

NEPS

National Educational Panel Study

Ariane Würbach

Samples, Weights and Nonresponse

NEPS Starting Cohort 5 — First-Year Students
From Higher Education to the Labor Market

Wave 19

Research Data

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1 Summary of Study

This report refers to Wave 19 of the Scientific Use File (SUF) of the survey “first-year undergraduate students in higher education in 2011” (Starting Cohort 5) conducted within the National Educational Panel Study (NEPS). The current SUF 19.0.0 of the First-Year Students sample is available online at [DOI:10.5157/NEPS:SC5:19.0.0](https://doi.org/10.5157/NEPS:SC5:19.0.0) (NEPS Network, 2022).¹ This paper supplements the previous NEPS Survey Paper by Zinn et al., 2017 as well as the Wave 9 up to Wave 18 weighting documentations (Würbach, 2020a, 2020b, 2023; Ziesmer, 2021a, 2022a, 2022b; Zinn, 2017, 2018a, 2018b, 2019), 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), B112 (Wave 10), B138 (Wave 13), B140 (Wave 15), B142 (Wave 16), and B161 (Wave 18) were conducted via computer-assisted telephone interviews (CATIs). The studies B54 (Wave 2), B56 (Wave 4), B58 (Wave 6), B95 (Wave 8), B113 (Wave 11) and B139 (Wave 14), and B143 (Wave 17) 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. In study B114 (Wave 12) a mixed mode design was applied: participants could choose between being interviewed and tested via CATI/CAWI or CAPI. And in study B162 (Wave 19) participants were obliged to conduct a CATI and a CAWI for full participation. For each wave weights are available for those persons that participated in an interview. Weights for persons participating in competence tests are only available for Wave 1 (i.e. study B53). Weights are provided for participants where data is available for the interview, no weights are provided for persons who only attended the competence tests in Wave 5 (study B57), Wave 7 (study B90), and Wave 12 (study B114). Table 2 gives the wave-specific number of participants, temporary dropouts, and final drop-outs in and after the survey.

¹For general information on the NEPS, see Blossfeld et al., 2011 and Blossfeld and Roßbach, 2019. More detailed information is available in the documentation section on the [homepage](#).

Table 1: Attribution of studies to panel waves.

Wave	Study number	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/Summer 2013
Wave 5 Test	B57 Test	Spring/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
Wave 11	B113 CAWI	Autumn 2016
Wave 12	B114 CAWI	Spring/Summer/Autumn 2017
Wave 13	B138 CATI	Spring/Summer 2018
Wave 14	B139 CAWI	Autumn 2018
Wave 15	B140 CATI	Spring/Summer 2019
Wave 16	B142 CATI	Spring/Summer 2020
Wave 17	B143 CAWI	Winter 2020/21
Wave 18	B161 CATI	Spring/Summer 2021
Wave 19	B162 CATI/CAWI	Spring/Summer 2022

2 Panel progress

The following Table 2 details the panel progress of Starting Cohort 5 by differentiating participants, temporary dropouts, and final dropouts for each group separately and in total. Final dropouts are separated into final dropouts due to refusal during the survey period and final dropouts between two consecutive waves. Starting with Wave 7, the number of final dropouts, which have not participated in three consecutive CATIs is reported in the corresponding footnotes.

Table 2: Panel progress of Starting Cohort 5 by wave.

Wave	Sub-sample	Panel Cohort		Status at the end of the wave				
		Panel sample	Gross sample	Participants	Participation proportion	Temporary dropouts	Final dropout (within wave)	Final dropout (after wave)
1	Total	-	31082	17909	0.576	-	0	0
	LA	-	7864	5555	0.706	-	0	0
	UNI	-	11904	8023	0.674	-	0	0
	FH	-	7460	3894	0.522	-	0	0
	PR	-	3854	437	0.113	-	0	0
1T	Total	17909	17909	5949	0.332	11941	19	0
	LA	5555	5555	2021	0.364	3527	7	0
	UNI	8023	8023	2715	0.338	5303	5	0
	FH	3894	3894	1115	0.286	2772	7	0
	PR	437	437	98	0.224	339	0	0
2	Total	17890	17890	12272	0.686	5591	27	13
	LA	5548	5548	3839	0.692	1701	8	2
	UNI	8018	8018	5608	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	17850	17850	13113	0.735	4557	180	31
	LA	5538	5538	4253	0.768	1234	51	9
	UNI	7995	7995	5841	0.731	2076	78	10
	FH	3881	3881	2701	0.696	1135	45	10
	PR	436	436	318	0.729	112	6	2
4	Total	17639	17639	11202	0.635	6423	14	19
	LA	5478	5478	3695	0.675	1780	3	2
	UNI	7907	7907	5003	0.633	2898	6	12
	FH	3826	3826	2219	0.580	1602	5	5
	PR	428	428	285	0.666	143	0	0

Table 2: Panel progress of Starting Cohort 5 by wave.

Wave	Sub-sample	Panel Cohort		Status at the end of the wave				
		Panel sample	Gross sample	Participants	Participation proportion	Temporary dropouts	Final dropout (within wave)	Final dropout (after wave)
5	Total	17606	17606	12693	0.721	4620	293	3
	LA	5473	5473	4186	0.765	1215	72	0
	UNI	7889	7889	5614	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	17310	17310	8766	0.506	8538	6	60
	LA	5401	5401	2907	0.538	2493	1	17
	UNI	7763	7763	3962	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	17244	17244	10182	0.590	7041	21	6
	LA	5383	5383	3352	0.623	2028	3	1
	UNI	7731	7731	4593	0.594	3124	14	4
	FH	3712	3712	1975	0.532	1733	4	1
	PR	418	418	262	0.627	156	0	0
7T	Total	17217	600	339	0.565	235	26	1
	LA	5379	57	38	0.667	18	1	0
	UNI	7713	343	202	0.589	126	15	0
	FH	3707	158	77	0.487	72	9	1
	PR	418	42	22	0.524	19	1	0
7	Total	17190	14464	9610	0.664	4432	422	^a 2104
	LA	5378	2653	1924	0.725	666	63	564
	UNI	7698	7697	5132	0.667	2382	183	976
	FH	3697	3697	2277	0.616	1264	156	519
	PR	417	417	277	0.664	120	20	45

Table 2: Panel progress of Starting Cohort 5 by wave.

Wave	Sub-sample	Panel Cohort		Status at the end of the wave				
		Panel sample	Gross sample	Participants	Participation proportion	Temporary dropouts	Final dropout (within wave)	Final dropout (after wave)
8	Total	14664	14664	8628	0.588	6025	11	1
	LA	4751	4751	2933	0.617	1817	1	0
	UNI	6539	6539	3944	0.603	2588	7	0
	FH	3022	3022	1546	0.512	1473	3	1
	PR	352	352	205	0.582	147	0	0
9	Total	14652	14652	10096	0.689	4322	234	^b 920
	LA	4750	4750	3430	0.722	1252	68	276
	UNI	6532	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	13498	13498	9089	0.673	4190	219	^c 1207
	LA	4406	4406	3072	0.697	1275	59	457
	UNI	6047	6047	4148	0.686	1817	82	451
	FH	2723	2723	1650	0.606	1001	72	276
	PR	322	322	219	0.680	97	6	23
11	Total	12072	12072	7020	0.582	5041	11	7
	LA	3890	3890	2232	0.574	1654	4	2
	UNI	5514	5514	3396	0.616	2115	3	4
	FH	2375	2375	1225	0.516	1146	4	1
	PR	293	293	167	0.570	126	0	0
12	Total	12054	12054	8550	0.709	3042	462	^d 726
	LA	3884	3884	2866	0.738	889	129	126
	UNI	5507	5507	3902	0.709	1411	194	367
	FH	2370	2370	1576	0.665	666	128	218
	PR	293	293	206	0.703	76	11	15

Table 2: Panel progress of Starting Cohort 5 by wave.

Wave	Sub-sample	Panel Cohort		Status at the end of the wave				
		Panel sample	Gross sample	Participants	Participation proportion	Temporary dropouts	Final dropout (within wave)	Final dropout (after wave)
13	Total	10866	10866	7293	0.671	3315	258	708
	LA	3629	3629	2418	0.666	1122	89	250
	UNI	4946	4946	3392	0.686	1450	104	294
	FH	2024	2024	1296	0.640	670	58	147
	PR	267	267	187	0.700	73	7	17
14	Total	9900	9900	5161	0.521	4732	7	4
	LA	3290	3290	1673	0.509	1615	2	2
	UNI	4548	4548	2479	0.545	2065	4	1
	FH	1819	1819	881	0.484	937	1	1
	PR	243	243	128	0.527	115	0	0
15	Total	9889	9889	6531	0.660	3115	243	^e 712
	LA	3286	3286	2134	0.649	1065	87	238
	UNI	4543	4543	3087	0.680	1355	101	315
	FH	1817	1817	1139	0.627	627	51	142
	PR	243	243	171	0.704	68	4	17
16	Total	8934	8934	6218	0.696	2537	179	^f 812
	LA	2961	2961	2038	0.688	853	70	280
	UNI	4127	4127	2930	0.710	1129	68	366
	FH	1624	1624	1077	0.663	515	32	152
	PR	222	222	173	0.779	40	9	14

Table 2: Panel progress of Starting Cohort 5 by wave.

Wave	Sub-sample	Panel Cohort		Status at the end of the wave				
		Panel sample	Gross sample	Participants	Participation proportion	Temporary dropouts	Final dropout (within wave)	Final dropout (after wave)
17	Total	7943	7943	5284	0.665	2650	9	1
	LA	2611	2611	1707	0.654	903	1	0
	UNI	3693	3693	2523	0.683	1162	8	1
	FH	1440	1440	912	0.633	528	0	0
	PR	199	199	142	0.714	57	0	0
18	Total	7933	7933	5991	0.755	1830	112	^g 552
	LA	2610	2610	1937	0.742	643	30	193
	UNI	3684	3684	2845	0.772	786	53	230
	FH	1440	1440	1053	0.731	362	25	120
	PR	199	199	156	0.784	39	4	9
19	Total	7269	7269	5662	0.779	1519	88	–
	LA	2387	2387	1800	0.754	558	29	–
	UNI	3401	3401	2714	0.798	642	45	–
	FH	1295	1295	995	0.768	288	12	–
	PR	186	186	153	0.823	31	2	–
	CAWI	5662	5662	5117	0.904	545	–	–

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. Students that were declared as final drop-outs because of not having participated in three consecutive CATIs: ^a2,087 after Wave 7, ^b886 after Wave 9, ^c1,178 after Wave 10, ^d710 after Wave 12, ^e694 after Wave 15, ^f689 after Wave 16, and ^g545 after Wave 18.

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. The first step in this process 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), for Wave 9 in Zinn (2017), for Wave 10 in Zinn (2018a), for Wave 11 in Zinn (2018b), for Wave 12 in Zinn (2019), for Wave 13 in Würbach (2020a), for Wave 14 in Würbach (2020b), for Wave 15 in Ziesmer (2021b), for Wave 16 in Ziesmer (2022a), for Wave 17 in Ziesmer (2022b), and for Wave 18 in Würbach (2023). In Zinn et al. (2017) also the procedures applied to derive design weights as well as the cross-sectional and longitudinal survey weights is described.

Table 3 and Table 4 show the estimated models for Wave 19, the first model returns the response propensities for participation in CATI only, and the second model the response propensities for participation in CATI and CAWI. Previous wave participation, measured as frequency, is the primary factor in explaining current participation behavior in both models. The more often a person participated in previous waves the higher is the probability for participation in the current wave.² Male students have a significantly higher participation propensities for overall participation (CATI only) compared to female students. This effect becomes less important for participation in both modes, CATI and CAWI.

²The associated variable is coded as follows: always/very often (participation in seventeen to fifteen waves), often (participation in fourteen to ten waves), seldom (otherwise).

Table 3: Modeling Participation in Wave 19, CATI only (i.e., Study B162).

Variable	Reference Category	Estimate	SE
Participation in previous waves	always/very often		
often		-2.426***	0.053
seldom		-7.169***	0.165
University	no		
yes		0.029	0.071
Gender	female		
male		0.222***	0.054
Teacher Education	no		
yes		0.009	0.065
Funding	private		
public		-0.098	0.162
Field of Study	Field 9		
Field 1		-0.119	0.202
Field 2		0.066	0.079
Field 3		0.066	0.071
Field 4		-0.133	0.120
Field 5		-0.500	0.452
Field 6		-0.009	0.185
Field 7		0.035	0.095
Field 8		-0.227	0.164
Reading Competence Wave 1	low		
Lower medium		-0.212	0.110
Upper medium		-0.099	0.106
high		-0.011	0.108
missing		-0.024	0.081
Region	East		
West		-0.148*	0.063
Educational Attainment Mother	1a, 1b, 2b		
1c, 2a		-0.113	0.113
2a		-0.147	0.124
3a, 3b		0.185	0.163
missing		-0.102	0.123
Educational Attainment Father	1a, 1b, 2b		
1c, 2a		0.037	0.141
2a		0.244	0.153
3a, 3b		0.135	0.159
missing		0.358*	0.146
Birth Year	< 1989		
1989/90		-0.019	0.064
> 1990		0.031	0.073
Migration Background	Generation Status \geq 3		
Generation Status < 3		-0.021	0.073
Sample size	17,906 ^a		

Notes: ^a Three of the 17909 students of the Wave 1 panel cohort were abroad at panel start. Thus, per definition they are not part of the SC5 target population.

***, **, and * denote significance at the 0.1%, 1%, and 5% level, respectively.

Table 4: Modeling Participation in Wave 19, CATI and CAWI (i.e., Study B162).

Variable	Reference Category	Estimate	SE
Participation in previous waves	always/very often		
often		-2.355***	0.050
seldom		-7.038***	0.185
University	no		
yes		0.064	0.071
Gender	female		
male		0.116*	0.054
Teacher Education	no		
yes		-0.010	0.064
Funding	private		
public		0.017	0.160
Field of Study	Field 9		
Field 1		-0.279	0.203
Field 2		0.099	0.078
Field 3		-0.060	0.070
Field 4		-0.102	0.118
Field 5		-0.580	0.459
Field 6		0.032	0.184
Field 7		0.014	0.094
Field 8		-0.119	0.162
Reading Competence Wave 1	low		
Lower medium		-0.203	0.108
Upper medium		-0.011	0.104
high		0.075	0.106
missing		-0.092	0.079
Region	East		
West		-0.108	0.062
Educational Attainment Mother	1a, 1b, 2b		
1c, 2a		-0.047	0.114
2a		-0.139	0.124
3a, 3b		0.213	0.162
missing		-0.051	0.123
Educational Attainment Father	1a, 1b, 2b		
1c, 2a		0.052	0.142
2a		0.200	0.154
3a, 3b		0.182	0.160
missing		0.299*	0.146
Birth Year	< 1989		
1989/90		-0.022	0.063
> 1990		0.031	0.072
Migration Background	Generation Status \geq 3		
Generation Status < 3		0.014	0.072
Sample size	17,906 ^a		

Notes: ^a Three of the 17909 students of the Wave 1 panel cohort were abroad at panel start. Thus, per definition they are not part of the SC5 target population.

***, **, and * denote significance at the 0.1%, 1%, and 5% level, respectively.

4 Summary of Weights

Table 5 lists the types of weights provided for SUF release version 19-0-0 and Table 6 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 the field of study, institution type, 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 et al. (2018).

Table 5: 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 B113	w_t11
Weights of students participating in B114	w_t12
Weights of students participating in B138	w_t13
Weights of students participating in B139	w_t14
Weights of students participating in B140	w_t15
Weights of students participating in B142	w_t16
Weights of students participating in B143	w_t17
Weights of students participating in B161	w_t18
Weights of students participating in B162	w_t19
Weights of students participating in all online studies	w_allCAWI
Weights of students participating in all telephone interviews	w_allCATI
Weights of students participating in all studies so far	w_allWaves

Table 6: Summary statistics for all weights provided.

Label of weight	Cases	Min.	Lower Quart.	Median	Mean	Upper Quart.	Max.
w_h	17,906	1.667	1.667	6.286	4.764	6.286	6.366
w_t1	17,906	0.009	0.329	0.997	1.000	1.328	3.386
w_t1ext	17,906	0.174	6.020	18.272	18.469	24.326	325.273
w_t1comp	5,949	0.146	0.302	0.825	1.000	1.298	4.134
w_t2	12,270 ^a	0.009	0.348	0.920	1.000	1.331	3.680
w_t3	13,110 ^b	0.008	0.308	0.875	1.000	1.275	3.923
w_t4	11,199 ^a	0.008	0.308	0.835	1.000	1.277	4.118
w_t5	12,690 ^b	0.009	0.302	0.871	1.000	1.269	4.013
w_t6	10,181 ^c	0.017	0.319	0.798	1.000	1.277	4.254
w_t7	9,608 ^a	0.007	0.578	0.795	1.000	1.125	3.802
w_t8	8,627 ^c	0.011	0.272	0.752	1.000	1.147	4.678
w_t9	10,095 ^c	0.008	0.324	0.843	1.000	1.252	4.118
w_t10	9,088 ^c	0.008	0.281	0.806	1.000	1.184	4.366
w_t11	7,019 ^c	0.009	0.349	0.748	1.000	1.202	4.412
w_t12	8,548 ^a	0.008	0.296	0.836	1.000	1.294	4.225
w_t13	7,292 ^c	0.008	0.309	0.788	1.000	1.284	4.279
w_t14	5,160 ^c	0.009	0.402	0.712	1.000	1.144	4.494
w_t15	6,530 ^c	0.015	0.391	0.771	1.000	1.341	4.097
w_t16	6,217 ^c	0.008	0.371	0.765	1.000	1.348	4.150
w_t17	5,283 ^c	0.008	0.406	0.704	1.000	1.327	4.336
w_t18	5,990 ^c	0.008	0.335	0.779	1.000	1.263	4.358
w_t19_CATI	5,661 ^c	0.007	0.438	0.753	1.000	1.296	4.129
w_t19_CAWI	5,116 ^c	0.007	0.439	0.725	1.000	1.189	4.310
w_allCAWI	2,082 ^c	0.050	0.312	0.621	1.000	1.127	4.941
w_allCATI	2,405 ^c	0.024	0.092	0.147	1.000	0.308	5.922
w_allWaves	1,066 ^c	0.108	0.465	0.748	1.000	1.270	4.073

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

For further information on weighting please contact statistik@lifbi.de.

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