

NEPS

National Educational Panel Study

Angelina Hammon

Samples, Weights and Nonresponse

NEPS Starting Cohort 6 — Adults

Adult Education and Lifelong Learning

Wave 7 to 9

Research Data

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Wilhelmsplatz 3, 96047 Bamberg
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Samples, Weights, and Nonresponse: the Adult Cohort of the National Educational Panel Study (Wave 7 to 9)

Hammon, A.

Leibniz Institute for Educational Trajectories

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E-mail address of lead author:

methoden@lifbi.de

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Samples, Weights, and Nonresponse: the Adult Cohort of the National Educational Panel Study (Wave 7 to 9)

1. Prequel

This report documents the sample sizes and the weighting procedures of the panel Waves 7 to 9 of the NEPS Starting Cohort 6 (SC6, Adult Education and Lifelong Learning).¹

This paper supplements the previous report for weighting by Hammon, Zinn, Aßmann, and Würbach (2016) which gives more detailed information on the applied sampling procedure, the derivation of design weights, their successive adjustments, and the computation of panel weights for previous waves.

In total, the SC6 sample comprises three subsamples: respondents from the ALWA sample (ALWA), the enhancement & refreshment sample of Wave 2 (NEPS 1), and the refreshment sample of Wave 4 (NEPS 3). Table 1 summarizes the study numbers, the survey modes, the periods of the studies, as well as the numbers of participants in each wave. Table 2 completes this information by detailing the composition of the distinct samples together with the numbers of nonrespondents and final drop-outs.

Table 1: Summary of waves.

Wave	Study number	Survey mode	Period	Number of Participants
2	B72	CATI/CAPI	2009/10	11,649
3	B67	CAPI/CATI	2010/11	9,320
4	B68	CATI/CAPI	2011/12	14,104
5	B69	CAPI/CATI	2012/13	11,696
6	B70	CATI/CAPI	2013/14	10,639
7	B97	CAPI/CATI	2014/15	9,770
8	B115	CATI/CAPI	2015/16	9,236
9	B116	CAPI/CATI	2016/17	8,662

CATI: Computer-assisted telephone interview, CAPI: Computer-assisted personal interview.

The remainder of this supplement is structured as follows: Section 2 describes how the panel weights of Wave 7 to 9 are derived. This includes nonresponse adjustments and the post-stratification of weights, respectively. Section 3 concludes with a summary of the design variables and the sampling weights provided.

¹The three waves correspond to the studies B97 (Wave 7), B115 (Wave 8) and B116 (Wave 9).

Table 2: Case numbers, respondents, nonrespondents and final drop-outs.

Wave	Sub-sample	Gross sample	Participants	Participation proportion	Temporary drop-outs	Final drop-outs (within wave)	Final drop-outs (after wave)
2	Gesamt	8997	0	27009	11649	0.431	1927
	ALWA	8997	0	8997	6572	0.730	1927
	NEPS 1	-	0	18012	5077	0.282	0
3	Gesamt	12195	0	12195	9323	0.764	2566
	ALWA	7402	0	7402	5639	0.763	1582
	NEPS 1	4793	0	4793	3684	0.769	984
4	Gesamt	11390	0	28501	14112	0.495	1806
	ALWA	6714	0	6714	5380	0.801	1023
	NEPS 1	4676	0	4676	3524	0.754	783
	NEPS 3	-	0	17111	5208	0.304	0
5	Gesamt	15504	255	15249	11696	0.767	2113
	ALWA	6199	3	6196	4880	0.788	757
	NEPS 1	4097	8	4089	3100	0.758	548
	NEPS 3	5208	244	4964	3716	0.749	808
6	Gesamt	13809	251	13558	10639	0.785	2354
	ALWA	5637	114	5523	4555	0.825	814
	NEPS 1	3648	119	3529	2847	0.807	520
	NEPS 3	4524	18	4506	3237	0.718	1020
7	Gesamt	12465	22	12443	9770	0.785	1771
	ALWA	5208	2	5206	4189	0.805	737
	NEPS 1	3253	10	3243	2604	0.803	385
	NEPS 3	4004	10	3994	2977	0.745	649
8	Gesamt	11197	10	11187	9236	0.826	1458
	ALWA	4817	2	4815	4099	0.851	554
							13433
							1927
							498
							12935
							306
							181
							125
							0
							414
							204
							210
							0
							1440
							559
							441
							440
							528
							161
							114
							253
							344
							109
							82
							153
							616
							162

Table 2: Case numbers, respondents, nonrespondents and final drop-outs.

Wave	Sub-sample	Gross sample	Participants	Participation proportion	Temporary drop-outs	Final drop-outs (within wave)	Final drop-outs (after wave)
	NEPS 1	2907	4	2903	2450	0.844	322
	NEPS 3	3473	4	3469	2687	0.775	582
9	Gesamt	10078	23	10055	8662	0.861	1003
	ALWA	4427	23	4404	3835	0.871	431
	NEPS 1	2641	0	2641	2289	0.867	240
	NEPS 3	3010	0	3010	2538	0.843	332
							390
							131
							0
							200
							0
							392
							138
							112
							140
							144

2. Cross-sectional and Longitudinal Weights for Wave 7 to 9

2.1. Wave 7

For all members of the Wave 7 gross sample, participation probabilities have been estimated in order to adjust the Wave 7 sampling weights with respect to nonresponse. For this purpose, logistic regression models have been calculated separately for the two subsamples NEPS1/ALWA and NEPS3. The resulting predicted probabilities indicate the Wave 7 participation propensity whose inverses are used as adjustment factors for the longitudinal and cross-sectional Wave 7 weights. Missing values in the model covariates were below 5% for each variable and were handled by single imputation. The parameter estimates of the computed models are given in Table 1 and 2 in the Appendix. The results of the model for the ALWA/NEPS1 subsample show selectivity with regards to *birth cohort*, *migration background*, *subsample*, *marital status*, *residential area* and *educational level*. Individuals of the youngest birth cohort and unmarried respondents are more likely to drop out than units from the oldest age group and divorced individuals. The higher the educational level of an individual, the more likely is the participation in the survey. Furthermore, the size of the individuals' residential area has a negative impact on the probability to attend in the survey. Units from the ALWA subsample have a lower probability to drop out than units from the newly drawn NEPS sample. In addition, individuals who have a migration background possess a much lower likelihood of participating in the survey. For the NEPS3 subsample we also find a selectivity with regards to *migration background*, *marital status* and *educational level*.

The longitudinal weights of continuous participation until Wave 7 are computed by means of the longitudinal weights of the previous wave, and the likelihood of participating in Wave 7. Since there exist two different NEPS subsamples drawn at two different time points, we calculate two types of longitudinal weights, one starting from Wave 2 and one beginning with Wave 4, when the (second) refreshment sample has been drawn. The calculation was done as in previous waves (cp. Hammon et al. (2016)).

The cross-sectional weights were additionally calibrated to match sample distributions with external benchmark distributions. The variables considered in this context are the same as in the Waves 3 to 6 (cp. Hammon et al. (2016)). Benchmark distributions had been taken from the Microcensus 2014. A comparison of the (unweighted) Wave 7 sample distributions and the benchmark distributions from the Microcensus can be found in Tables 3 to 8 in the Appendix. Especially with regards to *education* and the *country of birth* the distributions studied differ. This deviation can be overcome by the calibrated Wave 7 weights.

2.2. Wave 8

The calculated logistic regression models for participation in Wave 8 for the ALWA and NEPS1 subsample indicate the same selectivities as in the previous wave with additional effects of some of the federal states the units are living in. Individuals from *Berlin*, *Hessen*, *Sachsen* and *Thüringen* have a greater probability of participating in the survey than people from *Nordrhein-Westfalen*. The model for the NEPS3 subsample shows again a selectivity with regards to *migration background*, *marital status* and *educational level*. The model estimates can be found in Table 9 and 10 in the Appendix.

The longitudinal weights of continuous participation until Wave 8 are calculated using the longitudinal weights of Wave 7, and the likelihood of participating in Wave 8 resulting from the estimated nonresponse models. The cross-sectional weights were calibrated to match sample distributions with those of the Microcensus 2015. A comparison of the (unweighted) Wave 8 sample distributions and the benchmark distributions from the Microcensus can be found in Tables 11 to 16 in the Appendix. The distributions of *educational level* and *country of birth* deviate substantially as in previous waves.

2.3. Wave 9

In Wave 9, participation of the ALWA and NEPS1 subsample depends on *birth cohort, migration background, subsample, marital status, household size, federal state* and *educational level*. Individuals of the oldest birth cohort and divorced persons are still less likely to drop out than units from the youngest age group and unmarried individuals. The propensity of participating increases with increasing level of education. Units from the ALWA study have a higher likelihood to participate than units from NEPS1 subsample. Furthermore, migration background has a very negative impact on the probability of participating in the survey. Individuals from *Sachsen* and *Thüringen* are more likely to participate than people from *Nordrhein-Westfalen*. In addition, units who live in a two-person-household have a lower probability of participating than those who live in a household with three or more persons. The model of the NEPS3 subsample shows selectivity with regards to *migration background* and *educational level*. In addition, units from *Hamburg* are less likely and individuals from *Niedersachsen* are more likely to participate than respondents from *Nordrhein-Westfalen*. Moreover, persons who live in a city with 50,000 to 100,000 inhabitants possess a much higher probability of dropping out than individuals from a residential region with less than 2000 inhabitants. The parameter estimates of both models can be found in Table 17 and 18 in the Appendix.

The longitudinal weights of continuous participation until Wave 9 are derived using the longitudinal weights of Wave 8, and the participating propensities in Wave 9 that are predicted by the computed logistic regression models. The cross-sectional weights were calibrated to match sample distributions with those of the Microcensus 2016. A comparison of the (unweighted) Wave 9 sample distributions and the benchmark distributions from the Microcensus can be found in Tables 19 to 24 in the Appendix. The distribution of *country of birth* and especially that of *educational level* differ considerably between sample and Microcensus.

3. Summary of Design Variables and Weights

To ease statistical analysis, all of the survey weights are provided in a standardized form, where standardization was performed to have weights with mean one. Table 3 lists the types of weights provided for the SC6 SUF release version 9-0-0 and Table 4 gives some summary statistics of the (standardized) weights provided. Along with sampling weights, variables highlighting the sampling design are published. They are summarized in Table 5.

Table 3: Types of weights provided.

Type of weight	Label
Weights of individuals participating in Wave 7 (study B97)	w_t7_cal
Weights of individuals participating in Wave 8 (study B115)	w_t8_cal
Weights of individuals participating in Wave 9 (study B116)	w_t9_cal
Weights of individuals participating in Wave 2, 3, 4, 5, 6 and 7	w_t234567_std
Weights of individuals participating in Wave 2, 3, 4, 5, 6, 7 and 8	w_t2345678_std
Weights of individuals participating in Wave 2, 3, 4, 5, 6, 7, 8 and 9	w_t23456789_std
Weights of individuals participating in Wave 4, 5, 6 and 7	w_t4567_std
Weights of individuals participating in Wave 4, 5, 6, 7 and 8	w_t45678_std
Weights of individuals participating in Wave 4, 5, 6, 7, 8 and 9	w_t456789_std

Table 4: Summary statistics for (calibrated and standardized) weights.

Label of weight	Number of individuals	Min.	Lower Quart.	Median	Mean	Upper Quart.	Max.
w_t7_cal	9,770	0.000	0.225	0.466	1.000	1.129	20.603
w_t8_cal	9,236	0.035	0.219	0.397	1.000	1.005	27.110
w_t9_cal	8,662	0.000	0.066	0.166	1.000	0.622	49.743
w_t234567_std	5,462	0.061	0.278	0.543	1.000	1.203	4.974
w_t2345678_std	5,019	0.042	0.226	0.469	1.000	1.153	5.205
w_t23456789_std	4,624	0.029	0.173	0.401	1.000	1.106	5.398
w_t4567_std	8,506	0.086	0.374	0.576	1.000	1.113	4.805
w_t45678_std	7,636	0.059	0.308	0.520	1.000	1.070	5.047
w_t456789_std	6,982	0.041	0.248	0.454	1.000	1.021	5.266

Table 5: Design variables provided.

Type of design information	Label
Primary Sampling Unit (Sampling point number)	psu
Identifier of stratum (Implicit stratification)	stratum
Initial sample (ALWA, NEPS)	sample
Initial sample detailed (ALWA, NEPS enhancement, NEPS refreshment)	subsample
Federal state	tx80101
BIK 10 classification	tx80102
BIK 7 classification	tx80103

References

Hammon, A., Zinn, S., Aßmann, C., & Würbach, A. (2016). *Samples, weights, and nonresponse: the adult cohort of the national educational panel study (wave 2 to 6)* (NEPS Survey Paper No. 7). Bamberg, Germany: Leibniz Institute for Educational Trajectories, National Educational Panel Study.

A. Results of Nonresponse Modeling and Calibration

Table 1: Results of the logit regression model measuring the participation propensity of individuals in Wave 7 for the ALWA and NEPS 1 subsample.

Variable	Reference	Odds Ratio	P-Value
<i>Subsample</i> NEPS1	ALWA	0.72	0.00
<i>Birth year</i> 1956 – 1969 1970 – 1979 1980 – 1986	1944 – 1955	1.09 0.92 0.66	0.20 0.24 0.00
<i>Gender</i> female	male	1.04	0.30
<i>Country of birth</i> born abroad	born in Germany	0.60	0.00
<i>Marital status</i> unmarried married widowed	divorced	0.79 0.93 1.01	0.00 0.30 0.97
<i>Household size</i> one person two persons	three persons and more	0.97 0.93	0.67 0.14
<i>School qualification</i> ISCED 3ac/4ab ISCED 3b ISCED 5a/6 ISCED 5b	ISCED 1/2ab	1.67 1.22 2.04 1.57	0.00 0.00 0.00 0.00
<i>Federal State</i> Hamburg Niedersachsen Bremen Schleswig-Holstein Hessen Rheinland-Pfalz Baden-Württemberg Bayern Saarland Berlin Brandenburg Mecklenburg-Vorpommern Sachsen Sachsen-Anhalt Thüringen	Nordrhein-Westfalen	0.92 1.08 1.41 0.88 1.09 0.85 1.09 1.07 0.99 1.08 1.13 0.97 1.49 1.02 1.41	0.55 0.30 0.17 0.27 0.28 0.09 0.20 0.30 0.93 0.47 0.30 0.87 0.00 0.87 0.01
<i>BIK categories</i> 2000 to 5000 inhab. 5000 to 20,000 inhab. 20,000 to 50,000 inhab. 50,000 to 100,000 inhab. (styp 2/3/4) 50,000 to 100,000 inhab. (styp 1) 100,000 to 500,000 inhab. (styp 2/3/4) 100,000 to 500,000 inhab. (styp 1) more than 500,000 inhab. (styp 2/3/4) more than 500,000 inhab. (styp 1)	less than 2000 inhab.	0.68 0.79 0.71 0.73 0.98 0.76 0.75 0.67 0.71	0.03 0.15 0.02 0.04 0.92 0.07 0.05 0.01 0.02

<i>Attempts to contact target</i>		0.99	0.00
Number of cases	12,482		

Table 2: Results of the logit regression model measuring the participation propensity of individuals in Wave 7 for the NEPS 3 subsample.

Variable	Reference	Odds Ratio	P-Value
<i>Birth year</i>	1944 – 1955		
1956 – 1969		0.94	0.44
1970 – 1979		0.84	0.07
1980 – 1986		0.83	0.10
<i>Gender</i>	male		
female		1.04	0.55
<i>Country of birth</i>	born in Germany		
born abroad		0.58	0.00
<i>Marital status</i>	divorced		
unmarried		0.76	0.02
married		0.98	0.84
widowed		1.31	0.19
<i>Household size</i>	three persons and more		
one person		1.09	0.43
two persons		1.08	0.25
<i>School qualification</i>	ISCED 1/2ab		
ISCED 3ac/4ab		1.95	0.00
ISCED 3b		1.54	0.00
ISCED 5a/6		2.24	0.00
ISCED 5b		1.63	0.00
<i>Federal State</i>	Nordrhein-Westfalen		
Hamburg		0.61	0.03
Niedersachsen		1.33	0.01
Bremen		1.44	0.34
Schleswig-Holstein		1.04	0.85
Hessen		0.97	0.83
Rheinland-Pfalz		1.01	0.96
Baden-Württemberg		0.89	0.28
Bayern		1.16	0.12
Saarland		0.97	0.90
Berlin		1.04	0.82
Brandenburg		1.07	0.68
Mecklenburg-Vorpommern		0.92	0.70
Sachsen		1.48	0.01
Sachsen-Anhalt		1.46	0.04
Thüringen		1.38	0.08
<i>BIK categories</i>	less than 2000 inhab.		
2000 to 5000 inhab.		0.66	0.17
5000 to 20,000 inhab.		0.87	0.56
20,000 to 50,000 inhab.		0.73	0.19
50,000 to 100,000 inhab. (styp 2/3/4)		0.59	0.03
50,000 to 100,000 inhab. (styp 1)		0.86	0.61
100,000 to 500,000 inhab. (styp 2/3/4)		0.71	0.14
100,000 to 500,000 inhab. (styp 1)		0.70	0.13

more than 500,000 inhab. (styp 2/3/4)		0.77	0.28
more than 500,000 inhab. (styp 1)		0.67	0.09
<i>Attempts to contact target</i>		0.99	0.00
Number of cases	5,208		

Table 3: Comparison of the distribution of the Wave 7 sample data and the target distribution (Microcensus 2014) according to gender and educational attainment.

Gender and education	actual distribution	target distribution	
	net sample	population (Microcensus 2014)	
	%	%	total
male			
ISCED 1	0.31	1.49	687,000
ISCED 2	1.45	4.02	1,854,000
ISCED 3	17.49	25.14	11,591,000
ISCED 4	2.90	3.60	1,659,000
ISCED 5	25.80	14.64	6,751,000
ISCED 6	1.22	0.90	413,000
female			
ISCED 1	0.45	1.74	804,000
ISCED 2	3.06	6.33	2,918,000
ISCED 3	19.12	24.66	11,369,000
ISCED 4	3.71	6.09	2,807,000
ISCED 5	23.76	10.92	5,034,000
ISCED 6	0.74	0.49	224,000
Total	100.00	100.00	461,110,000

Table 4: Comparison of the distribution of the Wave 7 sample data and the target distribution (Microcensus 2014) according to birth year and educational attainment.

Birth year and education	actual distribution	target distribution	
	net sample	population (Microcensus 2014)	
	%	%	total
1975 – 1986			
ISCED 1	0.13	0.76	344,000
ISCED 2	0.87	2.28	1,029,000
ISCED 3	5.03	10.18	4,588,000
ISCED 4	1.61	3.39	1,528,000
ISCED 5	9.59	6.89	3,103,000
ISCED 6	0.56	0.36	163,000
1965 – 1974			
ISCED 1	0.09	0.91	410,000
ISCED 2	0.81	2.37	1,066,000
ISCED 3	9.16	12.95	5,834,000
ISCED 4	2.08	2.92	1,318,000
ISCED 5	12.55	6.73	3,033,000
ISCED 6	0.53	0.39	176,000

1956 – 1964			
ISCED 1	0.19	0.79	358,000
ISCED 2	1.37	2.49	1,120,000
ISCED 3	11.94	13.22	5,959,000
ISCED 4	2.00	2.16	974,000
ISCED 5	15.52	6.10	2,749,000
ISCED 6	0.44	0.34	153,000
1944 – 1955			
ISCED 1	0.34	0.78	350,000
ISCED 2	1.46	3.25	1,464,000
ISCED 3	10.48	13.61	6,133,000
ISCED 4	0.92	1.07	48,300
ISCED 5	11.90	5.73	2,583,000
ISCED 6	0.42	0.32	142,000
Total	100.00	100.00	45,060,000

Table 5: Comparison of the distribution of the Wave 7 sample data and the target distribution (Microcensus 2014) according to Federal State.

Federal State	actual distribution	target distribution	
	net sample	population (Microcensus 2014)	
	%	%	total
Schleswig-Holstein	2.88	3.40	1,572,000
Hamburg	1.69	2.25	1,038,000
Niedersachsen	10.67	9.53	4,401,000
Bremen	0.68	0.82	380,000
Nordrhein-Westfalen	21.73	21.64	9,996,000
Hessen	7.54	7.51	3,468,000
Rheinland-Pfalz	4.56	4.89	2,259,000
Baden-Württemberg	12.35	12.89	5,951,000
Bayern	15.79	15.65	7,230,000
Saarland	1.38	1.22	565,000
Berlin	3.71	4.41	2,035,000
Brandenburg	3.31	3.15	1,457,000
Mecklenburg-Vorpommern	1.67	2.02	932,000
Sachsen	5.78	5.01	2,314,000
Sachsen-Anhalt	3.10	2.83	1,305,000
Thüringen	3.16	2.77	1,281,000
Total	100.00	100.00	46,184,000

Table 6: Comparison of the distribution of the Wave 7 sample data and the target distribution (Microcensus 2014) according to BIK categories of municipal size.

BIK categories	actual distribution	target distribution	
	net sample	population (Microcensus 2014)	
	%	%	total

less than 2000 inhab.	2.20	1.71	790,000
2000 to 5000 inhab.	2.48	2.63	1,216,000
5000 to 20,000 inhab.	8.18	8.49	3,922,000
20,000 to 50,000 inhab.	11.69	11.10	5,124,000
50,000 to 100,000 inhab. styp 2/3/4	8.67	7.68	3,548,000
50,000 to 100,000 inhab. styp 1	2.11	2.20	1,017,000
100,000 to 500,000 inhab. styp 2/3/4	16.39	14.76	6,817,000
100,000 to 500,000 inhab. styp 1	15.89	14.84	6,851,000
500,000 and more inhab. styp 2/3/4	8.99	9.64	4,453,000
500,000 and more inh. styp 1	23.42	26.94	12,442,000
Total	100.00	100.00	46,180,000

Table 7: Comparison of the distribution of the Wave 7 sample data and the target distribution (Microcensus 2014) according to birth year.

Year of birth	actual distribution	target distribution	
	net sample	population (Microcensus 2014)	
	%	%	total
1944	1.68	1.82	842,000
1945	1.47	1.39	641,000
1946	1.63	1.57	727,000
1947	1.85	1.82	841,000
1948	1.91	1.96	906,000
1949	2.33	2.12	981,000
1950	2.33	2.18	1,006,000
1951	2.44	2.19	1,009,000
1952	2.59	2.23	1,031,000
1953	2.25	2.23	1,031,000
1954	2.68	2.31	1,066,000
1955	2.35	2.36	1,088,000
1956	3.28	2.45	1,132,000
1957	3.03	2.51	1,159,000
1958	3.44	2.56	1,180,000
1959	3.84	2.65	1,224,000
1960	3.58	2.73	1,258,000
1961	3.47	2.82	1,304,000
1962	3.49	2.86	1,322,000
1963	3.64	2.95	1,360,000
1964	3.69	2.99	1,382,000
1965	3.59	2.97	1,373,000
1966	3.67	2.91	1,343,000
1967	2.98	2.85	1,317,000
1968	2.96	2.77	1,281,000
1969	2.49	2.71	1,250,000
1970	2.42	2.60	1,199,000
1971	1.98	2.51	1,157,000
1972	1.95	2.26	1,043,000
1973	1.75	2.07	954,000
1974	1.43	2.04	942,000
1975	1.37	2.01	930,000
1976	1.38	2.08	959,000

1977	1.56	2.07	954,000
1978	1.38	2.12	981,000
1979	1.55	2.12	977,000
1980	1.45	2.21	1,019,000
1981	1.34	2.22	1,024,000
1982	1.42	2.24	1,035,000
1983	1.66	2.17	1,000,000
1984	1.37	2.10	971,000
1985	1.51	2.09	967,000
1986	1.79	2.16	999,000
Total	100.00	100.00	46,165,000

Table 8: Comparison of the distribution of the Wave 7 sample data and the target distribution (Microcensus 2014) according to country of birth.

Country of birth	actual distribution	target distribution	
	net sample	population (Microcensus 2014)	
	%	%	total
born abroad	7.60	17.97	8,296,000
born in Germany	92.40	82.03	37,869,000
Total	100.00	100.00	46,165,000

Table 9: Results of the logit regression model measuring the participation propensity of individuals in Wave 8 for the ALWA and NEPS 1 subsample.

Variable	Reference	Odds Ratio	P-Value
<i>Subsample</i> NEPS1	ALWA	0.68	0.00
<i>Birth year</i> 1956 – 1969 1970 – 1979 1980 – 1986	1944 – 1955	1.11 0.95 0.67	0.12 0.49 0.00
<i>Gender</i> female	male	1.04	0.27
<i>Country of birth</i> born abroad	born in Germany	0.58	0.00
<i>Marital status</i> unmarried married widowed	divorced	0.77 0.92 1.04	0.00 0.26 0.80
<i>Household size</i> one person two persons	three persons and more	0.95 0.91	0.41 0.05
<i>School qualification</i> ISCED 3ac/4ab ISCED 3b ISCED 5a/6	ISCED 1/2ab	1.87 1.31 2.31	0.00 0.00 0.00

ISCED 5b		1.70	0.00
<i>Federal State</i>	Nordrhein-Westfalen		
Hamburg		1.14	0.34
Niedersachsen		1.12	0.13
Bremen		1.38	0.19
Schleswig-Holstein		0.95	0.64
Hessen		1.18	0.04
Rheinland-Pfalz		0.85	0.75
Baden-Württemberg		1.07	0.28
Bayern		1.05	0.44
Saarland		0.86	0.37
Berlin		1.26	0.04
Brandenburg		1.09	0.43
Mecklenburg-Vorpommern		1.09	0.61
Sachsen		1.39	0.00
Sachsen-Anhalt		0.96	0.75
Thüringen		1.43	0.00
<i>BIK categories</i>	less than 2000 inhab.		
2000 to 5000 inhab.		0.67	0.03
5000 to 20,000 inhab.		0.76	0.09
20,000 to 50,000 inhab.		0.73	0.04
50,000 to 100,000 inhab. (styp 2/3/4)		0.80	0.16
50,000 to 100,000 inhab. (styp 1)		0.79	0.21
100,000 to 500,000 inhab. (styp 2/3/4)		0.74	0.04
100,000 to 500,000 inhab. (styp 1)		0.77	0.08
more than 500,000 inhab. (styp 2/3/4)		0.68	0.02
more than 500,000 inhab. (styp 1)		0.74	0.04
<i>Attempts to contact target</i>		0.99	0.00
Number of cases	12,482		

Table 10: Results of the logit regression model measuring the participation propensity of individuals in Wave 8 for the NEPS 3 subsample.

Variable	Reference	Odds Ratio	P-Value
<i>Birth year</i>	1944 – 1955		
1956 – 1969		1.02	0.83
1970 – 1979		0.95	0.58
1980 – 1986		0.82	0.08
<i>Gender</i>	male		
female		1.01	0.93
<i>Country of birth</i>	born in Germany		
born abroad		0.51	0.00
<i>Marital status</i>	divorced		
unmarried		0.79	0.05
married		1.02	0.85
widowed		1.43	0.08
<i>Household size</i>	three persons and more		
one person		1.01	0.90
two persons		1.14	0.06
<i>School qualification</i>	ISCED 1/2ab		
ISCED 3ac/4ab		1.78	0.00
ISCED 3b		1.35	0.01

ISCED 5a/6		2.16	0.00
ISCED 5b		1.53	0.00
<i>Federal State</i>	Nordrhein-Westfalen		
Hamburg		0.69	0.11
Niedersachsen		1.15	0.21
Bremen		1.84	0.11
Schleswig-Holstein		0.86	0.40
Hessen		0.89	0.37
Rheinland-Pfalz		1.00	0.99
Baden-Württemberg		0.87	0.18
Bayern		1.02	0.87
Saarland		0.74	0.24
Berlin		0.98	0.90
Brandenburg		1.11	0.55
Mecklenburg-Vorpommern		0.78	0.24
Sachsen		1.32	0.07
Sachsen-Anhalt		1.37	0.08
Thüringen		1.35	0.09
<i>BIK categories</i>	less than 2000 inhab.		
2000 to 5000 inhab.		0.71	0.24
5000 to 20,000 inhab.		0.92	0.73
20,000 to 50,000 inhab.		0.80	0.35
50,000 to 100,000 inhab. (styp 2/3/4)		0.64	0.06
50,000 to 100,000 inhab. (styp 1)		0.81	0.49
100,000 to 500,000 inhab. (styp 2/3/4)		0.79	0.32
100,000 to 500,000 inhab. (styp 1)		0.81	0.36
more than 500,000 inhab. (styp 2/3/4)		1.07	0.77
more than 500,000 inhab. (styp 1)		0.82	0.39
<i>Attempts to contact target</i>		0.99	0.00
Number of cases	5,208		

Table 11: Comparison of the distribution of the Wave 8 sample data and the target distribution (Microcensus 2015) according to gender and educational attainment.

Gender and education	actual distribution	target distribution	
	net sample	population (Microcensus 2015)	
	%	%	total
male			
ISCED 1	0.29	1.41	713,000
ISCED 2	1.34	3.72	1,888,000
ISCED 3	23.30	22.61	11,459,000
ISCED 4	1.54	3.33	1,688,000
ISCED 5	21.48	13.57	6,880,000
ISCED 6	1.21	4.96	2,514,000
female			
ISCED 1	0.39	1.64	833,000
ISCED 2	2.94	5.82	2,950,000
ISCED 3	24.83	22.07	11,188,000
ISCED 4	0.95	5.77	2,926,000
ISCED 5	20.95	10.14	5,141,000
ISCED 6	0.77	4.95	2,511,000
Total	100.00	100.00	50,691,000

Table 12: Comparison of the distribution of the Wave 8 sample data and the target distribution (Microcensus 2015) according to birth year and educational attainment.

Birth year and education	actual distribution net sample	target distribution population (Microcensus 2015)	
	%	%	total
1975 – 1986			
ISCED 1	0.15	0.75	371,000
ISCED 2	0.81	2.13	1,054,000
ISCED 3	5.91	9.11	4,504,000
ISCED 4	0.38	3.14	1,552,000
ISCED 5	9.91	6.50	3,217,000
ISCED 6	0.63	3.11	1,540,000
1965 – 1974			
ISCED 1	0.09	0.85	420,000
ISCED 2	0.81	2.24	1,106,000
ISCED 3	12.40	11.61	5,744,000
ISCED 4	0.61	2.75	1,361,000
ISCED 5	11.09	6.21	3,071,000
ISCED 6	0.45	2.51	1,240,000
1956 – 1964			
ISCED 1	0.15	0.75	369,000
ISCED 2	1.22	2.29	1,133,000
ISCED 3	16.11	11.96	5,915,000
ISCED 4	0.89	2.05	1,012,000
ISCED 5	13.08	5.58	2,758,000
ISCED 6	0.45	2.10	1,039,000
1944 – 1955			
ISCED 1	0.29	0.72	354,000
ISCED 2	1.44	2.94	1,454,000
ISCED 3	13.71	12.25	6,060,000
ISCED 4	0.62	1.06	525,000
ISCED 5	8.36	5.29	2,616,000
ISCED 6	0.44	2.12	1,048,000
Total	100.00	100.00	49,463,000

Table 13: Comparison of the distribution of the Wave 8 sample data and the target distribution (Microcensus 2015) according to Federal State.

Federal State	actual distribution net sample	target distribution population (Microcensus 2015)	
	%	%	total
Schleswig-Holstein	2.85	3.42	1,587,000
Hamburg	1.87	2.23	1,035,000
Niedersachsen	10.60	9.62	4,467,000
Bremen	0.70	0.82	380,000
Nordrhein-Westfalen	21.78	21.65	10,047,000

Hessen	7.65	7.52	3,491,000
Rheinland-Pfalz	4.83	4.89	2,268,000
Baden-Württemberg	12.28	12.91	5,992,000
Bayern	15.46	15.66	7,268,000
Saarland	1.26	1.22	568,000
Berlin	3.92	4.35	2,019,000
Brandenburg	3.32	3.16	1,467,000
Mecklenburg-Vorpommern	1.62	2.04	945,000
Sachsen	5.65	4.99	2,315,000
Sachsen-Anhalt	3.00	2.81	1,305,000
Thüringen	3.19	2.72	1,263,000
Total	100.00	100.00	46,417,000

Table 14: Comparison of the distribution of the Wave 8 sample data and the target distribution (Microcensus 2015) according to BIK categories of municipal size.

BIK categories	actual distribution	target distribution	
	net sample	population (Microcensus 2015)	
	%	%	total
less than 2000 inhab.	2.20	1.83	848,000
2000 to 5000 inhab.	2.43	2.53	1,176,000
5000 to 20,000 inhab.	7.88	8.69	4,031,000
20,000 to 50,000 inhab.	11.65	10.96	5,087,000
50,000 to 100,000 inhab. styp 2/3/4	8.76	7.89	3,660,000
50,000 to 100,000 inhab. styp 1	1.93	2.18	1,011,000
100,000 to 500,000 inhab. styp 2/3/4	15.99	14.53	6,745,000
100,000 to 500,000 inhab. styp 1	15.93	14.81	6,875,000
500,000 and more inhab. styp 2/3/4	9.21	9.68	4,492,000
500,000 and more inh. styp 1	24.03	26.90	12,486,000
Total	100.00	100.00	46,180,000

Table 15: Comparison of the distribution of the Wave 8 sample data and the target distribution (Microcensus 2015) according to birth year.

Year of birth	actual distribution	target distribution	
	net sample	population (Microcensus 2015)	
	%	%	total
1944	1.65	1.82	845,000
1945	1.38	1.37	634,000
1946	1.52	1.56	724,000
1947	1.72	1.83	847,000
1948	1.79	1.96	909,000
1949	2.33	2.09	972,000
1950	2.35	2.17	1,008,000
1951	2.36	2.18	1,011,000
1952	2.59	2.22	1,029,000
1953	2.20	2.22	1,029,000

1954	2.64	2.31	1,071,000
1955	2.35	2.36	1,096,000
1956	3.30	2.40	1,114,000
1957	3.06	2.47	1,147,000
1958	3.42	2.53	1,175,000
1959	4.00	2.69	1,249,000
1960	3.72	2.78	1,289,000
1961	3.55	2.83	1,315,000
1962	3.62	2.88	1,337,000
1963	3.63	2.91	1,350,000
1964	3.61	3.00	1,390,000
1965	3.87	2.98	1,385,000
1966	3.53	2.87	1,333,000
1967	3.11	2.87	1,331,000
1968	2.87	2.80	1,298,000
1969	2.57	2.69	1,249,000
1970	2.51	2.53	1,172,000
1971	1.88	2.50	1,159,000
1972	1.91	2.26	1,050,000
1973	1.76	2.09	970,000
1974	1.44	2.05	953,000
1975	1.43	2.05	952,000
1976	1.47	2.11	979,000
1977	1.57	2.09	968,000
1978	1.43	2.13	989,000
1979	1.58	2.08	967,000
1980	1.41	2.23	1,036,000
1981	1.38	2.22	1,040,000
1982	1.42	2.24	1,035,000
1983	1.61	2.13	990,000
1984	1.33	2.13	987,000
1985	1.36	2.15	998,000
1986	1.80	2.22	1,031,000
Total	100.00	100.00	46,407,000

Table 16: Comparison of the distribution of the Wave 8 sample data and the target distribution (Microcensus 2015) according to country of birth.

Country of birth	actual distribution	target distribution	
	net sample	population (Microcensus 2015)	
	%	%	total
born abroad	7.32	18.51	8,590,000
born in Germany	92.68	81.49	37,817,000
Total	100.00	100.00	46,407,000

Table 17: Results of the logit regression model measuring the participation propensity of individuals in Wave 9 for the ALWA and NEPS 1 subsample.

Variable	Reference	Odds Ratio	P-Value
<i>Subsample</i> NEPS1	ALWA	0.70	0.00
<i>Birth year</i> 1956 – 1969 1970 – 1979 1980 – 1986	1944 – 1955	1.08 0.96 0.68	0.22 0.56 0.00
<i>Gender</i> female	male	1.07	0.06
<i>Country of birth</i> born abroad	born in Germany	0.57	0.00
<i>Marital status</i> unmarried married widowed	divorced	0.79 0.97 1.11	0.01 0.73 0.44
<i>Household size</i> one person two persons	three persons and more	0.98 0.89	0.76 0.01
<i>School qualification</i> ISCED 3ac/4ab ISCED 3b ISCED 5a/6 ISCED 5b	ISCED 1/2ab	1.87 1.28 2.36 1.67	0.00 0.00 0.00 0.00
<i>Federal State</i> Hamburg Niedersachsen Bremen Schleswig-Holstein Hessen Rheinland-Pfalz Baden-Württemberg Bayern Saarland Berlin Brandenburg Mecklenburg-Vorpommern Sachsen Sachsen-Anhalt Thüringen	Nordrhein-Westfalen	0.91 1.05 1.90 0.84 1.09 0.98 1.00 1.01 0.86 1.19 1.15 1.02 1.35 0.95 1.35	0.50 0.55 0.07 0.14 0.25 0.81 0.99 0.91 0.37 0.12 0.22 0.90 0.00 0.64 0.01
<i>BIK categories</i> 2000 to 5000 inhab. 5000 to 20,000 inhab. 20,000 to 50,000 inhab. 50,000 to 100,000 inhab. (styp 2/3/4) 50,000 to 100,000 inhab. (styp 1) 100,000 to 500,000 inhab. (styp 2/3/4) 100,000 to 500,000 inhab. (styp 1) more than 500,000 inhab. (styp 2/3/4) more than 500,000 inhab. (styp 1)	less than 2000 inhab.	0.76 0.82 0.84 0.82 0.88 0.81 0.85 0.80 0.79	0.13 0.20 0.25 0.20 0.51 0.15 0.28 0.15 0.11
<i>Attempts to contact target</i>		0.99	0.00
Number of cases	12,482		

Table 18: Results of the logit regression model measuring the participation propensity of individuals in Wave 9 for the NEPS 3 subsample.

Variable	Reference	Odds Ratio	P-Value
<i>Birth year</i>	1944 – 1955		
1956 – 1969		1.05	0.53
1970 – 1979		0.97	0.75
1980 – 1986		0.82	0.08
<i>Gender</i>	male		
female		0.97	0.60
<i>Country of birth</i>	born in Germany		
born abroad		0.41	0.00
<i>Marital status</i>	divorced		
unmarried		0.95	0.63
married		1.08	0.47
widowed		1.44	0.07
<i>Household size</i>	three persons and more		
one person		0.97	0.78
two persons		1.08	0.24
<i>School qualification</i>	ISCED 1/2ab		
ISCED 3ac/4ab		1.94	0.00
ISCED 3b		1.58	0.00
ISCED 5a/6		2.49	0.00
ISCED 5b		1.77	0.00
<i>Federal State</i>	Nordrhein-Westfalen		
Hamburg		0.58	0.02
Niedersachsen		1.26	0.03
Bremen		1.90	0.09
Schleswig-Holstein		0.85	0.35
Hessen		0.90	0.40
Rheinland-Pfalz		0.90	0.46
Baden-Württemberg		0.86	0.13
Bayern		1.10	0.30
Saarland		0.86	0.54
Berlin		1.00	0.97
Brandenburg		1.07	0.72
Mecklenburg-Vorpommern		0.85	0.46
Sachsen		1.23	0.16
Sachsen-Anhalt		1.39	0.07
Thüringen		1.25	0.21
<i>BIK categories</i>	less than 2000 inhab.		
2000 to 5000 inhab.		0.67	0.16
5000 to 20,000 inhab.		0.71	0.16
20,000 to 50,000 inhab.		0.71	0.15
50,000 to 100,000 inhab. (styp 2/3/4)		0.59	0.03
50,000 to 100,000 inhab. (styp 1)		0.89	0.70
100,000 to 500,000 inhab. (styp 2/3/4)		0.64	0.05
100,000 to 500,000 inhab. (styp 1)		0.73	0.17
more than 500,000 inhab. (styp 2/3/4)		0.82	0.40
more than 500,000 inhab. (styp 1)		0.68	0.09
<i>Attempts to contact target</i>		0.99	0.00
Number of cases	5,208		

Table 19: Comparison of the distribution of the Wave 9 sample data and the target distribution (Microcensus 2016) according to gender and educational attainment.

Gender and education	actual distribution	target distribution	
	net sample	population (Microcensus 2016)	
	%	%	total
male			
ISCED 1	0.28	1.48	753,000
ISCED 2	0.38	3.88	1,981,000
ISCED 3	7.43	22.04	11,251,000
ISCED 4	1.33	3.39	1,730,000
ISCED 5	38.85	13.74	7,015,000
ISCED 6	0.88	5.08	2,588,000
female			
ISCED 1	0.67	1.71	874,000
ISCED 2	0.55	5.86	2,989,000
ISCED 3	7.53	21.49	10,966,000
ISCED 4	0.95	5.96	3,041,000
ISCED 5	40.78	10.29	5,252,000
ISCED 6	0.38	5.08	2,595,000
Total	100.00	100.00	51,037,000

Table 20: Comparison of the distribution of the Wave 9 sample data and the target distribution (Microcensus 2016) according to birth year and educational attainment.

Birth year and education	actual distribution	target distribution	
	net sample	population (Microcensus 2016)	
	%	%	total
1975 – 1986			
ISCED 1	0.12	0.84	417,000
ISCED 2	0.06	2.23	1,108,000
ISCED 3	1.20	8.92	4,442,000
ISCED 4	0.27	3.23	1,607,000
ISCED 5	15.99	6.67	3,322,000
ISCED 6	0.10	3.27	1,627,000
1965 – 1974			
ISCED 1	0.09	0.89	442,000
ISCED 2	0.22	2.30	1,147,000
ISCED 3	2.91	11.46	5,704,000
ISCED 4	0.62	2.84	1,415,000
ISCED 5	21.39	6.27	3,121,000
ISCED 6	0.25	2.56	1,274,000
1956 – 1964			
ISCED 1	0.20	0.76	379,000
ISCED 2	0.28	2.34	1,165,000
ISCED 3	4.36	11.82	5,882,000
ISCED 4	0.63	2.10	1,043,000
ISCED 5	26.30	5.71	2,842,000
ISCED 6	0.27	2.14	1,065,000
1944 – 1955			
ISCED 1	0.54	0.71	351,000

ISCED 2	0.38	2.94	1,462,000
ISCED 3	6.49	11.58	5,762,000
ISCED 4	0.75	1.08	538,000
ISCED 5	15.94	5.23	2,603,000
ISCED 6	0.63	2.12	1,056,000
Total	100.00	100.00	49,774,000

Table 21: Comparison of the distribution of the Wave 9 sample data and the target distribution (Microcensus 2016) according to Federal State.

Federal State	actual distribution net sample	target distribution population (Microcensus 2016)	
	%	%	total
Schleswig-Holstein	2.77	3.43	1,602,000
Hamburg	1.67	2.22	1,036,000
Niedersachsen	10.66	9.58	4,471,000
Bremen	0.74	0.78	366,000
Nordrhein-Westfalen	22.05	21.66	10,112,000
Hessen	7.57	7.49	3,498,000
Rheinland-Pfalz	4.73	4.94	2,305,000
Baden-Württemberg	12.09	12.95	6,045,000
Bayern	15.61	15.63	7,297,000
Saarland	1.29	1.23	573,000
Berlin	3.87	4.35	2,030,000
Brandenburg	3.42	3.19	1,487,000
Mecklenburg-Vorpommern	1.65	2.02	945,000
Sachsen	5.66	4.98	2,326,000
Sachsen-Anhalt	3.05	2.81	1,311,000
Thüringen	3.17	2.72	1,271,000
Total	100.00	100.00	46,675,000

Table 22: Comparison of the distribution of the Wave 9 sample data and the target distribution (Microcensus 2016) according to BIK categories of municipal size.

BIK categories	actual distribution net sample	target distribution population (Microcensus 2016)	
	%	%	total
less than 2000 inhab.	2.17	1.74	812,000
2000 to 5000 inhab.	2.46	2.52	1,177,000
5000 to 20,000 inhab.	7.73	8.61	4,018,000
20,000 to 50,000 inhab.	11.94	11.04	5,152,000
50,000 to 100,000 inhab. styp 2/3/4	8.72	7.82	3,651,000
50,000 to 100,000 inhab. styp 1	2.01	2.14	999,000
100,000 to 500,000 inhab. styp 2/3/4	15.89	15.01	7,003,000
100,000 to 500,000 inhab. styp 1	16.17	14.42	6,729,000
500,000 and more inhab. styp 2/3/4	9.32	9.71	4,530,000
500,000 and more inh. styp 1	23.60	26.99	12,595,000
Total	100.00	100.00	46,666,000

Table 23: Comparison of the distribution of the Wave 9 sample data and the target distribution (Microcensus 2016) according to birth year.

Year of birth	actual distribution net sample	target distribution population (Microcensus 2016)	
	%	%	total
1944	1.67	1.72	802,000
1945	1.37	1.29	600,000
1946	1.55	1.49	695,000
1947	1.70	1.70	792,000
1948	1.74	1.86	868,000
1949	2.24	2.03	948,000
1950	2.30	2.11	983,000
1951	2.45	2.11	986,000
1952	2.60	2.25	1,048,000
1953	2.23	2.19	1,024,000
1954	2.68	2.28	1,063,000
1955	2.22	2.33	1,087,000
1956	3.35	2.40	1,118,000
1957	3.12	2.50	1,168,000
1958	3.31	2.50	1,165,000
1959	4.03	2.67	1,244,000
1960	3.73	2.76	1,287,000
1961	3.57	2.87	1,339,000
1962	3.57	2.89	1,349,000
1963	3.80	3.06	1,430,000
1964	3.57	3.00	1,398,000
1965	3.69	3.03	1,414,000
1966	3.57	2.98	1,392,000
1967	3.01	2.88	1,343,000
1968	2.98	2.84	1,326,000
1969	2.57	2.68	1,253,000
1970	2.61	2.48	1,158,000
1971	1.88	2.47	1,151,000
1972	1.89	2.34	1,093,000
1973	1.77	2.07	967,000
1974	1.51	2.05	956,000
1975	1.42	2.02	942,000
1976	1.44	2.07	965,000
1977	1.65	2.08	969,000
1978	1.37	2.15	1,005,000
1979	1.58	2.16	1,006,000
1980	1.41	2.26	1,056,000
1981	1.39	2.24	1,044,000
1982	1.40	2.26	1,056,000
1983	1.51	2.27	1,061,000
1984	1.36	2.18	1,018,000
1985	1.45	2.23	1,043,000
1986	1.74	2.26	1,056,000
Total	100.00	100.00	46,668,000

Table 24: Comparison of the distribution of the Wave 9 sample data and the target distribution (Microcensus 2016) according to country of birth.

Country of birth	actual distribution	target distribution	
	net sample	population (Microcensus 2016)	
	%	%	total
born abroad	6.93	19.38	9,043,000
born in Germany	93.07	80.62	37,625,000
Total	100.00	100.00	46,668,000