasking in web surveys using paradata. *Computers in Human Behavior*, *55*, 777–787.
- Stern, M. J. (2008). The use of client-side paradata in analyzing the effects of visual layout on changing responses in web surveys. *Field Methods*, *20*, 377–398.

Instructor:

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https://reforms.uni-mannheim.de/internet_panel/Team/hoehne_jan/