IFN Working Paper No. 1455, 2023

Nonresponse Bias in Trust Surveys

Andreas Bergh, Christian Bjørnskov and Richard Öhrvall

Research Institute of Industrial Economics
P.O. Box 55665
SE-102 15 Stockholm, Sweden
info@ifn.se
www.ifn.se

Nonresponse bias in trust surveys

Andreas Bergh[+]

Christian Bjørnskov[*]

Richard Öhrvall[**]

Abstract:

Social trust is typically measured using surveys that ask people if they agree that most people can be trusted. A potential problem is that falling response rates plague these surveys. If non-responses are systematic, comparisons of social trust over time will be biased. We examine social and legal trust among non-respondents by conducting a classroom survey where the first part included questions on social and institutional trust and is answered during class, whereas a second part of the survey is handed in by respondents later. Surveys from 300 Danish and Swedish university students suggest that if anything, social trust among survey responders is somewhat lower than among non-responders. Using two waves of the Swedish National Election Study, we also show that conditional on education, social trust is uncorrelated to dropping out of the panel survey.

Keywords: Social trust, legal trust, survey data, nonresponse bias

JEL-codes: C83, P48

[+] Department of Economics, Lund University, Box 7082, SE-22007 Lund, Sweden; and Research Institute of Industrial Economics (IFN), P.O. Box 55665, 102 15 Stockholm, Sweden; email: andreas.bergh@ifn.se. Bergh gratefully acknowledges support from the Jan Wallanders och Tom Hedelius Stiftelse (grants and P19-0180) and Länsförsäkringars Fond.

[*] Department of Economics, Aarhus University, Fuglesangs Allé 4, DK-8210 Aarhus V, Denmark; and Research Institute of Industrial Economics (IFN), P.O. Box 55665, 102 15 Stockholm, Sweden; e-mail: chbj@econ.au.dk. Bjørnskov's work on this publication was made possible through the support of Grant 62065 from the John Templeton Foundation. The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the John Templeton Foundation. Additional financial support for Bjørnskov from Jan Wallanders och Tom Hedelius Stiftelse (grant P18-0162) is gratefully acknowledged.

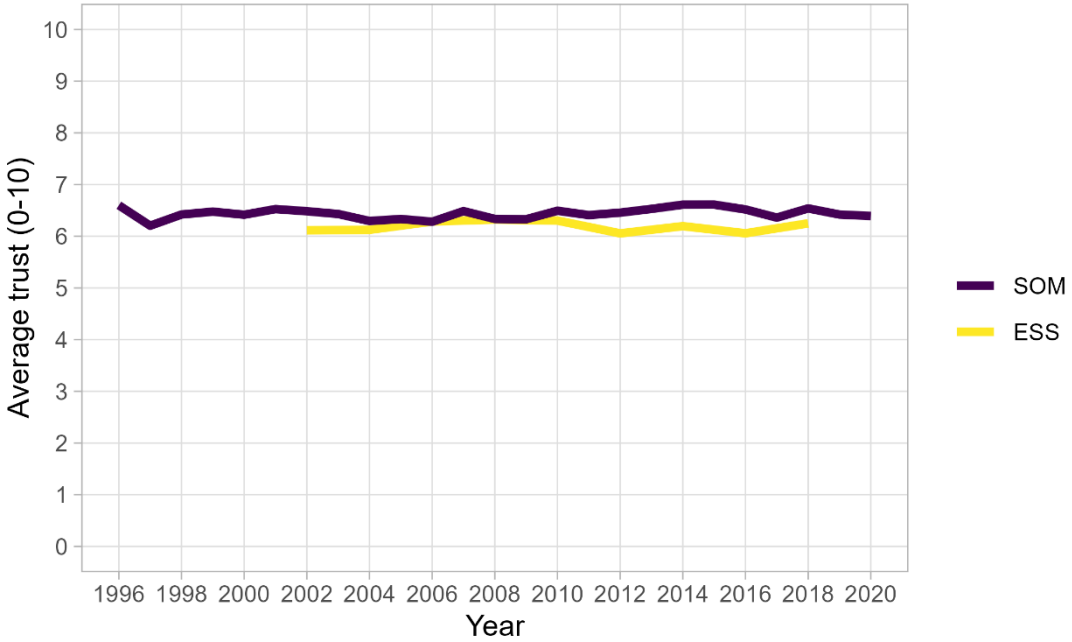
** Center for Local Government Studies, Linköping university, Kungsgatan 56c, 602 33 Norrköping, Sweden; and Research Institute of Industrial Economics (IFN). richard.ohrvall@liu.se

1. Introduction

Social trust is typically measured using surveys asking people if they agree that most people can be trusted. Country-level averages of social trust have, for example, been shown to explain economic growth (Algan and Cahuc 2013), macroeconomic stability (Sangnier 2013), and welfare state size (Bergh and Bjørnskov 2011). There is also a fair amount of evidence that survey-measured trust is an indicator of actual trust-related behaviour (Bjørnskov 2021; Knack and Keefer 1997; Thöni et al. 2012).

As noted by several authors, average survey-measured social trust is strikingly stable over time in many countries (with some notable exceptions, such as the US). The case of Sweden is illustrated in Figure 1, which plots two trust measures across 25 years.

Figure 1. Average social trust in Sweden according to the SOM surveys and the European Social Survey (ESS), 1996-2020



Comment: Data comes from the SOM surveys 1996–2020 and the European Social Survey (ESS) 2002–2018. Social trust is measured on a scale from 0 to 10, where higher values mean higher degree of trust.

A potential problem is that most surveys are increasingly plagued by falling response rates (Beullens et al., 2018; Smith, 1995). If non-responses are systematic, comparisons of social trust over time will be biased, and the appearance of stability of social trust over time in many countries might be deceptive.

This paper examines the direction and importance of such bias using two different approaches. First, we conducted a survey experiment in both Denmark and Sweden. The

experiment had two parts, where students answered the first part of the survey under conditions that ensured a 100 percent response rate (a teacher telling students to fill out and hand in a survey during class), and the second part had a lower response rate because it was supposed to be completed at home and handed in at a later stage during the course. Questions about social trust and personal characteristics were asked in the first part of the survey, and thus the research design allows us to compare trust and other characteristics of responders to those of non-responders.

Second, we use the quasi-panel undertaken in connection with Swedish elections – the Swedish National Election Study – where Swedish voters are asked a set of questions. A subset of respondents are supposed to reappear in the following survey wave conducted four years later (following the election cycle in Sweden), but some of them drop out of the panel survey. Conditional on participating in the earlier wave, we examine how social trust is related to reappearance in the survey.

Our results show that among both Swedish economics students and Danish political science students, social trust among non-respondents was marginally (but insignificantly) higher than trust among responders. In contrast, the analysis of the Swedish National Election Study reveals a weak but positive correlation between social trust and reappearance. Conditional on education, however, social trust is unrelated to survey reappearance.

2. Related literature

Non-responses in cross-sectional surveys and attrition in repeated panel studies can pose a critical threat to the validity of the resulting research. Non-response can lead to bias if the non-responders are systematically different from those who do respond. Similarly, attrition in panel studies, or the loss of participants over time, can also introduce bias if the dropouts are not randomly distributed. If the non-response rate is also increasing over time, it can further exacerbate these biases and potentially lead to misinterpreted trends.

Previous findings regarding the relationship between response rate and non-response bias in surveys nevertheless tend to indicate no or only minor problems, as noted, for example, in the meta-analysis by Groves (2006). Comparing a low-effort restricted-call design (from the Index of Consumer Sentiment) to a high-effort "all-call" design, Curtin, Presser, and Singer (2000) found almost no change when the additional interviews in the all-call design were omitted. Similarly, Keeter et al. (2000) conducted a randomized design using identical

questionnaires in two parallel surveys where one featured a standard five-day design and the second featured a rigorous design that allowed for more callback and refusal conversion attempts. For the 91 statistics measured, the average difference was only about two percentage points. Similar results were obtained in the replication and extension by Keeter et al. (2006). Holbrook et al. (2003) concluded that telephone surveys with low response rates generally still have excellent demographic representativeness.

These general findings need not apply to social trust, however. Comparing social trust as measured in a rigorous study to a standard study, Keeter et al. (2006) noted that social trust was lower (31% vs. 35%) in the more rigorous survey. The difference was driven by lower trust (28%) among the most hard-to-reach respondents. These were also less likely to express political views (by answering 'don't know' or by refusing to answer), less likely to vote, and more likely to go out more than three nights per week. As such, non-respondents may differ in terms of trust and other dimensions of social capital.

Since these studies were conducted, response rates have fallen further (Luiten et al. 2020; Williams and Brick 2018). Trust surveys may therefore be particularly prone to non-response bias. Conceptually, as social trust is associated with cooperative behavior, this may not be surprising. Yet, the degree to which this is a problem for the vast trust literature has remained uncertain.

3 The classroom survey experiment

3.1 Data and method

To examine how the propensity to participate in surveys is associated with social and legal trust, we use survey experiments conducted among undergraduate students in Lund, Sweden and Aarhus, Denmark.[2] Toward the end of a lecture, while all students were still present in the classroom, a questionnaire was distributed. Students were told that the survey consisted of two parts, the first of which should be completed in class and handed to the teacher before leaving the classroom. The second part was to be completed at home and handed in at a later stage during the course. The number of distributed questionnaires were 216 in Denmark and 101 in Sweden, i.e., in total 327 questionnaires. The setup resulted in a 100 percent response

[2] Both experiments were carried out during the autumn semester of 2018.

rate for the first part of the survey, and a lower response rate for the second part (21% in Sweden and 48% in Denmark).

The students were not told about any specific purpose of the survey. The first part consisted mainly of personal characteristics, including questions on social trust and trust in the courts (*legal trust*). The questions in the second part of the survey concerned the willingness to change views on political issues, which we refrain from analyzing here. The entire questionnaire is available in Appendix B. We here employ information on the respondents collected through the questionnaire. This includes age, sex, number of siblings, if any of their parents had any tertiary education, and where they position themselves on a political scale from left to right.

As can be seen from the descriptive statistics presented in Table 1, the Danish sample (dominated by political science students) differs somewhat from the Swedish sample (dominated by economics students). The Danes are more trusting and more left-leaning.[3] In the Swedish sample, non-respondents are slightly more trusting (for both social and legal trust) than respondents. In the Danish sample, non-respondents also have slightly higher social trust, but slightly lower legal trust. Still, all differences are small and insignificant.

To examine if people with higher trust are prone to responding to surveys, we estimated linear probability models (LPM) where the dependent variable is a binary indicator variable equal to 1 if the person handed in the second part of the survey and 0 otherwise (corresponding models using logistic regression instead are presented in the Appendix). The key independent variables are social trust and legal trust, respectively. We control for the above-mentioned individual characteristics. Since we use pooled data from both countries, we also add a variable indicating whether the experiment occurred in Sweden or Denmark.

[3] It is likely that the latter difference is due to the Danes being political science students while the Swedes were economics students. Globally, political scientists tend to be substantially more left leaning than economists. The discussion goes back at least to Everett Carl Ladd and Seymour Martin Lipset's (1975) report for the Carnegie Commission.

Table 1. Classroom survey experiment, descriptive statistics

Danish sample	**Respondents**		**Non-respondents**	
	Mean	Std dev	Mean	Std dev
Social trust (0-10)	7.47	1.87	7.68	1.57
Legal trust (0-10)	8.81	1.15	8.56	1.14
Age	22.12	1.48	22.15	1.35
Female	0.46		0.54	0.50
Number of siblings	1.63	1.26	1.68	1.08
Well-educated parents	0.52		0.53	0.50
Left-right position (1-5)	2.79	0.97	2.60	0.94
Swedish sample	**Respondents**		**Non-respondents**	
	Mean	Std dev	Mean	Std dev
Social trust (0-10)	5.73	2.29	5.95	1.97
Legal trust (0-10)	6.59	2.15	6.80	1.96
Age	23.25	5.68	21.85	2.94
Female	0.50		0.50	0.50
Number of siblings	1.60	1.60	1.64	1.12
Well-educated parents	0.68		0.74	0.44
Left-right position (1-5)	3.05	1.47	3.53	1.23

Comments: The Swedish questionnaire was distributed to economics students at Lund university and the Danish questionnaire was distributed to political science students at Aarhus university. Both questionnaires were distributed during the autumn 2018. Not all respondents have answered all questions. The number of observations vary in Denmark between 101 and 104 for respondents, and between 106 and 110 for non-respondent, and in Sweden between 19 and 22 for respondents and between 72 and 79 for non-respondents. Social and legal trust is measured on a scale from 0 to 10, where a higher value indicates a higher level of trust. Well-educated parents is a dummy variable indicated if any parent have any tertiary education. Position on the left-right political scale is measured using a scale with five steps: clearly to the left, somewhat to the left, in the middle, somewhat to the right, and clearly to the right. Higher values indicate a position further to the right on the political spectrum.

3.2 Results

In Table 2, we present linear probability models, fitted with and without controlling for personal characteristics. As can be seen in the table (models A to C), individuals with higher social trust are, if anything, less likely to respond to (and hand in) the latter part of the survey. However, the association between social trust and responding to the second part of the survey is not statistically significant. This is the case when we only have that variable in our model (Model A), when we control for demographic characteristics (Model B), and when we also control for the political position on the left-right scale (Model C). The same three models estimated using logistic regression instead give the same results (see Table A1 in the Appendix).

Models D to F in Table 2 show the results from the same estimations but with legal trust (i.e., trust in Swedish/Danish courts) as the independent variable instead of social trust. Coefficients for legal trust are all insignificant and close to 0, suggesting that legal trust is uncorrelated with the propensity to answer and hand in part two of the survey (also in this case, logistic regression models give the same results, see Table A2 in the Appendix).

Table 2. Trust and survey responses, LPM

	Model A	Model B	Model C	Model D	Model E	Model F
Social trust	-0.015	-0.015	-0.017			
	(0.015)	(0.015)	(0.015)			
Legal trust				0.014	0.010	0.009
				(0.018)	(0.019)	(0.019)
Age		0.014	0.015		0.014	0.015
		(0.013)	(0.013)		(0.012)	(0.012)
Female		-0.047	-0.045		-0.046	-0.043
		(0.055)	(0.056)		(0.056)	(0.057)
Well-educated parents		-0.023	-0.019		-0.018	-0.015
		(0.058)	(0.059)		(0.059)	(0.060)
Number of siblings		-0.008	-0.014		-0.008	-0.013
		(0.025)	(0.026)		(0.025)	(0.025)
Left-right position (1-5)			0.000			0.003
			(0.026)			(0.027)
Sweden (Ref: Denmark)	-0.292***	-0.293***	-0.302***	-0.236***	-0.245***	-0.253***
	(0.059)	(0.062)	(0.067)	(0.063)	(0.065)	(0.073)
Constant	0.596***	0.337	0.350	0.357**	0.125	0.121
	(0.116)	(0.311)	(0.328)	(0.158)	(0.333)	(0.335)
Observations	313	297	290	313	297	290
R^2	0.068	0.076	0.080	0.065	0.071	0.074

Comments: *** p<0.01, ** p<0.05, * p<0.1. The outcome variable indicates if a respondent in the first part of the survey also was a respondent in the second part (=1) or not (=0). In models A-C, trust is social trust. In models D-F, trust is legal trust. The models are estimated using linear probability models, i.e., OLS. Robust standard errors in parentheses. For more information on the variables, see Table 1.

4 Non-response in a panel survey

4.1 Data and method

We have also studied the relationship between non-response and trust using a representative sample. More specifically, we make use of the Swedish National Election Studies (SNES), conducted by Statistics Sweden. SNES is a survey based on a simple random sample (SRS) drawn from the Swedish population register and with a target population that includes Swedish citizens entitled to vote in the national parliament election and between 18 and 80 years of age. The survey has a two-wave panel design; half of the sample was included in the previous wave, and the other half will be included in the next wave, which will take place four years later at the time of the next parliamentary election. We examine the relationship between trust and non-response by studying the propensity to respond in the second wave of the survey depending on the level of trust reported in the first wave.

Unfortunately, a question about social trust has only been included in a few rounds of SNES. Therefore, we focus on the panel included in the 1998 and 2002 waves of the survey, which are waves that both contained a social trust question. Luckily, this is a suitable panel for our purposes since the non-response rate increased substantially between the two waves (Holmberg and Oscarsson 2004, Ch. 1). The panel has a sample size of 1,433 individuals. Among them, 893 individuals agreed in the first wave in 1998 to take part in a face-to-face interview and answered a wide range of questions, and 888 of them answered the question on social trust. Those who refused to participate in a face-to-face interview were asked to answer a shorter questionnaire by telephone. This group consisted of 258, but since that questionnaire did not include any question on social trust, we here consider those who only agreed to answer them to be non-respondents.

Hence, there were 888 respondents in the 1998 wave of the panel who answered a question on social trust question, and the intention was that they should answer the same question again in 2002. Of those 888 respondents, 579 (65 percent) agreed to once again take part in a face-to-face survey, and another 115 (13 percent) agreed to answer a shorter questionnaire by telephone (see Table A3 in the Appendix for the full description of the response categories).

As can be seen in Table 3, respondents in the first wave who, for some reason, did not respond in the second wave of the panel had somewhat lower trust than those who did, though the differences are far from statistically significant. Interestingly, among those who could be

reached but refused to participate, trust was very similar to trust among those who participated. The trust levels are also very similar among those who agreed to a face-to-face interview and those who only agreed to a short interview by telephone.

Table 3. The 1998-2002 SNES panel, trust in 1998 in different response categories 2002

Group	Mean	Std dev	No. observations
All respondents	6.63	2.14	694
Respondents face-to-face	*6.65*	*2.10*	*579*
Respondents telephone	*6.52*	*2.33*	*115*
All non-respondents	6.28	2.42	167
Refused	*6.54*	*2.32*	*93*
Not reached	*6.11*	*2.27*	*55*
Unable due to illness	*5.53*	*3.22*	*19*
Migrated or died	5.85	1.92	27
All	6.54	2.19	888

Comments:

We estimate the likelihood of responding in the second wave of the survey among those who participated in the first wave and answered the question on social trust. As seen in Table 4, some people have left the panel because they died or migrated (i.e., they are no longer part of the Swedish population register). Therefore, they are not part of the survey's target population, and we have excluded them from the analysis. We conduct the analysis using linear probability models where the outcome variable refers to whether the respondents in the first wave answered in the second wave (results from corresponding models using logistic regression are presented in the Appendix). As mentioned, individuals in the panel who refused to participate in a face-to-face interview were given the option to answer a shorter questionnaire by telephone. Since those who answered by telephone initially refused to participate, and the trust question was only included in the full questionnaire, we consider them non-respondents in our main analysis. However, we also estimate models where we also consider those who agreed to an interview by telephone as respondents. This can be seen as an indication of how offering different data collection modes can remedy potential bias of social trust estimated due to non-response.

Our key independent variable is the level of social trust, measured in a conventional way with a question on how much one can trust people in general. The responses were given on a scale from 0 to 10, where a higher number means a higher level of trust. We also add control variables in the form of sex, age, income, and education. Age is categorized into seven categories. The level of income is based on register data and categorized into five categories.

Education is divided into three categories: lower (compulsory school), medium (upper secondary school), and high (tertiary education). All control variables are based on information from the 1998 wave of the survey. Descriptive statistics for the independent variables are presented in Table A4 in the Appendix.

4.2 Results

Table 4 shows the results from linear probability models that explain the reappearance in 2002 using social trust as answered in the 1998 survey and various personal characteristics. As can be seen in the table, there is a small positive correlation between the level of social trust in 1998 and the likelihood to agree to a new face-to-face interview in 2002, but the relationship is not statistically significant. When we add controls for sex and age (Model B), the relationship is about the same and slightly more significant, but only with a p-value less than .10 (full models with all coefficients are presented in Table A5 in the Appendix). In Model C, we add controls for income and education, the coefficient falls substantially and the relationship between social trust and responding again becomes statistically insignificant.[4]

Table 4. Explaining participating in panel survey 2002 conditional on participation in 1998, LPM

	Model A	Model B	Model C
Social trust (0–10)	0.012	0.013*	0.008
	(0.008)	(0.008)	(0.008)
Gender & Age		YES	YES
Income & Education			YES
Constant	0.592***	0.515***	0.417***
	(0.052)	(0.077)	(0.083)
R^2	0.003	0.022	0.045
Observations	861	861	854

Comments: *** p<0.01, ** p<0.05, * p<0.1. The sample studied is the SNES panel survey 1998-2002 and restricted to thoose individuals who responded to the question on social trust in 1998 and were included in the target population in 2002, i.e., those who had not died or migrated by 2002. The outcome variable refers to if a respondent in first wave of the survey agreed to a (face-to-face) interview in the second wave (=1) or not (=0). The models are estimated using linear probability models (LPM). Robust standard errors in parentheses. All independent variables are measured at the time of the first wave in 1998. For the age variable, the reference category is 18-21 years of age. The education categories are: lower = compulsory education (reference category), medium = upper secondary education, and higher = tertiary education. The five income categories are: 0-49,999 SEK (reference category), 50,000-124,999 SEK, 125,000-189,999 SEK, 190,000-249,999 SEK, and 250,000- SEK.

[4] Specifically, adding either education or income reveals that it is the inclusion of education that affects the size and significance of the association.

We have also estimated corresponding models using logistic regression instead (see Table A6 in the Appendix). The results are very similar: only in Model A and B can we find a weak relationship between the level of social trust and responding the second wave of the survey ($p<.10$). Furthermore, we estimated the same set of model, but with an outcome variable the refers to if the respondents in the first wave agreed to any type of interview in the second wave, i.e., including a shorter interview by telephone. The results of those models are in a substantive sense the same as in our main specification (see Table A7 and A8 in the Appendix).

5. Concluding discussion

Since the beginning of the modern literature on trust and its consequences, social scientists have worried about the precision and validity of trust surveys. Early critics held that it is unknown what trust surveys measure, and that responses to trust questions were merely expressive and unrelated to actual behavior (cf. Fine 2001; Guinnane 2005). However, such concerns have been dismissed, as subsequent studies show that social trust measures capture trust in strangers, and that it is closely associated with cooperative, trusting behavior (Uslaner 2002; Naef and Schupp 2009; Thöni et al. 2012; Bjørnskov 2021). It has also been indicated that social trust tends to be stable over time in most societies (Uslaner 2008; Bergh and Bjørnskov 2011; Bergh and Öhrvall 2018).

However, respondent behavior in surveys has remained a worry, not least, as measured trust levels exhibit stability over time while response rates in trust surveys have declined (Luiten et al. 2020). If non-response and reappearance in surveys are not random, the national trust measures that most of the literature is based upon may be biased, and increasingly so over time.

We, therefore, conducted an experiment among economics students in Lund, Sweden, and political science students in Aarhus, Denmark, designed to enable us to assess the degree to which non-response is associated with social trust. We also tested whether social trust was a significant factor in reappearance in the Swedish National Election Study in 2002 (relative to 1998). In the former case, we find a negative relationship – more trusting respondents are *less* likely to respond – but it is not statistically significant. In the latter case, we find that individuals with a lower level of trust are slightly less likely to respond in a second wave of a survey, but no longer so when controlling for education.

Overall, we thus find evidence against non-response and reappearance bias as substantial problems for measuring trust in large-scale surveys. If anything, to the extent that one can generalize from experiments with students in two Scandinavian countries with extremely high levels of social trust, non-responses bias trust surveys in a pessimistic direction.

References

Algan, Yann and Pierre Cahuc. 2013. Trust and Growth. *Annual Review of Economics*, 5 (December), 521–549.

Bergh, Andreas and Christian Bjørnskov. 2011. Historical Trust Levels Predict Current Welfare State Design. *Kyklos*, 64 (1), 1–19.

Bergh, Andreas and Richard Öhrvall. 2018. A Sticky Trait: Social Trust among Swedish Expatriates in Countries with Varying Institutional Quality. *Journal of Comparative Economics*, 46 (4), 1146-1157.

Beullens, Koen, Geert Loosveldt, Caroline Vandenplas and Ineke Stoop. 2018. Response Rates in the European Social Survey: Increasing, Decreasing, or a Matter of Fieldwork Efforts? *Survey Methods: Insights from the Field*, pp. 1–12. Retrieved from https://surveyinsights.org/?p=9673

Bjørnskov, Christian. 2021. Civic Honesty and Cultures of Trust. *Journal of Behavioral and Experimental Economics*, 92, 101693.

Fine, Ben. 2001. *Social Capital versus Social Theory*. Routledge: London.

Groves, Robert M. 2006. Nonresponse Rates and Nonresponse Bias in Household Surveys. *Public Opinion Quarterly*, 70, 646-75.

Guinnane, Timothy. 2005. Trust: A Concept Too Many. *Jahrbuch für Wirtschaftsgeschichte*, 1, 77–92.

Holbrook, Allyson L., Melanie C. Green and Jon A. Krosnick. 2003. Telephone versus Face-to-Face Interviewing of National Probability Samples with Long Questionnaires: Comparisons of Respondent Satisficing and Social Desirability Response Bias. *Public Opinion Quarterly*, 67(1), 79–125.

Jaak Billiet, Achim Koch and Michel Philippens, 2007. Understanding and Improving Response Rates. In "Measuring Attitudes Cross-Nationally Lessons from the European Social Survey" edited by Jowell, Roberts, Fitzgerald, Eva. 2007. London: Sage Publications, 107-129.

Keeter, Scott, Carolin Miller, Andrew Kohut, Robert M. Groves and Stanley Presser. 2000. Consequences of Reducing Nonresponse in a National Telephone Survey. *Public Opinion Quarterly*, 64(2), 125–148.

Keeter, Scott, Courtney Kennedy, Michael Dimock, Jonathan Best and Peyton Craighill. 2006. Gauging the Impact of Growing Nonresponse on Estimates from a National RDD Telephone Survey. *Public Opinion Quarterly*, 70 (5), 759-779.

Knack, Stephen and Philip Keefer. 1997. Does Social Capital Have an Economic Pay-Off? A Cross-Country Investigation. *Quarterly Journal of Economics*, 112, 1251–1288.

Ladd, Everett Carl and Seymour Martin Lipset. 1975. *The Divided Academy: Professors and Politics*. New York: McGraw-Hill.

Luiten, Annemieke, Joop Hox and Edith de Leeuw. 2020. Survey Nonresponse Trends and Fieldwork Effort in the 21st Century: Results of an International Study across Countries and Surveys. *Journal of Official Statistic*, 36 (3), 469-487.

Naef, Michael, and Jürgen Schupp. 2009. Measuring Trust: Experiments and Surveys in Contrast and Combination. SOEP working paper 167, DIW Berlin.

Holmberg, Sören and Henrik Oscarsson. 2004. *Väljare: Svenskt väljarbeteende under 50 år.* Stockholm: Norstedts juridik.

Sangnier, Marc. 2013. Does Trust Favor Macroeconomic Stability? *Journal of Comparative Economics*, 41 (3), 653–668.

Smith, Tom W. 1995. Trends in non-Response Rates. *International Journal of Public Opinion Research*, 7 (2), 157-171.

Thöni, Christian, Jean Robert Tyran, and Erik Wengström. 2012. Microfoundations of Social Capital. *Journal of Public Economics*, 96 (7–8), 635–43.

Uslaner, Eric M. 2002. *The Moral Foundations of Trust*. Cambridge, UK: Cambridge University Press.

Uslaner, Eric M. 2008. Where You Stand Depends on Where Your Grandparents Sat: The Inheritability of Generalized Trust. *Public Opinion Quarterly*, 72, 725-740.

Williams, Douglas and Michael J. Brick. 2018. Trends in U.S. Face-To-Face Household Survey Nonresponse and Level of Effort. *Journal of Survey Statistics and Methodology,* 6 (2), 186-211.

Appendix A

Table A1. Social trust and survey responses, logistic regression models

	Model A	Model B	Model C
Social trust (0-10)	-0.066	-0.067	-0.080
	(0.067)	(0.068)	(0.070)
Age		0.064	0.067
		(0.055)	(0.056)
Female		-0.208	-0.200
		(0.247)	(0.251)
Well-educated parents		-0.095	-0.079
		(0.255)	(0.260)
Number of siblings		-0.038	-0.066
		(0.116)	(0.121)
Left-right position (1-5)			-0.001
			(0.124)
Sweden (Ref: Denmark)	-1.338***	-1.372***	-1.414***
	(0.305)	(0.330)	(0.354)
Constant	0.447	-0.747	-0.672
	(0.526)	(1.357)	(1.459)
Pseudo R^2	0.05	0.06	0.06
Observations	313	297	290

Comments: *** p<0.01, ** p<0.05, * p<0.1. The outcome variable refers to if a respondent in first part of the survey was a respondent in the second part (=1) or not (=0). The models are estimated using logistic regression. Robust standard errors in parentheses. Pseudo R^2 refers to McFadden's R^2. For more information on the variables, see Table 1 in the main text.

Table A2. Legal trust and survey responses, logistic regression models

	Model A	Model B	Model C
Legal trust (0-10)	0.072	0.050	0.043
	(0.092)	(0.097)	(0.098)
Age		0.064	0.067
		(0.050)	(0.051)
Female		-0.201	-0.190
		(0.250)	(0.253)
Well-educated parents		-0.075	-0.064
		(0.257)	(0.261)
Number of siblings		-0.037	-0.062
		(0.114)	(0.118)
Left-right position (1-5)			0.015
			(0.126)
Sweden (Ref: Denmark)	-1.070***	-1.145***	-1.184***
	(0.311)	(0.334)	(0.377)
Constant	-0.700	-1.735	-1.744
	(0.808)	(1.515)	(1.520)
Pseudo R^2	0.05	0.06	0.06
Observations	313	297	290

Comments: *** p<0.01, ** p<0.05, * p<0.1. The outcome variable refers to if a respondent in first part of the survey was a respondent in the second part (=1) or not (=0). The models are estimated using logistic regression. Robust standard errors in parentheses. Pseudo R^2 refers to McFadden's R^2. For more information on the variables, see Table 1 in the main text.

Table A3. SNES panel 1998-2002, response categories in 2002

Response category	Number of observations	In percent
Full interview (face-to-face)	579	65.2
Short interview (telephone)	115	13.0
Unable to participate	19	2.1
Not reached	55	6.2
Refusal	93	10.5
Migrated or died	27	3.0
All	**888**	**100**

Comments: The table presents the response categories in 2002 in the SNES panel survey 1998-2002 for those individuals who responded to the question on social trust in 1998.

Table A4. SNES panel 1998-2002, descriptive statistics

	Number of observations	In percent
Age: 18–21	66	7.7
Age: 21–30	140	16.3
Age: 31–40	178	20.7
Age: 41–50	157	18.2
Age: 51–60	136	15.8
Age: 61–70	110	12.8
Age: 71–80	74	8.6
Total	*861*	*100*
Female	418	48.5
Male	443	51.5
Total	*861*	*100*
Lower (compulsory school)	273	32.0
Medium (upper secondary school)	333	39.0
High (tertiary education)	248	29.0
Total	*854*	*100*
Income category 1 (0–49,999 SEK)	137	15.9
Income category 2 (50,000–124,999 SEK)	167	19.4
Income category 3 (125,000–189,999 SEK)	258	30.0
Income category 4 (190,000–249,999 SEK)	180	20.9
Income category 5 (250,000-SEK)	119	13.8
Total	*861*	*100*

Comments: The table presents the descriptive statistics for the SNES panel survey 1998-2002 and among those individuals who responded to the question on social trust in 1998 and were included in the target population in 2002, i.e., those who had not died or migrated by 2002. Information on education and income is gathered at the time of the first wave in 1998.

Table A5. Social trust and survey response (face-to-face) in SNES 1998-2002, LPM

	Model A	Model B	Model C
Social trust (0–10)	0.012	0.013*	0.008
	(0.008)	(0.008)	(0.008)
Female		-0.062*	-0.081**
		(0.032)	(0.034)
Age: 21–30		0.016	-0.015
		(0.074)	(0.086)
Age: 31–40		0.141**	0.127
		(0.070)	(0.091)
Age: 41–50		0.101	0.081
		(0.072)	(0.095)
Age: 51–60		0.156**	0.148
		(0.072)	(0.096)
Age: 61–70		0.150**	0.190*
		(0.075)	(0.098)
Age: 71–80		0.118	0.173*
		(0.082)	(0.104)
Education: medium			0.129***
			(0.043)
Education: high			0.169***
			(0.045)
Income group 2			0.090
			(0.070)
Income group 3			0.010
			(0.069)
Income group 4			0.034
			(0.071)
Income group 5			0.107
			(0.075)
Constant	0.592***	0.515***	0.417***
	(0.052)	(0.077)	(0.083)
R^2	0.003	0.022	0.045
Observations	861	861	854

Comments: *** p<0.01, ** p<0.05, * p<0.1. The sample studied is the SNES panel survey 1998-2002 and restricted to thoose individuals who responded to the question on social trust in 1998 and were included in the target population in 2002, i.e., those who had not died or migrated by 2002. The outcome variable refers to if a respondent in first wave of the survey agreed to a (face-to-face) interview in the second wave (=1) or not (=0). The models are estimated using linear probability models (LPM). Robust standard errors in parentheses. All independent variables are measured at the time of the first wave in 1998. For the age variable, the reference category is 18-21 years of age. The education categories are: lower = compulsory education (reference category), medium = upper secondary education, and higher = tertiary education. The five income categories are: 0-49,999 SEK (reference category), 50,000-124,999 SEK, 125,000-189,999 SEK, 190,000-249,999 SEK, and 250,000- SEK.

Table A6. Social trust and survey response (face-to-face) in SNES 1998-2002, Logistic regression models

	Model A	Model B	Model C
Social trust (0–10)	0.055*	0.058*	0.037
	(0.034)	(0.034)	(0.036)
Female		-0.287*	-0.384**
		(0.148)	(0.161)
Age: 21–30		0.063	-0.088
		(0.304)	(0.356)
Age: 31–40		0.620**	0.571
		(0.301)	(0.393)
Age: 41–50		0.428	0.350
		(0.303)	(0.408)
Age: 51–60		0.694**	0.689
		(0.315)	(0.425)
Age: 61–70		0.659**	0.884**
		(0.326)	(0.435)
Age: 71–80		0.509	0.790*
		(0.352)	(0.455)
Education: medium			0.613***
			(0.201)
Education: high			0.817***
			(0.222)
Income group 2			0.414
			(0.308)
Income group 3			0.040
			(0.297)
Income group 4			0.152
			(0.312)
Income group 5			0.578
			(0.363)
Constant	0.360	0.039	-0.435
	(0.228)	(0.323)	(0.358)
Pseudo R^2	0.003	0.017	0.037
Observations	861	861	854

Comments: *** p<0.01, ** p<0.05, * p<0.1. The sample studied is the SNES panel survey 1998-2002 and restricted to thoose individuals who responded to the question on social trust in 1998 and were included in the target population in 2002, i.e., those who had not died or migrated by 2002. The outcome variable refers to if a respondent in first wave of the survey agreed to a (face-to-face) interview in the second wave (=1) or not (=0). The models are estimated using logistic regression. Robust standard errors in parentheses. All independent variables are measured at the time of the first wave in 1998. For the age variable, the reference category is 18-21 years of age. The education categories are: lower = compulsory education (reference category), medium = upper secondary education, and higher = tertiary education. The five income categories are: 0-49,999 SEK (reference category), 50,000-124,999 SEK, 125,000-189,999 SEK, 190,000-249,999 SEK, and 250,000- SEK. Pseudo R^2 refers to McFadden's R^2

Table A7. Social trust and (any) survey response in SNES 1998-2002, LPM

	Model A	Model B	Model C
Social trust (0–10)	0.011*	0.011*	0.007
	(0.007)	(0.007)	(0.007)
Female		-0.036	-0.044
		(0.027)	(0.029)
Age: 21–30		0.013	0.027
		(0.065)	(0.074)
Age: 31–40		0.073	0.110
		(0.061)	(0.079)
Age: 41–50		0.035	0.063
		(0.063)	(0.082)
Age: 51–60		0.138**	0.179**
		(0.060)	(0.081)
Age: 61–70		0.049	0.128
		(0.066)	(0.086)
Age: 71–80		0.056	0.158*
		(0.071)	(0.092)
Education: medium			0.093**
			(0.037)
Education: high			0.140***
			(0.038)
Income group 2			-0.008
			(0.061)
Income group 3			-0.054
			(0.059)
Income group 4			-0.006
			(0.059)
Income group 5			0.029
			(0.061)
Constant	0.732***	0.694***	0.626***
	(0.046)	(0.069)	(0.074)
R^2	0.004	0.017	0.039
Observations	861	861	854

Comments: *** p<0.01, ** p<0.05, * p<0.1. The sample studied is the SNES panel survey 1998-2002 and restricted to those individuals who responded to the question on social trust in 1998 and were included in the target population in 2002, i.e., those who had not died or migrated by 2002. The outcome variable refers to if a respondent in first wave of the survey agreed to a full face-to-face or a shorter telephone interview in the second wave (=1) or not (=0). The models are estimated using linear probability models (LPM). Robust standard errors in parentheses. All independent variables are measured at the time of the first wave in 1998. For the age variable, the reference category is 18-21 years of age. The education categories are: lower = compulsory education (reference category), medium = upper secondary education, and higher = tertiary education. The five income categories are: 0-49,999 SEK (reference category), 50,000-124,999 SEK, 125,000-189,999 SEK, 190,000-249,999 SEK, and 250,000- SEK.

Table A8. Social trust and (any) survey response in SNES 1998-2002, logistic regression models

	Model A	Model B	Model C
Social trust (0–10)	0.070*	0.070*	0.041
	(0.040)	(0.040)	(0.042)
Female		-0.237	-0.297
		(0.176)	(0.194)
Age: 21–30		0.063	0.122
		(0.346)	(0.427)
Age: 31–40		0.431	0.671
		(0.344)	(0.465)
Age: 41–50		0.187	0.349
		(0.342)	(0.477)
Age: 51–60		0.973**	1.274**
		(0.392)	(0.530)
Age: 61–70		0.275	0.817
		(0.366)	(0.517)
Age: 71–80		0.321	0.988*
		(0.404)	(0.548)
Education: medium			0.620***
			(0.238)
Education: high			0.990***
			(0.274)
Income group 2			-0.025
			(0.378)
Income group 3			-0.320
			(0.363)
Income group 4			0.000
			(0.386)
Income group 5			0.390
			(0.457)
Constant	0.975***	0.772**	0.305
	(0.265)	(0.375)	(0.416)
Pseudo R^2	0.004	0.019	0.044
Observations	861	861	854

Comments: *** p<0.01, ** p<0.05, * p<0.1. The sample studied is the SNES panel survey 1998-2002 and restricted to those individuals who responded to the question on social trust in 1998 and were included in the target population in 2002, i.e., those who had not died or migrated by 2002. The outcome variable refers to if a respondent in first wave of the survey agreed to a full face-to-face or a shorter telephone interview in the second wave (=1) or not (=0). The models are estimated using logistic regression models. Robust standard errors in parentheses. All independent variables are measured at the time of the first wave in 1998. For the age variable, the reference category is 18-21 years of age. The education categories are: lower = compulsory education (reference category), medium = upper secondary education, and higher = tertiary education. The five income categories are: 0-49,999 SEK (reference category), 50,000-124,999 SEK, 125,000-189,999 SEK, 190,000-249,999 SEK, and 250,000- SEK. Pseudo R^2 refers to McFadden's R^2

Appendix B. The survey (Translated from Danish and Swedish)

This survey examines various views among students. The survey is anonymous. The identifier-number cannot be connected to your name.

Pages 1 is to be completed in class and handed in before you leave the lecture hall. Page 2 is to be done at home and handed in at a later lecture.

Background information:

Major: Political Science Economics Business Other Don't know

Age: ____ years

Gender: ____

Number of siblings: _____

Education level of most highly educated parent:
Primary or less;
Shorter secondary (1-2 years);
Secondary (3 years);
Short tertiary (1-3 years;
Long tertiary (4 years or more);
PhD

How important is it for you to be liked by others? (mark with a circle)

Completely unimportant rather unimportant Neither important or unimportant

Rather important Very important

Politically I consider myself (mark with a circle):
left-oriented somewhat left-oriented centrist somewhat right-oriented right-oriented

Some say that you can never be too careful when dealing with other people. Others say that most people can be trusted. What is your view? Mark a number with a circle below!

0------1------2------3------4------5------6------7------8------9------10

You can never be too careful when dealing with other people — Most people can be trusted

How much do you trust courts in Denmark? Mark a number with a circle below!

0------1------2------3------4------5------6------7------8------9------10

I have no trust in Danish courts — I have complete trust in Danish courts

Part 2.

This part is to be completed at home and handed in at the next lecture. Answer with your own words. Your answers can be long but please only use this page.

B1. How confident are you in your political views?

Answer:

B2. Can you give an example of a political position where you have changed your mind during the last 3 years? If yes, describe the change and why it occurred. If not, move on to next question.

Answer:

B3. If you were to change your mind on some political issue during the next 3 years, what issue do you think that would be?

B4. What could lead you to change your mind on the issue you answered above? Describe what would be most likely to make you change your mind on that issue.