

**New Data and Services
for Vocational Education and Training Research –
Research Data Centre of the Federal Institute
of Vocational Education and Training
(BIBB-FDZ)**

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1. Introduction

Modern societies are exposed to dramatic social, economic and demographic changes. For different reasons, the countries' system of education and training is a key resource in mediating these changes. In Germany, it is the dual system of initial vocational education and company-based continuing vocational education that particularly gives shape to the system. Its central governmental institution is the Federal Institute of Vocational Education and Training (BIBB). On the basis of the Vocational Training Law (Berufsbildungsgesetz, BBiG) BIBB has the responsibility for policy, practice and research in the field of vocational education and training (VET). Being directly accountable to the Federal Government, BIBB is funded from the federal government budget and is subject to the legal supervision of the Federal Ministry of Education and Research (BMBF).

BIBB, from the 1970s on, has a vivid tradition in survey research and initiates and realizes the collection of individual- and firm-level data on VET. Thus, up to today, the BIBB has collected numerous data on all relevant stations in VET as well as on the transitions between them. In line with the suggestions from the Commission to improve the informational infrastructure in Germany (KVI, 2001), in 2008, BIBB founded a Research Data Centre (FDZ) to give researchers a standardized access to BIBB-data. The BIBB-FDZ belongs to the data infrastructure of the German Council for Social and Economic Data (RatSWD) and is oriented towards the Council's criteria (RatSWD 2008). At the moment, aside from the head, there are two researcher positions and two and a half administrative assistance positions at BIBB-FDZ. The paper is aimed at giving an overview of the status quo and outlining some future activities of the BIBB-FDZ.

To this end, in the next section, we sketch central characteristics of the BIBB-data and introduce the conceptual scheme by which we organize them

at BIBB-FDZ. Then we move to the description of current and future datasets available for research. Thereby, we shortly discuss their research potential against the background of current issues in the field and recent work with the data. In section 3, we give an overview of the BIBB-FDZ services for researchers around the information and documentation of the data stock, services for single data sets, and data access. Section 4 concludes the paper with an outline of future activities.

2. Research and Data on Vocational Training and Education at BIBB

The Institute's mandated tasks (BIBB, 2009a) go beyond research on vocational education and training, but, beside others, include the development and updating of initial and continuing training occupations, the management and supervision of national and international VET programs, the support of in-company vocational training practice with training materials and training media, and the development of concepts for qualifying company trainers. Thus, aside from the research community, BIBB closely works together with federal and state-level ministries, central employers' organizations, unions, trade associations and the offices responsible for vocational training (chambers), i.e. persons and bodies involved in the planning of VET. Equally, BIBB acts jointly with persons implementing VET in firms and schools.

Research at BIBB focuses on the fields' internationalization, specific target groups, life-long learning, permeability and equivalence of educational pathways, modernization and quality assurance in VET, and the training market and employment system (for a detailed overview of BIBB's research activities see BIBB, 2009b). The BIBB department 2 *Sociology and Economics of Vocational Education and Training* thereby plays a key role in quantitative data collection and analysis in all these areas¹. A central output of this effort is documented in the annual *BIBB Data Report on Vocational Education and Training* (BIBB, 2009d).

At BIBB, broadly speaking, data analyses and reporting is based on two types of data. On the one hand, BIBB publishes important VET statistics based on administrative data collected together with or by other Federal institutions: the *BIBB-Census of new training contracts* (BIBB-Erhebung "Neu abgeschlossene Ausbildungsverträge zum 30. 9.", annual reporting date 30. 9.), the data on the *current participation of German firms in initial VET* based on

¹ The department 2 is subdivided in the departments *Vocational Training Supply and Demand/Training Participation (2.1)*, *Qualifications, Occupational Integration and Employment (2.2)*, *Costs, Benefits and Financing of Vocational Education and Training (2.3)*, and *Training Behavior, Career Paths, Target Group Analysis (2.4)*. For detailed information on research within these departments see BIBB, 2009c.

the Business Statistics from the Federal Employment Agency, and the *Census on complete initial and continuing VET contracts and exams* based on data collected at the responsible departments and consolidated at the Federal Statistical Office (annual reporting date 31. 12.)². The legal basis for these VET statistics is the Vocational Training Act (*Berufsbildungsgesetz (BBiG)*). In 2007, the degree of information of these latter statistics was improved considerably by changing from an aggregate to an individual-level statistic and by including more socio-demographic information of individuals (Uhly, 2009; Krekel et al., 2006). Unfortunately, these data suffer from the disadvantage of not including a personal ID number (see the discussion in Stanat/Döbert, 2009; Hillmert, 2009). Whether and how these process-produced individual-level data will be made available for external scientific research is still open.

One the other hand, BIBB itself collects data of which several are surveyed on a regular basis, and others are single studies. A conservative estimate on the number of surveys initiated within the last two decades results in a number of around 200. Beside others, most important, these surveys differ as regards their actuality, their coverage (in the study population and the detailedness of issues surveyed) and their thematic focus. Because for these surveys, there is no requirement of reporting by survey subjects (§ 101 of Vocational Training Act), the data protection requirements (§ 40 of the German data protection law), as compared to other German FDZ are comparably low. But in practice, the information BIBB-FDZ demands from researchers for data access are limited to an absolute minimum (see section 3 for details).

At BIBB-FDZ we organize these data sets within a conceptual framework that is built up along three dimensions (see figure 1): Firstly, a *temporal design* (i.e. year(s) of cross-sections and longitudinal data), *secondly* a dimension of the *unit of analysis* (individual- versus firm-level data) and, *thirdly*, an analytic dimension capturing the *thematic focus* of the data. This latter dimension has six categories and represents the central positions and transitions in the VET system in a life-course perspective: 1. *school*, 2. *1st transition (transition from school to initial VET)*, 3. *initial VET*, 4. *2nd transition (transition from initial VET to work)*, 5. *work and employment*, 6. *continuing education*.

At present, in total of 16 single datasets covering five of the six positions in the life-course as specified above can be accessed via BIBB-FDZ. However, the degree of their (current) documentation differs. All data sets are documen-

² The original data are collected by the chambers of trade and craft (about 60 in Germany). In an intermediate step they are appended at the level of federal states. The Federal Statistical Office coordinates the data deliveries of each state and relays them to BIBB. BIBB is currently the only institution with the permission to analyze the respective data for the entire German economy. The census includes new and existing contracts. For conceptual differences between the *BIBB-Census of new training contracts* and the census from the Federal Statistical Office see Uhly et al., 2009.

ted in the (1) *BIBB-FDZ data catalogue*, for some we offer (2) *in-depth data and methods manuals and other services*. We describe these two different documentation concepts in section 3. Before, we give an overview of the data, i.e. their main features and research potential.

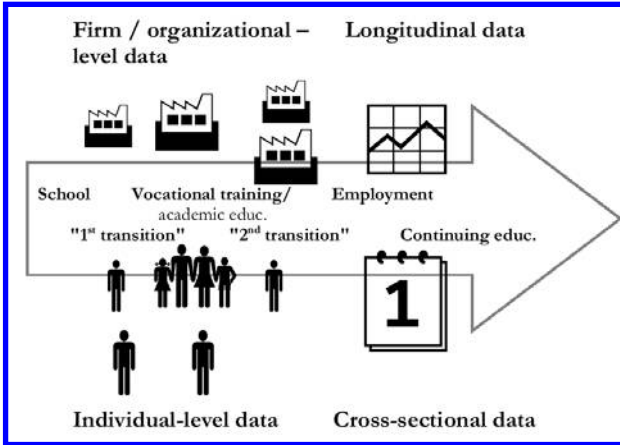


Figure 1: Conceptual framework of BIBB-data at BIBB-FDZ

School

BIBB is directed at vocational education research, the main distributor of school surveys in Germany is the Institute for Educational Progress (IQB)³. Nevertheless, there are some studies with students from general schools as the unit of analysis at BIBB, as well. These studies aim at surveying the decision processes of vocational education choices at the end of general schooling, for numerous studies have shown that educational outcomes strongly depend on educational choices (the so-called ‘secondary effects’). The *BIBB-Survey on Occupational Titles 2005 (BIBB-Schülerbefragung zu Berufsbezeichnungen 2005)* is a unique school leaver cross-section on occupational titles and their effects on youth’s occupational choice. Students ($n = 3,001$) in the last year of the main German general educational tracks (i.e. ISCED 3 and 4) in four federal states were interviewed (face-to-face in classes)⁴ on self- and occupational concepts as regards VET and work, the images of occupations, and the subjective familiarity with these occupations. To this end, a total number of

³ Currently, IGLU/PIRLS 2001, PISA 2000, 2003, 2006, the MARKUS and the ELEMENT studies can be accessed via the FDZ of the IQB (IQB, 2009).

⁴ A limitation, however, is that by reason of the restrictive policy, the students could not be randomly sampled; the participation of classes is based on self-selection. Within the selected classes, all students were interviewed.

20 occupations were considered in a vignette-design (two in each questionnaire version). The data allow for analyzing the role of subjective assessments of occupational contents (task, requirements, and occupational outcomes), job preferences and students' criteria for occupational choice on youth educational plans (Eberhardt/Ulrich, 2006; Eberhardt et al., 2009). In that students from all different general school tracks in Germany were surveyed, the differential effects of prospective occupational choices of varying age-groups and school forms can be analyzed. The scientific-use-file (SUF) of the *BIBB-Survey on Occupational Titles 2005* can be ordered at BIBB-FDZ.

1st Transition (Transition from School to Initial VET)

The transition from general to vocational education has become much more heterogeneous within the last decades (Hillmert/Jacob, 2003). The social compositions of graduates have changed (e.g. Solga/Wagner, 2007), and the opportunities and preferences for vocational education past general schooling have become more complex. Research has tried to find out what explains students choices given their opportunities and preferences, and what is the role of institutions, and actors involved in the VET (Konieczka, 2007; Müller/Pollak, 2007, Dustmann et al., 2009). BIBB initiates several surveys that focus on the transition from general to vocational education in Germany. In contrast to the school data described above, these surveys include data of school graduates and explicitly pick out the transition as a central theme. Currently, there are two BIBB-data sources on the transition from school to VET available for secondary analyses at BIBB-FDZ: Firstly, the *BIBB School Graduate Surveys 2004, 2005, 2006, 2008* (*BIBB-Schulabgängerbefragungen 2004, 2005, 2006, 2008*) are repeated representative German school graduates cross-sections on school leavers' occupational preferences (in the earlier spring) and choices (at the time of the interview in autumn). One objective of the survey is to assess the demand for apprenticeships in the Dual system (Friedrich, 2008). Each wave, around 1,500 graduates from all German general education tracks (i.e. ISCED 3 and 4) are interviewed (CATI)⁵. Given their current situation students were asked for assessing the reasons for success or failure in realizing their former plans, for evaluating the current situation, and for their further occupational plans. Beside others, the data include information on migration background, and school achievement (grades). In that the same variables were surveyed each year, the data allow for studying aggregate change in variables across the waves (Friedrich, 2009). Moreover, the retrospective design can be used to analyze change at the individual level (Diehl et al., 2009). BIBB-FDZ offers factually anonymous versions of the data as a SUF. In addition, data at

⁵ The data are representative for the German speaking youth aged 14 and above within the respective age groups of school tracks.

the level of the 4-digit code of the German occupational classification (KldB, 1992) can be accessed at the BIBB-FDZ safe center.

Secondly, as regards the 1st transition, in 2006 BIBB has initiated the *BIBB Transition Survey (BIBB-Übergangsstudie)* which is a representative German youth cross-section including rich longitudinal information on the entire educational careers of the 1982 to 1988 birth cohort starting from primary education. For a total number of 7,230 Germans aged 18 to 24, the survey include event data on all typical educational and occupational activities in Germany, and the cohort's occupational perspectives. In contrast to most other studies, the survey allows detailed analyses of the different components of the non-academic initial VET sector, i.e. the dual system, the full-time school-based programs, and the 'transition system'. On average, information on four events was surveyed for each respondent (around 28,000 spells, in total). Together with detailed structural information on the activity as such (type, duration), the survey includes a range of attitude questions (motives of choosing specific activities, evaluation of personal and professional development), performance indicators (grades), and the search- and application behavior at each station. In addition to diverse indicators for migration background it includes detailed information on social background, i.e. respondents fathers' and mothers' occupational and educational status. Finally, there are items (scales) on voluntary activities, personal values and self-efficacy. Based on these data, educational biographies and their determinants in Germany can be analyzed at a very detailed level (Beicht et al., 2008). BIBB-FDZ offers factually anonymous versions of the data as a SUF and project-based data (e.g. with more disaggregated regional information) for On-site use.

Initial VET

It is clear from BIBB's mandate that most surveys are targeted directly to studying initial VET in the non-academic initial VET sector (data on academic VET is available at the Higher Education Information System (HIS)). At present, there are two individual-level and two firm-level surveys on initial VET available at BIBB-FDZ. These data sets are targeted towards understanding the advantages and drawbacks in this important area of skill formation in Germany by considering the (interplay of) diverse actors involved: students, VET experts, and – for students in the dual system – training firms. As regards the individual-level data, firstly, the *BIBB-Survey on Contract Cancelling 2002 (BIBB-Vertragslöserstudie 2002)* studies former apprenticeship students in the dual system (2,300 cases), who cancelled an apprenticeship contract. With a proportion of around one fourth of all new contracts, the termination of contracts during the term is a relevant phenomenon in Germany, and, regularly, is related with negative consequences (Schöngen, 2003). The data include a small set of variables allowing for studying the reasons for cancelling the con-

tract (firm-, occupation-, school-related, personal), and some socio-demographic variables. Currently, the data are documented in our data catalogue. Interested researchers might consult the BIBB-FDZ for data access.

An alternative way to study the functioning of the dual system is the *BIBB-Expert Monitor (BIBB-Expertenmonitor)*. The repeating online survey is organized as an access-panel (with offline-recruitment of experts for recurring participation) and is used at BIBB to consult experts from training firms, chambers, school, and federal education institutions on diverse current issues in VET: the quality determinants of successful apprenticeships and the readiness of apprentices for vocational training (2004), trends in the qualification of applicants (2005), the firm's role in apprenticeships' quality (2007), and quality of and problems in apprenticeship training (2008). SUF of the data with around 500 cases, each including a small number of attitude and background variables are prepared at BIBB-FDZ. Researchers might consult the BIBB-FDZ for data access. Some more information on the data can be accessed via the BIBB-FDZ Online-Catalogue.

One of the central actors in the German system of VET, however, clearly is the training firm. The fact that around 60 percent of each birth cohort enters the dual system depends on the high disposition of German firms to train. The 2001 and 2007 *BIBB-Surveys on Costs and Benefits of Apprenticeship Training for Firms (BIBB-Erhebung zu Kosten und Nutzen der Berufsausbildung für Betriebe)* include more than 200 variables allowing detailed analyses of firms' (economic) motives for training apprentices. The firm level surveys are representative cross-sections covering about 2,500 training firms across the whole range of German apprenticeship occupations. They are directed to answer the question why firms train. While some of the research focus on detailed analyses of the cost and benefit structure of apprenticeship training within German firms (Beicht et al., 2004), due to their high comparability the data are also used to compare the costs and benefits of apprenticeship training firms in Germany and Switzerland (Dionisius et al., 2009). Other studies using the data try to answer the question of firms' motives for apprenticeship training (Walden, 2007; Dustmann/Schoenberg, 2008). Because the data provide also information of how many apprentices stay after training in the training firm, the cost and benefit survey allows for analyses of firms' general skill demand. The *BIBB-Surveys on Costs and Benefits of Apprenticeship Training for Firms 2001* is prepared and documented, the 2007 survey will be prepared in the BIBB-FDZ during the year 2010. As for all other firm-data, BIBB-FDZ provides data access to this study via On-site use and/or Remote Data Access (see section 3 for details about the several opportunities of data access).

In contrast to the 'cost and benefit studies' the *BIBB-Survey on Firms' Disposition to Train 2004 (BIBB-Erhebung zur Ausbildungsbereitschaft von Betrieben 2004)* includes training (1,526) and non-training firms (478) of all sec-

tors and size classes and centers on the subjective assessment of firms' motives for training. Interested researchers might consult the BIBB-FDZ Online-Catalogue for further information and for data access.

Work and Employment

Within the field of work and employment, BIBB has a long tradition in survey research. Since 1979 BIBB is one of the two collaborators of the *Surveys of the Working Population on Qualification and Working Conditions in Germany*, i.e. the BIBB/IAB- and BIBB/BAuA Employment Surveys⁶. A next wave with BAuA is planned for 2011. The BIBB/IAB and BIBB/BAuA surveys are representative labor force cross-sections covering 20,000 to 35,000 individuals, and are directed to study special social groups (such as old-age, female, non-formally qualified workers, workers with different national backgrounds) and developments within detailed occupations, industries and vocational fields. They include information on respondent's qualification and career history, as well as on detailed job-related information (organizational information, job tasks, job skill requirements, working conditions, health etc., see Rohrbach 2009). The data have proved to be of very high research potential in a large variety of fields, including leading research on skill-biased technical change and the task approach⁷ (Spitz-Oener, 2006, Dustmann et al., 2009), the skill-weights approach (Backes-Gellner/Mure, 2005), skill mismatching (Rohrbach-Schmidt/Tiemann, forthcoming), research on occupational change on the individual level (Hall, 2007), competency research, and wage determination (Antonczyk et al., 2009). BIBB-FDZ offers factually anonymous versions of the data 2006 as a SUF (as the earlier waves via GESIS) and project-based data (with more disaggregated regional information, and additional variables) for On-site use (for details see Rohrbach, 2009, table 4).

Continuing Education

Over the last years, the growing needs of national economies to meet the skill demand with a trained workforce has raised the importance of adult edu-

⁶ Whereas in 1979, 1985/86, 1991/1992, and 1998/99 data were surveyed in cooperation with the *Institute of Employment Research* (IAB) of the German Federal Labour Office (BA), and since the wave 2005/2006 together with the *Federal Institute for Occupational Safety and Health* (BAuA).

⁷ Following the task approach represented by Autor et al. (2003), currently, projects at BIBB focus on 'Assets and drawbacks of different measures of skill and task requirements at the worker- and occupation-level in national and international surveys modules', 'Job tasks and wages: worker and job heterogeneity in Germany' (based on Autor / Handel, 2009), and the analysis of regional variance in tasks.

cation and continuing training. As a further area of research, BIBB has been active in data collection and analysis in continuing education at the national and international level (for a good overview of the data situation on adult learning in Germany, see Kleinert/Matthes, 2009). Firstly, the *BIBB-Survey on Costs and Benefits of Continuing Education for Individuals 2003* (*BIBB-Erhebung zu Kosten und Nutzen der Weiterbildung für Individuen 2003*) is a cross-sectional survey of participants (around 2,000) and nonparticipants (around 800) of continuing education in the German working-age population. Research with the data has shown large differences in the skill level of both groups, and sheds some lights on the barriers of continuing training from the perspective of non-participants (e.g. Beicht et al., 2006). Currently, the data are documented in the BIBB-FDZ Online-Catalogue. Interested researchers might consult the BIBB-FDZ for data access. Secondly, the *BIBB-monitoring system of continuing education* (*BIBB-Weiterbildungsmonitor*), since 2001, repeatedly surveys German providers of general and professional adult education (around 1,500 per wave). The monitor is organized as an online access-panel and is used to generate structural information and current trends in the field. In addition to the perspective of participants in continuing education, the survey complements research opportunities in the field by the firm-level perspective of further VET providers. Lastly, BIBB has the main responsibility in the realization of the *Continuing Vocational Training Survey* (CVTS) in Germany. However, because these data are administrative (in the sense of being collected due to a national-specific application by law, formulated by EUROSTAT), the data dissemination strategy is in the responsibility of the German Federal Statistic Office.

To sum up so far, BIBB has a vivid tradition in survey research and a large stock of individual- and firm-level data on decisive positions and transitions in the education and labor market system. To work with this data stock efficiently, BIBB-FDZ provides several services for researchers, as described in the next section.

3. BIBB-FDZ Services for Researchers

As said above, a conservative estimate on the number of single BIBB-surveys initiated within the last two decades results in a number of around 200. Against resources and for reasons of research efficiency, not all of these data should reasonably be prepared at an elaborate level. However, to give as much transparency on the data stock at BIBB as possible and in-depth information on selected surveys, BIBB-FDZ establishes a two-step approach of data documentation:

Data-Recall Facility: The BIBB-FDZ Data Catalogue

The first step is documenting all data in a data catalogue (organized as a database) including fundamental information about the data sets. The intention of the catalogue is to enable researchers to evaluate whether a specific BIBB-survey is suitable for their research questions. Amongst others, the BIBB-FDZ data catalogue accessible at our website provides information about

- the three organizing dimensions: survey year(s), unit of analysis, and thematic focus among the six life-course positions (see section 2)
- the methodological aspects: research design, data collection mode, response rate and sample information (weights, entire population etc.)
- the survey content: number of variables, issues covered.

At present, the online BIBB-FDZ data catalogue does not include all 200 BIBB-surveys, but will be constantly enlarged. As for those surveys for which we offer detailed documentation (see below) the selection is based on the surveys' current external request, actuality, and (further) supposed research potential. Researchers might use the catalogue to search for BIBB-data meeting their demands⁸, and notify the BIBB-FDZ if they are interested in data access. At BIBB-FDZ, modalities of data access would be clarified timely. By and by, and given their demand, in a second step BIBB-FDZ would prepare a detailed documentation of the data.

Elaborated Documentation: Data and Method Manuals and Further Services

The second step of documentation is the preparation of detailed data and methods manuals, and further data-related services and their supply at the BIBB-FDZ website for download. In contrast to the BIBB-FDZ data catalogue, the detailed documentation concept is aimed at enabling researchers to work with the data independently from further support by the original data producers.

Of central importance in this second documentation concept are data and methods manuals. They go into detail on data collection (sampling, pre-test and interviewer instructions, response behavior), variables, data preparation (weights, anonymizations, major reclassifications, imputations, missing values), information about sensitive and synthetic variables⁹ and (if available)

⁸ Internally, a more extensive (internal) catalogue version is available. Researchers should not hesitate to contact the BIBB-FDZ in cases, where the online catalogue does not yield any hits for their queries. Possibly, there are data sets meeting demands for which we have yet not collected the required information for transferring them in the online version.

⁹ For sensitive variables the BIBB-FDZ gives information about the original range of the data, the number of observations and others. Synthetic variables are offered in order

the different data set versions. Secondly, at the BIBB-FDZ website a couple of further standard tools for the work with the data are posted: Questionnaires, the data sheet from our data catalogue with central characteristics on the respective survey (see above) fieldwork documents (if available), references on recent work with the data, and test data. The latter fulfills at least two functions: firstly, they give researchers a detailed though artificial view on the structure and content of the data. Secondly, researchers might use test data to write the syntax-files for remote data access (see below). Currently, a total number of seven BIBB-surveys is documented at the level of this detailed documentation concept (cf. section 2).

Both kinds of documentations, the data catalogue and the elaborated documentation, are currently available in German language only. For some elaborated documentations exist also English-speaking documents (for example for the *Survey of the Working Population on Qualification and Working Conditions in Germany*, see Rohrbach, 2009). If Non-German-speaking researchers are interested in working with BIBB-FDZ data, they should not hesitate to contact BIBB-FDZ directly.

Standardized Access

Access to BIBB data sets is according to the regulations of the German data protection law (§ 40) and is possible via (1) Off-site Use as Scientific-Use-Files (SUF), (2) Remote Data Access (DFV), and (3) On-site Use (GWA). Each type of data access corresponds with different levels of data confidentiality: Factually anonymous versions of the datasets are available for off-site use as Scientific Use Files (SUF). More sensitive and less anonymous versions of SUF (in regular including more sensitive information) as well as all kind of firm-level data¹⁰ can be analyzed via Remote Data Access (DFV) and/or via On-site Use (GWA). DFV requires that researchers develop executable syntax-files (in Stata or SPSS) with the test data. After verifying compliance with data protection legislation, the results of the programs applied to the original data at BIBB-FDZ are sent back to the researcher. All data sets of the BIBB-FDZ are accessible via DFV. For data access via GWA, BIBB-FDZ provides separate safe workplaces for guest researchers at BIBB in Bonn¹¹.

to prevent researchers from time- and labor-intensive recoding. Some of them are identifiers (for example regions, occupations, sectors etc.). If prepared, BIBB-FDZ goes into maximum detail allowing representative analyses for the respective variables.

¹⁰ Firm-level data are especially 'sensitive', because normally, they include specific sets of variables (foremost information on branches, firm-size, region) that would allow the re-identification of single firms (Ronning et al., 2005).

¹¹ Currently, there are two workplaces (stand-alone PC) equipped with STATA and SPSS (other statistical packages might be available upon request) in one separate guest room. Researchers work in individual IT environments meaning that their work is pro-

We assume that SUFs are the most favorable data product for external researchers. Due to data confidentiality, SUF can only be prepared for individual-level data (see fn. 10). However, individual-level data might include sensitive information as well (e.g. full text, 5-digit occupation codes, less coarsened values). If differently anonymous data sets are available, external researchers may combine these different ways of data access and, of course, any combination is feasible.

For each way of data access, a request form must be filled in advance. In the case of requesting access to SUF or DFV, some little information about data users is required to assure that the requested data access is for non-commercial purposes¹². In the case of the more sensible GWA access and especially firm-level data, we need a formal agreement, which has to be signed by the head of the user's affiliated institution. The application form for all three options of data access is available at our web site.

4. Future Activities

There are three main areas of future activities at BIBB. These activities are oriented towards user demands¹³ and the BIBB-FDZ resources. Firstly, we constantly enlarge the number of data sets documented at the BIBB-FDZ data catalogue, and the number of data sets with detailed documentation and standardized products for data access. As regards the data catalogue, BIBB-FDZ will invest in a metadata system and the metadata exchange with other institutions. Forthcoming data sets with elaborated documentation are e.g. the *BIBB-Surveys on Costs and Benefits of Apprenticeship Training for Firms 2007*, the *BIBB-BAuA Surveys of the Working Population on Qualification and Working Conditions in Germany 2011*, and the *BIBB Graduate Survey 2008*. In addition to the preparation of recent surveys, a special focus will be on the examination of opportunities of producing large time-series on permanent issues surveyed at BIBB from the 1970s on. Secondly, we try to enrich available surveys systematically, by providing standard (international) sociological and economic re-classifications applicable to the data (e.g. in fields of education, occupations, and regions), and by matching aggregate data at appropriate levels for multilevel analyses. These levels might be geographical units or occupational

tected and may not be read by any other person except BIBB-FDZ members (which is of course bound to professional secrecy, also in an in-house perspective).

¹² Researchers give information about their affiliated institution and *shortly* (maximum 1.5 pages) describe their research aims and the methods to be used. The latter is required to validate non-commercial interests and that the research objective is feasible with the requested data set. Overall, we estimate that filling the application form is possible within ten minutes.

¹³ In the year 2010, BIBB-FDZ launches a user-survey.

or industry groups, and aggregate data might come from other sources¹⁴ or will be produced on the basis of (other) BIBB-data (e.g. BIBB-BAuA 2006). In that, typically, information on single units is extended, such multilevel data will only be accessible via On-site use and/ or remote data access. A third area of future activities of the BIBB-FDZ will be the initialization and organization of user conferences. These conferences bring together (future) users, the BIBB-FDZ team, and researchers at BIBB that are directly involved in data collection. This would be a valuable opportunity to intensively debate the BIBB-FDZ work and its future challenges against actual user needs.

References

- Antonczyk, D./Fitzenberger, B./Leuschner, U.* (2009): Can a task-based approach explain the recent changes in the German wage structure? IZA Discussion paper No. 4050.
- Autor, D./Levy, F./Murnane, R. J.* (2003): The skill content of recent technological change: An empirical exploration, *Quarterly Journal of Economics* 118 (4).
- Autor, D./Handel, M. J.* (2009): Putting tasks to the test. Human capital, job tasks and wages. Cambridge, Mass.
- Backes-Gellner, U./Mure, J.* (2005): The Skill-Weights Approach on Firm Specific Human Capital: Empirical Results for Germany, Zürich.
- Beicht, U./Friedrich, M./Ulrich, J. G.* (2008): Ausbildungschancen und Verbleib von Schulabsolventen. Berichte zur beruflichen Bildung, Band 18. Bielefeld.
- Beicht, U./Herget, H./Walden, G.* (2004): Costs and benefits of in-company vocational education and training in Germany. Bielefeld.
- Beicht, U./Krekel, E. M./Walden, G.* (2006): Berufliche Weiterbildung. Welche Kosten und welchen Nutzen haben die Teilnehmenden? Bielefeld.
- BIBB* (2009a): About the Institute. BIBB: BIBB-Website. URL: <http://www.bibb.de/en/26173.htm>.
- BIBB* (2009b): Research. BIBB: BIBB-Website. URL: <http://www.bibb.de/en/26169.htm>.
- BIBB* (2009c): Department 2. Sociology and Economics of Vocational Education and Training. BIBB: BIBB-Website. URL: <http://www.bibb.de/en/1820.htm>.
- BIBB* (2009d): Datenreport zum Berufsbildungsbericht, Bonn.
- Diehl, C./Friedrich, M./Hall, A.* (2009): Jugendliche ausländischer Herkunft beim Übergang in die Berufsausbildung: Vom Wollen, Können und Dürfen, *Zeitschrift für Soziologie* 38 (1), 48 – 68.

¹⁴ As regards regions, beside others, aggregate data might come from the Federal Office for Building and Regional Planning (BBR, *Bundesinstitut für Bauwesen und Raumplanung*), i.e. the 'INKAR'-database, for which BIBB-FDZ has BBRs' explicit permission to match the indicators with all BIBB-FDZ data sets. For an exhaustive list of all applicable indicators please contact BIBB-FDZ.

- Dionisius, R./Muehlemann, S./Pfeifer, H./Walden, G./Wenzelmann, F.* (2009): Costs and benefits of apprenticeship training. A comparison of Germany and Switzerland, *Applied Economics Quarterly* 55 (1), 7–37.
- Dustmann, C./Ludsteck, J./Schönberg, U.* (2009): Revisiting the German wage structure, *The Quarterly Journal of Economics* 124 (2): 843–881.
- Dustmann, C./Schoenberg, U.* (2008): Why does the German apprenticeship system work? *Skill formation* 2008: 85–108.
- Eberhard, V./Scholz, S./Ulrich, J. G.* (2009): Image als Berufswahlkriterium – Bedeutung für Berufe mit Nachwuchsmangel, *Berufsbildung in Wissenschaft und Praxis* 3.
- Eberhard, V./Ulrich, J. G.* (2006): Berufsbezeichnungen und ihre Bedeutung im Kontext der Berufswahl, in: N. Bley/M. Rullmann (Hrsg.): *Übergang Schule und Beruf: aus der Praxis für die Praxis – Region Emscher-Lippe*, Wissenswertes für Lehrkräfte und Eltern, 295–304, Recklinghausen.
- Friedrich, M.* (2008): Chancen von Schulabgängern und Schulabgängerinnen auf vollqualifizierende Berufsausbildungsgänge – Auswertung aus den BIBB-Schulabgängerbefragungen 2004–2006, *Berufsbildungsbericht* 2008, 75 ff.
- Friedrich, M.* (2009): Berufliche Pläne und realisierte Bildungs- und Berufswege nach Verlassen der Schule. Ergebnisse der BIBB-Schulabgängerbefragungen 2004 bis 2006, Bielefeld.
- Friedrich, M.* (2009): Berufliche Wünsche und beruflicher Verbleib von Schulabgängern und Schulabgängerinnen, in: Bundesinstitut für Berufsbildung [Hrsg.]: *Datenreport zum Berufsbildungsbericht 2009. Informationen und Analysen zur Entwicklung der beruflichen Bildung*, 70–81, Bonn.
- GESIS* (2009): Data Archive for the Social Sciences, Website, URL: <http://www.gesis.org/en/institute/gesis-scientific-sections/data-archive-for-the-social-sciences/>.
- Hall, A.* (2007): Beruflichkeit: Fundament oder Hindernis für Flexibilität? Berufswechsel von dual ausgebildeten Fachkräften, *Berufsbildung in Wissenschaft und Praxis* 36 (4).
- Hillmert, S.* (2009): Knowing more about Vocational Training, RatSWD Working Paper No. 105.
- Hillmert, S./Jacob, M.* (2003): Bildungsprozesse zwischen Diskontinuität und Karriere: das Phänomen der Mehrfachausbildungen, *Zeitschrift für Soziologie* 32 (4), 325–345.
- Kleinert, C./Matthes, B.* (2009): Data in the Field of Adult Education and Lifelong Learning: Present Situation, Improvements and Challenges. RatSWD Working Paper No. 91.
- Kommission zur Verbesserung der informationellen Infrastruktur* (2001): Gutachten „Wege zu einer besseren informationellen Infrastruktur“, Baden-Baden.
- Konietzka, D.* (2007): Vocational Training and the Transition to the First Job in Germany – New Risks at Labor Market Entry? in: D. Bills (ed.): *The Sociology of Job Training. Research in the Sociology of Work* (Vol. 12). Greenwich (Conn.), 161–195.

- Krekel, E. M. / Uhly, A. / Ulrich, J. G.* (Hrsg.) (2006): Forschung im Spannungsfeld konkurrierender Interessen. Die Ausbildungsstatistik und ihr Beitrag für Praxis, Politik und Wissenschaft, Forschung Spezial – Heft 11.
- Müller, W. / Pollak, R.* (2007): Weshalb gibt es so wenige Arbeiterkinder in Deutschlands Universitäten? Bildung als Privileg, 2. Auflage, 303 – 342.
- Rohrbach, D.* (2009): BIBB-BAUA Data Manual. BIBB-FDZ website. URL: <http://www.bibb.de/50815.htm>.
- Rohrbach-Schmidt, D. / Tiemann, M.* (forthcoming): Qualification and skill-based mismatching in Germany, in: F. Green / M. Keese (eds.): Job tasks, work skills and the labour market, Paris.
- Ronning, G. / Sturm, R. / Höhne, J. / Lenz, R. / Rosemann, M. / Scheffler, M. / Vorgrimler, D.* (2005): Handbuch zur Anonymisierung wirtschaftsstatistischer Mikrodaten. Statistik und Wissenschaft, vol. 4. Statistisches Bundesamt, Wiesbaden.
- Schöngen, K.* (2003): Lösung von Ausbildungsverträgen – schon Ausbildungsabbruch? Ergebnisse einer Befragung des Bundesinstituts für Berufsbildung, in: Informationen für die Beratungs- und Vermittlungsdienste der Bundesanstalt für Arbeit 25, 5 – 19.
- Spitz-Oener, A.* (2006): Technical Change, Job Tasks, and Rising Educational Demands: Looking outside the Wage Structure, *Journal of Labour Economics* 24 (2), 235 – 270.
- Solga, H. / Wagner, G. G.* (2007): A Modern Statistical Infrastructure for Excellent Research and Policy Advice, *Schmollers Jahrbuch* 127 (2), 315 – 320.
- Stanat, P. / Döbert, H.* (2009): Data in the Domain of School Education – Secondary School: Present situation, New Developments, and Future Requirements, RatSWD, Working Paper No. 70.
- Uhly, A.* (2009): Berufsbildungsstatistik 2007: Erste Neuerungen umgesetzt – Verbesserte Analysemöglichkeiten zur Vorbildung der Auszubildenden, *Berufsbildung in Wissenschaft und Praxis* 38 (3), 9 – 13.
- Uhly, A. / Flemming, S. / Schmidt, D. / Schüller, F.* (2009): Zwei Erhebungen zu neu abgeschlossenen Ausbildungsverträgen. Konzeptionelle Unterschiede zwischen der „Berufsbildungsstatistik zum 31. 12.“ und der „BIBB Erhebung über neu abgeschlossene Ausbildungsverträge zum 30. 09.“. Bonn, Wiesbaden: BIBB, Statistisches Bundesamt. URL: http://www.bibb.de/dokumente/pdf/a21_ausweitstat_methodenpapiervergleich-BIBB-StBA-2009.pdf.
- Walden, G.* (2007): Short-term and long-term benefits as determinants of the training behaviour of companies, *Zeitschrift für Arbeitsmarktforschung* 40 (2/3), 169 – 191.