

Chapter 8

Power, Culture and Item Nonresponse in Social Surveys



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Introduction

It is somewhat ironic that attention to survey unit nonresponse (UNR)—defined as “the failure to obtain any survey measurements on a sample unit” (Dillman et al. 2002: 6)—is pervasive in the survey methodology literature, whereas item nonresponse (INR)—defined as “the failure to obtain substantive answers to individual survey questions when a unit response is obtained” (Dillman et al. 2002: 12)—is much less frequently considered. It is equally ironic that considerable sociologic theory is available to account for patterns of survey UNR (e.g., Goyder et al. 2006; Groves and Couper 1998), while underlying theoretical explanations for INR are less developed.

In this chapter, we address this imbalance by examining INR within cross-national social surveys and considering its relationship to several sociological constructs which may advance our understanding of the INR process. These include social status, power, diversity and culture. We focus on these aspects because they enable us to take into account the social contexts within which individuals make decisions as to whether or not they will participate in survey interviews or complete self-administered questionnaires. In doing so, we employ a rich source of international social data that affords us the opportunity to integrate the existing evidence concerned with INR—much of which is limited to a single national setting—and

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examine its generalizability across a more diverse set of social contexts. It also enables us to investigate new hypotheses concerned with the potential effects of culture that can only be examined using multi-national data sets. We begin with an overview of existing research regarding INR.

Item Nonresponse in Social Surveys

While the increased attention afforded to UNR is perhaps excusable given the dramatic declines in survey response rates witnessed in recent decades (Stoop 2016), INR nonetheless remains an important potential source of nonresponse error as well. Most importantly, item-level missing data can result in biased survey estimates or incorrect conclusions when mistakenly treated as being missing completely at random (MCAR) (Little and Rubin 2014; Schafer and Graham 2002). INR also reduces the effective sample size available for analyses, resulting in reductions in statistical power (Callens and Loosveldt 2018; McKnight et al. 2007). As virtually all social surveys experience some degree of INR and are thus vulnerable to these threats, we believe it is essential that greater effort be invested in understanding the sociological processes associated with it.

Available research highlights the relevance of INR for data quality, demonstrating it to be associated with variables at multiple levels of analysis. At the item level, evidence suggests that use of branching questions increases INR (Messmer and Seymour 1982; Turner et al. 1992). Question sensitivity can also increase INR, particularly during interviewer-assisted surveys (Rässler and Riphahn 2006; Tourangeau et al. 2000). In contrast, topic salience or relevance can decrease INR (Adua and Sharp 2010). Mode differences in INR are also well-known. In general, INR is more common in self-administered surveys (Heerwegh and Loosveldt 2008; Tourangeau et al. 2000), where it has been associated with poor visual design and questionnaire layout (Jenkins and Dillman 1997) and where interviewers who can encourage respondents to answer every question are absent (Dillman et al. 2002).

Rates of INR have also been shown to vary systematically across interviewers (Callens and Loosveldt 2018; Pickery and Loosveldt 1998). The speed at which interviewers read survey questions has been found to influence INR, with faster speeds leading to higher rates of 'don't know' responses (Vandenplas et al. 2018). Interviewer job experience, though, has not been shown to be consistently associated with INR (Tu and Liao 2007; Vandenplas et al. 2018). Some research suggests higher levels of INR obtained from female interviewers (Riphahn and Serfling 2005). Other findings indicate that social distance between interviewers and respondents may be reduced when interviewer-respondent dyads are matched on demographic characteristics, potentially decreasing INR. Indeed, some evidence finds reduced social distance in terms of variables such as gender, age, ethnicity and education to be associated with INR (Tu and Liao 2007; Vercruyssen et al. 2017). Other investigators, in contrast, have concluded there are few if any effects on INR of interviewer-respondent matching (Lipps 2007; Rässler and Riphahn 2006; Riphahn and Serfling 2005).

Item Nonresponse and Marginalized Populations

Several respondent characteristics have in addition been found to be associated with increased rates of INR. Females, older persons, those with lower levels of education, the unemployed, and those who are otherwise socially disadvantaged all demonstrate greater INR (Adua and Sharp 2010; Callens and Loosveldt 2018; Candido et al. 2011; Colsher and Wallace 1989; Elliott et al. 2005; Frick and Grabka 2007; Klein et al. 2011; Koch and Blohm 2009; Kupek 1998; Messer et al. 2012; Pickery and Loosveldt 1998; Riphahn and Serfling 2005; Struminskaya et al. 2015; Vercruyssen et al. 2017; Yan et al. 2010). In the U.S., numerous studies have also documented race and ethnic differences in patterns of INR. Specifically, in the U.S., African American, Asian, Hispanic, and Native American respondents have each demonstrated higher levels of INR, compared to non-Hispanic whites, in social surveys (Elliott et al. 2005; Klein et al. 2011; Lee et al. 2017; Owens et al. 2001; Yan et al. 2010). Similar differences in INR between German vs. other ethnic groups in Germany have also been reported (Struminskaya et al. 2015). Alexander (2018) interprets these findings from a marginalized group perspective, attributing the INR differences to group variations in abilities and access to the information resources needed, in some cases, to answer survey questions. These social group differences in INR rates are also consistent with Berinsky's (2002) discussion of "exclusion bias," which suggests that INR differentials reflect broader patterns of social inequality. It is notable that most of this existing INR research has been conducted within single countries. Here, we propose several new hypotheses that seek to expand the group marginalization explanation by suggesting it can be generalized across countries:

H1: Across countries, women provide more INR than men.

H2: Across countries, older respondents provide more INR than younger respondents.

H3: Across countries, lower educated respondents provide more INR than higher educated respondents.

Group marginalization also leads to social inequalities, and we expect levels of social inequalities within countries to be associated with INR across countries:

H4: Across countries, INR will be higher in those with greater levels of inequality.

Item Nonresponse and Social Power

The social inequities reviewed above all suggest power differentials. Indeed, social power, which generally refers to relationships among people and the ability of some to influence the behavior of others (Dahl 1957), is typically viewed as unbalanced, as actors are understood not to have equal levels of power over one another (Mulder 1977). At the risk of over-simplifying complex and highly variable patterns of social relationships across countries, the uneven distribution of social power within

societies appears to be near-universal. The structuring of these power disparities within countries, though, is highly variable and arguably unique to each. In addition to gender, age and education, power differentials may be defined in terms of any number of other personal characteristics or social positions, including race/ethnicity, religion, migration status, language, social class, geographic residency, or some combination of them.

In general, we expect that those occupying less powerful social positions will have weaker access to the resources needed to provide adequate information during survey interviews. Many of the group differences in INR identified in the literature can be accounted for by power differentials, which are commonly attributed to majority vs. minority status. Our fifth hypothesis suggests that:

H5: Across countries, members of minority groups have higher rates of INR than do members of majority groups.

In addition to power differentials defined based on objective group membership, we also believe that subjective individual feelings of powerlessness may also be associated with INR. Hence:

H6: Across countries, individuals reporting greater feelings of powerlessness have higher rates of INR than do individuals reporting less feelings of powerlessness.

Item Nonresponse and Culture

As acknowledged earlier, most research concerned with INR has examined surveys conducted within one country, which of course limits their generalizability. This is of additional concern given that the limited cross-national research that is available suggests considerable heterogeneity in INR patterns across countries (Callens and Loosveldt 2018; Frick and Grabka 2007). There are several potential rationales to account for variations in INR across countries. Countries may train interviewers differentially regarding how to address INR when in the field. They may have differing quality control protocols and employ various modalities for data collection (Koch and Blohm 2009). Cross-national research affords the opportunity to investigate some of these potential methodological sources of variability in INR. One that has been examined within countries only is data collection mode. As discussed earlier, available evidence from single country studies suggests that INR is greater when surveys are predominantly self-administered. Our sixth hypothesis seeks to generalize these findings cross-nationally:

H7: Across countries, INR is higher in self-administered modes that do not employ interviewers.

Cross-national survey research also presents the opportunity to examine how higher-level cultural values may influence INR patterns. One of the most well-known cultural frameworks was developed by Hofstede (2001), who identified multiple cultural orientations that vary across countries. Several of these are of

interest here as possible country level dimensions that may be associated with INR at the individual level. Power distance addresses the issue of unequal power distribution within countries (discussed earlier) and focuses on the degree to which this unequal distribution is accepted by those with less power. Societies high in power distance tend to be authoritarian in nature, stressing conformity. In contrast, those low in power distance more often emphasize independence and are less authoritarian in nature. As conformity seems to be of greater importance in high power distance societies, we would anticipate less INR for surveys conducted there. Thus, our eighth hypothesis is that:

H8: Across countries, INR will be higher in those with lower levels of power distance.

Another of Hofstede's cultural dimensions is individualism vs. collectivism (Triandis 1995). Briefly, individualism emphasizes self-enhancement, whereas collectivism focuses more on the well-being of the social group. Individualistic cultures view persons as individual actors who pursue their personal interests. Collectivistic cultures, in comparison, view individuals as members of social groups, and it are the interests of those social groups that are paramount. The greater personal autonomy observed in individualistic cultures suggests another hypothesis:

H9: Across countries, INR will be higher in those that are more individualistic.

Uncertainty avoidance is a third of Hofstede's dimensions that we believe is relevant for understanding INR across countries (Gudykunst and Kim 2003). This orientation focuses on the amount of uncertainty and ambiguity that is acceptable within a country or culture. In those high in uncertainty avoidance, consensus is valued, formal rules and laws are plentiful, and there is less tolerance for deviance. Countries low in uncertainty avoidance, in contrast, are less threatened by ambiguity, tend to have less interest in formal rules, and are tolerant of both deviant persons and ideas. We thus suspect that the lack of tolerance for ambiguity found in cultures with high levels of uncertainty avoidance may discourage survey respondents within those cultures from leaving survey questions unanswered. Consequently, we hypothesize that:

H10: Across countries, INR will be higher in those with lower levels of uncertainty avoidance.

Finally, we also examine the effects of cultural diversity within countries on INR. Countries that are ethnically homogeneous are typically able to lay claim to a shared historical experience and are more likely to also share language and often also religion. In contrast, ethnic diversity is found to be associated with less social cohesion, weaker national economic growth (Putnam 2007) and with greater internal conflict (Kanbur et al. 2011). The social conflict associated with cultural and ethnic diversity may also be manifest in higher rates of INR in social surveys. We thus hypothesize that:

H11: Across countries, INR will be higher in those with higher levels of ethnic diversity.

While ethnic and cultural diversity can be a source of internal conflict, we acknowledge that diversity is also an immense source of national pride and strength for many peoples in many countries.

We next turn to a description of the cross-national survey data and the methods we employ to investigate these hypotheses.

Data and Methods

In the following sections, we first introduce our survey data sets. We then describe our specific measures, followed by an overview of our multi-level analysis methods.

Data Sets

We used for our analysis de-identified data from the 2016 *International Social Survey Programme* (ISSP) Module on Role of Government IV (ISSP 2018). The target population in each country consisted of all persons aged 18 and older.¹ Overall, the data set of the 2016 ISSP module contains 48,720 respondents from 35 countries. The advantage of the ISSP data set is that it covers a large variety of countries and cultural groups. A complete list of participating countries can be found in Table 8.1.

Variables

Dependent Variable: Count of Item Nonresponse

Our dependent variable in this analysis is a count of item nonresponse in the 2016 ISSP data set. Following the approach of Callens and Loosveldt (2018), we model item nonresponse as a count variable that calculates the number of questions for which respondents provided an item nonresponse. Instead of analyzing all variables in the dataset, we selected a subset of items which exceeded the recommended threshold value of 5% INR (Little and Rubin 2002). Overall, we analyzed the count of INR for 25 variables in the 2016 ISSP data set. Therefore, the outcome variable has a value range between 0 and 25. Table 8.3 in the Online Appendix provides a list of all included variables. Although a separate analysis of “can’t choose” and “refusals” would have been preferable (Shoemaker et al. 2002), this was not feasible

¹Exceptions for 2016 ISSP were Finland (15–74 years), Japan (16 years and over), Latvia (18–74 years), Norway (18–79 years), Sweden (18–79 years), South Africa (16 years and over), and Suriname (21–74 years).

Table 8.1 Countries of the 2016 ISSP data set and their respective minority definition

Country (N)	Majority	Minority	Minority definition
Australia (1267)	847	420	Not born in Australia or English-speaking country and parents non-Australian or born in English-speaking country
Belgium (1952)	1705	247	Both parent from non-European countries
Chile (1416)	1162	254	Self-classification in lower social classes (lowest third)
Croatia (1026)	931	95	Non-Croat
Czech Republic (1400)	1285	115	Non-Czech
Denmark (1138)	815	323	Non-Danish
Finland (1186)	1104	82	Non-Finnish
France (1501)	1241	260	Non-European
Georgia (1487)	1344	143	Non-Georgian
Germany (1689)	1569	120	Non-German
Great Britain (1563)	1460	103	Non-white
Hungary (1000)	995	5	Roma
Iceland (1322)	1126	196	Belonging to a minority
India (1508)	841	667	Non-Hindu OBC or non-Hindu other
Israel (1248)	973	275	Non-Jewish
Japan (1611)	1568	43	Non-Japanese or father or mother non-Japanese
Latvia (1002)	659	343	Non-Latvian
Lithuania (1006)	898	108	Non-Lithuanian
New Zealand (1350)	1026	324	Non-European
Norway (1260)	1116	144	Non-Norwegian
Philippines (1200)	970	230	Non-Roman Catholic
Russia (1576)	1320	256	Non-Russian
Slovakia (1150)	1027	123	Non-Slovak
Slovenia (1024)	967	57	Roma and migrants from countries from former Yugoslavia
South Africa (3063)	2207	856	Self-classification in lower social classes (lowest third)

(continued)

Table 8.1 (continued)

Country (N)	Majority	Minority	Minority definition
South Korea (1051)	913	138	Inhabitants of Gwangju Metropolitan City, South Jeolla Province, North Jeolla Province
Spain (1834)	1652	182	Both parents non-Spaniards
Suriname (1273)	1078	195	Self-classification in lower social classes (lowest third)
Sweden (1140)	996	144	Parents from non-Nordic country
Switzerland (1066)	756	310	Parents non-Swiss
Thailand (1475)	1356	119	Non-Buddhist
Taiwan (1966)	1860	106	Aborigine, Southeast Asia, other
Turkey (1535)	1291	244	Non-Turks
United States (1390)	1013	377	Non-whites (GSS race variable)
Venezuela (1045)	862	183	Self-classification in lower social classes (lowest third)
Total (48,720)	40,933	7787	

due to coding inconsistencies across countries for several variables in the ISSP data set (e.g., for the income variable).

Independent Variable

Minority Status

An important focus of our research is on the influence of minority status on INR. Which social groups are considered as minority can differ across countries and might be based on distinctions such as ethnicity, religious denomination, social class, migrant status or region. We consulted with cultural experts for advice on how to define the main cleavage in each respective country (see Acknowledgements). Table 8.1 contains a list of minority definitions by country. For our analysis, we modeled the variable minority status as a binary measure (reference category: majority group). We acknowledge that a dichotomization of this variable in one majority and one minority group might be an oversimplification in a variety of countries and does not completely adjust for the diverse realities of many societies in our analysis. Since we attempted a cross-national analysis with many countries, we had to opt for a higher level of abstraction than in a single-country study. We encourage replications of our research with a smaller subset of countries that account for the differences between minority groups within countries.

Respondent Level Characteristics

On the respondent level, we included gender (reference category: women), age (metric),² and education. With regard to education, we distinguish between low level, medium level, and high level of education³ (reference category: medium level of education). We also added a variable at the individual level that addresses the respondents' feeling of powerlessness (v47; "People like me don't have any say about what the government does"; 5-point scale from "strongly agree" to "strongly disagree"; can't choose option; reverse coded). All variables are grand mean centered, see (Hox et al. 2018).

Country Level Characteristics

In addition to respondent level characteristics, we also added country level variables to our model. Since previous research revealed the influence of interviewer involvement on item nonresponse, we added a dummy variable for mode that distinguishes between countries with data collection that relies predominantly on self-completions vs. countries with data collection that features greater interviewer involvement⁴ (reference category: interviewer involvement).

In addition to mode setting, we also included variables that describe the countries' particularities. The countries in our data set differ with regard to the level of inequality within each respective society. We addressed this by including the Coefficient of Human Inequality in our analysis. This indicator is collected by the United Nations Development Programme and averages inequalities in health, education, and income.⁵ The coefficient ranges between 0 and 1, with lower values representing greater levels of inequality within a society. Additionally, the countries differ with regard to their gross domestic product per capita. (GDP per capita in US \$). We included GDP per capita data collected by the Worldbank.⁶ We adjusted the GDP to the range of the other variables in the model by dividing its value by 1000.

²Age was not collected continuously but as response categories with age ranges in Denmark. We used the middle value of these age ranges as age values for Denmark.

³After consultation with an expert on cross-national classifications of education, we coded the categories of the ISSP degree variables as follows: no formal education, primary school, and lower secondary as *low* educational level; upper secondary and post secondary, non-tertiary as *medium* educational level; lower level tertiary and upper level tertiary as *higher* educational level.

⁴Most of the countries have either only data collection with interviewer involvement or self-completion. Two countries, Germany and Suriname, had both types of data collection. Therefore, we assigned these countries to the mode setting that was predominant in the respective country (Germany: self-completion; Suriname: interviewer).

⁵Further documentation on the UNR inequality index can be found here: <http://hdr.undp.org/en/content/what-does-coefficient-human-inequality-measure>.

⁶The GDP per capita data was taken from <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>.

The countries also vary in their cultural orientation. We selected the Hofstede dimensions of power distance, individualism-collectivism, and uncertainty avoidance for our analysis. Country level scores for these dimensions are from Hofstede's research (2010) and appended to the data set.⁷

Finally, we believe INR might also be affected by the degree of heterogeneity of ethnic groups within a society. Therefore, we included a measure of ethnic fractionalization in our analysis. The ethnic diversity index is based on the approach of Patsiurko et al. (2012) who took data on ethnic composition from Encyclopaedia Britannica and transformed them to ethnic indices using the approach of 'one minus the Herfindahl index' (Patsiurko et al. 2012). This formula calculates the probability that two randomly selected individuals in a country belong to different ethnic groups and provides estimates ranging from 0 to 1 (Alesina et al. 2003). For example, an ethnic fractionalization score of 0.04 for a country means that the odds of two people selected randomly belonging to different ethnic groups is 4 percent. Patsiurko et al. provided values for all OECD countries. However, our data set also contains non-OECD countries. Therefore, we calculated the scores for these countries based on entries from Encyclopaedia Britannica. The data entries cover the period 2000–2007 since no newer data were available from Encyclopaedia Britannica. Although not optimal, the fractionalization indices should still provide some valuable insights since previous research indicates that these measures are highly persistent and hardly change over time (Alesina et al. 2003; Awaworyi Churchill et al. 2017).

Analysis

We estimated multilevel mixed-effects negative binomial regressions with two analytical levels (respondent and country) (Hilbe 2011) for the 2016 ISSP data set. Instead of using a simple Poisson model for count data, this model is preferable if over-dispersion is present in the data. That is, when the observed variance is much larger than expected under the Poisson model (Hox et al. 2018). We adjust for the over-dispersion in our data by adding an explicit error term α to our model which increases the variance compared to the variance implied by the Poisson model (Hox et al. 2018). We used STATA version 14 to run our model and selected the mode-curvature adaptive Gauss–Hermite quadrature⁸ to calculate the log likelihood. This

⁷Values were retrieved from Hofstede's website: <https://geerthofstede.com/research-and-vsm/dimension-data-matrix/>.

⁸We opted for the mode-curvature adaptive Gauss–Hermite quadrature integration method instead of the default integration method (Gauss–Hermite quadrature integration method) because the default setting created out-of-bound values for the country variance. We cross-checked our results with the Gauss–Hermite quadrature integration method with outputs in mlwin and the gllamm command in STATA. In all outputs, we found a similar pattern of significance for the regression coefficients. Contrary to the results with the default setting, not all regression coefficients are

is an estimator with numerical integration and has the advantage of permitting likelihood-ratio tests for comparing nested models.

In an initial step, we fitted a two-level random-intercept Poisson model. The reported likelihood-ratio test indicates sufficient variability between countries to favor a mixed-effects Poisson regression over a standard Poisson regression (LR test vs. Poisson model: $\chi^2(01) = 9321.32$; $p < 0.001$). We proceeded to fit our model with a multilevel mixed-effects negative binomial model. The Likelihood-ratio test comparing the mixed-effects negative binomial model to the mixed-effects Poisson models supports the use of the mixed-effects negative binomial model for our data (LR $\chi^2(1) = 30087.50$; $p < 0.001$).

Results

In total, we estimate three nested models. We start with a baseline model with intercept only and then add block-wise respondent level (Model 2) and country level (Model 3) explanatory variables. We additionally report incidence rate ratios for the final model. The predictors are added block-wise at the respondent and country level to also examine the amount of INR variability explained by the added variables. The model is a purely hierarchical one, where each respondent belongs to only one country.

Null Model

We begin with a Null model with a random intercept to assess whether there is significant variation on the country level. This model does not include any explanatory variables. Results are reported in Table 8.2, model 1. The estimate of the variance component σ_u^2 is 0.22. In addition, an additional parameter α that controls the variability of the data is estimated in the negative binomial model and is reported as its log estimate ($\ln\alpha = -0.106$; S.E. = 0.010) which equals an α of 0.90 (indication of over-dispersion). The likelihood-ratio test for this model indicates that there is enough variability in INR between countries to favor a mixed-effects negative binomial regression over a negative binomial regression without random effects ($\chi^2(01) = 7010.43$; $p < 0.001$). Therefore, we will retain our multilevel structure in the more complex models. However, INR also might be affected by characteristics of the respondents. In particular, we are interested whether minority status has an impact on INR.

significant with the mode-curvature adaptive Gauss–Hermite quadrature integration method. Therefore, our results are more conservative than in the default setting.

Table 8.2 Regression results for the baseline model, the respondent-level model and the combined respondent and country-level model

	Model 1 Baseline Coeff. (S.E.)	Model 2 + Individual Coeff. (S.E.)	Model 3 + Country Coeff. (S.E.)	IRR
FIXED PART				
Intercept	0.972 (0.079)***	0.835 (0.075)***	0.811 (0.065)***	2.251 (0.147)
Minority (reference: Majority)		0.201 (0.014)***	0.207 (0.015)***	1.230 (0.018)
Gender (reference: Women)		-0.262 (0.010)***	-0.267 (0.011)***	0.766 (0.008)
Age		0.003 (0.000)***	0.003 (0.000)***	1.003 (0.000)
Education (reference: Medium)				
Low education		0.182 (0.013)***	0.155 (0.013)***	1.168 (0.015)
High education		-0.204 (0.013)***	-0.191 (0.014)***	0.826 (0.012)
Influence		0.029 (.075)***	0.029 (0.005)***	1.030 (0.005)
Mode (reference: Interviewer)			0.383 (0.190)**	1.467 (0.279)
Inequality			-0.012 (0.015)	0.988 (0.0145)
GDP per capita/1000			-0.007 (0.005)	1.000 (0.000)
Uncertainty avoidance			0.008 (0.004)**	1.001 (0.000)
Power distance			-0.003 (0.004)	0.992 (0.000)
Individualism-collectivism			0.000 (0.004)	1.002 (0.000)
Ethnic fractionalization			0.379 (0.065)	2.47 (0.076)
RANDOM PART				
Country	0.217 (0.052)	0.196 (0.047)	0.131 (0.033)	0.131 (0.033)
/lnalpha	-0.106 (0.010)***	-0.357 (0.011)***	-0.327 (0.012)***	-0.327 (0.012)***
AIC	211342.3	189445.4	169437.8	
BIC	211368.6	189524.2	169576.2	
Log	-105668.13	-94713.701	-84702.9	
UNITS				
Respondents	48,720	46,616	42,089	42,089
Countries	35	35	32	32

Note. IRR: Incidence Rate Ratio; * $p < 0.01$, ** $p < 0.05$, *** $p < 0.001$

Respondent and Country Level Random Intercept Model

Extending the baseline model, we add minority status, gender, age, education, and the measure of the feeling of powerlessness at the respondent level (model 2). On the country level, we include the mode of data collection, the Coefficient of Human Inequality, GDP per capita, the Hofstede dimensions of uncertainty avoidance, power distance, and individualism-collectivism as well as a measure of ethnic fractionalization (model 3).

The variance between countries is reduced when demographic and attitudinal control variables on the respondent level are added to the baseline model (model 2). It substantially shrinks further when country level variables are included (model 3). The likelihood ratios tests for model comparisons are significant for the comparison between the Null model and model 2 (LR chi-square (6) = 21908.86; $p < 0.001$) and between model 2 and model 3 (LR chi-square (7) = 20021.61; $p < 0.001$). The AIC and BIC values are also decreasing for each model respectively, flagging model 3 as the ‘best’ model. For model 3, we also report the results as incidence-rate ratio (exponentiated coefficients). An incidence-rate ratio (IRR) of 1 suggests no difference in risk, an IRR larger than 1 suggests an increased risk and values below 1 a reduced risk. Unfortunately, no data were available for Georgia for the Hofstede values and for Taiwan and New Zealand for the inequality measure. Therefore, model 3 only includes 32 countries instead of the full sample of 35 countries.

Individual Level Variables

In model 3, all individual level variables are highly significant. Since all variables were centered on their grand mean, the reference group are women who are belonging to the majority, having mean age, a medium level education and neither agree nor disagree of what people like them have no say about what the government does. Being a member of the minority seems to increase the expected number of nonresponses by 23.0%, whereas being a male respondent reduces the expected number of nonresponses by 23.4%. A year increase in age leads to 0.3% higher expected number of nonresponses. Low education increases the expected number of nonresponses by 16.8% and high education reduces it by 17.4%. Finally, the feeling of powerlessness also increases the incidence rate ratio for nonresponse. These findings confirm H5, H3, H6, H2 and H1, respectively.

Country Level Variables

In contrast to the individual level, not many country-level predictors are significant. Respondents who answered the questionnaire in a self-completion mode have a higher risk of INR, a finding that confirms H7. In a similar vein, respondents from countries with higher values of uncertainty avoidance show higher risks of INR, a

finding that is opposite of what H10 expected. Although, we could not find significant effects for individualism (H9) and power distance (H8), the directions of those effects each go in the hypothesized direction, respectively. Similarly, no significant effect was found for ethnic fractionalization (H11) and inequality (H4). Although these effects were not significant, the effect for ethnic fractionalization was also in the hypothesized direction: higher levels of ethnic diversity increases the risk of INR.

Discussion

To test our hypotheses concerned with the relationships that group marginalization, social power and culture may have with INR, we analyzed data from more than 48,000 respondents situated in 35 nations across 6 continents. Employing this diverse sample, we have uncovered support for several of our eleven hypotheses.

It has now been 40 years since Hofstede (1980) first published *Culture's Consequences*, in which he described multiple dimensions of national culture. Subsequently, these dimensions have been found to be associated with a wide variety of social phenomenon across multiple disciplines (Hofstede 2001). Yet, we are aware of only a single study that has evaluated the relationship between any of these dimensions and INR (Lee et al. 2017). In that paper, Lee and colleagues demonstrated cultural differences in Hofstede's time orientation dimension to be associated with INR for subjective probability questions. However, in the analyses reported here, we only could find a significant effect for the dimension of uncertainty avoidance, and the direction of that association was the opposite of what we had hypothesized (H10). Across the countries we examined, INR was found to be greater in those countries with less of an emphasis on uncertainty avoidance where a greater tolerance of ambiguity might be anticipated. This finding suggests that respondents embedded within uncertainty avoidant cultures might be more inclined to avoid answering, perhaps when confronted with ambiguous questions or topics. In contrast, no significant effects were found for the cultural dimensions of individualism-collectivism and power distance (H8 & H9).

However, the main focus of our study was to examine the effects of group marginalization on INR. We find evidence of a relationship using multiple indicators of marginalization. Some of these findings confirm earlier research suggesting that INR is more common among the socially disadvantaged, including females, older and less educated persons (H1-H3). Together, these findings support the marginalized group perspective (Alexander 2018) and confirm its generalizability across a broad cross-section of countries. It would appear that, in addition to the many harmful effects that social exclusion and inequality have on individual well-being, marginalization processes also appear to contribute to INR in social surveys, diminishing the representation of disadvantaged persons within this social context as well.

A marginalized status easily translates into reduced or less powerful social position. Because stratification exists within all countries (Davis and Moore 1945), we can expect to observe differences in social power as well. As discussed earlier, however, we anticipated that the stratification structures related to power would almost certainly vary in form and complexity across countries. To address this reality, we consulted with cultural “insiders” and survey experts within each country we examined to determine the most appropriate measures of social cleavage for identifying majority vs. minority populations. These were subsequently employed as country-specific measures to differentiate more- vs. less-powerful social groups. At the individual level, we observe evidence supportive of our hypothesis (H5) describing the effects of membership in groups less able to wield social power. Regardless of national variability in the definitions used, those persons belonging to nationally-defined minority groups more frequently provided non-answers to the survey questions posed to them. These findings were supported by additional analyses which demonstrated more INR among persons within each country who indicated having greater feelings of powerlessness (H6). The pervasiveness of these relationships is evident in the finding that the objective indicator of marginalized group membership *and* the subjective measure of perceived powerlessness each were independently associated with increased INR across countries.

These results indicate that the dimension of power needs to be taken seriously in survey methodological research. Respondents that take less powerful positions in the different countries show increased levels of item nonresponse. This is highly problematic because nonresponse also means that the opinions of these groups are potentially not being adequately taken into account in the substantive analysis of the data. These issues address directly aspects of an insufficient representation of less powerful members of society in general social surveys. These respondents might have diverse reasons for not providing a substantive response to a survey question, such as missing comprehension of the question, lack of knowledge or distrust of government authorities.

Questionnaire developers should consider the different motivations for item nonresponse and work to design their questionnaires to better encourage responses from members of marginalized groups. Strategies to address these issues could be, for example, cognitive interviews or focus groups with particularly marginalized groups to detect issues of missing comprehension or lack of knowledge. Other strategies might include providing questionnaires in simplified language (e.g., as adopted by the LISS panel) and developing new approaches to help increase respondents’ trust of interviewers and survey programmes. An example of such a strategy is the Doorstep Training Initiative for Bilingual Interviewers at the U.S. Census Bureau that also trains interviewers to address the respondents’ fear or mistrust of the U.S. Government (Goerman 2017). Of course, just as definitions and the composition of marginalized groups vary across countries, optimal strategies for addressing item nonresponse can also be expected to vary from country-to-country.

Future Research

Future research should take a more differentiated look at various forms of item nonresponse. This was unfortunately not feasible with our datasets but could perhaps be done with other data sets that provide a more detailed and consistent coding of item nonresponse. Since the goal of our analysis was to represent as much cultural variability as possible, we opted to investigate ISSP data, despite this limitation. Consequently, whether there are variations of the found effects across different types of item nonresponse is an open research question. There are also reasons to anticipate that the social and cultural processes examined here may have differential effects on the INR associated with various question topics (Alexander 2018; Kane and Macaulay 1993), and we believe this also merits further inquiry. Relatedly, the contrary findings regarding the direction of uncertainty avoidance effects requires additional investigation, as questions that are structured ambiguously or that address ambiguous topics may be more likely to produce INR within uncertainty avoidant cultures. Finally, we also acknowledge that we used a very vague distinction between minority and majority in our study. Although we built our definitions based on recommendations by culture specific experts, we are aware that a simple dichotomy is almost certainly an oversimplification of the social reality in many countries. For example, in the U.S. a more detailed analysis would most likely detect differences between races (e.g., Blacks, Hispanics, and Asians). We encourage future studies that take a more detailed look at differences between different minority groups within particular countries to better understand how positions of social marginalization, social power, and culture influence response and nonresponse patterns in social surveys.

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Appendix

Table 8.3 Variables included in analysis from 2016 ISSP dataset

Variable number	Question text	Response options
Q1	In general, would you say that people should obey the law without exception, or are there exceptional occasions on which people should follow their consciences even if it means breaking the law?	Obey the law without exception OR Follow conscience on occasions Can't choose
Q2a	There are many ways people or organisations can protest against a government action they strongly oppose. Please show which you think should be allowed and which should not be allowed by ticking a box on each line. Organising public meetings to protest against the government	Should it be allowed? Definitely Probably Probably not Definitely not Can't choose
Q2b	There are many ways people or organisations can protest against a government action they strongly oppose. Please show which you think should be allowed and which should not be allowed by ticking a box on each line. Organising protest marches and demonstrations	Should it be allowed? Definitely Probably Probably not Definitely not Can't choose
Q3a	There are some people whose views are considered extreme by the majority. Consider people who want to overthrow the government by revolution. Do you think such people should be allowed to . . . hold public meetings to express their views?	Definitely Probably Probably not Definitely not Can't choose
Q3b	There are some people whose views are considered extreme by the majority. Consider people who want to overthrow the government by revolution. Do you think such people should be allowed to . . . publish books expressing their views?	Definitely Probably Probably not Definitely not Can't choose
Q4	All systems of justice make mistakes, but which do you think is worse To convict an innocent person OR . . . to let a guilty person go free? Can't choose
Q5c	Here are some things the government might do for the economy. Please show which actions you are in favour of and which you are against. Less government regulation of business	Strongly in favour of In favour of Neither in favour of nor against Against Strongly against Can't choose

(continued)

Table 8.3 (continued)

Variable number	Question text	Response options
Q5f	Here are some things the government might do for the economy. Please show which actions you are in favour of and which you are against. Reducing the working week to create more jobs	Strongly in favour of In favour of Neither in favour of nor against Against Strongly against Can't choose
Q9b	Here is a list of people and organisations that can influence government actions. Please read through the list and write in the boxes below the letters corresponding to the ones you think have the most and the second most influence on the actions of the (COUNTRY) government?	The media Trade unions Business, banks and industry Religious organisations/authorities The military/army Organised crime People who vote for the party/the parties in government Citizens in general Civic and voluntary organisations International organizations (e.g. united nations, International Monetary Fund) Can't choose
Q10	Here are two opinions about what affects policies in [COUNTRY]. Which of them comes closest to your view?	Policies in [COUNTRY] depend more on what is happening in the world economy, rather than who is in government OR Policies in [COUNTRY] depend more on who is in government, rather than what is happening in the world economy Can't choose
Q11b	Do you think that the [COUNTRY] government should or should not have the right to do the following . Monitor e-mails and any other information exchanged on the internet?	Definitely should have right Probably should have right Probably should not have right Definitely should not have right Can't choose
Q12	Here is a scale from 0 to 10 where 0 is "all government information should be publicly available, even if this meant a risk to public security" and 10 is "public security should be given priority, even if this meant limiting access to government information". Where would you place yourself on such a scale?	11 point scale ranging from 00→11. Labels of endpoints: All government information should be publicly available, even if this meant a risk to public security Public security should be given priority, even if this meant limiting access to government information Can't choose

(continued)

Table 8.3 (continued)

Variable number	Question text	Response options
Q13b	Some people think that governments should have the right to take certain measures in the name of national security. Others disagree. Do you think that the [COUNTRY] government should or should not have the right to do the following: Collect information about anyone living in other countries without their knowledge	Definitely should have right Probably should have right Probably should not have right Definitely should not have right Can't choose
Q17a	Generally, how would you describe taxes in [country] today? ((we mean all taxes together, including [wage deductions], [income tax], [taxes on goods and services] and all the rest.)) first, for those with high incomes, are taxes	... much too high, Too high, About right, Too low, Or, are they much too low? Can't choose
Q17b	Generally, how would you describe taxes in [country] today? ((we mean all taxes together, including [wage deductions], [income tax], [taxes on goods and services] and all the rest.)) Next, for those with middle incomes, are taxes much too high, Too high, About right, Too low, Or, are they much too low? Can't choose
Q17c	Generally, how would you describe taxes in [country] today? ((we mean all taxes together, including [wage deductions], [income tax], [taxes on goods and services] and all the rest.)) Lastly, for those with low incomes, are taxes much too high, Too high, About right, Too low, Or, are they much too low? Can't choose
Q18a	In general, how often do you think that the tax authorities in [country] do the following... Make sure people pay their taxes	Almost always Often Sometimes Almost never Can't choose
Q18b	In general, how often do you think that the tax authorities in [country] do the following... ... treat everyone in accordance with the law, regardless of their contacts or position in society?	Almost always Often Sometimes Almost never Can't choose
Q19a	In general, how often do you think that major private companies in [country] do the following: a. ... Comply with laws and regulations?	Almost always Often Sometimes Almost never Can't choose

(continued)

Table 8.3 (continued)

Variable number	Question text	Response options
Q19b	In general, how often do you think that major private companies in [country] do the following: ... try to avoid paying their taxes?	Almost always Often Sometimes Almost never Can't choose
Q20	In your opinion, about how many politicians in [COUNTRY] are involved in corruption?	Almost none A few Some Quite a lot Almost all Can't choose
Q21	And in your opinion, about how many public officials in [country] are involved in corruption?	Almost none A few Some Quite a lot Almost all Can't choose
Q22	In the last five years, how often have you or a member of your immediate family come across a public official who hinted they wanted, or asked for, a bribe or favour in return for a service?	Never Seldom Occasionally Quite often Very often Can't choose
Respondent's income	Example U.S.: In which of these groups did your earnings from (OCC), from all sources for [last year] fall? That is, before taxes or other deductions. Just tell me the letter. Total income includes interest or dividends, rent, social security, other pension, alimony or child support, unemployment compensation, public aid (welfare), armed forces or veteran's allotment.	Nonresponse categories: Refused Don't know No answer Inapplicable
Household income	Example U.S.: In which of these groups did your total family income, from all sources, fall last year before taxes, that is. Just tell me the letter. Total income includes interest or dividends, rent, social security, other pensions, alimony or child support, unemployment, compensation, public aid (welfare), armed forces or veteran's allotment.	Nonresponse categories: Refused Don't know No answer Inapplicable

References

- Adua, L., & Sharp, J. S. (2010). Examining survey participation and response quality: The significance of topic salience and incentives. *Survey Methodology*, 26(1), 95–109. <https://www150.statcan.gc.ca/n1/en/pub/12-001-x/2010001/article/11252-eng.pdf?st=kPlsEgKD>.
- Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S., & Wacziarg, R. (2003). Fractionalization. *Journal of Economic Growth*, 8(2), 155–194. <https://doi.org/10.1023/A:1024471506938>.
- Alexander, E. C. (2018). Don't know or won't say? Exploring how colorblind norms shape item nonresponse in social surveys. *Sociology of Race and Ethnicity*, 4(3), 417–433. <https://doi.org/10.1177/2332649217705145>.
- Awaworyi Churchill, S., Ocloo, J. E., & Siawor-Robertson, D. (2017). Ethnic diversity and health outcomes. *Social Indicators Research*, 134, 1077–1112. <https://doi.org/10.1007/s11205-016-1454-7>.
- Berinsky, A. (2002). Silent voices: Social welfare policy opinions and political equality in America. *American Journal of Political Science*, 46(2), 276–287. <https://www.jstor.org/stable/3088376>.
- Callens, M., & Loosveldt, G. (2018). Don't know responses to survey items on trust in police and criminal courts: A word of caution. *Survey Methods: Insights from the Field*. <https://doi.org/10.13094/SMIF-2018-00002>.
- Candido, E., Kurdyak, P., & Alter, D. A. (2011). Item nonresponse to psychosocial questionnaires was associated with higher mortality after acute myocardial infarction. *Journal of Clinical Epidemiology*, 64(2), 213–222. <https://doi.org/10.1016/j.jclinepi.2010.03.010>.
- Colsher, P. L., & Wallace, R. B. (1989). Data quality and age: Health and psychobehavioral correlates of item nonresponse and inconsistent responses. *Journal of Gerontology*, 44(2), 45–52. <https://doi.org/10.1093/geronj/44.2.P45>.
- Dahl, R. A. (1957). The concept of power. *Behavioral Science*, 2, 201–215. <https://doi.org/10.1002/bs.3830020303>.
- Davis, K., & Moore, W. E. (1945). Some principles of stratification. *American Sociological Review*, 10(2), 242–249. <https://www-jstor-org.proxy.cc.uic.edu/stable/2085643>.
- Dillman, D. A., Eltinge, J. L., Groves, R. M., & Little, R. J. (2002). Survey nonresponse in design, data collection, and analysis. In R. M. Groves, D. A. Dillman, J. L. Eltinge, & R. J. Little (Eds.), *Survey nonresponse* (pp. 3–24). New York: Wiley. <https://www.wiley.com/en-us/Survey+Nonresponse-p-9780471396277>.
- Elliott, M. N., Edwards, C., Angeles, J., Hambarsoomians, K., & Hays, R. D. (2005). Patterns of unit and item nonresponse in the CAHPS[®] hospital survey. *Health Services Research*, 40(6p2), 2096–2119. <https://doi.org/10.1111/j.1475-6773.2005.00476.x>.
- Frick, J. R., & Grabka, M. M. (2007). *Item non-response and imputation of annual labor income in panel surveys from a cross-national perspective*. SOEPpapers on multidisciplinary panel data research, no. 49, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin, Germany. <https://ssrn.com/abstract=1020605>.
- Goerman, P. (2017). *Development of a doorstep training initiative for bilingual interviewers at the U.S. Census Bureau*. Mannheim: Presentation at the CSDI Workshop. Retrieved from https://csdiworkshop.org/wp-content/uploads/2019/01/Goerman_CSDI_2017_final_updated.pdf.
- Goyder, J., Boyer, L., & Martinelli, G. (2006). Integrating exchange and heuristic theories of survey nonresponse. *Bulletin de Méthodologie Sociologique*, 92, 28–44. <https://journals.openedition.org/bms/554>.
- Groves, R. M., & Couper, M. P. (1998). *Nonresponse in Household Interview Surveys*. New York: Wiley. <https://www.wiley.com/en-us/Nonresponse+in+Household+Interview+Surveys-p-9780471182450>.
- Gudykunst, W. B., & Kim, Y. Y. (2003). *Communicating with strangers* (4th ed.). Boston: McGraw-Hill.
- Heerwegh, D., & Loosveldt, G. (2008). Face-to-face versus web surveying in a high-internet-coverage population: Differences in response quality. *Public Opinion Quarterly*, 72(5), 836–846. <https://doi.org/10.1093/poq/nfn045>.

- Hilbe, J. M. (2011). *Negative binomial regression* (2nd ed.). Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511973420>.
- Hofstede, G. (1980). *Culture's consequences*. Beverly Hills, CA: Sage.
- Hofstede, G. (2001). *Culture's consequences* (2nd ed.). Thousand Oaks, CA: Sage. <https://us.sagepub.com/en-us/nam/cultures-consequences/book9710>.
- Hofstede, G. (2010). Cultures and organizations: Software of the mind. *Cultures Organ*, 23, 362–365. <https://doi.org/10.1057/jibs.1992.23>.
- Hox, J., Moerbeek, M., & van de Schoot, M. (2018). *Multilevel analysis: Techniques and applications* (2nd ed.). New York: Routledge. <https://doi.org/10.4324/9780203852279>.
- ISSP Research Group. (2018). *International social survey programme: Role of government V – ISSP 2016*. Retrieved from <https://dbk.gesis.org/dbksearch/sdesc2.asp?no=6900&db=e&doi=10.4232/1.13052>.
- Jenkins, C. R., & Dillman, D. A. (1997). Towards a theory of self-administered questionnaire design. In L. Lyberg, P. Biemer, M. Collings, E. de Leeuw, C. Dippo, N. Schwarz, & D. Trewin (Eds.), *Survey measurement and process quality* (pp. 165–196). New York: Wiley. <https://onlinelibrary.wiley.com/doi/10.1002/9781118490013.ch7>.
- Kanbur, R., Rajaram, P. K., & Varshney, A. (2011). Ethnic diversity and ethnic strife. An interdisciplinary perspective. *World Development*, 39(2), 147–158. <https://doi.org/10.1016/j.worlddev.2009.11.034>.
- Kane, E. W., & Macaulay, L. J. (1993). Interviewer gender and gender attitudes. *Public Opinion Quarterly*, 57(1), 1–28. <https://doi.org/10.1086/269352>.
- Klein, D. J., Elliott, M. N., Haviland, A. M., Saliba, D., Burkhart, Q., Edwards, C., & Zaslavsky, A. M. (2011). Understanding nonresponse to the 2007 Medicare CAHPS survey. *The Gerontologist*, 51(6), 843–855. <https://doi-org.proxy.cc.uic.edu/10.1093/geront/gnr046>.
- Koch, A., & Blohm, M. (2009). Item nonresponse in the European social survey. *Ask: Research & Methods*, 18(1), 45–65. <http://hdl.handle.net/1811/69564>.
- Kupek, E. (1998). Determinants of item nonresponse in a large national sex survey. *Archives of Sexual Behavior*, 27(6), 581–594. <https://doi.org/10.1023/A:1018721100903>.
- Lee, S., Liu, M., & Hu, M. (2017). Relationship between future time orientation and item nonresponse on subjective probability questions: A cross-cultural analysis. *Journal of Cross-Cultural Psychology*, 48(5), 698–717. <https://doi.org/10.1177/0022022117698572>.
- Lipps, O. (2007). Interviewer and respondent survey quality effects in a CATI panel. *Bulletin de Méthologie Sociologique*, 95, 5–25. <https://journals.openedition.org/bms/392>.
- Little, R. J. A., & Rubin, D. B. (2002). Single imputation methods. *Statistical Analysis with Missing Data*. <https://doi.org/10.1002/9781119013563.ch4>.
- Little, R. J. A., & Rubin, D. B. (2014). *Statistical analysis with missing data* (2nd ed.). New York: Wiley. <https://onlinelibrary.wiley.com/doi/book/10.1002/9781119013563>.
- McKnight, P. E., McKnight, K. M., Sidani, S., & Figueredo, A. J. (2007). *Missing data: A gentle introduction*. New York: Guilford Press. <https://www.guilford.com/books/Missing-Data/McKnight-McKnight-Sidani-Figueredo/9781593853938>.
- Messer, B. L., Edwards, M. L., & Dillman, D. A. (2012). Determinants of item nonresponse to web and mail respondents in three address-based mixed-mode surveys of the general public. *Survey Practice*, 5(2). <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=A45DB36A0B8BD2FBCC02FD762FEECAC9?Doi=10.1.1.673.8650&rep=rep1&type=pdf>.
- Messmer, D. J., & Seymour, D. T. (1982). The effects of branching on item nonresponse. *Public Opinion Quarterly*, 46(2), 270–277. <https://doi.org/10.1086/268718>.
- Mulder, F. (1977). *The daily power game*. Leiden: Martinus Nijhoff. <https://www.springer.com/us/book/9781468469530>.
- Owens, L., Johnson, T. P., & O'Rourke, D. (2001). Culture and item nonresponse in health surveys. *Seventh Conference on Health Survey Research Methods*. DHHS publication no. (PHS) 01-1013. Hyattsville, MD: National Center for Health Statistics. https://www.cdc.gov/nchs/data/hsrc/hsrc_7th_proceedings_1999.pdf.

- Patsiurko, N., Campbell, J. L., & Hall, J. A. (2012). Measuring cultural diversity: Ethnic, linguistic and religious fractionalization in the OECD. *Ethnic and Racial Studies*, 35(2), 195–217. <https://doi.org/10.1080/01419870.2011.579136>.
- Pickery, J., & Loosveldt, G. (1998). The impact of respondent and interviewer characteristics on the number of “no opinion” answers. *Quality & Quantity*, 32(1), 31–45. <https://doi.org/10.1023/A:1004268427793>.
- Putnam, R. D. (2007). E pluribus unum: Diversity and community in the twenty-first century the 2006 Johan Skytte prize lecture. *Scandinavian Political Studies*, 30(2), 137–174. <https://doi.org/10.1111/j.1467-9477.2007.00176.x>.
- Rässler, S., & Riphahn, R. T. (2006). Survey item nonresponse and its treatment. *Modern Econometric Analysis: Surveys on Recent Developments*. https://doi.org/10.1007/3-540-32693-6_15.
- Riphahn, R. T., & Serfling, O. (2005). Item non-response on income and wealth questions. *Empirical Economics*, 30, 521–538. <https://doi.org/10.1007/s00181-005-0247-7>.
- Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7(2), 147–177. <https://doi.org/10.1037/1082-989X.7.2.147>.
- Shoemaker, P. J., Eichholz, M., & Skewes, E. A. (2002). Item nonresponse: Distinguishing between don't know and refuse. *International Journal of Public Opinion Research*, 14(2), 193–201. <https://doi.org/10.1093/ijpor/14.2.193>.
- Stoop, I. A. L. (2016). Unit nonresponse. In C. Wolf, D. Joye, T. W. Smith, & Y.-c. Fu (Eds.), *The SAGE handbook of survey methodology* (pp. 409–424). Los Angeles: Sage.
- Struminskaya, B., Weyandt, K., & Bosnjak, M. (2015). The effects of questionnaire completion using mobile devices on data quality. Evidence from a probability-based general population panel. *Methods, Data, Analyses*, 9(2), 261–292. https://www.gesis.org/fileadmin/upload/forschung/publikationen/zeitschriften/mda/Vol.9_Heft_2/MDA_Vol9_2015-2_Struminskaya.pdf.
- Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge: Cambridge University Press. <https://www.cambridge.org/core/books/the-psychology-of-survey-response/46DE3D6F7C1399BCDC78D9441C630372>.
- Triandis, H. C. (1995). *Individualism and collectivism*. Boulder, CO: Westview Press. <https://www.routledge.com/Individualism-AndCollectivism/Triandis/p/book/9780813318509>.
- Tu, S.-H., & Liao, P.-S. (2007). Social distance, respondent cooperation and item nonresponse in sex survey. *Quality & Quantity*, 41(2), 177–199. <https://doi-org.proxy.cc.uic.edu/10.1007/s11135-007-9088-0>.
- Turner, C. F., Lessler, J. T., George, B. J., Hubbard, M. L., & Witt, M. B. (1992). Effects of mode of administration and wording on data quality. In C. F. Turner, J. T. Lessler, & J. C. Gfroerer (Eds.), *Survey measurement of drug use: Methodological studies* (pp. 221–243). Washington, DC.: National Institute of Drug Abuse, U.S. Department of Health and Human Services. http://qcpages.qc.cuny.edu/~cturner/TechPDFs/NIDA_BOOK.pdf.
- Vandenplas, C., Loosveldt, G., Beullens, K., & Denies, K. (2018). Are interviewer effects on interview speed related to interviewer effects on straight-lining tendency in the European social survey? An interviewer-related analysis. *Journal of Survey Statistics and Methodology*, 6(4), 516–538. <https://doi.org/10.1093/jssam/smx034>.
- Vercruyssen, A., Wuyts, C., & Loosveldt, G. (2017). The effect of sociodemographic (mis)match between interviewers and respondents on unit and item nonresponse in Belgium. *Social Science Research*, 67, 229–238. <https://doi.org/10.1016/j.ssresearch.2017.02.007>.
- Yan, T., Curtin, R., & Jans, M. (2010). Trends in income nonresponse over two decades. *Journal of Official Statistics*, 26(1), 145–164. <https://www.scb.se/contentassets/ca21efb41fee47d293bbee5bf7be7fb3/trends-in-income-nonresponse-over-two-decades.pdf>.