



# Effects of topic distribution and topic importance on interest and follow-up response

Oliver Lipps<sup>1,2</sup> and Alexandre Pollien<sup>1</sup>

<sup>1</sup> FORS, Lausanne

<sup>2</sup> University of Bern

FORS Working Paper 02-2019

Lausanne, December 2019

## **FORS Working Paper series**

The FORS Working Paper series presents findings related to survey research, focusing on methodological aspects of survey research or substantive research. Manuscripts submitted are papers that represent work-in-progress. This series is intended to provide an early and relatively fast means of publication prior to further development of the work. A revised version might be requested from the author directly.

Further information on the FORS Working Paper Series can be found on [www.forscenter.ch](http://www.forscenter.ch)

### **Copyright and Reserved Rights**

The copyright of the papers will remain with the author(s). Formal errors and opinions expressed in the paper are the responsibility of the authors. Authors accept that the FORS reserves the right to publish and distribute their article as an online publication.

FORS may use the researcher's name and biographical information in connection with the advertising and promotion of the work. For any comment, suggestion or question on these guidelines, please do not hesitate to contact us ([paperseries@fors.unil.ch](mailto:paperseries@fors.unil.ch)).

### **Editorial Board**

Erika Antal	Michael Ochsner
Carmen Borrat-Besson	Valérie-Anne Ryser
Brian Kleiner	Marlène Sapin
Ursina Kuhn	Robin Tillmann
Florence Lebert	Michèle Ernst Stähli
Oliver Lipps	Alexandra Stam
Georg Lutz	Marieke Voorpostel
Karin Nisple	Boris Wernli

Responsible editor: Marieke Voorpostel

### **How to cite this document:**

Lipps, O. & Pollien, A. (2019). Effects of topic distribution and topic importance on interest and follow-up response. *FORS Working Paper Series, paper 2019-2*. Lausanne: FORS.  
DOI: 10.24440/FWP-2019-00002

If you want to contact the authors: [oliver.lipps@fors.unil.ch](mailto:oliver.lipps@fors.unil.ch)

ISSN 1663-523x (online)

FORS, c/o University of Lausanne, Géopolis, 1015 Lausanne, Switzerland, E-mail:  
[paperseries@fors.unil.ch](mailto:paperseries@fors.unil.ch)

© 2019 Oliver Lipps and Alexandre Pollien

## SUMMARY

It is well-known that sample members who find the survey topic more important are more likely to respond. What is less known is the effect of different topic compositions. To reduce respondent burden, some social science surveys split long multi-topic questionnaires into varying components and administer only subsets to sample members. The rest of the questionnaire is asked in a second (follow-up) part. Whether respondents who answered more questions of importance to them in the first part are more likely to respond to the second part has never been tested.

In this paper, we examine this question using data from a multi-topic push to web survey with six questionnaire subsets, which are assigned at random to sample members in the first part. At the beginning of the first part respondents are asked the importance the different topics have in their lives and at the end whether the survey was interesting to complete. This design allows assessing effects of topic distribution and topic importance on interest in the survey and on response to the follow-up.

We first found that the subsets of the questionnaire are jointly associated with how interesting the respondent found the survey. Yet, we do not find support for our idea that respondents who answered more questions on topics important for them found the survey more interesting. Neither were these respondents more likely to participate in the second part of the survey. This shows that respondents to the first part do not self-select into the follow-up depending on topic importance.

**Keywords:** topic interest, topic importance, split questionnaire design, attrition, selection

# 1. INTRODUCTION

Understanding how the survey topic interferes with response is a concern for survey designers. Different people prefer different survey topics (Lynn & Clarke 2002) and sample members with a higher topic interest or for whom the topic is important are more likely to participate in the survey (e.g., Groves, 2004, Groves et al. 2000, Keusch 2015, Marcus et al. 2007, Roose et al. 2007, Zillmann et al. 2014). In surveys that are split into two parts answering experiences made during the first part are likely to be correlated with participation in the second part. In split questionnaire designs (Raghunathan and Grizzle 1995) with follow-up such as the European Value Study 2017 in Switzerland (EVS 2019), random subsamples are asked to answer questionnaires with different topic distributions in the first part and the rest of the questionnaire in the second part. If different topic distributions encourage different people to take the second part, respondents of the second part will then be a (topic-specific) selection of the respondents of the first part which may cause biased results (Herzing et al., forthcoming).

Despite its importance, research about effects of topic interest on nonresponse is scarce. Often, the samples used are very specific and questions about respondents' topic interest are measured indirectly via their "proximity" to or "involvement" in the survey topic (Van Kenhove et al. 2002). For example, members of an organization are asked about their organization (Postoaca 2006), the audience of a performance is asked about this performance (Roose et al. 2007), or users of a dating site are asked about finding a partner online (Zillmann et al. 2014). Participants of such surveys generally show high response rates. Other research tests the effect of topic interest on response by experimentally making the topic salient among subsamples (e.g., Martin 1994<sup>1</sup>).

When the survey involves the general population and is self-administered, topic salience is harder to control (Marcus et al. 2007). For one, topic interest can only be effective if people are aware about the survey topic(s) (Dillman et al. 2009, Groves et al. 2006). Unlike in interviewer-administrated surveys where interviewers explain survey topics in depth and give question examples, topics are introduced through one or two sentences in the invitation letter in self-administered surveys. Jenkins and colleagues (1992) observe through cognitive testing that respondents either do not read the introductory information or forgot it by the time they needed it. In addition, effects of topic interest on response in surveys that are made up of a mix of various topics are unclear (Goyder 1987). Scarce research shows that topic interest has effects on participation in web surveys (Couper 2005), while findings in access panels are mixed (Keusch 2013, Tourangeau et al. 2009).

To summarize, designing and testing the effect of topic interest on response is difficult especially in multi-topic self-administered surveys about the general population. The ideal research design would ask surveys with varying topic distributions repeatedly to persons whose topic interests were known (Groves et al. 2004). The challenge of this design is that independent repeated survey requests between subjects are needed with additional survey features be held constant. The design used in this paper tries to come close to this by using a survey that varies the distribution of questions of six different topics in the first part of the

---

<sup>1</sup> In this example, participants of a bowling tournament were randomized to receive one of two versions of a mail questionnaire, one couched as a bowling survey, and the other as a restaurant survey. Bowlers receiving the 'bowling' questionnaire were almost twice as likely to respond as bowlers who received the 'restaurant' questionnaire.

survey, and asks the remaining questions in a follow-up survey. No specific topic was mentioned neither in the advance letter of the first part nor of the second part such that there is no reason for respondents to expect a specific topic distribution in the two parts. This design avoids endogeneity from a selection of people with higher interest in a specific topic into a survey with a higher saliency of this topic. All respondents answered a question on the importance each of the topics has in their life at the beginning of the first part and whether the survey was interesting to answer at the end. We expect that respondents who answered more questions on the topics they found more important will evaluate the survey as more interesting, and subsequently, will be more likely to participate in the follow-up survey. We first test if different topic distributions were associated with survey interest and second, if participation in the follow-up depends on the topic distribution, topic importance, and their interaction.

This paper is organised as follows: After giving an overview about the theoretical basis of the mechanism of topic importance on participation, we introduce the data used, explain our modelling approach and present the results, before we summarize and discuss the findings.

## 2. THEORY

Why are some topics more important to people or why are they more interested in one topic than in others? One explanation is that being successful, or knowledgeable in a topic, increases subjective interest and thus participation. According to Birkelbach (1998, p.135), being more willing to talk about one's own success rather than about one's shortcomings is a natural human behaviour. Dealing with a successful topic may lower the opportunity costs of participating (Voorpostel, 2010), for example by avoiding embarrassments as resulting from admitting shortcomings. For example, Zillmann et al. (2014) analyse participation in an online survey on a dating site about finding a partner online. They find that success chances on the partner market explain participation. In addition to showing one's competence, people may be motivated to participate in a survey because they think that stating their opinion may help pushing their own interests (Schnell 2013).

Dillman (1978) proposes a model of response based on social exchange theory where people are more likely to respond if reciprocity has been established between themselves and the institution administering the survey. By meeting their topic interest and curiosity, respondents receive and provide information or knowledge of their interest, which in turn increase their willingness to respond (Van Kenhove et al. 2002). Brüggem et al. (2011) develop a concept to explain the motivation to participate in a survey, the survey participation inventory (SPI). They identify intrinsic motives such as topic interest or curiosity as important drivers of survey response. Porst and von Briel (1995), asking respondents about their main reason to participate in a survey, find that topic interest and curiosity led the ranking with 14.9% mentions. Accordingly, Sheehan (2001) found in a meta-study of 31 web-based surveys a positive correlation of  $r=.18$  between response rates and topic interest and Cook et al. (2000) report a correlation of  $r=.19$  from 68 web-based surveys. In addition, topic interest correlates positively with fewer dropouts in web surveys (Galesic 2006, Shropshire 2009). In panel surveys, there is evidence that panel members' unpleasant experiences from previous waves decrease the likelihood of participation in subsequent waves (Loosveldt and Carton 2001). We will test this by analysing effects of topic interest on participating in the second part of a two-part survey.

According to the leverage-salience theory (Groves et al. 2000, Groves et al. 2004), topic interest does not have a homogeneous effect on response: it depends both on its importance

in the view of sample members (leverage) and on the salience of the topic exhibited during the survey request (salience). Leverage-salience theory posits that the interaction of the sample member's assessed survey topic importance and the topic saliency is the key variable to test the leverage-salience theory (Marcus et al. 2007). Groves, when asked about the development of the leverage-salience theory, said that "it became obvious that the whole system of effects on survey response decisions is a set of interactive effects. There's very little in the way of main effects." (Groves 2017, p.128). Usually, the topic is made salient by interviewers with the (possibly sample-member tailored) request for participation. In our case, we assume that the different stimuli produced by the different topic distributions in the first part of the survey have an effect on the decision to take the second part. While a shortcoming of this design may be that the differences between the stimuli from the topic distributions do not contrast a lot, the advantage is that there cannot be effects from interviewers who may vary in how clearly they explain the survey topic (Groves et al. 2006).

### 3. DATA AND METHODS

To test if respondents who receive more questions they find important report a higher interest in the survey and are more likely to take the follow-up survey, we use data from the 2017 edition of the Swiss part of the European Value Study (EVS 2019). In addition to factual questions, the EVS 2017 asks questions about values within the topics work, family, friends, leisure time, politics and religion. Six randomly varied questionnaire designs with different topic distributions are used, producing different stimuli. 4'800 Swiss residents aged 18 years and older were randomly sampled from the Swiss population register and randomly assigned to one of the six experimental designs (800 each). Using the Swiss population register guarantees almost complete coverage. In addition, this sampling frame includes basic socio-demographic variables. Sample members were recruited via traditional mail including an invitation letter and a flyer containing information on the study, the survey length, how to participate online and an unconditional incentive of 10 CHF (about 9 Euro). The questionnaire was announced as taking about 25 minutes to complete and possibly followed by a second part. Respondents to the first part received an invitation for a follow-up survey (announced as taking 15 minutes) containing the complementary questions of the first part. The invitation letter to the second part contains the following phrase: "In order to further develop some aspects of our research, we selected a number of people to complete an additional module. This allows us to complete the first questionnaire and will not be followed by any further solicitation." Thus, there is no mention of different topics in the second part. In case of non-response, a maximum of three reminder letters were sent of which the second reminder letter included a paper questionnaire.

Among the 2091 respondents to the first part<sup>2</sup>, we analyse two dependent variables, "interest in the survey", asked at the end of the first part (0=not interesting, 1=somewhat interesting, 2=interesting) and whether the respondent from the first part answered the second part (0=no, 1=yes). 39% of the respondents found the survey very interesting, 48% somewhat interesting, and 13% not very interesting. The response rate to the follow-up amounted to 79%. Our main independent variables are the number of questions asked about each topic in each of the six designs, the reported importance of each of the topics in the respondent's life, and their

---

<sup>2</sup> The response rates of the six designs range from 40.6% to 44.6% and are not significantly different ( $\text{Pr}(\chi^2)=.148$ ).

interaction. Table 1 lists the distribution of the importance that respondents attributed to the topics, Table 2 the number of questions asked about each topic in each of the six designs.

*Table 1: Reported importance of the six topics (%). N=2091.*

Topic	Work	Family	Friends	Leisure Time	Politics	Religion
Not at all important	1.6	0.4	0.1	0.3	7.5	33.4
Not important	5.5	2.4	6.2	7.7	41.9	37.3
Quite important	47.0	11.9	44.6	46.1	41.1	18.4
Very important	45.9	85.3	49.2	46.0	9.6	11.0

*Table 2: Number of questions asked about each topic in the six designs. N=2091.*

Topic	Work	Family	Friends	Leisure Time	Politics	Religion
Design 1	25	42	17	13	15	26
Design 2	28	45	24	17	23	19
Design 3	21	38	8	17	57	11
Design 4	17	6	29	10	27	35
Design 5	10	5	13	10	61	27
Design 6	13	3	20	14	69	20

Within the six designs, the actual number of questions a respondent answers varies slightly due to filtering. To not confuse this variance with uncontrolled characteristics of people (responsible for filtering), we set the number of questions per topic in each design to the respective modal number (see table 2). We control for parts of the selection into the different filters by using the filter variables (whether living with a partner or not, having a religious affiliation, having a Swiss nationality or not, and whether working or not). We are aware that not all interactions of these variables (which are nonetheless responsible for filtering) can be controlled. Estimated coefficients from these variables are biased because they include both effects from the small differences of the number of questions due to filtering and their substantive effects. However, controlling or not controlling for these variables produce almost the same coefficients of the number of questions for both dependent variables.

To control for respondent's heterogeneity in rating levels of importance, we analyse the individually centered importance of the different topics, i.e., the individual topic specific importance minus the individual mean importance of all topics<sup>3</sup>. To control for the selection into responding to the first part, we use the socio-demographic variables from the sampling frame age (recoded to dummies <30, 30-44, 45-64, 64 years or older), urbanity (town, countryside), sex (woman, man), nationality (recoded to dummies Swiss, from a neighboring country, from another country), civil status (never married, married, divorced, widowed), household size (1,2,3,4+ persons), commune size (>100'000, 50'000-99'999, 20'000-49'999, 10'000-19'999, 5'000-9'999, 2'000-4'999, 1'000-1'999, and <1'000 inhabitants; modelled as a linear variable), and whether the household owns a landline and if yes, whether this landline is registered in the telephone registry. In addition, we control for survey specific variables: mode (web on a smartphone, web on other device, paper), place of filling the survey (at home, at work, at

<sup>3</sup> Because of centering, in addition to the reference category for the number of questions (leisure), an additional topic (friends) needs to be dropped for testing topic importance and their interactions with the number of questions.

another place), as well as for reported additional respondent variables: education level (lower, equal to, higher than high school level), and trust in people (0=no, 1=yes). These variables have often been shown to correlate well with nonresponse and attrition (e.g., Uhrig 2008, Voorpostel 2010). In order not to lose observations due to listwise deletion in the regression, we imputed missing values using chained equations (Azur et al. 2011), assuming a missing at random mechanism. First, we imputed 9 missing values for two sampling frame variables (urbanity and commune size) and then a number of missing values for some survey variables (7 for religious denomination, 54 for where the questionnaire was completed, 216 for education, 45 for interest in the survey, 56 for whether the respondent is employed, 85 for living with a partner, and 20 for trust).

We model the two dependent variables using selection models with the socio-demographic variables as predictors of the selection into responding to the first part: Interest in the survey is modelled as an ordinal variable using ordered probit models subject to a binary sample selection mechanism using the Stata procedure `opsl` (De Luca and Perotti 2011). Participation in the second part is modelled as a binary variable using probit models subject to a binary sample selection mechanism using the Stata procedure `heckprobit` (Heckman 1979). We use selection models because likelihood ratio tests indicate that respondents to the first part are not a random sample of all sample members. Selection models control this selection for the available variables of all sample members, in our case, the sampling frame variables.

We proceed in four steps for each of the two dependent variables, with all models controlled for the socio-demographic and the survey variables:

1. the number of questions in the different topics (model 1)
2. the reported importance of each of these topics (individually centered) (model 2)
3. 1) plus 2) (model 3)
4. 1) plus 2) plus the interaction of the number of questions in the different topics with importance of these topics (variable by variable) (models 4-7)

## 4. RESULTS

Since we are primarily interested in the development of the coefficients of the distribution of the topics (1.) and their interaction with the reported importance of each of these topics (3.), we do not depict coefficients of the control variables. We list marginal effects of the independent variables modelling the first dependent variable “interest in the survey” in Table 3:



**Table 3: Marginal effects for the “interest in the survey” (0,1,2) models. Data: EVS 2017, N=4800 (binary selection model), 2091 (ordinal model for dependent variable).**

Model	1	2	3	4	5	6	7
Number of questions on work (qw)	-.062		-.074	-.067	-.074	-.075	-.075
Number of questions on family (qf)	-.007		-.009	-.008	-.008	-.009	-.009
Number of questions on politics (qp)	-.028		-.034	-.032	-.034	-.035	-.034
Number of questions on religion (qr)	-.048		-.061	-.056	-.061	-.061	-.061
Centered importance of work (iw)		.052	.048	.195	.048	.048	.048
Centered importance of family (if)		-.097	-.096	-.093	-.055	-.096	-.097
Centered importance of politics (ip)		.281**	.282**	.282**	.280**	.308**	.281**
Centered importance of religion (ir)		.013	.013	.016	.013	.013	.010
Interaction qw X iw				-.008			
Interaction qf X if					-.002		
Interaction qp X ip						-.001	
Interaction qr X ir							.000
Joint significance (qw, qf, qp, qr)	.04		.03				

+ p<.1, \* p<.05, \*\* p<.01. All models controlled for the socio-demographic and the survey variables. Joint significance (qw, qf, qp, qr) denote the probability of the chi2 test of joint significance.

Not surprisingly, the reported importance of the topics (variables iw,...,ir) are jointly significant (1%) (not shown in table 1) such that respondents with different topic interests find the survey differently interesting. However, of these topics, only politics is significant. From models 1 and 3, the different number of questions are jointly significant (Joint significance (qw, qf, qp, qr) < .05). The joint significance of the distribution of the topics means that respondents are aware of the different topics insofar as they express different survey interests. No single interaction between the number of questions of a topic and the reported importance of this topic (variables qXi) is significant. Similarly, the interaction variables of the number of questions and their importance are not jointly significant (not shown in table 3). This means that even if respondents answer more questions about a topic they find important, they do not express a higher interest in the survey.

In Table 4, we list marginal effects of the independent variables modelling the second dependent variable “participation in the second part”. Compared with the models in Table 1, we add an eighth model, where we additionally control for “interest in the survey”.

**Table 4: Marginal effects for the “participation in the second part” (0,1) models. Data: EVS 2017, N=4800 (selection equation), 2091 (model for dependent variable).**

Model	1	2	3	4	5	6	7	8
Number of questions on work (qw)	.044		.052	.055	.052	.053	.053	.065
Number of questions on family (qf)	.009		.010	.011	.008	.010	.011	.012
Number of questions on politics (qp)	.021		.024	.025	.024	.026	.025	.031
Number of questions on religion (qr)	.051		.059	.061	.059	.059	.058	.069
Centered importance of work (iw)		-.007	-.005	.047	-.005	-.007	-.005	-.009
Centered importance of family (if)		.128+	.128+	.129+	.063	.124+	.130+	.152*
Centered importance of politics (ip)		.138*	.134*	.134*	.137*	.006	.135*	.101+
Centered importance of religion (ir)		-.027	-.029	-.028	-.027	-.028	.024	.032
Interaction qw X iw				-.003				
Interaction qf X if					.003			
Interaction qp X ip						.003		
Interaction qr X ir							-.002	-.003
interest in survey								-.246**
Joint significance (qw, qf, qp, qr)	.58		.53					

+ p<.1, \* p<.05, \*\* p<.01. All models controlled for the socio-demographic and the survey variables. Joint significance (qw, qf, qp, qr) denote the probability of the chi2 test of joint significance.

For respondents to the first part the different number of questions are not jointly significant for the decision to participate in the second part (Joint significance (qw, qf, qp, qr) > .05 in models 1 and 3). The same is true for both the single interactions of the number of questions and the joint interaction variables. This means that the decision to continue the survey depends neither on the distribution of question topics in the first part nor on whether the survey contains more questions which respondents find important. However, as expected, survey interest in the first part is associated with a higher participation in the second part.

## 5. SUMMARY AND CONCLUSION

In this paper, we use data from a two-part split questionnaire design survey where six different subsets of the questionnaire with varying distributions of topics are experimentally assigned to respondents. Respondents assess for each topic the importance it has in their lives. We test the effects of topic distribution and topic importance on 1) expressed interest in the survey after completion and 2) participation rate in the second part of the survey. While different topic distributions result in differences with respect to interest expressed, respondents who answered more questions from important topics do neither find the survey more interesting, nor do they show a higher participation in the second part. This is surprising because survey designers have always assumed that people who complete surveys with more questions they rate as being important find the survey more interesting. It may be that samples in previous studies on which this assumption is based were too selective, or that the effect of topic importance was deducted from stated responses only.

In line with many previous findings, we find that importance the respondent attributes to politics is associated with their interest in the survey, whereas none of the other topics were related to survey interest. It should be noted that there was more variation in how important respondents rated politics than the other domains which were rated either important or unimportant by most people. Politics is also the topic with the largest range in number of questions (15-69). Nonetheless, a questionnaire with more political questions does not increase interest in the survey, nor is a higher political interest associated with an increased likelihood of taking the follow-up survey, independent of the number of questions about politics. A hypothesis could be that curiosity or interest alone is not enough to cause effects: it may be that participants expect an actual exchange of knowledge and information, which is less possible in self-administered surveys. It is also conceivable that an important topic does not necessarily mean that questions on this topic are interesting to answer.

For designers of split questionnaires, our findings are good news: while different questionnaire compositions produce slightly different interests in the survey, neither questionnaire compositions nor its interaction with individual topic importance is associated with participation in the follow-up survey: different questionnaire compositions do not select respondents in follow-up surveys such that the final respondent samples are comparable.

There are a number of shortcomings in our paper: first, it is not clear if the stimulus was big enough for the respondents to be aware of the weight each topic (which they find more or less important) had in the questionnaire that was administered to them. However, the assumption of being aware of the contents of the questionnaire has not yet been tested in the literature and is certainly worth to be further explored in further research. Second, the decision which question belongs to which topic is subjective. Often, a question touches several topics, which made a categorisation difficult such that the variable 'question topic' may contain some

measurement error. Third, not all respondents of the first part may have expected a follow-up questionnaire with a similar topic distribution in the second part. Although not explicitly communicated in the invitation to the second part, some respondents may have expected more questions of other topics in order to provide complements to the first part questionnaire. Since the EVS 2017 is not a panel survey, the content of the second part was not further specified. These measurement errors can be easily decreased by 1) using designs with larger topic distribution differences, 2) using questions which clearly belong to a specific topic and/or test intersubjective coding by using several coders and calculating the intercoder reliability and 3) by communicating that the second part contains the same questions that the first part. These shortcomings notwithstanding, we think that our approach is one of the first that uses a nationally representative random sample and an experimentally manipulated multi-topic questionnaire design to test respondent's topic importance on survey interest and response behaviour.

## REFERENCES

- Azur, M., Stuart, E., Frangakis, C., & Leaf, P. (2011). Multiple imputation by chained equations: what is it and how does it work? *International Journal of Methods in Psychiatric Research*, 20(1), 40-49.
- Birkelbach, K. (1998). Befragungsthema und Panelmortalität: Ausfälle in einer Lebenslaufferhebung. *ZA-Information* 42, 128-147.
- Brüggen, E., Wetzels, M., De Ruyter, K., & Schillewaert, N. (2011). Individual differences in motivation to participate in online panels: the effect on response rate and response quality perceptions. *International Journal of Market Research*, 53(3), 369-39.
- Cook, C., Heath, F., & Thompson, R. (2000). A meta-analysis of response rates in web- or Internet-based surveys. *Educational and Psychological Measurement*, 60, 821-836.
- Couper, M. (2005). Technology trends in survey data collection. *Social Science Computer Review*, 23(4), 486-501.
- De Luca, G., & Perotti, V. (2011). Estimation of ordered response models with sample selection. *Stata Journal*, 11(2), 213-239.
- Dillman, D. (1978). *Mail and telephone surveys: The total design method* (Vol. 19). New York: Wiley.
- Dillman D., Smyth J., & Christian L. (2009) *Internet, mail, and mixed-mode surveys: the tailored design method*. 3rd ed. Hoboken: Wiley.
- EVS (2019). European Values Study 2017: Integrated dataset (EVS 2017). GESIS Data Archive, Cologne. ZA7500 Data file Version 2.0, doi:1.4232/1.13314
- Galesic, M (2006). Dropouts on the web: Effects of interest and burden experienced during an online survey. *Journal of Official Statistics*, 22(2), 313-328.
- Goyder, J. (1987). *The silent minority: Nonrespondents on sample surveys*. Westview Press.
- Groves, R., Couper, M., Presser, S., Singer, E., Tourangeau, R., Acosta, G. P., & Nelson, L. (2006). Experiments in producing nonresponse bias. *International Journal of Public Opinion Quarterly*, 70(5), 720-736.

- Groves, R., Presser, S., & Dipko, S. (2004). The role of topic interest in survey participation decisions. *Public Opinion Quarterly*, 68(1), 2-31.
- Groves, R., Singer, E., & Corning, A. (2000). Leverage-saliency theory of survey participation: description and an illustration. *Public Opinion Quarterly*, 64(3), 299-308.
- Groves, R. (2017). A conversation with Robert Groves. In Habermann, H., Kennedy, C., & Lahiri, P. *Statistical Science*, 32(1), 128-137.
- Heckman, J. (1979). Sample selection bias as a specification error. *Econometrica*, 47, 153-161.
- Herzing, J., Pollien, A., Ernst Stähli, M., Joye, D., Milbert, P., & Ochsner, M. Is there an alternative to face-to-face surveys? An assessment of different strategies to redesign a general population survey from a face-to-face survey to a push-to-web survey, forthcoming.
- Jenkins, C., Ciochetto, S., & Davis, W. (1992), Results of Cognitive Research on the Public School 1991-92 Field Test Questionnaire for the Schools and Staffing Survey. *Internal Census Bureau Memorandum*, June, 15.
- Keusch, F. (2013). The role of topic interest and topic salience in online panel web surveys. *International Journal of Market Research*, 55(1), 59-8.
- Keusch, F. (2015). Why do people participate in Web surveys? Applying survey participation theory to Internet survey data collection. *Management Review Quarterly*, 65(3), 183-216.
- Loosveldt, G., & Carton, A. (2002). Utilitarian individualism and panel nonresponse. *International Journal of Public Opinion Research*, 14(4), 428-438.
- Lynn, P., & Clarke, P. (2002). Separating refusal bias and non-contact bias: evidence from UK national surveys. *Journal of the Royal Statistical Society: Series D (The Statistician)*, 51(3), 319-333.
- Marcus, B. et al. (2007). Compensating for low topic interest and long surveys: a field experiment on nonresponse in web surveys. *Social Science Computer Review*, 25(3), 372-383. <https://doi.org/1.1177/0894439307297606>
- Martin, C. (1994). The impact of topic interest on mail survey response behaviour. *Journal of the Market Research Society*, 36(4), 327-339.
- Porst, R., & Briel, C. v. (1995). Wären Sie vielleicht bereit, sich gegebenenfalls noch einmal befragen zu lassen? Oder: Gründe für die Teilnahme an Panelbefragungen. (*ZUMA-Arbeitsbericht*, 1995/04). Mannheim: Zentrum für Umfragen, Methoden und Analysen - ZUMA-.
- Postoaca A. (2006). *The anonymous elect. Market research through online access panels*. Springer, Berlin.
- Raghunathan, T. E., & Grizzle, J. E. (1995). A split questionnaire survey design. *Journal of the American Statistical Association*, 90(429), 54-63.
- Roose, H., Lievens, J., & Waeye, H. (2007). The joint effect of topic interest and follow-up procedures on the response in a mail questionnaire: An empirical test of the leverage-saliency theory in audience research. *Sociological Methods & Research*, 35(3), 410-428.
- Schnell, R. (2013). *Nonresponse in Bevölkerungsumfragen: Ausmaß, Entwicklung und Ursachen*. Springer, Berlin.

- Sheehan, K. (2001). E-mail survey response rates: A review. *Journal of computer-mediated communication*, 6(2). DOI: <https://doi.org/1.1111/j.1083-6101.2001.tb00117.x>.
- Shropshire, K. O., Hawdon, J. E., & Witte, J. C. (2009). Web survey design: Balancing measurement, response, and topical interest. *Sociological Methods & Research*, 37(3), 344-37.
- Tourangeau, R., Groves, R., Kennedy, C., & Yan, T. (2009). The presentation of a web survey, nonresponse and measurement error among members of web panel. *Journal of Official Statistics*, 25(3), 299-321.
- Uhrig, N. (2008). *The nature and causes of attrition in the British Household Panel Survey* (Vol. 5). Colchester, Essex: Institute for Social and Economic Research, University of Essex.
- Van Kenhove, P., Wijnen, K., & De Wulf, K. (2002). The influence of topic involvement on mail-survey response behavior. *Psychology & Marketing*, 19(3), 293-301.
- Voorpostel, M. (2010). Attrition Patterns in the Swiss Household Panel by Demographic Characteristics and Social Involvement. *Swiss Journal of Sociology*, 36(2), 359-377.
- Zillmann, D., Schmitz, A., Skopek, J., & Blossfeld, H.-P. (2014). Survey topic and unit nonresponse. *Quality & Quantity*, 48(4), 2069-2088.