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Martina Huber, and Alexandra Schmucker

# WeLL – Unique Linked Employer-Employee Data on Further Training in Germany

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## **WeLL – Unique Linked Employer-Employee Data on Further Training in Germany**

### Abstract

This paper explains the main features of an innovative linked employer-employee data set with a particular focus on continuous training in Germany, called WeLL. The data set comprises establishment data that can be linked to longitudinal information on the associated employees. The employer survey and the first wave of the employee survey were conducted in 2007. Both surveys focus on the collection of training information together with a variety of employee and employer background characteristics. In addition, it is possible to link these data with other survey and administrative data for a large number of respondents.

**Keywords:** Employee training, establishment data, linked employer-employee data

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\* Michael Fertig and Katja Görlitz, RWI Essen; Stefan Bender, Martina Huber, and Alexandra Schmucker, IAB Nürnberg. – The project members acknowledge financial support from the Leibniz Association (WGL) and the Institute for Employment Research (IAB). The authors would also like to thank Peter Jacobebbinghaus for helpful comments and suggestions. – All correspondence to Michael Fertig, RWI Essen, Hohenzollernstr. 1-3, 45128 Essen, Germany, e-mail: [fertig@rwi-essen.de](mailto:fertig@rwi-essen.de).

## Introduction

A large body of empirical evidence suggests that continuous training of employees exhibits several positive impacts. On the one hand, it seems to improve firm performance significantly, for instance productivity and sales (see e.g. Bartel 2000, Dearden et al. 2006) and contributes to the successful implementation of new technologies (cf. Bresnahan 2002). On the other hand, trained employees seem to benefit by an enhanced potential to cope with the challenges of a frequently changing work environment due to e.g. organizational change or new technologies. In Germany, worker training is most often a common investment of both employers and employees, with employers contributing to a large extent to training costs (Pischke 2001, Görlitz 2008).

By contrast to the impact, evidence on the decision process and the determinants of worker training in Germany is rather scarce. Specifically, little is known on the interaction between firms and workers with respect to the decision on who is trained within the firm, who decides on the contents of training and how training costs and benefits are shared between employers and employees. These aspects should, however, in all likelihood exhibit important repercussions on the gains of training and its allocation across firms and employees. It seems safe to argue that the selection process into a particular training measure exhibits an important impact on returns of participation. For instance, on theoretical grounds firms should have higher incentives to invest into training measures enhancing firm-specific human capital, whereas employees are more likely to engage in training imparting general human capital. The reconciliation of these diverging interests and its consequences for the division of costs and benefits of specific training measures are important for a better understanding of how further training helps to maintain or enhance the human capital of the workforce. Furthermore, it might deliver helpful insights for the design and targeting of interventions aiming at higher participation in further training of employees.

Against this background the lack of knowledge on the determinants of the investment decision is unfortunate and might be due – at least to a large extent – to the lack of appropriate data linking together information on employers and employees.<sup>1</sup> Thus, the project "Further Training as a Part of Lifelong Learning"<sup>2</sup> (*Berufliche Weiterbildung als Bestandteil Lebenslangen Lernens*, or "WeLL" for short) aims at analyzing the joint training decisions of employers and their employees. Within the project, a linked employer-employee data set (LEED) with a particular focus on continuous training is established. The project is conducted by the RWI Essen, the Institute for Employment Research (IAB), the Institute for Applied Social Sciences (infas) and the German Institute for Adult Education (DIE). Financial support is provided by the Leibniz-Gemeinschaft (WGL) and the Institute for Employment Research.

The WeLL data consists of survey data on employers that can be linked to administrative and survey information of the associated employees. The employee survey data is designed as a longitudinal data set with three annually repeated waves. In this paper, we provide a detailed description of the design of the LEED as well as the status of the underlying surveys, particularly the WeLL Employer Survey and the first wave of the WeLL Employee Survey.

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<sup>1</sup> Although there are matched employer-employee data sets containing training information for the US (Lynch 1998), no such data are currently available for Germany. Here, the Linked Employer-Employee Data of the Institute for Employment Research (Alda et al. 2005) contains information on further training on the establishment level only and no comparable information on the level of employees.

<sup>2</sup> A detailed description of the project is available in German in Bender et al. (2008).

Overall, the sampling frame of the data follows two steps: in a first step, a stratified sample of establishments was drawn with establishment size and industry sector constituting the most important strata. In a second step, randomly selected individuals employed in these establishments were surveyed. Representatives of the chosen establishments were interviewed face-to-face between May and August 2007. The first wave of the employee survey was conducted by telephone interviews from October 2007 to January 2008. Both questionnaires focused on training activities and were complemented by questions on a large set of background characteristics of employers and employees, respectively. The survey data can be augmented with other surveys and administrative data sources. The sample design implies that the WeLL data consists of information on a large number of employees which were drawn from a rather small number of establishments. More precisely, in the first wave 6404 employees from 149 establishments were interviewed. Hence, the sample is not representative for the population of German establishments or employees, but tailored at the analysis of intra-firm processes with respect to further training.

The remainder of this paper is organized as follows. The next section describes the WeLL Employer Survey, in particular the sample design, the survey instrument and the data. Accordingly, the WeLL Employee Survey is presented in the third section. Finally, we provide information on how to link the survey data with other data sources and data access.

### **WeLL Employer Survey**

The establishments that were considered for participation in the WeLL Employer Survey were selected according to following rules: Firstly, the 2005 wave of the IAB Establishment Panel Survey<sup>3</sup> was used to draw a sample of establishments that reported to having invested in employee training activities in the first half of 2005. These establishments were classified by size, industry sector and region. In particular, we constructed three size groups according to the number of employees in jobs subject to social security contributions<sup>4</sup> (100-199, 200-499 and 500-1999), two industry groups (manufacturing and service sector) and two regions (West Germany and East Germany)<sup>5</sup>. Within each of these 12 groups, the five establishments with the highest and those five with the lowest overall investment expenditures<sup>6</sup> were asked to participate in the survey. The goal was to obtain five interviews per group. Due to a higher non-response rate in some groups, additional establishments were surveyed with the next higher or next lower investment activity. Secondly, from the IAB Establishment Panel Survey a sample of establishments was drawn that reported to not having engaged in employee training in the first half of 2005. Those establishments without training investments in 2005 that fulfill the size, industry and regional criteria were also asked to participate in the WeLL Employer Survey. Since the number of these establishments is low (32), all of them were chosen.

The content of the WeLL Employer Survey covers among others information on the incidence and magnitude of employers' training investments. A detailed description of the questionnaire can be found in Appendix Table A-1. Training investments are defined as financial contributions to worker training by either bearing direct training costs or relieving employees

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<sup>3</sup> A description of the data is provided in Kölling (2000).

<sup>4</sup> In Germany, around 80% of the workforce is covered by the social security system. Exceptions are civil servants, freelancers and self-employed.

<sup>5</sup> Only establishments from the West German federal states Bavaria, Schleswig-Holstein and North Rhine-Westphalia and from the East German federal states Mecklenburg-Western Pomerania and Saxony are selected.

<sup>6</sup> In the IAB Establishment Panel, investments refer to the sum of total investments during the year preceding the interview.

from work for participation in a variety of different formal and informal types of training activities. Additionally, information on costs and benefits, organization and participants of training are available on the establishment level.

Face-to-face interviews based on a standardized questionnaire with persons in charge of recruitment and training decisions such as human resource managers were conducted within the survey period from May to August 2007. From a total of 167 establishments that were asked to participate in the survey (gross sample), 98 interviews could be realized (net sample). Hence, the overall response rate is 59%. This response rate is similar for both types of establishments, i.e. those with training investments during 2005 and those without. To cover all training activities beginning with January 2006 the WeLL Employer Survey contains retrospective training information for approximately 1.5 years.

**Table 1: Number of realized interviews in the WeLL Employer Survey**

Employees (covered by social security system)	West Germany		East Germany		Total
	Manu- facturing	Service Sector	Manu- facturing	Service Sector	
<b>100-199</b>	10	9	7	10	36
<b>200-499</b>	10	5	9	6	30
<b>500-1999</b>	9	8	7	8	32
<b>Total</b>	29	22	23	24	98

Table 1 illustrates the number of interviews realized in each size-industry-region group. For the majority of groups 7 to 10 interviews were realized. Only for establishments in the service sector with 200 to 499 employees the number is lower (5 or 6 interviews). All participating establishments reported investments into worker training between January 2006 and May to August 2007 (depending on the date of the interview), although some of them abstained from doing so in 2005 according to their responses in the 2005 wave of the IAB Establishment Panel.

### **WeLL Employee Survey 2007**

The target population of the WeLL Employee Survey in 2007 was defined as the population of all employees in one of the 167 establishments in the gross sample at the reference date December 31<sup>st</sup>, 2006. Furthermore, the sample was restricted to employees in jobs covered by social security contributions, i.e. excluding workers in apprenticeship and (partial) retirement. If these restrictions reduce the size of the establishment to less than 50 employees, these employees are excluded from the sample. This yields approximately 56000 employees in 149 establishments. After a first correction of the addresses and telephone numbers 20190 employees were considered for the survey. Without sample-neutral drop outs 16552 workers were requested to participate in the survey.

A detailed description of the questionnaires' content is provided in Table A-2 in the Appendix. One very important feature of the employee survey is the definition of training measures which is identical to that in the employer survey. That is, workers were classified as training participants if they had participated in at least one of the training types considered in the employer survey. Thus, the data captures participation in various types of formal and informal learning activities since January 2006. Specifically, detailed information on beginning and end date, content, duration, costs, quality and certification of the training is available for up to three formal courses. This is complemented by the employment history

since January 2006 including job characteristics and workers' mobility as well as information on individual and household-related characteristics.

In the first wave 6404 interviews were conducted between October 2007 and January 2008 via Computer Assisted Telephone Interviews (CATI). Hence, the response rate is 38.7%. The average length of the interview was 32 minutes.

In the data almost two-thirds (62%) are male employees and 98% of the respondents reported to be a German citizen. 22% of the respondents hold a university degree, 10% are skilled blue collar workers<sup>7</sup>, 66% have a vocational training degree (e.g. graduation from the German apprenticeship system) and 3% attained no vocational degree. Around 97% of the respondents are still employed at the time of the interview. On average, the share of participants in formal training courses is 64%. The corresponding share for informal learning activities amounts to 68%. The overall participation rate in either one of the two types of further training is 84%. Given our sampling scheme this participation rate is of course not representative for the population of German employees.

The WeLL Employee Survey 2007 is the first wave of a three-wave panel which is designed to collect information on the development of individuals' training activities and the related changes in their employment biography and job characteristics. The second and third wave of the survey will be conducted in the second half of 2008 and 2009, respectively. The relative short time period between the surveys enables us to obtain a complete training biography with detailed information, e.g. on costs, duration or topic without running into the risk of recall errors. All individuals who participated in the first wave will be asked for participation in follow-up interviews (with the exception of retired persons), independently of their employment status. That is, individuals who become unemployed between the first and the second interview or change the employer will also be contacted again. Since it is possible to match the survey data with administrative data for both employers and employees, establishment characteristics will also be available for job movers as long as they hold a job subject to social security contributions. Finally, we will adjust for panel mortality by interviewing a sample of new employees, i.e. workers who entered one of the 149 establishments in the employer gross sample in the course of the year 2007.

### **Linking WeLL Employer with Employee Data and Possibilities to Match other Survey or Administrative Data**

According to German data protection law, the survey data on employers and employees can only be linked if both parties agree on merging their data with other data sources. For these establishments and employees, the survey data can be linked with each other and can also be augmented with other data sources. In total, survey data from 5819 employees (91% of all respondents) and 72 establishments (73%) can be augmented with information from administrative data sources. WeLL employer and employee data can be linked for 3128 individuals out of 72 establishments (see Table 2).

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<sup>7</sup> That is, graduates from the German apprenticeship system mainly from technical occupations which obtained an additional degree, the so-called *Meister, Techniker, Fachwirt*.

**Table 2: Number of employees that allow merging their survey data with other data sources**

Employees that gave their permission to merge their data	Number of employees within establishments...			Total
	...that participated in the WeLL Employer Survey and allowed merging their data (72)	...that participated in the WeLL Employer Survey and did not allow merging their data (16)	...that did not participate in the WeLL Employer Survey (61)	
	Yes	3128	404	
No	305	33	247	585
<b>Total</b>	3433	437	2534	6404

**Notes:** The number of establishments within each category in parentheses.

On the individual level the employment history of employees since 1975 including labor market participation, wages and job mobility can be merged to the survey data for employees. These data are taken from the Employee and Benefit-Recipient History of the IAB (*Beschäftigten-Leistungsempfänger-Historik*, BLH). The BLH contains employment histories on a day-to-day basis for all employees in social security covered jobs since 1975 for West and since 1992 for East Germany. Information on workers in jobs with reduced social security contributions (so-called “Minijobs”) are available since 1999. Further information on times of benefit receipt under the jurisdiction of the Federal Employment Agency (BA) (i.e. unemployment benefits, unemployment assistance and maintenance allowance) can also be matched.<sup>8</sup>

Additional information on the establishment level can be merged from the Establishment History Panel (*Betriebs-Historik-Panel*, BHP). The BHP comprises cross-sectional establishment data since 1975 for West and 1992 for East Germany. Every cross section contains all establishments in Germany which are included in the Employee and Benefit-Recipient History (BLH) on June 30th. These are all establishments with at least one employee subject to social security contributions at the reference date. Since 1999 also establishments with no such employee but with at least one employee in a “Minijob” are included. The BHP contains information on the industry sector and the location of the establishment. Furthermore, the number of employees in total and stratified by gender, age, occupational status, qualification and nationality is available (for more details see Spengler 2008).

Finally, the WeLL data can also be merged with survey data from the IAB Establishment Panel. Detailed information on the IAB Establishment Panel (e.g. questionnaires, list of variables etc.) is available on the homepage of the Research Data Centre (FDZ) of the Federal Employment Agency at the Institute for Employment Research (<http://fdz.iab.de>).

### Access to Data

When the project is finished, the data will be available for non-commercial research purposes according to the requirements of the German data protection laws. Data access will be provided by the Research Data Centre (FDZ) of the German Federal Employment Agency (BA) at the Institute for Employment Research (IAB). Further details on data access will be available on the homepage of the FDZ after the last wave of the Employee Survey.

<sup>8</sup> Unfortunately, there is no description of the BLH data available. However, detailed information can be found in the FDZ Datenreport “The Regional File of the IAB Employment Sample 1975-2004” (Drews 2008). The IAB Employment Sample is a 2% random sample drawn from the BLH with almost the same characteristics and data structure.

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## Appendix

**Table A-1: Description of variables available in the WeLL Employer Survey**

Topic	Variables
Training definition	Internal and external courses, participation in presentations and congresses, on-the-job training, participation in quality circles or other workshops, coaching/ mentoring, job rotation and self-directed learning
Intensity and motivation	Number of participants, motivation and intention to invest in further training
Finance and organization	Training budget, direct and indirect costs, balancing indirect costs by extra work, public subsidies/ funding, person/ staff in charge for training decisions, possibilities to discover training demand, who initiated training (worker or employer), certification
Choice of participants	Participation was mandatory, who takes part in training (e.g. by education or occupation), arrangements to repay training costs in case of worker mobility, quality control, expected development of amount of training investments in the next year
Establishment characteristics	Organizational and technological changes, demand for skilled employees, vacancies, occupation of employees, business volume, size, industry

**Table A-2: Description of variables available in the WeLL Employee Survey 2007**

Topic	Variables
<i>Training information</i>	
Training definition	Internal and external courses, participation in presentations and congresses, on-the-job training, participation in quality circles or other workshops, coaching/ mentoring, job rotation and self-directed learning
Details on training	Duration, costs, topic, certification, vocational degree, motivation for participation, quality, who took the initiative for training (employer/ employee), transferability of knowledge after job loss, repayment arrangements
Reason for non-participation in training	Cost-related reasons, no expected returns, training was cancelled by organizer, training organization and supply did not meet one's requirements, family-related reasons
<i>Individual characteristics</i>	
Socio-economic characteristics	Gender, month and year of birth, place of birth, nationality, schooling degree, vocational degree
Employment history (since January 2006)	Employment, unemployment and non-employment spells, work characteristics for each employment spell (e.g. occupation, temporary contract, working time, overtime, job tasks, use of information technology (IT), reason for job termination), self-employment
Job satisfaction	Overall job satisfaction, satisfaction with different aspects of work (e.g. job tasks, career advancement, income, training, working time, colleagues and supervisor)
Household characteristics	Marital status, employment of spouse or partner, children, size of household, working as a volunteer, help persons in need of care, job and household income
Expectations	Expectations of career development, expected changes in establishment performance and characteristics