

This appendix relates to

Engel, Uwe. 2015. Response Behavior in an Adaptive Survey Design for the Setting-Up Stage of a Probability-Based Access Panel in Germany. In Uwe Engel, Ben Jann, Peter Lynn, Annette Scherpenzeel & Patrick Sturgis (Eds.), *Improving Survey Methods. Lessons from Recent Research*, 207–222. New York/London: Routledge.

Table A18.1 Auxiliary variables in the four field-experimental conditions

Condition	The response probabilities are estimated on the basis of ...
a.	<p>... the contact course. This includes:</p> <ul style="list-style-type: none"> - the number of contact attempts needed - if already the 1st contact attempt yielded a final outcome (y/n) or if an outcome was achieved after - ringing or busy tones in contact attempts before (y/n) or after - an answering machine was involved in contact attempts before (y/n), and given yes: - if it has been possible to leave a short message for the target household that explained the contact attempt (y/n) - if it was possible to make appointments with contact persons (y/n), target persons (y/n) or both (y/n)
b.	<p>... the set of auxiliary variables for condition a. plus:</p> <ul style="list-style-type: none"> - a standardized set of seventeen items reflecting different arguments for refusal conversion attempts. This set of items is described in detail in the online available PPSM panel report (Engel¹ 2013: 43, Table 2.10).
c.	<p>... the set of auxiliary variables for condition a. plus:</p> <ul style="list-style-type: none"> - previous survey experience (asked in the full, key and exit version of the interview), - four participation reasons (scientific survey, did just have time, am generally ready for participating in surveys, didn't want to say "no"), - three indicators of social integration (interest in politics, did participate in last elections, Germany is a country one can live in very well), - education - household size <p>(all items asked in the full and key version of the interview)</p>
d.	... all previously stated auxiliary variables

Source: A detailed German-speaking description of this field experiment is given in Engel et al. 2012: 131-134 and 205-214². The estimates of nonresponse bias presented in Tables A18.2 and A18.3 adds to the description and response propensity modeling presented there.

¹ Engel, Uwe (2013). *Access Panel and Mixed-Mode Internet Survey. PPSM Panel Report*.

<https://www.viewsandinsights.com/videoportal>

² Engel, Uwe, Simone Bartsch, Christiane Schnabel & Helen Vehre (2012). *Wissenschaftliche Umfragen. Methoden und Fehlerquellen* [Scientific Surveys. Methods and Sources of Error]. Frankfurt/New York: campus

Table A18.2 Nonresponse bias in mean estimates, I: education, income, age, gender, interest in science and respondent ratings of social/political integration

	$B(\bar{y}_R) = \frac{Cov_{\rho Y}}{\bar{\rho}}$			
	a.	b.	c.	d.
Considered all in all, one can live in a country like Germany very well (1=agree not at all, ..., 7=agree totally)	0.049*	0.016	---	---
Are the decisions of the Federal Government for you personally ... 1=not at all important, 2=not so important, 3=important, 4=very important?	0.029*	0.035*	0.033*	0.034*
Interest in science: : 1=not at all, 2=little, 3=strong, 4=very strong	0.061*	0.054*	0.054*	0.037
Education (six classes)	0.037	0.014	---	---
Monthly net household income (six income classes)	0.080*	0.041	0.057*	0.027
Age (in years)	0.005	0.508°	-0.027	0.509*
Male (vs. female)	0.004	-0.002	0.003	-0.002
Sig.: *p ≤ 0.05; ° p ≤ 0.07				

Source (formula): Bethlehem³ (2009: 222). PPSM recruitment sample 1.

Table A18.3 Nonresponse bias in mean estimates, II: Attitudes toward surveys

	$B(\bar{y}_R) = \frac{Cov_{\rho Y}}{\bar{\rho}}$			
	a.	b.	c.	d.
1) I enjoy responding to questionnaires through the mail or Internet	-0.062*	-0.125*	-0.012	-0.073*
2) I enjoy being interviewed for a survey	-0.018	-0.126*	0.029	-0.064*
3) Surveys are interesting in themselves	0.009	-0.082*	0.065*	-0.023
4) Surveys are important for society	0.005	-0.061*	0.053*	-0.012
5) A lot can be learned from information collected through surveys	-0.013	-0.048°	0.033	-0.007
6) Completing surveys is a waste of time	0.010	0.094*	-0.002	0.082*
7) I receive far too many requests to participate in surveys	0.020	0.056†	0.014	0.059°
8) Opinion polls are an invasion of privacy	0.019	0.104*	0.000	0.083*
9) It is exhaustive to answer so many questions in a survey	-0.010	0.062°	-0.023	0.041
10) Surveys provide a good opportunity to take part in an important joint civil task	0.096°	0.072	0.178*	0.114°
11) Who takes part in surveys, returns something to society	0.010	0.001	0.083	0.057
12) In principle I am someone who doesn't take part in surveys	0.035	0.082	0.000	0.044

7pt scales (respectively): 1=doesn't agree at all, ..., 7=agree totally. PPSM recruitment sample 1

³ Jelke Bethlehem (2009) Applied Survey Methods. A Statistical Perspective. Hoboken: Wiley

Table A18.4 Response rates in a mixed-mode field experiment

	All target persons received a personalized advance letter incl. a link to an online questionnaire resp. optionally an invitation to a telephone interview					
	Telephone number registered			not registered		
	Call announced		Reply letter*		Reply letter*	
Response rate	36.4%		9.5%		6.1%	
Percentage base	N=423		N=421		N=1,579	
Prepaid incentive	5 €	None				
	49.5%	22.2%				
Percentage base	N=220	N=203				
Mode preference	Online	Phone	Online	Phone	Online	Phone
	39.0%	61.0%	75.0%	25.0%	86.5%	13.5%
	N=154		N=40		N=96	

Source: Co-authors of this 2013 field experiment on the effect of survey incentives within a mixed-mode design are Uwe Engel and Björn-Oliver Schmidt.

*Reply letter with envelope to inform us about the telephone number if a telephone interview was preferred to an online interview. Survey topic was the current "Euro crisis". Note that in the two "reply letter" groups no reminder was employed. In addition to that we were able to realize only few telephonic contact attempts in the "call-announced" group. This let us expect higher response rates upon other terms. The fieldwork lasted four weeks in November/December of 2012. The experiment was carried out as part of a University course on survey methods.

Table A18.5 Structural differences in the odds of having a number that is listed in the telephone directory

	e ^b	b/s.e
Family status (Ref.cat: single)	Ref.cat.	
Married	1.04	0.44
Widowed	0.99	-0.11
Divorced	0.72	-3.24
Education [Ref.cat: Schooling (basic or intermediate level) and completed industrial or agricultural apprenticeship]	Ref.cat.	
Schooling (mainly intermediate level) and completed mercantile apprenticeship	1.09	1.07
Schooling (mainly intermediate level) and finished training at a technical college/master's diploma	1.04	0.47
Schooling (higher level) and polytechnic degree	0.76	-2.55
Schooling (highest level) and university degree	0.82	-2.47
Schooling (mainly intermediate level) and finished training at a vocational school	1.19	1.54
Structure of household (Ref.cat: 'single' household)	Ref.cat.	
2 persons, none below 18 years old	1.07	0.80
2 persons, 1 of whom 1 is below 18 years old	1.09	0.53
3 persons, of whom none is below 18 years	1.37	2.77
3 persons, of whom at least 1 is below 18 years old	0.80	-1.93
4+ persons, of whom none is below 18 years old	1.97	4.68
4+ persons, of whom at least 1 is below 18 years old	1.26	2.29
Gender: Male (1) vs. female (0)	0.98	-0.46
Monthly net household income (six income classes)	0.95	-2.28
Missing value in income	0.94	-0.66
Age (in years)	1.04	17.54
Missing values in age variable	7.19	11.62
Intercept		

PPSM random samples 2 and 3; N=7,390; McFadden's Pseudo-R²=0.076

Table A18.6 Incentive effects on response rates and sample composition

			Sample N*	Response Rate†
Micro-Census 2007	I		---	---
Sample	II	All	1,140	31.5%
	III	No incentive group	433	19.9%
	IV	"1 € cash" group	234	28.6%
	V	"5 € voucher group"	231	35.9%
	VI	"5 € cash" group	242	50.8%

Schooling	I	II	III	IV	V	VI
	%	%	%	%	%	%
Certificate of completion of compulsory basic secondary schooling	48.5	30.9	23.2	28.4	25.0	41.3
Secondary school level 1 certificate (grade 10) or equivalent certificate	25.6	26.9	23.2	35.8	26.3	24.8
Advanced technical college entrance qualification	6.0	6.3	3.7	7.5	7.5	6.6
General qualification for university entrance	20.0	36.0	50.0	28.3	41.3	27.3
Total	100	100	100	100	100	100

PPSM "Bremen" Pilot Study. The fieldwork was carried out during 15 days in June/July of 2007 in the city state of Bremen (Germany). *Excluding 97 non-eligible cases. Relevant losses: 750 cases. Number of interviews realized: 359 (full) plus 31 (core) interviews. †Only full interviews counted.

Design features: Personalized advance letter, random allocation to the incentive conditions & due to cost considerations, just one contact attempt and no reminder were employed (Engel et al. 2012: 129). The "Schooling" Table is related to a 2013 paper co-authored by Helen Vehre, Simone Bartsch, and Uwe Engel on the education bias in a telephone survey with incentives.. Note: (Prior to DFG funding) this has been the first of the four pilot studies conducted to prepare the main study which started in spring 2009.

Table A18.7 Response rates in the "Hamburg" Pilot Study

Sample	1 st step	2 nd step
I	Registration-office sample	Selection of subset with listed tel. numbers
II	RLD telephone sample	Subset: Telephone numbers listed
III		Subset: Telephone numbers not listed

Sample	I	II and III combined	II	III
	Response rates			
Full interview	24.2%	18.8%	16.9%	19.8%
Core interview	2.1%	1.0%	2.3%	0.4%
Exit interview	9.9%	8.5%	4.6%	10.5%
N*	525	388	130	258

PPSM "Hamburg" Pilot Study. The fieldwork was carried out during 9 days in the February of 2008 in the city state of Hamburg (Germany). *Percentage base (excluding not-eligible cases). Design features: No advance letter, no incentives, up to 15 contact attempts realized. Note: This has been the second of the four pilot studies conducted to prepare the main study which started in spring 2009.

Table A18.8: Adjusted mean values in survey attitudes, by type of sample (full interviews only)

Sample	1 st step	2 nd step
I	Registration-office sample	Selection of subset with listed tel. numbers
II	RLD telephone sample	Subset: Telephone numbers listed
III		Subset: Telephone numbers not listed

Mean values adjusted for the propensity to take part in the survey	Sample				Propensity	
	Mean I	Mean II	Mean III	Sig.*	Sig.*	b
	All respondents asked					
Surveys are important for society	4.8	4.6	5.0	0.69	0.00	0.26
A lot can be learned from information collected through surveys	4.9	5.0	5.3	0.44	0.02	0.19
Completing surveys is a waste of time	3.0	3.3	2.8	0.64	0.01	-0.24
**N	125	23	49			
	Only asked if a respondent took part in surveys already in the past					
I enjoy responding to questionnaires through the mail or Internet	2.1	2.2	2.7	0.20	0.12	0.17
I enjoy being interviewed for a survey	2.8	3.7	3.3	0.10	0.01	0.26
Surveys are interesting in themselves	4.2	4.6	4.2	0.71	0.03	0.24
I receive far too many requests to participate in surveys	4.1	2.8	4.1	0.09	0.43	-0.10
Opinion polls are an intrusion into privacy	3.1	2.9	2.7	0.77	0.00	-0.41
It is exhaustive to answer so many questions in a survey	3.8	3.4	4.2	0.43	0.27	-0.13
***N	79	14	32			

PPSM "Hamburg" Pilot Study. 7pt scale (respectively): 1=agree not at all, ..., 7=agree totally. *Prob. > F (covariance analysis). Response propensity estimated by an interviewer rating (7pt scale). This rating is highly correlated with the readiness to take part in the full vs. core or exit version of the interview (0.70; Cramer's V). Since the survey attitudes are part of the full interview version only, the rating is used as a proxy variable. **The N displayed above may be reduced by max. 2 cases due to missing values. ***This N may be reduced by max. 3 cases due to missing values (applies to sample I only).

Table A18.9 Adjusted mean values in political interest, by type of sample

Sam- ple	1 st step	2 nd step
I	Registration-office sam- ple	Selection of subset with listed tel. numbers
II	RLD telephone sample	Subset: Telephone numbers listed
III		Subset: Telephone numbers not listed

Mean values adjusted for the propensity to take part in the survey	Sample				Propensity	
	Mean I	Mean II	Mean III	Sig.*	Sig.*	b
	Asked in full and core interviews					
Interest in politics: 1=not at all, 2=less strong, 3=a bit, 4=strong, 5=very strong	3.5	3.5	3.2	0.35	0.59	0.03
N	135	25	50			
Are the decisions of the city parlia- ment of Hamburg for you personally ... 1=not important, 2=less important, 3=rather important, 4=important, 5=very important?	3.8	4.0	3.8	0.44	0.01	0.11
N	133	25	50			

PPSM "Hamburg" Pilot Study. *Prob. > F (covariance analysis). The response propensity is estimated by an interviewer rating (7pt scale). This rating is highly correlated with the readiness to take part in the full vs. core or exit version of the interview and is used here as a proxy variable.

Table A18.10: Intention to go to the polls, by type of sample and response propensity

Sample	e ^b	Sig.
I	Ref.cat.	
II	1.04	0.96
III	0.96	0.92
Full vs. core or exit inter- view	2.11	0.07
intercept	7.89	0.00

PPSM "Hamburg" Pilot Study. N=298. Election to the city parliament of Hamburg, Feb. 24th, 2008). The question was asked in the full, core and exit version of the interview. Displayed are the estimates of a random-intercept logistic regression equation that controls for significant variation across the interviewers.