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## Research Report Documentation of sample sizes and panel attrition in the German Socio Economic Panel (SOEP) (1984 until 2013)

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## Data Documentation

Deutsches Institut für Wirtschaftsforschung

Documentation of Sample Sizes and Panel Attrition in the German Socio Economic Panel (SOEP) (1984 until 2013)

Martin Kroh and Rainer Siegers

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## **Data Documentation 75**

Martin Kroh and Rainer Siegers\*

Documentation of Sample Sizes and Panel Attrition in the German Socio Economic Panel (SOEP) (1984 until 2013)

Berlin, September 2014

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### 1 Introduction

This data documentation is meant to provide SOEP users with a general overview of the longitudinal development of the survey over the past 30 years and the derivation of weights that compensate for selective panel attrition. In the first section, we report the number of household and personal interviews by cross-section. We do so for the entire SOEP sample as a whole, as well as for sub-samples A through K individually.

The SOEP study surveys not only the original sample from the first wave, but also households and persons that entered the survey at later points in time. They enter, for example, when SOEP households split (i.e., individuals move out and form their own households), when people move into SOEP households, and when an original sample member gives birth to a "new sample member". For a detailed review of the SOEP inclusion rules for new sample units and their treatment within the weighting framework see Spiess et al. (2008) and Schonlau et al. (2011). The second section of the present paper on the longitudinal development of the SOEP reports descriptive figures of the participatory behavior of the original sample members and the entrance patterns of new sample members.

Households may leave the survey for several reasons. SOEP's weighting strategy distinguishes between survey-related reasons and reasons unrelated to the survey (for a detailed description of the SOEP weighting strategy, see Rendtel 1995 and Schonlau et al. 2013 and for a general overview, Haisken-DeNew & Frick 2001). We ignore panel attrition of the latter form due to respondents moving abroad or dying, since these cases technically represent an exit from the underlying population. The second section of this paper provides initial evidence on the risk of survey-related panel attrition in different groups of the original sample units (e.g., in different sub-samples, age, educational, and income groups).

The third section reports in more detail on the occurrence of unsuccessful follow-ups to household addresses by cross-section and sub-sample, and sub-sample-specific regression models of the probability of unsuccessful follow-ups in 2013 based on the characteristics of households measured in 2012. The fourth section does the same for the second form of survey-related attrition: refusals.

1

Based on the regression models of unsuccessful-follow ups and refusals, we derive predicted observation probabilities. The inverse of the product of these predicted probabilities gives the longitudinal weighting variables for the year 2013: BDHBLEIB and BDPBLEIB. Based on the inverse of the probability of observing households and persons in 2012, the staying probability in 2013, and additional post-stratification to meet benchmarks of known marginals of the underlying population in 2013, we derive the cross-sectional weights BDHHRF and BDPHRF. The final section of this paper documents some summary statistics of the development of the longitudinal and the cross-sectional weights by sub-sample and wave.

## 2 Developments in Sample Size

With respect to developments in sample size, the following figures focus on (2.1) comparing the number of successful interviews by cross-section, (2.2) providing a longitudinal study of panel attrition in original sample members, (2.3) showing entrance of new sample members by birth / moving into SOEP households and their participation behavior, and (2.4) assessing the risk of survey-related attrition of original sample respondents by social characteristics.

Note that the sample sizes of the English public-use version of SOEP and the German DIW version differ by approximately 5 percent. Five percent of the original SOEP data was excluded in compliance with German data protection laws, which was accomplished technically by randomly selecting 5 percent of the original wave 1 households and dropping these and the persons living in them from the English public-use version. Hence the difference in sample sizes is not always exactly 5 percent. The sample sizes documented below refer to the original DIW database.

# 2.1 Development of the Number of Successful Interviews by Cross-Section

The following figures display the number of successful interviews considering different aspects:

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Figure 2: Comparison of Successful Interviews with Persons and Households (Subsamples A and B), Waves 1 to 30	6
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Figure 1: The Number of Successful Interviews with Persons by Subsamples A through K, Waves 1 to 30.

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Figure 2: Comparison of Successful Interviews with Persons and Households (Subsamples A and B), Waves 1 to 30.

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Figure 3: Comparison of Successful Interviews with Persons and Households (Subsample C), Waves 1 to 24.



□ Persons □ Households



### Figure 4: Comparison of Successful Interviews with Individuals and Households (Subsample D), Waves 1 to 19.



### Figure 5: Comparison of successful interviews with individuals and households (Subsample E), Waves 1 to 16.

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Persons	1,910	1,629	1,549	1,464	1,373	1,332	1,300	1,240	1,198	1,144	1,071	1,024	975	961	160	134
Households	1,056	886	842	811	773	744	732	706	686	647	602	574	553	545	92	82

Note. In Wave BC (2012), Sample E was split between SOEP-Innovation Sample (SOEP-IS) and SOEP-Core (N=82 Households).



Figure 6: Comparison of Successful Interviews with Individuals and Households (Subsample F), Waves 1 to 14.

Year

Households

1,224



Figure 7: Comparison of Successful Interviews with Individuals and Households (Subsample G), Waves 1 to 12.



### Figure 8: Comparison of Successful Interviews with Individuals and Households (Subsample H), Waves 1 to 8.

# 2.2 Continuance and Exit: The First Wave Gross Samples and their Participatory Behavior

The following figures display the participation behavior of the first-wave respondents in the subsequent years distinguishing between continued participation, exits due to survey-unrelated attrition, and exits due to survey-related attrition.

Figure 9: All First-Wave Persons (Gross Subsample A). Development up to Wave 30.	14
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Figure 9: All First-Wave Persons (Gross Subsample A). Development up to Wave 30.

Figure 10: All First Wave Persons (Gross Subsample B). Development up to Wave 30.



Whereabout of the 4830 Persons

Figure 11: All First Wave Persons (Gross Subsample C). Development up to Wave 24.



Whereabout of the 6131 Persons





Whereabout of the 1668 Persons



Figure 13: All First Wave Persons (Gross Subsample E). Development up to Wave 16. Whereabout of the 2446 Persons

Figure 14: All First Wave Persons (Gross Subsample F). Development up to Wave 14.



Whereabout of the 14510 Persons



Figure 15: All First Wave Persons (Gross Subsample G). Development up to Wave 12. Whereabout of the 3538 Persons





Whereabout of the 3407 Persons

# 2.3 New Entrants through Birth or Move into SOEP Households and Their Participation Behavior

The following figures display the participation behavior of the non-original sample members and their entrance to the ongoing survey, distinguishing between continuation of participation, exits due to survey unrelated attrition, and exits due to survey-related attrition.

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Figure 17: Entrants and their Participation Behavior (Subsample A).





Figure 18: Entrants and their Participation Behavior (Subsample B).



Figure 19: Entrants and their Participation Behavior (Subsample C).





Figure 20: Entrants and their Participation Behavior (Subsample D).



Figure 21: Entrants and their Participation Behavior (Subsample E).



487 Persons

Figure 22: Entrants and their Participation Behavior (Subsample F).





Figure 23: Entrants and their Participation Behavior (Subsample G).





### 2.4 The Risk of Survey-Related Panel Attrition

The following figures display Kaplan-Meier estimates of the risk of survey related attrition (unsuccessful follow-up and refusal) of the net sample of first-wave respondents thereby ignoring survey unrelated exits (moves abroad and deaths). These figures stratify the drop-out risk in different groups of the sample defined by respondents' sample membership (Figures 25, 26, and 27) and some basic socio-demographic characteristics measured in the year of sampling, such as age, occupation, income, and education (Figures 28 through 31). These unweighted figures show in general only moderate differences in the risk of survey related attrition between groups of the sample. Among the older samples A through C (Figure 25), for instance, first-wave respondents from sample B have a somewhat lower probability of remaining in the survey than respondents from sample A and C. In the more recent samples D through K (Figures 26 and 27), first-wave respondents from sample H have a somewhat lower probability of remaining in the survey than respondents from sample F. The latter in turn, have a lower probability of remaining in the survey than respondents from sample G.

Figure 25:	Successful Re-Interviewing of First-Wave Respondents by Subsamples A, B, C. Kaplan-Meier Estimates of Survey-Related Attrition Ignoring Deaths and Moves Abroad	24
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Figure 25: Successful Re-Interviewing of First-Wave Respondents by Subsamples A, B, C. Kaplan-Meier Estimates of Survey-Related Attrition Ignoring Deaths and Moves Abroad.

Figure 26: Successful Re-Interviewing of First-Wave Respondents by Subsamples D, E, F. Kaplan-Meier Estimates of Survey-Related Attrition Ignoring Deaths and Moves Abroad.





Figure 27: Successful Re-Interviewing of First-Wave Respondents by Subsamples G, H, J and K. Kaplan-Meier Estimates of Survey-Related Attrition Ignoring Deaths and Moves Abroad.

Figure 28: Successful Re-Interviewing of All First-Wave Respondents by Age Categories. Kaplan-Meier Estimates of Survey-Related Attrition Ignoring Deaths and Moves Abroad.







Figure 30: Successful Re-Interviewing of All First-Wave Respondents by Income Quintiles. Kaplan-Meier Estimates of Survey-Related Attrition Ignoring Deaths and Moves Abroad.





Figure 31: Successful Re-Interviewing of All First-Wave Respondents by Education. Kaplan-Meier Estimates of Survey-Related Attrition Ignoring Deaths and Moves Abroad.

## 3 Panel Attrition Due to Unsuccessful Follow-Ups

In each panel wave, the first step in successful re-interviewing is the relocation of the households of the preceding wave. The fieldwork organization of the SOEP, TNS Infratest, identifies whether (a) a household still lives at the old address, (b) an entire household has moved or all household members have died, (c) all household members have left the sampling area, and (d) all household members have returned to an existing panel household.

### 3.1 The Frequency of Successful Follow-Ups

Table 1 and Table 2 display the number of households of the previous waves that need to be re-contacted and the relative frequency of successful follow-ups in subsamples A through K and waves 1985 through 2013. The re-contact rates refer to all households of the previous wave that still exist in the sampling area plus split-off households. A contact is regarded as successful if the interviewer documented a completed interview or refusal in the address protocol. Moreover, if former household members returned to an existing panel household, this is classified as a successful follow-up.

	Sample A		Sample B		Sample C		Sample D		Sample E	
	n	%	n	%	n	%	n	%	n	%
1985	4681	98.5	1370	96.9						
1986	4486	99.0	1325	97.4						
1987	4232	99.1	1220	98.7						
1988	4140	99.2	1191	99.1						
1989	3984	99.1	1157	99.1						
1990	3902	99.2	1124	98.9						
1991	3860	99.5	1151	99.3	2246	98.5				
1992	3845	99.7	1153	99.2	2304	99.5				
1993	3867	99.3	1172	98.7	2227	99.1				
1994	3849	99.3	1150	99.1	2136	99.4				
1995	3784	99.5	1108	99.0	2113	99.6				
1996	3747	99.7	1069	99.3	2104	99.5	544	99.6		
1997	3688	99.6	1038	99.1	2091	99.5	542	99.3		
1998	3667	99.4	1019	99.4	2081	99.4	498	99.4		
1999	3631	99.6	975	99.4	2041	99.7	529	99.1	1100	99.5
2000	3549	99.6	934	99.5	2028	99.6	467	99.8	968	99.2
2001	3463	99.6	904	99.5	2036	99.7	454	99.1	922	99.1
2002	3406	99.7	877	9 9.1	2010	99.5	450	99.8	875	99.4
2003	3330	99.6	840	99.6	1982	99.6	434	99.5	834	99.3
2004	3260	99.8	803	99.6	1962	99.6	436	99.8	797	99.7
2005	3220	99.8	779	99.4	1959	99.7	429	99.3	783	99.1
2006	3138	99.7	770	99.6	1941	99.4	425	98.8	775	99.1
2007	3000	99.7	725	99.5	1834	99.9	387	99.5	727	99.7
2008	2856	99.7	676	99.1	1767	99.5	372	99.4	680	99.7
2009	2730	99.7	620	99.2	1695	99.8	351	99.7	636	100
2010	2570	99.8	548	99.3	1627	100	334	99.6	605	99.8
2011	2421	99.8	495	99.0	1541	99.8	302	99.3	589	100
2012	2289	99.8	440	99.7	1466	99.9	286	100	116	99.1
2013	2180	99.6	393	99.2	1417	99.7	269	99.2	98	100

# Table 1: The Frequency of Households to be Re-Contacted and the Relative Proportion of Successful Follow-Ups through Subsamples A to E by Year.

n = Number of households to be recontacted

% = Percentage of households with successful recontact

	Sample F		Sample G		Sample H		Sample J		Sample K	
	n	%	n	%	n	%	n	%	n	%
2001	6172	99.0								
2002	5451	99.5								
2003	4965	99.7	1056	99.1						
2004	4736	99.6	1010	99.7						
2005	4577	99.7	1001	99.7						
2006	4401	99.3	995	99.5						
2007	4157	99.5	933	99.3	1530	99.5				
2008	3962	99.4	904	99.6	1326	99.6				
2009	3760	99.6	870	99.5	1145	99.7				
2010	3538	99.5	826	99.9	1059	99.5				
2011	3318	99.6	797	99.6	992	99.5				
2012	3076	99.9	774	99.7	928	99.9	3204	99.2		
2013	2881	99.7	733	99.6	877	99.5	2871	99.5	1565	99.0

## Table 2: The Frequency of Households to be Re-Contacted and the Relative Proportion of Successful Follow-Ups through Subsamples F to K by Year.

n = Number of households to be recontacted

% = Percentage of households with successful recontact

# 3.2 Predicting the Probability of Successful vs. Unsuccessful Follow-Ups in the Year 2013

Based on the household and interview characteristics measured in 2012, we aim at predicting the probability of re-contacting a household relative to unsuccessful follow-up in 2013. Among a very large number of regressors that we tested in preliminary analyses, we identified a smaller number of variables that exert a robust effect on the probability of successful follow-ups (p < 0.05). Table 3 describes the regressors and Table 4 reports the subsample-specific estimates of logit models of the probability of re-contacting a household relative to unsuccessful follow-up.

Note that the estimates of regression models of the previous waves 1985 through 2012 are due to space restrictions not reported in the present data documentation, but can be obtained from previous attrition documentations.

Variable	Label	Value				
Interview Characteristics						
Phone Unknown	Telephone Number Undisclosed	0/1				
New HH	HH is New in SOEP	0/1				
Move HH	HH Move	0/1				
Separation	Move-out due to Separation in Last Wave	0/1				
Demographics and Health						
Under 12	Children younger than 12 in HH	0/1				
Montage	At Least one Person in HH has Alternating Place of Work	0/1				
Younger than 25	Head of HH is Younger than 25	0/1				
Smoker	At Least one Person in HH Smokes	0/1				
Region						
High AFD Share of Vote	HH Located in Area of High Share of Voting "AFD"	0/1				
High Share Eastern EU	HH in Area with High Share of Eastern EU or Late Repatriates	0/1				

### Table 3: Definition of the Regressors of the Logit Model of Unsuccessful Follow-Ups.

Variable	Label	Value					
Financial Situation, Real Estate and Insurance							
Non-Working	Head of HHH is Non-working	0/1					
Assets	Head of HH has no assets	0/1					
Personality and Well-Being							
Strong Political Interest	Head of HH has High or very High Political Interest	0/1					
Anxious	Head of HH is often anxious	0/1					

## Table 3: Definition of the Regressors of the Logit Model of Unsuccessful Follow-Ups.

	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
	Α	В	С	D	E	F	G	Н	J	к
Intercept	2.53***	1.58***	1.87***	1.59***		2.10***	1.70***	1.93***	2.36***	4.30***
Interview Character	<u>ristics</u>									
Phone Unknown						-0.38**			-0.91***	
New HH	-0.65***								-0.98***	-2.40***
Move HH			-0.70***			-0.69***		-0.86***	-0.64**	
Separation										-2.36***
<u>Demographics and</u> <u>Health</u>										
Under 12	-0.51**									
Montage								-0.63**		
Younger than 25										-1.05**
Smoker										-0.77**
<u>Region</u>										
High AFD Share	-0.46**									
High East. EU						-0.45***				
Financial Situation,	Real Esta	te and Insu	rance							
Non-Working	-0.44**									
Assets	-0.57***									
Personality and We	ll-Being									
Political Interest										-1.04***
Anxious										-1.11**
Log Likelihood	-35.71	-17.61	-23.49	-11.80		-39.91	-19.49	-18.68	-52.58	-32.52

### Table 4: Estimates of Logit Models of the Probability of Re-Contacting a Household (Relative to Unsuccessful Follow-Up) in 2013.

Note. \*\*\* p < 0.01; \*\* p < 0.05; \* p < 0.10

### 4 Panel Attrition Due to Refusals

In each panel wave, the second step in successful re-interviewing after relocating households from the preceding wave is to obtain each household's confirmation of willingness to participate in the survey. We define successful re-interviewing relative only to survey-related panel attrition, such as refusals, and ignore survey-unrelated attrition, such as deaths, and moves abroad, to generate the longitudinal weights.

### 4.1 The Frequency of Participation

Table 5 and Table 6 display the participation rates due to refusal by sub-sample and wave. In reverse one can derive the corresponding drop-out rates. Note that we did not distinguish between various types of refusals such as unconditional refusals, refusals due to lack of time, or health problems, etc.

	Samp	ole A	Sam	ole B	Samp	ole C	Sam	ple D	Sam	ple E
	n	%	n	%	n	%	n	%	n	%
1985	4611	89.8	1326	89.1						
1986	4442	89.2	1290	87.4						
1987	4194	93.2	1204	92.7						
1988	4105	91.1	1180	90.8						
1989	3949	92.4	1146	91.0						
1990	3871	93.3	1111	92.5						
1991	3842	94.0	1143	92.4	2213	91.7				
1992	3833	93.5	1144	92.7	2290	88.2				
1993	3838	93.9	1156	92.0	2208	89.2				
1994	3821	93.6	1139	89.8	2122	92.3				
1995	3766	93.6	1097	89.5	2101	92.2	634	82.3		
1996	3734	93.3	1061	90.5	2092	93.3	542	91.9		
1997	3674	94.1	1029	90.5	2076	93.6	537	89.2		
1998	3645	92.9	1013	88.6	2066	91.3	523	84.3		
1999	3616	92.0	969	88.5	2030	93.3	495	85.9	1084	81.7
2000	3535	91.7	929	88.3	2018	93.1	466	91.2	959	87.8
2001	3448	91.9	899	90.0	2028	91.2	450	88.4	913	88.8
2002	3396	92.0	869	88.1	1996	91.1	449	89.5	868	89.1
2003	3318	92.6	837	88.6	1974	91.5	432	92.4	828	89.9
2004	3253	92.5	800	89.3	1955	92.7	435	89.2	795	92.1
2005	3214	91.4	774	90.2	1954	90.6	426	89.0	782	90.3
2006	3130	90.1	767	85.4	1930	89.0	420	85.7	768	89.3
2007	2992	91.0	721	85.2	1832	90.3	385	89.6	725	89.2
2008	2850	90.7	671	84.9	1759	90.5	370	88.6	678	88.8
2009	2723	89.0	616	81.2	1693	90.7	350	87.4	636	90.3
2010	2565	87.5	545	80.9	1627	88.3	333	83.5	604	91.6
2011	2417	88.9	491	79.6	1538	88.1	300	88.7	589	92.5
2012	2285	89.0	439	78.8	1456	89.6	286	87.8	115	80.0
2013	2172	89.7	390	82.3	1413	88.5	267	86.9	98	83.7

Table 5: The Frequency of Re-Contacted Households and the Relative Proportion of Participation in Subsamples A through E by Year.

n = Number of re-contacted households

% = Percentage of households that participated

	Sam	ple F	Sam	ole G	Samp	ole H	Sam	ple J	Sam	ole K
	n	%	n	%	n	%	n	%	n	%
2001	6109	80.4								
2002	5420	84.6								
2003	4951	88.6	1047	87.0						
2004	4719	89.7	1007	89.8						
2005	4564	89.2	998	88.1						
2006	4370	89.1	990	86.8						
2007	4138	89.3	926	89.0	1523	78.0				
2008	3939	89.2	901	87.3	1321	81.9				
2009	3746	88.2	866	87.4	1142	87.2				
2010	3523	86.7	825	90.1	1054	86.6				
2011	3307	87.2	794	88.9	988	86.8				
2012	3073	87.9	772	89.0	927	88.2	3178	80.4		
2013	2873	89.3	730	92.7	873	89.7	2857	80.7	1549	82.7
n = Nur	nber of re-	contacted	d househo	lds	% =	Percenta	ge of hous	eholds th	at particip	ated

Table 6: The Fred	quency of Re-Contacted Households and the Relative Proportion of	Fartic-
ipation in Subsa	imples F through K by Year.	

# 4.2 Predicting the Probability of Re-Interviewing versus Refusal in the Year 2013

Based on the household and interview characteristics measured in 2012, and some regional information measured in 2013, we aim at predicting the probability of agreement vs. refusal to participate in the survey by the households that were recontacted in 2013. The individual attributes refer in many cases to the head of the household in the previous wave, but for split-off households the attributes refer to the person who moved out of the panel household (in the case of several persons, the first person mentioned in the address protocol). In many other cases, personal information are aggregated within the households, for instance, rare events, such as acute medical conditions.

As in the case of predicting successful follow-ups, we use only model specifications where all included regressors are significantly different from zero. The definition of the regressors is given in Table 7. Table 8 reports the subsample-specific estimates

of logit models of the probability of participating relative to refusal. Note that the estimates of regression models of the previous waves 1985 through 2012 are not reported in the present data documentation due to space restrictions, but can be obtained from previous attrition reports.

Variable	Label	Value
Interview Characteristics		
Original Sample Member	Head of HH is Original Sample Member	0/1
Freshman	Head of HH for Less Than Three Waves in SOEP	0/1
New HH	HH is New in SOEP	0/1
Partial Unit Nonresponse	Person(s) in HH did not Participate	0/1
Temporary Drop-Out	Temporary Drop-Out of HH in Previous Year	0/1
Email Known	Email Address Disclosed	0/1
Phone Unknown	Telephone Number Undisclosed	0/1
Change in Interview Mode	Change in Interview Mode Between Last Waves	0/1
Change of Interviewer	Change of Interviewer Between Last Waves	0/1
Real. Related HH	Related HH Realized	0/1
Interviewer Related HH	Same Interviewer in Related HH	0/1
Add. Questionnaire Muki	Additional Questionnaire Answered (Muki)	0/1
Add. Questionnaire Grip	Additional Questionnaire Answered (Grip)	0/1
Lee-Study	Participated at LEE-Study, at least one Address Given	0/1
VdB-Study Participation	HH Participated at van-den-Berg-Study	0/1
VdB-Study Refusal	HH Refused to Participate at van-den-Berg-Study	0/1
Short Interview	Interview Duration Short	0/1
Late Interview	Interview Done Later than May	0/1
High Item Nonresponse HH	High Item Nonresponse in HH Questionnaire	0/1
High Item Nonresponse P	High Item Nonresponse in Person Questionnaire of Head of HH	0/1
Subsample B4	HH from Sample B, Italian Head of HH	0/1

Table 7: Definition of the Regressors of the Logit Model of Refusal.

Variable	Label	Value
Subsample F2	HH from F2 ISOEP, Additional Foreigner Enumeration	0/1
Demographics and Health		
Age 25-34	Head of HH between 25 and 34 Years	0/1
Age 55-64	Head of HH between 55 and 64 Years	0/1
Age 65-74	Head of HH between 65 and 74 Years	0/1
Older than 75	Head of HH is Older than 75	0/1
Retiree	At Least one Retiree in HH	0/1
Single HH	One Person Living in HH	0/1
Divorced	Head of HH Divorced	0/1
Widowed	Head of HH Widowed	0/1
Moving In	Current Moving In HH	0/1
Previous Moving In	Moving In HH in Previous Year	0/1
No Previous Partner	No Married or Unmarried Couple Previous Year in HH	0/1
Health Situation		
Obesity	At Least one Person in HH Is Obese	0/1
Isolated	At Least one Person in HH Is Limited Socially due to Health	0/1
Care	At Least one Person in HH Is in Need of Care	0/1
Chain Smoker	At Least one Person in HH Is Chain Smoker	0/1
Smoker	At Least one Person in HH Smokes	0/1
Financial Situation, Real Est	ate and Insurance	
Subtenant	Subtenant of Dwelling	0/1
Building-Saving	Head of HH Does little Building-Saving (first Tercile)	0/1
Debts	Head of HH Highly indebted (third Tercile)	0/1
Funds1	Head of HH Has little funds (first Tercile)	0/1
Funds2	Head of HH Has average funds (second Tercile)	0/1
Life Insurance	Head of HH Has little Life Insurance (first Tercile)	0/1

## Table 7: Definition of the Regressors of the Logit Model of Refusal.

Variable	Label	Value
House Owner	Head of HH Is Owner of high priced House (third Tercile)	0/1
Little Real Estate	Head of HH Has Real Estate below average	0/1
Much Real Estate	Head of HH Has Real Estate above average	0/1
Insurance	HH with Many Insurances	0/1
Work and Education		
White-Collar Worker	Head of HH Is a White-Collar Worker	0/1
Blue-Collar Worker	Head of HH Is a Blue-Collar Worker	0/1
Civil Servant	Head of HH Is a Civil Servant	0/1
Self-Employed	Head of HH Is Self-Employed	0/1
University Degree	Head of HH Has a University Degree	0/1
Low Education	Head of HH Has Low Education	0/1
Management	Head of HH Has Management Functions	0/1
Other Employment	Head of HH Employed, Neither Management Nor Untrained	0/1

### Table 7: Definition of the Regressors of the Logit Model of Refusal.

### Personality Traits, Well-Being and Other Characteristics

Angry	Head of HH Often Angry in Last four Weeks	0/1
Strong Political Interest	Head of HH Has High or Very High Political Interest	0/1
Hobbies and Leisure	Head of HH Spends Much Time With Hobbies/Leisure	0/1
Unhappy	Head of HH Often Not Happy	0/1
Time Pressure	At Least one Person in HH Often Pressed for Time	0/1
Risk Willingness	Head of HH Has High Risk Willingness	0/1
Job Security	Head of HH Worried About Job Security	0/1

### Building, Area, and Region

Family Area	HH Located in Area with Mostly Families	0/1
Low Academics	HH Located in Area of Low Academics Rate	0/1
High Grüne Share of Vote	HH Located in Area of High Share of Voting "Grüne"	0/1
High AFD Share of Vote	HH Located in Area of High Share of Voting "AFD"	0/1

Variable	Label	Value
High SPD Share of Vote	HH Located in Area of High Share of Voting "SPD"	0/1
Low Purchasing Power	HH in Area with Low of Purchasing-Power (Microm)	0/1
High Purchasing Power	HH in Area with High of Purchasing-Power (Microm)	0/1
Depopulation	HH Located in Area of High Depopulation	0/1
High Share Foreigners	HH in Area with High Share of Foreigners (Microm)	0/1
High Share Islamic Countries	HH in Area with High Share of People from Islamic Countries	0/1
High Share Eastern EU	HH in Area with High Share of Eastern EU or Late Repatriates	0/1
Bavaria	HH Located in Bavaria	0/1
Rhineland/Saarland	HH Located in Rhineland-Palatinate/Saarland	0/1
Baden-Wuerttemberg	HH Located in Baden-Wuerttemberg	0/1
Hessen	HH Located in Hessen	0/1
Few Abitur-Graduates	HH Located in Area with Few Abitur-Graduates	0/1
One Family House	HH Lives in a One or Two Family House	0/1
Apartment Building	HH Lives in an Apartment Building	0/1

## Table 7: Definition of the Regressors of the Logit Model of Refusal.

### Table 8: Estimates of Logit Models for the Probability of Re-Interviewing a Household (Relative to Refusal) in 2013.

	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
	Α	В	С	D	E	F	G	Н	J	К
Intercept	0.83***	0.92***	0.63***	1.13***	0.99**	1.13***	1.46***	1.06***	0.67***	0.93***
Interview Characteristics										
Original Sample Memb.	-0.18***	-0.83***	-0.21**	-0.55***	-0.63**	-0.14**				
Freshman	-1.15***					-0.74**				
New HH						-0.34*		-0.77**		-0.51**
Part. Unit Nonresponse						-0.19**	-0.42***	-0.59***	-0.35***	-0.68***
Temporary Drop-Out	-1.06***		-1.51***			-1.54***	-1.58***	-1.74***	-1.95***	
Email Known			0.26***			0.19***			0.26***	0.34***
Phone Unknown	-0.41***	-0.90***	-0.29**			-0.49***		-0.59***	-0.54***	-0.66***
Change Interview Mode						-0.22**				
Change of Interviewer									-0.23***	
Temp. Related HH									0.41***	
Interviewer Related HH	0.24***									
Add. Question. Muki				-0.54**						
Add. Question.Grip			0.20**							
Lee-Study	0.36***	0.32**	0.39***							
VdB-Study Participation	0.37***					0.34***			0.32***	
VdB-Study Refusal								-0.62***		
Short Interview		-0.46**								
Late Interview				-0.74**				-0.54***		
High Item Nonresp. HH								-0.33**		
High Item Nonresp. P						-0.19***				
Subsample B4		0.48**								
Subsample F2						-0.36**				
Age 25-34										-0.29**
Age 55-64		-0.53**								
Age 65-74								0.36**		
Older than 75										-0.39***
Retiree			0.22**							
Single HH						-0.34***			-0.46***	-0.30***

### Table 8: Estimates of Logit Models for the Probability of Re-Interviewing a Household (Relative to Refusal) in 2013.

	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
	Α	В	С	D	E	F	G	Н	J	К
Divorced			0.40***						0.29***	0.33***
Widowed						0.25**			0.26**	0.42***
Moving In									-0.51***	
Previous Moving In			-0.58**							
No Previous Partner		0.51***				0.32***			0.38***	
Health Situation										
Obesity	0.17**									
Isolated										0.20**
Care	-0.36**									
Chain Smoker		0.59**								
Smoker	-0.13**									-0.25***
Financial Situation, Real	<u>Estate an</u>	<u>d Insuran</u>	<u>ce</u>							
Subtenant		0.41**								
Building-Saving								-0.55***		
Debts						0.33**				
Funds1	-0.21**									
Funds2			0.44***							
Life Insurance	0.40***									
House Owner							0.28**			
Little Real Estate									0.36**	
Much Real Estate									-0.28**	
Insurance							-0.30**		0.22**	
Work and Education										
White-Collar Worker	-0.17**									
Blue-Collar Worker									0.22**	
Civil Servant								-0.73***		
Self-Employed								-0.48**		
University Degree								0.41***		
Low Education									-0.16***	
Management	0.35***									

### Table 8: Estimates of Logit Models for the Probability of Re-Interviewing a Household (Relative to Refusal) in 2013.

	Sample A	Sample B	Sample C	Sample D	Sample F	Sample F	Sample G	Sample H	Sample	Sample K		
Other Employment	~		0.04**	D	-	•	0		0	Ν		
Personality Traits Well-Roing and Other Characteristics												
Personality Traits, Well-E	seing and	Other Ch	aracteristi	<u>cs</u>								
Angry									0.18***			
Strong Political Interest			0.29***									
Hobbies and Leisure								0.30**				
Unhappy		0.38**								0.18**		
Time Pressure						-0.14**			-0.14**			
Risk Willingness		0.47***						0.41***				
Job Security										-0.25***		
Building, Area, and Regi	<u>on</u>											
Family Area				0.54**								
Low Academics	-0.18**	-0.50**		-0.46**			-0.38**	0.43***		-0.25***		
H. Grüne Share of Vote							-0.27**					
H. AFD Share of Vote		-0.61***										
H. SPD Share of Vote								-0.44***				
Low Purchasing Power		-0.59***										
High Purchasing Power										-0.29***		
Depopulation						-0.20***						
H.Share Foreigners						-0.13**						
H. Share Islamic C.	0.25***											
H. Share Eastern EU				-0.42**								
Bavaria							-0.35**					
Rhineland/Saarland									0.32***			
Baden-Wuerttemb.	-0.44***								-0.23***			
Hessen							-0.44**					
Few Abitur-Grad.	0.21**											
One Family House			-0.19**									
Apartment Building				0.63**				-0.37**				
Log Likeihood	-586.04	-136.26	-409.10	-83.71	-40.76	-767.61	-156.24	-203.31	-1074.6	-628.46		

*Note.* \*\*\* p < 0.01; \*\*p < 0.05; \* p < 0.10.

### 5 Summary Statistics of the Derived Longitudinal and Cross-Sectional Weights

Based on the regression models of successful vs. unsuccessful recontacts and agreements vs. refusals to participate, we derive two sets of predicted probabilities, the product of which is the household's "staying probability". The inverse of this probability of staying in the SOEP in 2013 based on characteristics measured in 2012, BDHBLEIB, lends itself as a longitudinal weighting variable correcting for selective attrition between waves 2012 and 2013. Table 9, Table 10 and Table 11 report some sub-sample specific descriptive statistics of the longitudinal weights in each wave.

The product of the cross-sectional weight in 2012, BCHHRF, and the longitudinal weight in 2013, BDHBLEIB, provide the raw data for the cross-sectional weight in 2013. In a final step, the post-stratification of the cross-sectional weights corrects them to meet benchmarks of known marginals of the underlying population in 2013. These are at the household level states (Bundesländer), size of the community, household size, and house ownership. At the person level, SOEP weights are also adjusted to the marginal distributions of age, gender, and nationality (Non/German). With the integration of the latest migrant sample M in 2013, we also consider additional information on the country of origin of respondents and year of migration. Table 12 and Table 13 report sub-sample-specific descriptive statistics of the derived cross-sectional weighting variable BDHHRF and in comparison all previous cross-sectional weights AHHRF through BCHHRF.

	sample A				sample B				sample C			sample D				
	p10	p50	p90	Ν	p10	p50	p90	Ν	p10	p50	p90	Ν	p10	P50	p90	Ν
1985	1.06	1.10	1.22	4141	1.09	1.10	1.26	1181								
1986	1.04	1.07	1.26	3962	1.10	1.10	1.29	1128								
1987	1.03	1.03	1.13	3910	1.03	1.03	1.14	1116								
1988	1.02	1.04	1.20	3743	1.03	1.04	1.22	1071								
1989	1.03	1.04	1.16	3647	1.03	1.04	1.14	1043								
1990	1.02	1.02	1.11	3612	1.04	1.04	1.12	1028								
1991	1.02	1.02	1.09	3613	1.03	1.03	1.16	1056	1.03	1.06	1.18	2030				
1992	1.01	1.02	1.11	3585	1.01	1.03	1.16	1060	1.06	1.06	1.22	2020				
1993	1.01	1.01	1.16	3603	1.02	1.03	1.22	1064	1.03	1.04	1.17	1970				
1994	1.02	1.02	1.15	3577	1.03	1.05	1.22	1023	1.02	1.04	1.12	1959				
1995	1.01	1.01	1.16	3526	1.02	1.05	1.29	982	1.03	1.03	1.11	1938				
1996	1.01	1.03	1.12	3485	1.04	1.04	1.21	960	1.01	1.02	1.15	1951	1.00	1.08	1.16	396
1997	1.01	1.02	1.13	3458	1.02	1.04	1.29	931	1.02	1.04	1.12	1942	1.05	1.09	1.09	340
1998	1.02	1.03	1.14	3387	1.04	1.07	1.23	898	1.02	1.02	1.20	1886	1.08	1.08	1.35	308
1999	1.02	1.02	1.20	3325	1.04	1.04	1.22	858	1.01	1.03	1.10	1894	1.05	1.05	1.27	300
2000	1.02	1.02	1.15	3240	1.03	1.03	1.18	820	1.01	1.03	1.13	1879	1.02	1.02	1.10	302
2001	1.02	1.02	1.18	3168	1.02	1.02	1.23	809	1.02	1.02	1.16	1850	1.03	1.03	1.18	286
2002	1.01	1.02	1.21	3123	1.04	1.04	1.37	766	1.01	1.02	1.21	1818	1.00	1.02	1.21	289
2003	1.01	1.03	1.14	3072	1.01	1.03	1.31	742	1.01	1.03	1.14	1807	1.01	1.01	1.09	290
2004	1.01	1.01	1.12	3010	1.04	1.04	1.13	714	1.00	1.01	1.12	1813	1.00	1.01	1.25	277
2005	1.02	1.02	1.16	2937	1.05	1.05	1.17	698	1.00	1.02	1.15	1771	1.00	1.02	1.34	273
2006	1.01	1.04	1.22	2821	1.01	1.05	1.33	655	1.01	1.04	1.24	1717	1.03	1.04	1.44	261
2007	1.01	1.03	1.14	2723	1.03	1.07	1.24	614	1.00	1.03	1.16	1654	1.01	1.04	1.12	248
2008	1.02	1.05	1.13	2584	1.01	1.07	1.25	570	1.01	1.03	1.18	1592	1.02	1.07	1.22	231
2009	1.02	1.05	1.25	2423	1.01	1.05	1.60	500	1.00	1.03	1.21	1535	1.00	1.02	1.16	217
2010	1.01	1.06	1.38	2245	1.01	1.10	1.47	441	1.01	1.04	1.32	1437	1.00	1.01	1.43	278
2011	1.00	1.04	1.27	2148	1.01	1.07	1.55	391	1.01	1.05	1.24	1355	1.01	1.02	1.28	266
2012	1.02	1.08	1.27	2033	1.01	1.13	1.65	346	1.00	1.05	1.29	1312	1.00	1.04	1.45	251
2013	1.01	1.06	1.25	1949	1.01	1.09	1.58	321	1.01	1.07	1.27	1250	1.01	1.06	1.39	232

Table 9: Summary Statistics of the Derived Longitudinal Weights at the Household Levelfor Subsamples A through D (Percentiles of \$HBLEIB up to Wave 30).

		samp	ole E			sam	ple F		sample G				
	p10	p50	p90	N	p10	p50	p90	N	p10	p50	p90	N	
1999	1.00	1.23	1.47	886									
2000	1.03	1.07	1.21	838									
2001	1.01	1.05	1.25	811	1.08	1.14	1.59	4911					
2002	1.01	1.02	1.20	773	1.03	1.05	1.46	4586					
2003	1.04	1.04	1.15	744	1.02	1.04	1.24	4386	1.06	1.10	1.17	911	
2004	1.00	1.01	1.08	732	1.02	1.03	1.19	4235	1.02	1.03	1.25	904	
2005	1.01	1.03	1.18	706	1.01	1.03	1.17	4070	1.03	1.06	1.25	879	
2006	1.00	1.03	1.21	686	1.01	1.03	1.29	3895	1.00	1.04	1.31	859	
2007	1.01	1.01	1.16	647	1.02	1.03	1.15	3694	1.02	1.05	1.17	824	
2008	1.00	1.01	1.19	602	1.01	1.03	1.14	3513	1.01	1.03	1.18	787	
2009	1.00	1.04	1.17	574	1.02	1.04	1.34	3303	1.02	1.04	1.36	757	
2010	1.01	1.04	1.25	553	1.01	1.05	1.40	3055	1.00	1.01	1.23	743	
2011	1.00	1.00	1.17	545	1.01	1.05	1.34	2885	1.00	1.03	1.35	706	
2012	1.05	1.24	1.66	92	1.02	1.08	1.30	2702	1.02	1.07	1.24	687	
2013	1.07	1.20	1.32	82	1.01	1.06	1.21	2567	1.02	1.05	1.15	677	

### Table 10: Summary Statistics of the Derived Longitudinal Weights at the Household Level for Subsamples E through G (Percentiles of \$HBLEIB up to Wave 30).

Table 11: Summary Statistics of the Derived Longitudinal Weights at the Household Level for Subsamples H, J and K (Percentiles of \$HBLEIB up to Wave 30).

		sam	ple H			sam	ole J		sample K				
	p10	p50	p90	N	p10	p50	p90	Ν	p10	p50	p90	Ν	
2007	1.04	1.16	1.46	1188									
2008	1.01	1.03	1.18	1082									
2009	1.01	1.03	1.22	996									
2010	1.01	1.04	1.37	913									
2011	1.00	1.05	1.31	858									
2012	1.00	1.03	1.36	818	1.05	1.19	1.52	2555					
2013	1.00	1.05	1.27	783	1.03	1.13	1.36	2305	1.04	1.15	1.47	1281	

	р5	p10	p25	p50	p75	p90	p95	N
1984	431	597	3805	4725	5647	7130	8248	5921
1985	482	683	3897	5081	6430	8473	10032	5322
1986	541	752	3610	5302	6839	9277	11114	5090
1987	548	791	3541	5379	7040	9572	11449	5026
1988	534	804	3565	5637	7538	10348	12523	4814
1989	548	821	3613	5845	7876	10803	13276	4690
1990	698	1073	2217	4602	7042	9878	12394	6819
1991	680	1044	2332	4696	7156	10281	12875	6699
1992	671	1026	2340	4661	7139	10524	13660	6665
1993	690	1056	2403	4670	7253	10757	13975	6637
1994	713	1098	2402	4677	7271	11195	14664	6559
1995	700	1113	2381	4366	6974	11080	14823	6768
1996	738	1162	2386	4364	7010	11379	15311	6699
1997	746	1207	2399	4313	7052	11846	15895	6621
1998	983	1353	2331	3981	6215	9885	13119	7492
1999	970	1326	2312	3982	6497	10888	14352	7220
2000	803	1103	1760	2525	3568	5090	6491	13082
2001	752	1029	1756	2750	4143	6088	7843	11796
2002	506	659	1221	2554	4189	6523	8241	12320
2003	504	676	1231	2564	4329	6826	9079	11909
2004	491	669	1214	2536	4420	7261	9833	11644
2005	490	678	1235	2544	4520	7581	10860	11294
2006	451	648	1265	2382	4131	7137	9726	12361
2007	450	651	1256	2454	4458	7638	10566	11552
2008	450	654	1276	2541	4736	8224	11514	10921
2009	465	670	1309	2629	5005	9079	12312	10270
2010	497	708	1397	2803	5457	10120	13194	9551
2011	423	635	1357	2478	4351	7387	9549	12183
2012	395	610	1372	2573	4406	7064	9680	12217
2013	281	419	884	2062	3926	6430	8484	13990

 Table 12: Summary Statistics of the Derived Cross-Sectional Weights at the Household

 Level (Percentiles of \$HHRF up to Wave 30).

	р5	p10	p25	p50	p75	p90	p95	N
1984	385	538	1159	4371	5224	6066	6881	16173
1985	459	633	1431	4620	5716	6848	8113	14508
1986	492	677	1532	4681	6031	7572	8957	13804
1987	513	717	1599	4713	6228	7907	9368	13563
1988	488	683	1610	4876	6543	8505	10158	12872
1989	528	758	1755	5006	6878	8959	10666	12443
1990	688	1023	1907	3451	6153	8281	10217	18254
1991	737	1071	1902	3715	6206	8463	10662	17844
1992	782	1141	1985	3732	6279	8702	11158	17429
1993	848	1240	2061	3822	6382	8943	11425	17072
1994	867	1274	2090	3819	6397	9234	12082	16715
1995	764	1150	2012	3588	6081	9073	12263	17345
1996	806	1186	2017	3622	6162	9362	12908	16944
1997	848	1215	2058	3650	6241	9680	13467	16583
1998	916	1264	2039	3499	5581	8484	11440	18249
1999	901	1239	2014	3477	5779	9228	12615	17501
2000	719	970	1552	2308	3223	4550	5831	30784
2001	690	932	1528	2448	3656	5426	6920	27956
2002	430	595	1050	2190	3712	5829	7618	29101
2003	430	610	1068	2198	3811	6147	8266	27867
2004	429	603	1069	2185	3912	6540	8822	26918
2005	433	619	1103	2242	4012	6883	9670	25638
2006	399	581	1101	2187	3667	6346	8905	27442
2007	401	588	1113	2238	3897	7121	10172	25505
2008	414	601	1137	2321	4126	7676	11129	23792
2009	428	617	1177	2402	4371	8394	12431	22096
2010	460	662	1265	2576	4783	9336	13638	20281
2011	396	587	1238	2327	4018	6950	9467	25337
2012	388	583	1276	2449	4142	6797	9377	24987
2013	277	403	792	1857	3512	5877	7789	30174

# Table 13: Summary Statistics of the Derived Cross-Sectional Weights at the Person Level (Percentiles of \$PHRF up to Wave 30).

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