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Research Data

Samples, Weights, and Nonresponse: Wave 10 of the Student Sample of the National Educational Panel Study

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1 Summary of Study

This report refers Wave 10 of the Scientific Use File (SUF) doi:10.5157/NEPS:SC5:10.0.0 of the survey "first-year undergraduate students in higher education in 2011" (Starting Cohort 5, SC5) conducted within the National Educational Panel Study (NEPS). The current SUF version is available under DOI:10.5157/NEPS:SC5:10.0.0.[1] This paper supplements the previous NEPS Survey Paper by Zinn, Steinhauer, and Aßmann (2017) and the Wave 9 weighting documentation (Zinn, 2017), which give detailed information on the applied sampling procedure, the derivation of design weights, their successive adjustments, and the derivation of panel weights for all of the previous waves.

Table 1 summarizes the study numbers, the survey modes, the periods of the studies as well as the numbers of participants in each panel wave available in the current SUF. The studies B52 (Wave 1), B55 (Wave 3), B59 (Wave 5), B94 (Wave 7), B111 (Wave 9) and B112 (Wave 10) were conducted via computer-assisted telephone interviews (CATIs). The studies B54 (Wave 2), B56 (Wave 4), B58 (Wave 6), and B95 (Wave 8) are online surveys. The study B53 (Wave 1 Test) involves competence tests that have been conducted in parallel to the telephone interviews of the B52 study. Table 2 gives the wave-specific number of participants, temporary dropouts, and final drop-outs in and after the survey.

Table 1: Attribution of studies to panel waves.

Wave	Study	Survey Time
Wave 1	B52 CATI	Winter 2010/11
Wave 1 Test	B53 Test	Winter 2010/11
Wave 2	B54 CAWI	Autumn 2011
Wave 3	B55 CATI	Spring 2012
Wave 4	B56 CAWI	Autumn 2012
Wave 5	B59 CATI	Spring 2013/Summer 2013
Wave 5 Test	B57 Test	Spring 2013/Summer 2013
Wave 6	B58 CAWI	Autumn 2013
Wave 7	B94 CATI	Summer 2014
Wave 7 Test	B90 Test	Winter/Spring 2014
Wave 8	B95 CAWI	Autumn 2014
Wave 9	B111 CATI	Spring/Summer 2015
Wave 10	B112 CATI	Spring/Summer 2016

[1] For general information on the NEPS, see Blossfeld, Roßbach, and von Maurice (2011). More detailed information is available in the documentation section on the homepage.

2 Case Numbers, Respondents, Nonrespondents and Final Dropouts, Waves 1 to 10

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

Wave	Sub-sample	Panel sample	Gross sample	Participants	Participation proportion	Temporary dropouts	Final dropouts (within wave)	Final dropouts (after wave)
1	**Total**	-	31082	17910	0.576	0	13172	0
	LA	-	7864	5555	0.706	0	2309	0
	UNI	-	11904	8024	0.674	0	3880	0
	FH	-	7460	3894	0.522	0	3566	0
	PR	-	3854	437	0.113	0	3417	0
1T	**Total**	17910	17910	5949	0.332	11942	19	0
	LA	5555	5555	2021	0.364	3527	7	0
	UNI	8024	8024	2715	0.338	5304	5	0
	FH	3894	3894	1115	0.286	2772	7	0
	PR	437	437	98	0.224	339	0	0
2	**Total**	17891	17891	12273	0.686	5591	27	13
	LA	5548	5548	3839	0.692	1701	8	2
	UNI	8019	8019	5609	0.699	2395	15	8
	FH	3887	3887	2510	0.646	1374	3	3
	PR	437	437	315	0.721	121	1	0
3	**Total**	17851	17851	13113	0.735	4560	178	33
	LA	5538	5538	4253	0.768	1235	50	10
	UNI	7996	7995	5841	0.731	2077	77	11
	FH	3881	3881	2701	0.696	1135	45	10
	PR	436	436	318	0.729	112	6	2
4	**Total**	17640	17640	11202	0.635	6424	14	19
	LA	5478	5478	3695	0.675	1780	3	2
	UNI	7908	7908	5003	0.633	2899	6	12

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

Wave	Sub-sample	Panel sample	Gross sample	Participants	Participation proportion	Temporary dropouts	Final dropouts (within wave)	Final dropouts (after wave)
	FH	3826	3826	2219	0.580	1602	5	5
	PR	428	428	285	0.666	143	0	0
5	**Total**	17607	17607	12694	0.721	4620	293	3
	LA	5473	5473	4186	0.765	1215	72	0
	UNI	7890	7890	5615	0.712	2149	126	0
	FH	3816	3816	2582	0.677	1145	89	3
	PR	428	428	311	0.727	111	6	0
5T	**Total**	17311	17311	8767	0.506	8537	6	60
	LA	5401	5401	2907	0.538	2493	1	17
	UNI	7764	7764	3963	0.510	3799	2	30
	FH	3724	3724	1687	0.453	2035	2	10
	PR	422	422	210	0.498	211	1	3
6	**Total**	17245	17245	10183	0.590	7039	23	6
	LA	5383	5383	3352	0.623	2027	4	1
	UNI	7732	7732	4594	0.594	3123	15	4
	FH	3712	3712	1975	0.532	1733	4	1
	PR	418	418	262	0.627	156	0	0
7T	**Total**	17216	600	446	0.743	130	24	2
	LA	5378	57	43	0.754	14	0	0
	UNI	7713	343	261	0.761	68	14	0
	FH	3707	158	111	0.703	38	9	2
	PR	418	42	31	0.738	10	1	0
7	**Total**	17190	14456	9611	0.665	4426	419	2106
	LA	5378	2639	1924	0.729	652	63	564
	UNI	7699	7699	5133	0.667	2385	181	978

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

Wave	Sub-sample	Panel sample	Gross sample	Participants	Participation proportion	Temporary dropouts	Final dropouts (within wave)	Final dropouts (after wave)
	FH	3696	3696	2277	0.616	1264	155	519
	PR	417	417	277	0.664	120	20	45
8	**Total**	14665	14664	8629	0.588	6024	11	1
	LA	4751	4751	2933	0.617	1817	1	0
	UNI	6540	6539	3945	0.603	2587	7	0
	FH	3022	3022	1546	0.512	1473	3	1
	PR	352	352	205	0.582	147	0	0
9	**Total**	14653	14652	10096	0.689	4322	234	920
	LA	4750	4750	3430	0.722	1252	68	276
	UNI	6533	6532	4522	0.692	1936	74	411
	FH	3018	3018	1898	0.629	1039	81	214
	PR	352	352	246	0.699	95	11	19
10	**Total**	13499	13498	9090	0.673	4191	217	1208
	LA	4406	4406	3072	0.697	1275	59	457
	UNI	6048	6047	4149	0.686	1817	81	452
	FH	2723	2723	1650	0.606	1001	72	276
	PR	322	322	219	0.680	98	5	23

Notes: (i) *LA*: students in teacher education, *UNI*: students at public university without *LA*, *FH*: students at public universities of applied science, *PR*: students at private universities, (ii) 'T' indicates testing, (iii) Discrepancies between the sizes of the gross and the panel cohort samples are due to the short time periods available between forming the wave-specific gross samples and recording all the final drop-outs from previous waves. In some cases, the study of the previous wave was still running while the next wave-specific study already started.

3 Weighting Adjustments for Wave Participation

To mirror the recruitment and participation process within the weighting adjustments, consecutive modeling of the decision and participation process is performed. Up to now, nine steps occurred. The first one corresponds to the sampling of universities and fields of study, and to the recruitment of students. Here, design weights compensate for unequal selection probabilities and selectivity due to initial nonresponse. Then, starting from Wave 2, nonresponse adjusted design weights are derived for each wave. For this purpose, logistic regression models are used. On their basis nonresponse models are estimated and participation probabilities are predicted. These are used as adjustment factors to derive cross-sectional and longitudinal survey weights. The results of the analyses corresponding to the initial wave and all subsequent waves until Wave 8 are given in Zinn et al. (2017) and for Wave 9 in Zinn (2017). This paper also describes the procedures applied to derive design weights as well as cross-sectional and longitudinal survey weights. Table 3 shows the estimated model for Wave 10. Unsurprisingly, we find that the frequency of participation is the driving force in explaining participation behavior. The more often a person participated in previous waves the higher is the probability of participating again.[2] Likewise, persons who once started studying teacher education show a positive and highly significant propensity to participate in Wave 10. A further positive effect has been detected for students who started their academic carrier at university, and not at a school of applied science. Slightly negative effects are found for men, persons living in Western Germany, persons with migration background (measured by generation status), persons who did not report on household size, and for persons for whom no information exists on their university admission certificate. As compared to Wave 9, the response pattern in Wave 10 did not notably change.

4 Summary of Weights and Advice Regarding the Usage of Weights

Table 4 lists the types of weights provided for SUF release version 10-0-0 and Table 5 gives some summary statistics of the weights provided. All weights are provided in a trimmed and standardized form. For Wave 1, additionally a set of extrapolated cross-sectional weights is given allowing extrapolating sample distributions to the population level of first-year students in the winter semester 2010/2011 according to field of study, type of institution, sex, nationality, and kind of funding. No general recommendation for the usage of sampling weights can be given. However, some advices are given in Zinn et al. (2017) and in Zinn, Würbach, Steinhauer, and Hammon (2018).

[2] The associated variable is coded as follows: always (permanent participation in all preceding waves), often (no permanent participation but participation in more than 0.6 percent of all preceding waves), rare (otherwise).

Table 3: Modeling Participation in Wave 10 (i.e., Study B112)

Variable	Reference Category	Estimated	P-Value
Participation in previous waves	always		
often		-2.085	<0.001***
seldom		-5.090	<0.001***
University	no		
yes		0.215	0.005**
Gender	female		
male		0.191	0.003**
Teacher Education	no		
yes		0.290	0.003**
Nontraditional Admission	no		
yes		0.065	0.793
missing		-0.431	0.042*
Kids in Household	no		
yes		0.160	0.189
missing		-0.141	0.390
Reading Competence Wave 1	low		
Lower medium		-0.113	0.194
Upper medium		-0.218	0.044*
high		-0.301	0.001***
missing		-0.001	0.986
Household Size	one person		
two persons		-0.110	0.130
more than two persons		0.068	0.268
missing		-1.303	<0.001***
Region	East		
West		-0.107	0.049*
Educational Attainment Mother	1a, 1b, 2b		
1c, 2a		0.104	0.203
2a		0.090	0.342
3a, 3b		0.208	0.100
missing		0.180	0.036*
Educational Attainment Father	1a, 1b, 2b		
1c, 2a		-0.138	0.220
2a		-0.199	0.129
3a, 3b		-0.067	0.572
missing		-0.061	0.587
Birth Year	<1989		
1989/10		0.080	0.098.
>1990		0.008	0.903
School-leaving Qualification	no *Abitur*		
German *Abitur*		-0.004	0.985
Nongerman *Abitur*		0.136	0.652
missing		-0.097	0.668
Migration Background	Generation Status $\geq$ 3		
Generation Status < 3		-0.144	0.005**
Number of cases	17,907†		

Notes: † Three of the 17910 students of the Wave 1 panel cohort were abroad at panel start. Thus, per definition they are not part of the SC5 target population. Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

Table 4: Types of weights provided.

Type of weight	Label
Weights of strata	`w_h`
Weights of students participating in B52	`w_t1`
Weights (extrapolated) of students participating in B52	`w_t1ext`
Weights of students participating in B53	`w_t1comp`
Weights of students participating in B54	`w_t2`
Weights of students participating in B55	`w_t3`
Weights of students participating in B56	`w_t4`
Weights of students participating in B59	`w_t5`
Weights of students participating in B58	`w_t6`
Weights of students participating in B94	`w_t7`
Weights of students participating in B111	`w_t9`
Weights of students participating in B112	`w_t10`
Weights of students participating in all online studies	`w_t12468`
Weights of students participating in the telephone interviews	`w_t1357910`
Weights of students participating in all studies so far	`w_t12345678910`

Table 5: Summary Statistics for (Trimmed and Standardized) Weights.

Label of weight	Number	Min.	Lower Quart.	Median	Mean	Upper Quart.	Max.
`w_h`	11,544	0.008	0.304	0.817	1.000	1.237	4.191
`w_t1`	17,910	0.009	0.329	0.997	1.000	1.328	3.386
`w_t1ext`	17,910	0.174	6.020	18.270	18.471	24.327	325.273
`w_t1comp`	5,949	0.146	0.302	0.825	1.000	1.299	4.134
`w_t2`	12,271[a]	0.009	0.348	0.920	1.000	1.331	3.676
`w_t3`	13,110[b]	0.008	0.308	0.875	1.000	1.275	3.917
`w_t4`	11,200[a]	0.008	0.308	0.835	1.000	1.277	4.117
`w_t5`	12,694[b]	0.009	0.302	0.871	1.000	1.269	4.012
`w_t6`	10,182[c]	0.017	0.319	0.798	1.000	1.277	4.257
`w_t7`	9,545[a]	0.007	0.578	0.795	1.000	1.118	3.811
`w_t8`	8,628[c]	0.011	0.271	0.752	1.000	1.146	4.673
`w_t9`	10,095[c]	0.008	0.312	0.836	1.000	1.256	4.134
`w_t10`	9,089	0.008	0.304	0.817	1.000	1.237	4.191
`w_t12468`	5,852[c]	0.042	0.301	0.695	1.000	1.184	4.696
`w_t1357910`	5,257[c]	0.008	0.489	0.721	1.000	1.073	4.313
`w_t12345678910`	2,869[c]	0.188	0.524	0.839	1.000	1.329	3.494

Notes: a. For two of the participants no weights are provided since they studied abroad at panel start (in Wave 1). Thus for them no calibrated weights can be derived. b. For three of the participants no weights are provided since they studied abroad at panel start (in Wave 1). Thus for them no calibrated weights can be derived. c. For one participant no weight is provided since she/he studied abroad at panel start (in Wave 1). Thus for her/him no calibrated weight can be derived.

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