

## **The SFB882-B3 Linked Employer-Employee Panel Survey (LEEP-B3)**

By Martin Diewald, Reinhard Schunck,  
Anja-Kristin Abendroth, Silvia Maja Melzer, Stephanie Pausch,  
Mareike Reimann, Björn Andernach, Peter Jacobebbinghaus\*

### **1. Introduction**

The project B3 “Interactions between Capabilities in Work and Private Life: A Study of Employees in Different Work Organizations” is situated within the Collaborative Research Center 882 (SFB 882) at Bielefeld University. Its goal is to investigate the role of workplaces in the emergence of social inequalities focusing on the interaction between work and family life. To that end the project B3 created a unique and rich linked employer-employee data set, the B3 Linked Employer-Employee Panel Survey (LEEP-B3). The data was gathered in cooperation with the German Institute for Employment Research (IAB) in Nuremberg.

LEEP-B3 consists of survey data of employers which are linked to survey data of their employees. The employees’ data are further linked to survey data of their partners. Furthermore, employer-, employee-, and the partner-data can be linked to administrative data of the IAB, allowing to reconstruct employees’ and partners’ work biographies prior to the survey and the establishments’ histories, including administrative information on the establishments’ entire personnel. LEEP-B3 is designed as a longitudinal and multilevel survey with at least two waves. The data structure is graphically displayed in figure 1.

LEEP-B3 uses a two-stage sampling design. In the first stage, a stratified random sample of establishments with more than 500 employees was drawn out of the universe of establishments in Germany using administrative data of the Institute for Employment Research. Sampling was stratified on region (East- and West-Germany) and industry sector (NACE Rev. 2, see Eurostat, 2008).

---

\* The Collaborative Research Center 882 (SFB 882) “From Heterogeneities to Inequalities” at Bielefeld University is funded by the German Research Foundation (DFG). The authors would like to thank Jan Braukmann, Annika Clausen, Geraldine Döring, Julia Harand, and Fabienne Schlechter for their work in the research project B3 “Interactions between Capabilities in Work and Private Life: A Study of Employees in Different Work Organizations”.

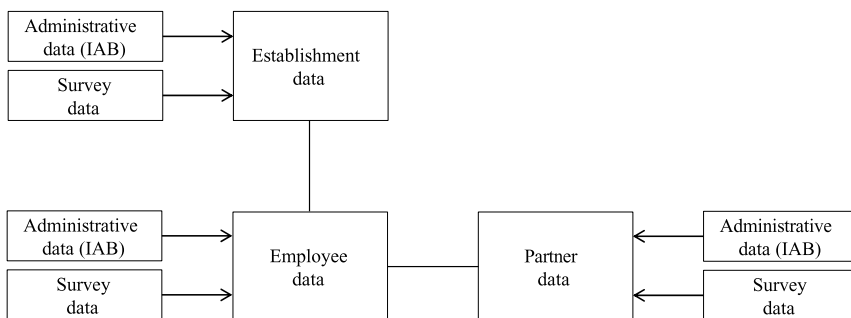


Figure 1: LEEP-B3 data structure

Interviews with representatives of these establishments were conducted between April and August 2012 ( $N = 115$ ). In the second stage, employees from all establishments which did not object to an employee survey ( $N = 100$ ) were randomly selected and interviewed ( $N = 6,454$ ). These interviews were conducted as computer assisted telephone interviews (CATI) during September 2012 and March 2013. During the same period employees' partners were also interviewed, given that the employees had a partner and allowed for contacting the respective partners ( $N = 2,185$ ). The data is thus particularly suited to investigate how organizational processes affect the (re)production of social inequality in different life domains. It combines rich information at the establishment level with equally rich information at the level of the employees and their partnerships.

The paper is organized as follows. The paper first discusses the LEEP-B3 establishment survey (section 2), explaining the sampling, response rate, and contents of the survey. This is followed by the presentation of the LEEP-B3 employee survey and the partner survey (section 3), similarly giving information on sampling, response rates, and the contents of the survey. Subsequently, in section 4, the paper explains possibilities of data access for interested researchers. Section 5 provides a summary and a short outlook.

## 2. LEEP-B3 Employer Survey

The selection of the establishments for the LEEP-B3 employer survey was based on administrative operational data provided by the Institute for Employment Research (IAB) in coordination with the Research Data Center (FDZ) of the Federal Employment Agency at IAB. The establishments were drawn out of the Employment History Data (Beschäftigten-Historik, BeH, Version 08.07.00–120203) of the IAB. The BeH comprises data on all German employees that are subject to social insurance contribution. This covers the vast

majority of employees in Germany, about 70% (Bundesagentur für Arbeit 2013), excluding self-employed persons and public servants (so called “Be-amte”). Because the BeH also provides information on the employer, the employee data can be aggregated to the level of establishments (Hethey-Maier/ Seth, 2010), allowing to sample establishments from this data. Among all establishments in the data, the sampling was limited to establishments with at least 500 regular employees, in order to retain a sufficient number of cases per establishment for the longitudinal employee survey (Bender et al., 2009; Pausch et al., 2014).<sup>1</sup>

Selection of establishments followed a stratified random sampling scheme. Establishments were classified according to the Statistical classification of economic activities in the European Community (Eurostat, 2008).<sup>2</sup> The population of 3,934 establishments meeting these criteria was stratified according to region (East- and Germany) and industry code, resulting in 34 strata. In order to ensure a sufficient number of East-German establishments, selection probabilities for establishments in East-Germany was doubled. Furthermore, selection probability of establishments from the “new economy” (industry codes: 61100–63990) was quadrupled (Pausch et al., 2014). The gross sample comprised 539 establishments (see table 1).

*Table 1*  
**LEEP-B3 employer sample**

	N	%
<b>Gross sample</b>	<b>539</b>	<b>100.00</b>
Neutral losses	58	10.76
Not contacted	48	8.91
Company no longer exists	5	0.93
Company not found at provided address	2	0.37
Company name correct, company number incorrect	2	0.37
Company name incorrect, company number correct	1	0.19

*Continued next page*

<sup>1</sup> Marginally employed, trainees, employees in partial retirement, interns, working students, and pensioners without contributions were excluded.

<sup>2</sup> Establishments from the industries A (agriculture, farming, forestry, and fishing), B (Mining), S (Other service activities), T (private households), and U (extra-territorial organizations and bodies) were excluded from sampling, either because organizational contexts in these industry sectors cannot be compared with the other industry sectors or because employees in these industry sectors are not embedded in establishments.

Table 1 continued

	N	%
<b>Adjusted net sample</b>	<b>481</b>	<b>100</b>
Refusal	310	64.45
Could not be contacted	53	11.02
Other reasons for nonparticipation	3	0.62
<b>Successful interviews</b>	<b>115</b>	<b>23.91</b>
Consent to employee survey	100	86.96
No consent to employee survey	15	13.04

To maximize the response rate among representatives of the establishments, a notoriously difficult population, we allowed for different interview modes, that is personal interviews, telephone interviews, by mail, and by e-mail (and combinations thereof). The interviews were conducted by IAB personnel (ProIAB) during April and August 2012. The response rate was at 23.91 % (see table 1) amounting to 115 establishments. In those 115 establishments, 100 did not object to an employee-survey (Pausch et al., 2014).

Table 2 shows the distribution of establishments according to industry sector in the population, in the gross sample, and in the survey sample. A major advantage of sampling through administrative data lies in the fact of having knowledge about the underlying population. This allows assessing possible non-response bias (Knerr et al., 2009). Multivariate non-response analyses, i.e., predicting sample membership based on administrative information, do not suggest that there is a bias in the sample regarding industry, region, and size of the establishment (Pausch et al., 2014). Thus, the LEEP-B3 covers the distribution of large establishments across industry, size, and region in Germany rather well.

The content of the LEEP-B3 employer’s survey covers information on the history of the establishments, their economic situation, their internal structure, including organizational demography (Williams/O’Reilly, 1998), measures to promote equal opportunity, health promotion, and information on the establishments’ environment. For details including the questionnaires and information on item non-response see Pausch et al. (2014).

Table 2

**Distribution of establishments in the population, gross sample, and survey**

Industry sector (WZ 2008)	Population		Gross sample		Survey	
	N	%	N	%	N	%
C – Manufacturing	1333	33.88	160	29.68	38	33.04
D,E,F – Electricity; water supply; construction	141	3.58	19	3.53	5	4.35
G – Wholesale and retail trade; repair of motor vehicles and motorcycles	224	5.69	28	5.19	5	4.35
H – Transportation	199	5.60	26	4.82	4	3.48
J – Information and communication activities	141	3.58	54	10.02	11	9.57
K – Financial and insurance activities	249	6.33	29	5.38	5	4.35
M – Professional, scientific, and technical activities	165	4.19	21	3.90	4	3.48
N – Administrative and support activities	166	4.22	23	4.27	2	1.74
O – Public administration and defense; compulsory social security	425	10.80	59	10.95	16	13.91
P – Education	125	3.18	18	3.34	3	2.61
Q – Human health and social work activities	726	18.45	96	17.81	21	18.26
I,L,R – Accommodation and food service; real estate; arts, entertainment and recreation	40	1.02	6	1.11	1	0.87
<b>N</b>	<b>3,934</b>	<b>100</b>	<b>539</b>	<b>100</b>	<b>115</b>	<b>100</b>

*Note:* due to data protection and anonymity considerations industry sectors D,E,F and I,L,R are collapsed.

### 3. LEEP-B3 Employee Survey

The target population of the first wave of the LEEP-B3 Employee Survey was defined as the population of employees working within one of the 100 establishments as of December 31st, 2011 based on the BeH data. The sample was restricted to employees subject to social security contributions, excluding marginally employed and apprentices, who were born 1960 or later (Abendroth et al., 2014). The goal of the survey was to interview approximately 65 employees per establishment. To that end the gross sample comprises on average 500 observations per establishment.

The first wave of the LEEP-B3 employee survey was conducted as computer assisted telephone interviews (CATI) between September 2012 and March 2013. Because the survey was carried out as a CATI, all observations for which there was no telephone number available in the administrative data or for which

a telephone number could not be researched were excluded (Abendroth et al., 2014), reducing the gross sample from 53,542 to 30,501 addresses. Overall, 6,454 employees could be interviewed, resulting in a response rate of 29.77% (see table 3). Of these respondents 6,314 (97.83%) agreed to participate in the second wave.

Table 3  
LEEP-B3 employee sample

	N	%
<b>Gross sample</b>	<b>30,510</b>	<b>100.00</b>
Neutral losses	8,832	28.95
Not contacted (quota filled)	3,169	10.39
No connection	2,008	6.58
Wrong person	1,887	6.18
Fax / data line	1,177	3.86
Out of sample (not target population)	591	1.94
<b>Adjusted net sample</b>	<b>21,678</b>	<b>100</b>
Refusal	11,856	54.69
Partial interview (break off)	76	0.35
Interview not possible during field time	3,292	15.19
<b>Successful interviews</b>	<b>6,454</b>	<b>29.77</b>
Consent to be re-interviewed	6,314	97.83
No consent to be re-interviewed	140	2.13

Since the administrative data (Integrierte Erwerbsbiographien, IEBs, Version 10.00.00 (2012)) contain information on gender, citizenship, age, education and earnings (Jacobebbinghaus/ Seth, 2007), it is again possible to directly compare the distribution of the characteristics in the population and the samples and to assess selectivity in the survey sample (Knerr et al., 2009). Tables 4 and 5 show the distribution of employees according to socio-demographic characteristics in the population, the gross sample, and the survey sample.

Multivariate analyses of non-response comparing the survey sample with the gross sample indicate some selectivity (Abendroth et al., 2014): Female respondents, German nationals, respondents with lower levels of education, older respondents, non-high earning respondents (< 5001 €), as well as respondents from industry sectors D,F,F, N, and O (reference C) were more likely to participate in the survey. However, when comparing the survey sample with the

Table 4

**Distribution of selected employee characteristics  
in the population, gross sample, and survey sample**

	Population		Gross sample		Survey	
	N	%	N	%	N	%
	<b>3,675,780</b>	<b>100.00</b>	<b>53,542</b>	<b>100.00</b>	<b>6,454</b>	<b>100.00</b>
<b>Male</b>	2,141,277	58.25	30,478	56.92	3,439	53.28
<b>German citizenship</b>	3,384,159	92.07	49,975	93.34	6,200	96.06
<b>Age</b>						
up to 24 years	167,003	4.54	2,480	4.63	288	4.46
25–34 years	969,621	26.38	13,197	24.65	1,477	22.89
35–44 years	1,222,796	33.27	17,241	32.20	1,924	29.81
45–53 years	1,316,360	35.81	20,624	38.52	2,765	42.84
<b>Education</b>						
Not known	1,451,782	39.50	21,123	39.45	2,281	35.34
Secondary without vocational training	118,815	3.23	1,829	3.42	160	2.48
Lower secondary with vocational training	1,038,621	28.26	15,846	29.60	1,875	29.05
Higher secondary with vocational training	341,048	9.28	5,285	9.87	688	10.66
Tertiary	725,514	19.74	9,459	17.67	1,450	22.47
<b>Monthly earnings in €</b>						
up to 1,000	129,083	3.51	2,090	3.90	242	3.75
1,001–2,000	431,455	11.74	6,982	13.04	993	15.39
2,001–3,000	823,759	22.41	13,881	25.93	1,698	26.31
3,001–4,000	951,726	25.89	14,571	27.21	1,486	23.02
4,001–5,000	624,614	16.99	7,601	14.20	887	13.74
5,001 and more	715,143	19.46	8,417	15.72	1,148	17.79
<b>Establishment size</b>						
500–699 employees	731,566	19.90	18,386	34.34	2,431	37.67
700–999 employees	676,038	18.39	18,383	34.33	2,164	33.53
1,000–1,499 employees	621,765	16.92	11,373	21.24	1,288	19.96
51,500 and more employees	1,646,411	44.79	5,400	10.09	571	8.85

overall population, the sample appears to be less selective (Abendroth et al., 2014). The results indicate that LEEP-B3 does not significantly deviate in most aspects from the underlying population. Only German nationals and employees in industry sector I (see section 2) are more likely to being in the survey and

employees with low or unknown levels education and employees in large establishments (> 1,500 employees) are less likely to being in the survey. None of the other characteristics listed in tables 4 and 5 predict survey participation when comparing the survey sample with the overall population (Abendroth et al., 2014). Thus, although the survey is tailored to providing data for the investigation of intra- and inter-organizational mechanisms, the sample represents the underlying population rather well, at least with regards to the characteristics listed in tables 4 and 5.

Table 5  
Distribution of employees across industries in the population,  
gross sample, and survey sample

	Population		Gross sample		Survey	
	N	%	N	%	N	%
	3,675,780	100.00	53,542	100.00	6,454	100.00
C – Manufacturing	1,472,602	40.06	17,435	32.56	2,080	32.23
D,E,F – Electricity; water supply; construction	96,640	2.63	1,591	2.97	126	1.95
G – Wholesale and retail trade; repair of motor vehiclesand motorcycles	163,926	4.46	2,687	5.02	312	4.83
H – Transportation	190,995	5.20	2,077	3.88	163	2.53
J – Information and communication activities	119,689	3.26	5,075	9.48	665	10.30
K – Financial and insurance activities	226,060	6.15	1,773	3.31	176	2.73
M – Professional, scientific, and technical activities	166,158	4.52	2,192	4.09	267	4.14
N – Administrative and support activities	101,601	2.76	1,200	2.24	109	1.69
O – Public administration and defense; compulsory social security	305,591	8.31	5,984	11.18	830	12.86
P – Education	181,366	4.93	1,598	2.98	193	2.99
Q – Human health and social work activities	629,484	17.13	11,330	21.16	1,453	22.51
I,L,R – Accommodation and food service; real estate;arts, entertainment and recreation	21,668	0.59	600	1.12	80	1.24

Note: due to data protection and anonymity considerations industry sectors D,E,F and I,L,R are collapsed.



The content of the LEEP-B3 employee survey covers detailed information about their labor market participation, characteristics of their employment-relationship, their private- and family life, as well as information about the interaction between these domains of life. Moreover, the LEEP-B3 employee survey also comprises information on personality characteristics, preferences measured through a factorial survey (Andernach/Schunck, 2014; Reimann et al., 2014), attitudes, as well as basic information on the respondents' health status and socio-demographic including migration background. For details including the questionnaires and information on item non-response see Abendroth et al. (2014).

The LEEP-B3 data also provides information on the employees' partners. If possible, additional interviews were conducted with employees' partners. Of all employees with a partner ( $N = 5,368$ ), 2,185 were interviewed, which corresponds to a response rate of 40.70%. The partner survey is a shortened version of the employee questionnaire, covering information about the partners' labor market participation, as well as the private and the family life, respectively. For partners that agreed to the linkage of their survey data with administrative IAB data, the German Record Linkage Center (GermanRLC) established this linkage based on information that is available in both data files, such as name, address, sex and age (Schild/Antoni, 2014). If the partner could not be interviewed, the respondents were asked to additionally provide some basic information on their partners. For details including the questionnaires and information on item non-response see Abendroth et al. (2014).

#### **4. Access to LEEP-B3**

A scientific use file (SUF) of the first wave of the LEEP-B3 is in preparation and will be available as of 2015. The factually anonymized SUF will include almost all of the employee variables from the survey and some variables on the establishments. Data access will be provided by the Research Data Center of the Collaborative Research Center 882 at Bielefeld University (SFB 882 FDZ). It is also being considered to provide access to the LEEP-B3 data with more information from the employer survey and the administrative data, e.g., by means of on-site use in a controlled research environment. Please contact the SFB 882 FDZ for current versions and terms of access.

#### **5. Summary and Outlook**

The B3 Linked Employer-Employee Panel Survey (LEEP-B3) is a unique data set for the analyses of intra- and interorganizational processes, being geared towards investigating the role of workplaces in the emergence of social

inequalities. The data was gathered by the research project B3 “Interactions between Capabilities in Work and Private Life: A Study of Employees in Different Work Organizations” within the Collaborative Research Center 882 (SFB 882) situated at Bielefeld University in cooperation with the German Institute for Employment Research (IAB) in Nuremberg. LEEP-B3 provides data on establishments, employees clustered within these establishments, and employees’ partners, all of which can be linked to administrative data from the IAB.

LEEP-B3 is designed as a longitudinal and multilevel survey with at least two waves. The sample of establishments and employees will be enlarged in the second wave to counter potential attrition. Data collection for the second wave started in spring 2014. Upon successful extension of the Collaborative Research Center 882 for a second term, two additional waves will be collected.

## References

- Abendroth, A.-K./Melzer, S. M./Jacobebbinghaus, P./Schlechter, F.* (2014): Methodological Report Employee and Partner Surveys of the Linked Employer-Employee Panel (LEEP-B3) in Project B3 “Interactions Between Capabilities in Work and Private Life: A Study of Employees in Different Work Organizations”. SFB 882 Technical Report Series, 12. Bielefeld: DFG Research Center (SFB) 882 From Heterogeneities to Inequalities.
- Andernach, B./Schunck, R.* (2014): Investigating the feasibility of a factorial survey in a CATI, SFB 882 Working Paper Series 28, 1–26.
- Bender, S./Fertig, M./Görlitz, K./Huber, M./Schmucker, A.* (2009): WeLL – Unique Linked Employer-Employee Data on Further Training in Germany, *Schmollers Jahrbuch* 129 (4), 637–43.
- Eurostat* (2008): NACE Rev 2. Statistical classification of economic activities in the European Community, Luxembourg.
- Hethey-Maier, T./Seth, S.* (2010): The Establishment History Panel (BHP), Handbook Version 1 (2).
- Jacobebbinghaus, P./Seth, S.* (2007): The German integrated employment biographies sample IEBS, *Schmollers Jahrbuch* 127 (2), 335–42.
- Knerr, P./Schröder, H./Aust, F./Gilberg, R.* (2009): Berufliche Weiterbildung als Bestandteil Lebenslangen Lernens (WeLL): WeLL-Erhebung 2007-Methodenbericht. Institut für Arbeitsmarkt-und Berufsforschung (IAB), Nürnberg [Institute for Employment Research, Nuremberg, Germany].
- Pausch, S./Harand, J./Schunck, R./Jacobebbinghaus, P.* (2014): Technical Report Employer Survey Project B3: Interactions Between Capabilities in Work and Private Life, SFB 882 Technical Report Series (04), 1–18.

- Reimann, M. / Andernach, B. / Schunck, R. / Diewald, M. / Abendroth, A.-K. / Melzer, S. M. / Pausch, S. (2014): Methodenbericht Faktorieller Survey (Vignetten) Projekt B3 “Wechselwirkungen zwischen Verwirklichungschancen im Berufs- und Privatleben”, SFB 882 Technical Report Series, 08.*
- Schild, C.-J. / Antoni, M. (2014): Linking survey data with administrative social security data – the project “Interactions between capabilities in work and private life”, German Record Linkage Center. Working Paper Series 2014–02, 1–11.*
- Williams, K. Y. / O'Reilly, C. A. (1998): Demography and diversity in organizations: A review of 40 years of research, Research in Organizational Behavior 20, 77–140.*