

Application for ESS CRONOS Panel: Module CRONOS-2

Proposed title for the Module	Survey Climate and Perceptions of Surveys as Indicators of Survey Nonresponse Across Europe
Single or repeat measurement within the panel	Repeat: first and second wave (2 times 9 questions =18 in total)
Principal Applicant	Bella Struminskaya (Ph.D.)
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Relevance and rationale

Internationally survey responses have been declining over the years, both for general governmental and social surveys and for the ESS, but nonresponse trends differ among countries (Beullens et al. 2018; Luiten et al. 2020). The growing nonresponse and the resulting risk of nonresponse bias has been and still is a major concern for researchers in academic, governmental, and market research, and has received wide attention (e.g., National Research Council, 2013). Most research about nonresponse causes and prevention focused on design and implementation, respondent characteristics, and interviewer behavior. Less attention has been paid to general attitudes towards surveys and the survey climate, although these are often named as important theoretical concepts for explaining nonresponse (e.g., Groves & Couper, 1998; Loosveldt & Joye, 2016). In the past, several detailed ‘surveys on surveys’ have been implemented (Goyder, 1986; Loosveldt & Storms, 2008), however measures were not

comparable. As a result, trend analyses of attitudes towards surveys are scant (Kim et al. 2011) and the need for an international survey climate barometer is felt widely (Loosveldt & Joye, 2016). The relative lack of empirical data on survey climate and its contextual effect on nonresponse rates is mainly due to the absence of a brief and reliable measurement instrument. To fill this gap, we developed the Survey Attitude Scale. This scale has been successfully implemented in online panels in Germany and the Netherlands and proved to have excellent psychometric properties (De Leeuw et al. 2019). Furthermore, using longitudinal data from the general population online Dutch LISS panel, it was possible to distinguish between trait (stable) and state (situational) components of survey attitudes (Bons et al. 2015).

Implementation of the Survey Attitude Scale in the first two waves of the CRONOS-2 panel will provide valuable information on survey climate in Europe to both the academic and non-academic world. On an aggregated level, comparable measures will be made available cross-nationally. The data from the Survey Attitude module can be used by researchers who analyze other modules in the CRONOS-2 panel waves in which it is asked as well as for analyses using all the future waves of the panel.

Our research agenda will produce results that (1) validate the scale cross-nationally, (2) help model attrition and control for nonresponse bias, and (3) provide recommendations for individual countries participating in the ESS that are based on the analysis of the survey climate. In order to achieve these goals, first, we will assess cross-country measurement equivalence based on the first-wave data. Second, we will use data from the first two waves to distinguish trait and state components. Third, we will use these components to model panel nonresponse and dropout, providing valuable information on attrition in probability-based online panels in Europe. We will provide recommendations for substantive researchers who wish to control for nonresponse bias on how to incorporate these attitudes into their analysis. Finally, in combination with the rich data base available (ESS recruitment and six waves of additional panel data) we will study survey climate in depth and investigate possible differences in survey climate and its influence on nonresponse in different countries.

Suitability for the CRONOS-2

In the past, attempts have been made to measure survey climate in various countries, however these measures are not equivalent and as a consequence international comparative figures are not available (Kim et al. 2011). The CRONOS-2 panel offers a unique opportunity to implement equivalent measures and study survey climate cross-nationally in a standardized way.

The Survey Attitude Scale consists of nine standardized closed (seven point) questions and has been successfully implemented in several online panels in Germany and the Netherlands (de Leeuw et al. 2010; de Leeuw et al. 2019). The Survey Attitude Scale has been part of the longitudinal core-questionnaire of two European probability-based panels, the online Dutch LISS panel and the mixed-mode online and mail German GESIS Panel. The scale has proven to be suitable for online implementation following or preceding a different substantive questionnaire module. Therefore, the design of CRONOS-2 is very appropriate for the Survey Attitude module.

By implementing the Survey Attitude Scale in both the first and second panel wave (total $2 \times 9 = 18$ standardized questions) the strength of cross-national standardized data collection can be fully exploited. Analysis of the first-wave data will provide valuable information on the cross-country measurement equivalence of the scale. The combined data of the first and second wave is necessary to distinguish trait and state components. The latent trait component represents the stability of the concept measured in empirical differences between respondents over time and situations, while the latent state represents the temporal differences between respondents (Kenny & Zautra, 2001; Bons et al. 2015). The rich auxiliary data available from the ESS and CRONOS-2 strengthen our envisioned analyses and the secondary use of the module considerably. Socio-demographic data from ESS Round 10 in combination with substantive data on Internet use and digital communication will be used together with the trait and state components in the first two waves to model subsequent wave nonresponse and attrition in probability-based online panels cross-nationally. Furthermore, we will use the substantive data from ESS Round 10 (i.e., on social trust, political interest, and democracy) to study survey climate in depth and investigate possible differences in survey climate and its influence on nonresponse in different countries.

Research team

Principal applicant: Dr. Bella Struminskaya, assistant professor of Methodology and Statistics at Utrecht University, affiliate researcher at Statistics Netherlands. Struminskaya is an expert in online data collection and panel effects. She has built probability-based online panels, studied the influence of survey attitudes and experience on panel attrition and sharing sensor data. She is a member of the ODISSEI Data Collection Committee (NL), GESIS Panel Quality Assurance Board (DE).

Prof. dr. Edith Desiree de Leeuw. Emeritus professor, Department of Methodology and Statistics, Utrecht University. De Leeuw is a renowned expert in data collection and nonresponse and developed the Survey Attitude Scale. She is a member of the Methods Advisory Board and Ethics Board of ESS-ERIC.

Dr. Henning Silber, Head of the Survey Operations Team, speaker of the Integrated Survey and Data Infrastructure at GESIS, Germany. Silber is an expert in questionnaire design and web-survey data collection. He presented on survey climate “Survey participation as a function of political attitudes and perceptions of surveys” at AAPOR 2020. He is Secretary-Treasurer of WAPOR.

The applicants have collaborated extensively. The proposed questionnaire was developed by de Leeuw. All applicants have implemented these questions in online panels in the Netherlands and Germany and conducted substantive and psychometric analyses similar to the analyses planned. They successfully pooled data, performed analyses, and published in *Measurement Instruments for the Social Sciences*; an open-access journal for substantive and theoretical researchers.

Team members are from the Netherlands and Germany, countries that have been part of ESS-ERIC from the outset.

Feasibility of Implementation

An English master questionnaire is available (see Appendix B). Translations of this master questionnaire in German and Dutch have been successfully implemented in the online mode

previously, and the psychometric properties have been assessed in two nations (De Leeuw et al. 2019). In the following, we describe the questionnaire development procedure that was used for this questionnaire.

Based on an extensive literature search, three theoretical dimensions were selected: two positive and one negative dimension. The first and second dimensions describe attitudes that guide the behavioural intentions of potential respondents positively.

The first dimension reflects the individual perception of surveys as a positive experience: survey enjoyment, as discussed by Cialdini (1984), Puleston (2012), and Dillman et al. (2014). The second dimension points to a positive survey climate and emphasizes the subjective importance and value of surveys, as discussed by Rogelberg et al. (2001) and Hox et al. (1995). The third dimension indicates a negative survey climate: surveys are perceived by respondents as a burden, which has a negative influence on motivation and participation (Groves & Couper, 1998; Stoop et al. 2010).

These three dimensions are fundamental building blocks in theories on survey participation and nonresponse and are seen as important indicators of a deteriorating survey climate (Loosveldt & Joye, 2016; Dillman, 2020). For each construct in the Survey Attitude Scale (i.e., enjoyment, value, and burden), we selected three questions that performed well in previous empirical research publications (e.g., de Leeuw et al. 2019). Three questions per construct were selected as this is the minimum to identify a construct in a confirmatory factor model, needed to establish measurement equivalence over countries.

The master questionnaire was evaluated by four international experts and translations were made into Dutch and German. Both the German and Dutch versions were pretested on a small scale. Field tests in online panels in the Netherlands and Germany established good psychometric properties and equivalence for these countries (de Leeuw et al. 2019). The confirmatory factor analysis found three factors, enjoyment, value, and burden, as expected from theory in two countries, the Netherlands and Germany, and in three panels. The theoretical three-factor model fitted the data well. In self-administered online panels, complete scalar equivalence was found. De Leeuw et al. (2019) showed that measurement equivalence was found cross-culturally. The survey attitude scale had high reliability (Cronbach's alpha ranging from 0.78-0.81) and high

predictive validity for all subscales, predicting willingness to participate and actual survey participation.

The thorough development and field testing give confidence in the successful development of a module for the ESS and make it viable to develop a cross-national module with translations for each country within the specified three months. The research team has experience with fielding studies in different countries (Germany, the Netherlands, the USA) and will reach out to experts on translation (e.g., Dr. Dorothee Behr and Dr. Brita Dorer at GESIS and Dr. Katharina Meitinger at Utrecht University). Furthermore, we plan to apply for funding for the translation by professional organizations that specialize in translation for social and attitudinal survey research such as cApStAn (<https://www.capstan.be/translate/>).

As a final note, the fact that the CRONOS-2 data collection is organised with different timeframes for three different groups of countries is not a disadvantage but in fact an advantage as it enables more detailed analyses. The CRONOS-2 design is very similar to an accelerated growth curve design. There are only two data collection occasions, but these are distributed across multiple time points. Using modern incomplete data techniques, it is possible to use all time points to specify the stability over time (Little, 2013). The team members de Leeuw and Struminskaya work together with renowned experts on missing data, Prof. van Buuren and Dr. Vink, which allows for ensuring high-quality analyses. In addition, the measurement equivalence analyses will benefit from the expertise of Prof. van de Schoot in this area.

Dissemination plans

Dissemination of the results is aimed at four groups (1) the ESS-member countries and contributing panels, (2) survey practitioners in various disciplines (social sciences, epidemiology and health research, market research, and official statistics) (3) the scientific community in general, e.g., survey methodologists at universities and academic research institutes, and (4) governmental agencies, e.g., National Statistical Institutes, EUROSTAT.

We will reach these groups through various means and channels. First, we will produce a report for the official ESS website. Two versions will be written, a detailed research report and a

comprehensive non-technical summary. Second, we plan to produce a webinar for ESS-researchers. Third, presentations will be made at scientific conferences and workshops (e.g., General Online Research (GOR) Conference, AAPOR Annual Conference, Nonresponse workshop) and special sessions will be organized around this topic (e.g., at the ESRA conference). Additionally, we plan to use the CRONOS-2 data in empirical social science studies courses taught by team members at Bachelor's and Master's, and postgraduate level in the Netherlands, Germany and other countries (see CV's). Finally, we aim at publishing on the (1) Cross-national properties of the scale, (2) Nonresponse and attrition, and (3) General EU-survey climate with guidelines for researchers. We plan to publish in international peer-reviewed journals with fast turn-around (e.g., Public Opinion Quarterly, Survey Research Methods) also for wider audiences (e.g., PLOS One). The PI's institution has agreements with these publishers and will cover open-access costs.

Key reference:

de Leeuw, E., Hox, J., Silber, H., Struminskaya, B., and Vis, C. (2019). Development of an international survey attitude scale: measurement equivalence, reliability, and predictive validity. *Measurement Instruments for the Social Sciences* 1, 9.

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Appendix A: Brief CV's of all team members.

CV Bella Struminskaya

Bella Struminskaya is an assistant professor of Methodology and Statistics at Utrecht University and affiliated researcher at Statistics Netherlands. Prior to joining Utrecht University, she was a senior researcher at GESIS Leibniz Institute for the Social Sciences, where she was a founding team member of probability-based offline-recruited mixed-mode GESIS Panel and online GESIS Panel Online Pilot. She completed her PhD at Utrecht University on data quality in probability-based online panels, focusing on nonresponse, attrition, and panel conditioning. Bella has authored and co-authored publications in international peer-reviewed journals, presented her work at numerous conferences, and has given invited and keynote talks. She is a deputy chairwoman of the board of the German Society for Online Research and programme chair of the General Online Research Conference (GOR). Her research focuses on online and mixed-mode surveys, nonresponse and measurement errors, panel effects, paradata, and data quality in smartphone surveys. Her recent publications are on passive data collection using mobile devices and sharing smartphone-sensor data. She is a guest-editor of special issues of *Social Science Computer Review* on Using Mobile Apps and Sensors in Surveys, *Survey Methods Insights from the Field* on Advancements in Online and Mobile Survey Methods, and *Journal of Royal Statistical Society* on The Future of Online Data Collection in Social Surveys. She has taught and teaches courses and workshops on survey research and statistical methods to social scientists at undergraduate and postgraduate levels in the Netherlands, Germany, U.S.A., and Qatar.

h-index (Google Scholar) = 8. Selected publications in the last three years:

1. **Struminskaya, B.**, Toepoel, V., Lugtig, P., Haan, M., Luiten, A. & Schouten, B. (in press). Understanding willingness to share smartphone-sensor data. *Public Opinion Quarterly*.
2. **Struminskaya, B.** (in press). Panel Conditioning. In: *SAGE Encyclopedia of Research Methods* Ed. by P. A. Atkinson, S. Delamont, R. A. Williams, & A. Cernat. Sage.
3. Keusch, F., **Struminskaya, B.**, Kreuter, F. & Weichbold, M. (2020). Combining active and passive mobile data collection: A survey of concerns. In: *Big Data Meets Survey Science*. Ed. by C. Hill, P. Biemer, T. Buskirk, L. Japiec, A. Kirchner, S. Kolenikov, and L. Lyberg. Hoboken: John Wiley & Sons.

4. Toepoel, V., Lugtig, P., **Struminskaya, B.**, Elevelt, A., Haan, M. (2020). Adapting surveys to the modern world: Comparing a research messenger design to a regular responsive design for online surveys. *Survey Practice* 13(1), <https://doi.org/10.29115/SP-2020-0010>.
5. Gummer, T., **Struminskaya, B.** (2020). Early and Late Participation during the Field Period: Response Timing in a Mixed-Mode Probability-Based Panel Survey. *Sociological Methods and Research*. First published April 22, 2020, <https://doi.org/10.1177/0049124120914921>
6. Cornesse, C., Blom, A., Dutwin, D., Krosnick, J., De Leeuw, E., Legleye, S., Pasek, J., Pennay, D., Philips, B., Sakshaug, J., **Struminskaya, B.** & Wenz, A. (2020). A Review of Conceptual Approaches and Empirical Evidence on Probability and Nonprobability Sample Survey Research. *Journal of Survey Statistics and Methodology* 8, 4-36.
7. De Leeuw, E., Hox, J., Silber, H., **Struminskaya, B.** & Vis, C. (2019). Development of an international survey attitude scale: measurement equivalence, reliability, and predictive validity. *Measurement Instruments for the Social Sciences*, 1(9)
8. Keusch, F., **Struminskaya, B.**, Antoun, C., Couper, M.P., & Kreuter, F. (2019). Willingness to participate in passive mobile data collection. *Public Opinion Quarterly* 83(S1), 210-235.
9. Silber, H., Schröder, J., **Struminskaya, B.**, Stocké, V., & Bosnjak, M. (2019). Does panel conditioning affect data quality in ego-centered social network questions? *Social Networks* 56, 45-54.
10. Weiß, B., Silber, H., **Struminskaya, B.**, Durrant, G. (2019). Mobile Befragungen. In: *Handbuch Methoden der empirischen Sozialforschung*. Ed. by N. Baur & J. Blasius, 2nd ed., Springer VS Verlag, pp. 675-686.
11. Stadtmüller, S., Silber, H., Daikeler, J., Martin, S., Sand, M., Schmich, P., Schröder, J., **Struminskaya, B.**, Weyandt, K., W., & Zabal, A. (2019). Adaptation of the AAPOR Final Disposition Codes for the German Survey Context. Mannheim: GESIS.
12. Bosnjak, M., Dannwolf, T., Enderle, T., Schaurer, I., **Struminskaya, B.**, Tanner, A. & Weyandt, K. (2018). Establishing an Open Probability-Based Mixed-Mode Panel of the General Population in Germany - The GESIS Panel. *Social Science Computer Review*, 36 (1), 103-115.
13. Silber, H., Weiss, B., **Struminskaya, B.** & Durrant, G. (2018). Onlinebefragungen auf mobilen Endgeräten: Potentiale und Herausforderungen. *PPmP - Psychotherapie Psychosomatik Medizinische Psychologie*, 68, 1-2.

CV Edith Desiree de Leeuw

Edith Desiree de Leeuw is MOA professor emerita of survey methodology at the department of methodology and statistics at Utrecht University. She has (co-)authored over 150 scholarly publications and is co-editor of 5 internationally renowned books on survey methodology: *Experimental Methods in Survey Research*, *The International Handbook of Survey Methodology*, *Total Survey Error in Practice*, *Advances in Telephone Methodology*, and *Survey Measurement and Process Quality*. She co-edited special issues on nonresponse and total survey error, is associate editor of the *Journal of official statistics (JOS)*, and editor of *mda: methods, data, analyses*.

Edith's publication efforts are oriented to research and policy audiences from multiple disciplines, such as market research, official statistics, and survey methodology and statistics. Special attention has been given to the dissemination of new research tools to practitioners and researchers in the fields of psychology, sociology, education, and applied and policy research. Her recent publications focus on mixed-mode studies with the emphasis on online surveys, including mixed-device online surveys, nonresponse, and cross-national research.

She was a Fulbright scholar with Don Dillman at Washington State University and visiting scholar with Jan de Leeuw (no relation) at the Program on Social Statistics, UCLA. She is a fellow of the Interuniversity Joint Institute for Psychometrics and Sociometrics (IOPS) in the Netherlands, and was awarded the Visiting International Fellowship at the Institute of Social Research, University of Surrey. In 2017 Edith received the WAPOR Helen Dinerman prize for lifetime contributions to the field of public opinion and the ESRA award for outstanding services to survey research, the highest honors given by these organizations.

h-index (Google Scholar) = 40. Publications in the last three years:

1. **de Leeuw, E.**, Luiten, A., & Stoop, I. (2020). Preface Special Issue *Journal of Official Statistics on Survey Nonresponse*. *Journal of Official Statistics*, 36, 463-469.
2. Luiten, A., Hox, J., & **de Leeuw, E.** (2020). Survey nonresponse trends and fieldwork effort in the 21st Century: Results of an International Study across Countries and Surveys. *Journal of Official Statistics*, 36, 469-487.
3. Cornesse, C., Blom, A. G., Dutwin, D., Krosnick, J. A., **de Leeuw, E. D.**, Legleye, S., Pasek,

- J., Pennay, D., Phillips, B., Sakshaug, J. W., Strumiskaya, B., & Wenz, A. (2020). A Review of Conceptual Approaches and Empirical Evidence on Probability and Nonprobability Sample Survey Research, *Journal of Survey Statistics and Methodology* 8, 4–36.
4. Lavrakas, P. J., Traugott, M. W., Kennedy, C., Holbrook, A. L., **de Leeuw, E. D.**, West, B. T. (Eds). *Experimental methods in survey research. Techniques that combine random sampling with random assignment.* 2019. New York, Wiley.
 5. Lavrakas, P. J., Kennedy, C., **de Leeuw, E. D.**, West, B. T., Holbrook, A. L. & M. W. Traugott (2019). Probability survey-based experimentation and the balancing of internal and external validity concerns. In P. J. Lavrakas, M. W. Traugott, C. Kennedy, A. L. Holbrook, E. D. de Leeuw, B. T. West (Eds). *Experimental methods in survey research. Techniques that combine random sampling with random assignment.* pp. 1-17. New York, Wiley
 6. **de Leeuw, E. D.**, Hox, J., & A. Scherpenzeel (2019). Mode effects versus question format effects: An experimental investigation of measurement error implemented in a probability-based online panel. In P. J. Lavrakas, M. W. Traugott, C. Kennedy, A. L. Holbrook, E. D. de Leeuw, B. T. West (Eds). *Experimental methods in survey research. Techniques that combine random sampling with random assignment.* pp. 151-165. New York, Wiley.
 7. **de Leeuw, E. D.**, Hox, J., & A. Luiten. (2018). International Nonresponse Trends across Countries and Years: An analysis of 36 years of Labour Force Survey data. *Survey Insights: Methods from the Field.* Retrieved from <https://surveyinsights.org/?p=10452>.
 8. Suzer-Gurtekin, Z. T., Valliant, R., Heeringa, S. G. & **E. D. de Leeuw** (2018). Mixed-Mode Surveys: An Overview of Design, Estimation and Adjustment Methods and Empirical Applications, chapter 23 In: T. P. Johnson, B.-E. Pennell, I. A.L. Stoop, & B. Dorer (Eds), *Advances in comparative survey methodology.* New York: Wiley.
 9. **de Leeuw, E. D.**, Suzer-Gurtekin, Z. T., & J. Hox. (2018). The design and implementation of mixed mode surveys. In: T. P. Johnson, B.-E. Pennell, I. A.L. Stoop, & B. Dorer (Eds), *Advances in comparative survey methodology.* New York: Wiley.
 10. **de Leeuw, E. D.** (2018). Mixed-Mode: Past, Present, and Future. *Survey Research Methods*, 12, 75-89. <https://ojs.ub.uni-konstanz.de/srm/article/view/7402/6582>
 11. **de Leeuw, E. D.** & V. Toepoel. Mixed-Mode and Mixed-Device Surveys (2018) In: *The Palgrave Handbook of Survey Research*, ed. by D. L. Vannette & J. A. Krosnick. pp. 51-61. Cham: Palgrave MacMillan. <https://link.springer.com/book/10.1007/978-3-319-54395-6>

CV Henning Silber

Henning Silber is Senior Research and head of the Survey Operations Team at the Department of Survey Design and Methodology at GESIS – Leibniz Institute for the Social Sciences. He studied Sociology and German Philology at The University of Göttingen and Abo Akademi University. In 2015, he received his doctorate in social sciences from The University of Göttingen. His PhD studies were funded by the German Academic Scholarship Foundation and the FAZIT Foundation. Henning was a Visiting Scholar at Stanford University, The University of Texas at Austin, Utrecht University, and The University of Chicago. From 2019 to 2020 he was Fulbright Research Fellow with Timothy Johnson and Allyson Holbrook at The University of Illinois at Chicago. Since 2018, he serves as the Secretary-Treasurer of The World Association of Public Opinion Research (WAPOR). He is speaker of the Integrated Survey and Data Infrastructure at GESIS and member of the Data Safety and Monitoring Committee of the Study of Health in Pomerania (SHIP). His research interests include survey methodology, political sociology, and the experimental social sciences. Hennings work has been published in leading journals such as *Sociological Research and Methods*, *Social Science Computer Review*, the *Journal of Survey Statistics and Methodology*, and *Social Networks*. He teaches social statistics as a guest lecturer at the University of Kassel, Germany.

h-index (Google Scholar) = 6. Selected publications in the last three years:

1. Beuthner, C., **Silber, H.**, & Stark, T. H. (2020). Effects of smartphone use and recall aids on network name generator questions. *Social Networks*, advanced online access.
2. **Silber, H.**, Züll, C., & Kühnel, S. M. (2020). Can we learn from open questions in surveys? A case study on non-voting reported in the 2013 German Longitudinal Election Study. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*, 16(1), 41-58.
3. Stark, T. H., **Silber, H.**, Krosnick, J. A., Blom, A. G., Aoyagi, M., ..., & Yu, R.-r. (2020). Cross-national replication of question order experiments. *Sociological Methods & Research*, 49(3), 567-602.
4. Meitinger, K., Stadtmüller, S., **Silber, H.**, Auriga, R., ..., & Zabal, A. (2020). Fieldwork monitoring in practice: Insights from 17 large-scale social science surveys in Germany. *Survey Methods: Insights from the Field*.

5. Daikeler, J., Bach, R., **Silber, H.**, & Eckman, S. (2020). Motivated misreporting in smartphone surveys. *Social Science Computer Review*, advanced online access.
6. Ackermann-Piek, D., **Silber, H.**, Daikeler, J., Martin, S., & Edwards, B. (2020). Training programs of multinational surveys mapped to the total survey error. *Methods, Data, Analyses*, 14(1), 35-60.
7. **Silber, H.**, Schröder, J., Struminskaya, B., Stocké, V., & Bosnjak, M. (2019). Panel conditioning in measuring ego-centered social networks in online surveys. *Social Networks*, 56, 45-54.
8. De Leeuw, E., Hox, J., **Silber, H.**, Struminskaya, B., & Vis, C. (2019). Development of an international survey attitude scale: Measurement equivalence, reliability, and predictive validity. *Measurement Instruments for the Social Sciences*, advanced access online.
9. **Silber, H.**, Danner, D., & Rammstedt, B. (2018). Comparing measurement reliability and validity of attentive and inattentiveness respondents. *International Journal of Social Research Methodology*, 22(2), 153-164.
10. **Silber, H.**, Roßmann, J., & Gummer, T. (2018). When near means related: Evidence from three web survey experiments on inter-item correlations in grid questions. *International Journal of Social Research Methodology*, 21(3), 275-288.
11. Gummer, T., Roßmann, J., & **Silber, H.** (2018). Using instructed response items as attention checks in web surveys: Properties and implementation. *Sociological Methods & Research*, advanced online access.
12. **Silber, H.**, Weiß, B., Struminskaya, B., & Durrant, G. (2018). Onlinebefragungen auf mobilen Endgeräten: Potentiale und Herausforderungen. *Psychotherapie, Psychosomatik und Medizinische Psychologie*, 68(7), 319 - 320. [in German]
13. Roßmann, J., Gummer, T., & **Silber, H.** (2018). Mitigating satisficing in cognitively demanding grid questions: Evidence from two web-based experiments. *Journal of Survey Statistics and Methodology*, 6(3), 376-400.

Appendix B: Master Questionnaire

(for a detailed description including operationalization and references see de Leeuw et al. 2019)

Three constructs are measured: survey enjoyment, survey value, and survey burden. For each construct, three questions are formulated based on an extensive search of the literature. The reference to the original publications on which a specific question was based is given in parentheses. Note that several questions were utilized by multiple authors. A seven-point response scale was used; this scale was end-point labelled (1: Totally disagree, 7: Totally agree).

Survey Enjoyment

E1: I really enjoy responding to questionnaires through the mail or Internet (Cialdini et al., 1991; Hox et al., 1995; Rogelberg et al., 2001)

E2: I really enjoy being interviewed for a survey (Cialdini et al., 1991; Hox et al., 1995; Rogelberg et al., 2001)

E3: Surveys are interesting in themselves (Hox et al., 1995; Loosveldt & Storms, 2008; Stocké, 2006)

Survey Value

V1: Surveys are important for society (Cialdini et al., 1991; Hox et al., 1995; Stocké, 2006)

V2: A lot can be learned from information collected through surveys (Rogelberg et al., 2001; Singer et al., 1998)

V3: Completing surveys is a waste of time (-) (Hox et al., 1995; Loosveldt & Storms, 2008; Rogelberg et al., 2001; Schleifer, 1986; Singer et al., 1998)

Survey Burden

B1: I receive far too many requests to participate in surveys (Cialdini et al., 1991; Hox et al., 1995)

B2: Opinion polls are an invasion of privacy (Goyder, 1986; Loosveldt & Storms, 2008; Schleifer, 1986)

B3: It is exhaustive to answer so many questions in a survey (Stocké, 2006)

Appendix C: References

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