

Research Data Centre (FDZ)
of the German Federal
Employment Agency (BA)
at the Institute for
Employment Research (IAB)



FDZ-Methodenreport

06/2016

EN

Methodological aspects of labour market data

German management and organizational practices survey (GMOP 0813)

Data collection

Sandra Broszeit,
Marie-Christine Laible



Bundesagentur für Arbeit

German management and organizational practices survey (GMOP 0813)

Data collection

Sandra Broszeit (Institute for Employment Research, Nuremberg)

Marie-Christine Laible (Institute for Employment Research, Nuremberg)

Die FDZ-Methodenreporte befassen sich mit den methodischen Aspekten der Daten des FDZ und helfen somit Nutzerinnen und Nutzern bei der Analyse der Daten. Nutzerinnen und Nutzer können hierzu in dieser Reihe zitationsfähig publizieren und stellen sich der öffentlichen Diskussion.

FDZ-Methodenreporte (FDZ method reports) deal with methodical aspects of FDZ data and help users in the analysis of these data. In addition, users can publish their results in a citable manner and present them for public discussion.

Contents

ABSTRACT.....	3
ZUSAMMENFASSUNG	3
1 INTRODUCTION AND PROJECT BACKGROUND	4
2 CONTENTS OF THE GMOP SURVEY QUESTIONNAIRE	4
3 SAMPLE	6
4 SURVEY METHOD AND PREPARATIONS FOR THE MAIN SURVEY	9
4.1 Survey method.....	9
4.2 Pretest.....	9
4.3 Telephone Screening	10
5 FIELD PHASE	11
5.1 Response rates.....	11
5.2 Reaching the target group.....	12
6 WEIGHTING	12
7 PARTICIPATING ESTABLISHMENTS	13
7.1 Key figures	13
7.2 Agreement to panel participation and merging of data.....	14
8 CONCLUSION	15
LIST OF ABBREVIATIONS.....	16
REFERENCES.....	17
APPENDIX	18

Abstract

The 'German Management and Organizational Practices' (GMOP) survey inquires about management practices and firm performance at the establishment-level. The survey was conducted in German establishments in the manufacturing industry or the construction sector with at least 25 employees subject to social security. The dataset contains information about more than 1,900 establishments for the years 2008 and 2013.

The present method report describes the process of data collection including conception of the questionnaire and data sampling.

Zusammenfassung

Die Studie „German Management and Organizational Practices“ (GMOP) untersucht Managementpraktiken und wirtschaftlichen Erfolg auf der Betriebsebene. Die Befragung wurde in deutschen Betrieben des produzierenden Gewerbes und des Baugewerbes mit mindestens 25 sozialversicherungspflichtig Beschäftigten durchgeführt. Der Datensatz enthält Informationen von mehr als 1.900 Betrieben für die Jahre 2008 und 2013.

Der vorliegende Methodenreport beschreibt den Prozess der Datenerhebung inklusive der Erstellung des Fragebogens und der Stichprobenziehung.

Keywords: data collection, establishment survey, management practices, firm performance, GMOP

The project is funded by the Leibniz Association.

We would like to thank our cooperation partners Holger Görg and Ursula Fritsch at the Kiel Institute for the World Economy as well as Thomas Weiß and Helmut Schröder from the survey institute infas.

The dataset described in this document is available for use by professional researchers. Further information can be found on the website <http://fdz.iab.de/en.aspx>.

1 Introduction and project background

It is still a puzzle for economists why productivity levels vary so substantially between countries, industries and firms. One potentially influential determinant that so far has largely been neglected is variations in the use of management practices. Therefore, the project 'Management Practices, Organizational behavior and Firm Performance in Germany' was initiated by the cooperation partners Research Data Center (FDZ) of the German Federal Employment Agency (BA) at the Institute for Employment Research (IAB), the Kiel Institute for the World Economy (IfW) and the Institute for Applied Social Science (infas). The project was funded by the Leibniz Association.

The 'German Management and Organizational Practices' (GMOP) survey was carried out in 2014/2015 and contains retrospective information on over 1,900 establishments for the years 2008 and 2013. It is representative for all German establishments in the manufacturing industry or the construction sector with 25 or more employees subject to social security. The questionnaire contents are largely based on the US 'Management and Organizational Practices Survey' (MOPS) spear-headed by Nick Bloom and John van Reenen (Bloom et al., 2013).

The data set provides important information for understanding the role of management practices for establishments' economic success. It allows analyses on the role of management for various aspects of firm performance such as productivity, innovation activities, employment and engagement in the global economy through exporting as well as foreign direct investments (FDI). Good management thereby is defined in terms of how well establishments monitor performance, set targets, and establish incentives (Bloom and van Reenen, 2010). Further, the data includes information on establishments' application of measures to promote work-family balance (WFB) and health of employees, which can also be analyzed regarding their effects on firm success.

This method report documents the collection of the establishment data. It focuses on the sampling procedure, the progress of the field phase, response rates, weighting and the questionnaire design. Furthermore, the report includes a brief introduction on the project background and an overview of the participating establishments.

2 Contents of the GMOP survey questionnaire

The main structure of the GMOP survey is based on the 'Management and Organizational Practices Survey' (MOPS) carried out in the US in 2010 by the US Census Bureau.¹ MOPS surveys all establishments included in the Annual Survey of Manufacturing (ASM) and relates to the years 2005 and 2010. The ASM has a sampling frame of the entire population of manufacturing establishments. The US MOPS was designed by Nick Bloom, Erik Brynjolfsson and John van Reenen. First analyses with the data are available in Bloom et al. (2013).

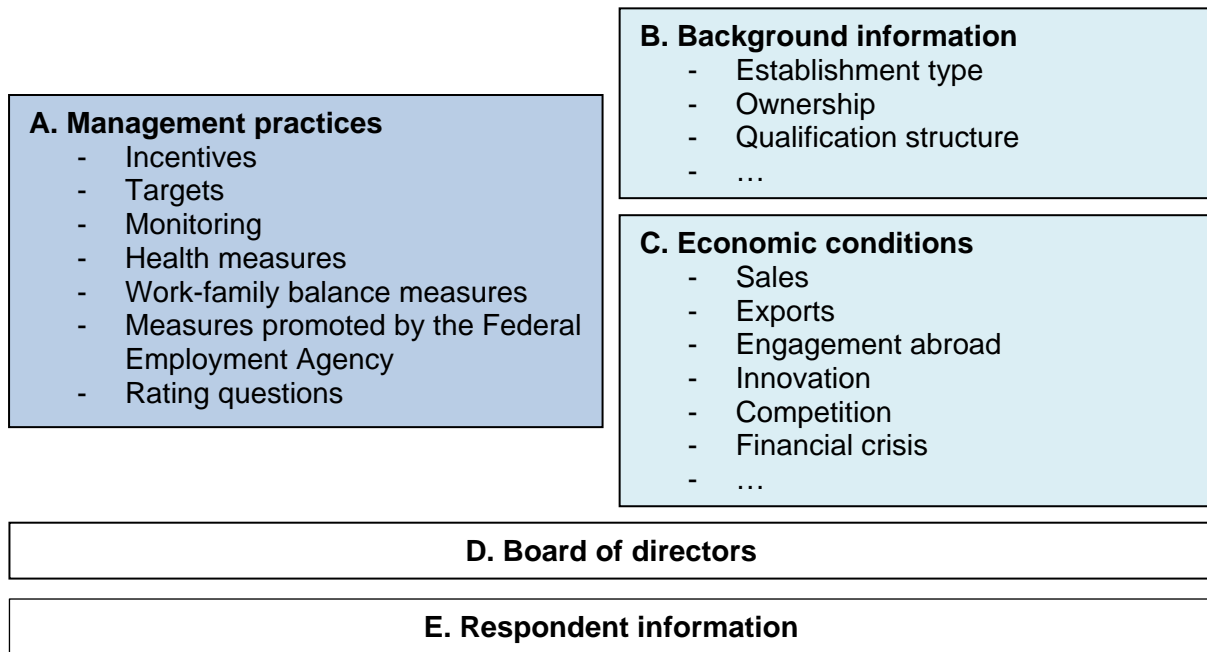
We implemented this survey in Germany. We retained the structure of the US survey when possible and translated the questions in the spirit of the original meaning. Some questions, for

¹ For further information on MOPS and the survey questionnaire, see <http://www.managementinamerica.com/>.

example those on lay-offs, were adapted to fit the German context. Due to the suggestions of Nick Bloom and John van Reenen, the questions from the original questionnaire block B pertaining to 'Organization' were deleted. Instead two new question sections were developed. The first is on the composition of the board of directors. The second block includes well-being enhancing measures (WEM), meaning measures to promote health and work-family balance (WFB) of employees, as well as some items on measures promoted by the Federal Employment Agency. Finally, performance indicators like sales, exports or FDI were included.

The ensuing questionnaire is structured into five sections on management practices (part A), background information on the establishment (part B), the economic situation and circumstances of the establishment (part C) and the board of directors (part D). An additional short section inquiries about characteristics of the respondent (part E). An overview is provided in Figure 1. The questions on management practices cover issues related to monitoring (e.g., whether a firm collected key performance indicators (KPI) and who reviewed them), production targets (e.g., on the in-house communication and timeframe of targets) and incentives related to pay and promotions. Additionally this part includes health measures (e.g. health days, sport and relaxation offers), work-family balance measures (e.g. temporary reduction of working hours, company kindergarten), measures promoted by the Federal Employment Agency (e.g. further education of elderly employees) as well as some rating questions on the importance of management practices. Part B pertains to background information on the establishments and amongst others asks about the ownership structure of the establishment and the number of employees and managers. Part C relates to performance indicators such as the revenue, exports, innovations and competition.

Figure 1 Questionnaire contents



Source: Own presentation.

3 Sample

The base population for the sample is the Establishment History Panel (BHP) of the IAB. The BHP is made up of cross-sectional data since 1975 for West Germany and 1992 for East Germany. Each cross-section of the BHP contains all German establishments, which are covered by the Employment History (BeH) on June 30th of each year. In order to be comprised in the BHP, an establishment needs to have at least one employee subject to social security on the reference date. Starting in 1999, this condition is expanded to include establishments with no employee liable to social security but with at least one marginal part-time employee. The total population of the BHP consists of between 1.3 and 2.9 million establishments per year.²

The population used for the GMOP sample is based on the cross-section of the BHP 2011. The sample drawing took place in several steps, which are graphically shown in Figure 2. At first, we restrict the population to all establishments in Germany with at least 25 employees subject to social security in the manufacturing industry or the construction sector.³ We do this to retain comparability with the original US survey. Applying this, our target population consists of 54,619 establishments.

In a second step, only establishments which could be linked to data from Bureau van Dijk (BvD) were retained. BvD is a commercial data provider collecting and managing financial data on firms worldwide.⁴ Through a record linkage process, the firms in BvD were matched to

² For further information on the BHP, see Gruhl et al. (2012) and http://fdz.iab.de/en/FDZ_Establishment_Data/Establishment_History_Panel.aspx.

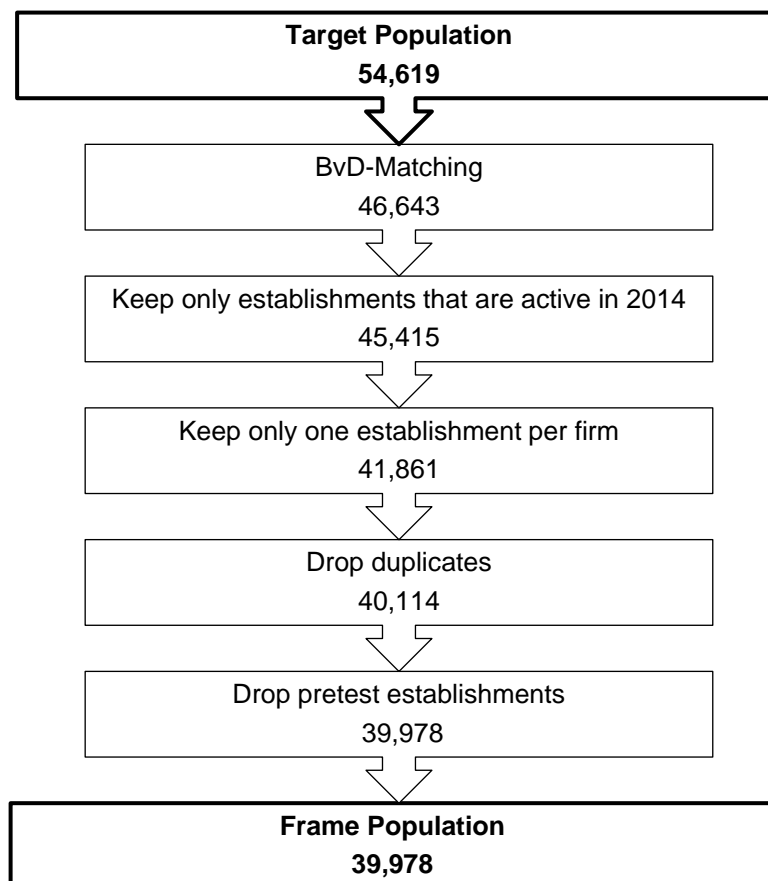
³ The US MOPS only surveys manufacturing establishments. However, due to a limited number of observations we expand the restriction to the construction sector.

⁴ For more information on the BvD data see Antoni et al. (2017) and for more information on the record linkage process see Schild (2016).

establishments in the BHP. In total 46,643 out of the 54,619 establishments were matched. We assume this linkage to be random, therefore also assuming that our restriction does not affect the representativeness of the sample. The reason for only using establishments with a valid IAB-BvD link is to merge additional financial information on the firm-level. BvD for instance includes information on capital, material cost or operating revenue.

Third, some further small restrictions were applied. We only used establishments which were active in 2014 based on the BvD information, reducing the number of observations to 45,415. Next, we only wanted to survey one establishment per firm. Since in the record linkage process it is desired that more than one establishment is matched to a firm, we selected the best matched establishment via a matching quality indicator (Schild, 2016). If two establishments had the same matching quality, one was selected randomly. After this, the remaining number of observations was 41,861. Then, duplicates were dropped. We considered duplicates to be those establishments which were matched to more than one BvD firm, i.e. having the same establishment identification, as well as those establishments having the same phone number. After dropping the duplicates, 40,114 observations remained. Finally, we eliminated addresses that were already used for the pretest. After applying all of the above restrictions, our frame population consisted of 39,978 observations.

Figure 2: Population restrictions for sample drawing



Source: Own calculations.

Out of the frame population, a total of 35,000 establishments was drawn, which is the gross sample. Due to a restricted population size, a disproportional sample selection with implicit

stratification was used. For the purpose of projection and representativeness, the drawing was based on three strata according to establishment size, settlement and industry. The sampling matrices are outlined below.

Regarding the establishment size, three size groups were generated:

- Establishments with 25-49 employees subject to social security
- Establishments with 50-99 employees subject to social security
- Establishments with 100 or more employees subject to social security

The regional distribution was considered within the framework of settlement structures⁵ as defined by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR, 2015). The basis for this settlement typology are 363 district regions in Germany, which are analyzed according to specific regional characteristics. Through these characteristics, the four regions are created:⁶

- Larger cities
- Urban regions
- Rural regions with signs of densification
- Sparsely populated rural regions

The final dimension refers to five industries summarized according to the Classification of Economic Activities, Edition 2008 (WZ 2008):⁷

- Food and consumption
- Consumer products
- Industrial goods
- Investment and durable goods
- Construction

Table 1 shows the aggregated gross sample matrix by strata firm size and industry.

⁵ The German term is "Siedlungsstrukturelle Kreistypen". For further information, see <http://www.bbsr.bund.de/BBSR/DE/Raumbeobachtung/Raumabgrenzungen/Kreistypen4/kreistypen.html?nn=443270>.

⁶ For detailed definitions, see appendix A 1.

⁷ The precise allocation to sector groups is shown in appendix A 2.

Table 1 Gross sample

	25-49	50-99	100 or more	Total
Food and consumption	1,499	1,142	1,157	3,798
Consumer products	1,356	850	790	2,996
Industrial goods	2,069	1,631	1,792	5,492
Investment and durable goods	6,899	3,873	3,972	14,744
Construction	5,168	1,933	869	7,970
Total	16,991	9,429	8,580	35,000

Source: Own calculations.

4 Survey method and preparations for the main survey

4.1 Survey method

Besides the questionnaire contents, we adopted the survey method from the US survey. The US MOPS was performed via written surveys, either using paper-pencil (Paper and pencil interview – PAPI) or an online tool (Computer-assisted web interview – CAWI). In the interest of greatest possible comparability, the GMOP was carried out in the same manner. The questionnaire as well as the cover letter included the notice that it is possible to complete the questionnaire either in writing or online. The paper and the online versions contained the same questions in the same sequence. In order to ensure an almost identical survey design, technical plausibility checks were avoided. Only a filtering process was implemented. To access the online version, the respondent had to use individual access data, which were printed on the first page of the written questionnaire as well as on the cover letter.

In addition, all establishments received a declaration of data protection which included information on the confidentiality of the given information as well as on the aggregation and anonymization of the data for analyses. The declaration also remarked that the participation is voluntary.

As target respondents, we defined top managers in the establishments, i.e. the managing director, the CEO, the division or plant manager.

4.2 Pretest

A pilot study, also called pretest, was run in order to test the adapted questionnaire. During the pretest, 400 establishments, sampled as described above, were screened by telephone in June 2014 and asked to participate in the written survey between July and August 2014. During the screening infas called the establishments in order to figure out the right target person from the top management level. Since the sample data only included the addresses of the establishments, the aim of the screening process was to get the contact information (name, email address and position in the establishment) of the managers in order to personally address the questionnaires to them.

The pretest yielded two main results. First, the response rate was lower than expected. Therefore the cover letter and the order of questions were adjusted for the main survey. Second, we predominantly reached the defined target persons, and of them mainly the CEOs or members of the executive offices. However, it did become clear that the screening tactic worked best with small establishments with up to 49 employees. Thus, we decided to split the sample in the main field phase into two subsamples so that establishments with less than 50 employees were screened prior to being sent the questionnaire, whereas larger establishments received the survey directly without prior screening.

4.3 Telephone Screening

The telephonic screening for the main survey lasted from October 2014 to December 2014. For the purpose of the screening it was not necessary to talk to the target person themselves. The contact information of the managers could instead be given by the person who answered the phone or any other respondent in the establishment.

Table 2 shows the result of the screening process. Subsample 1, which is the sample that was screened, consists of 16,929 establishments with less than 50 employees. With 10,152 of those, a valid interview could be realized. 8,982 of them reported the contact information of the target person. 4,975 establishments refused their participation in the survey due to concerns for data protection, lack of time or similar reasons. 599 were not part of the target group, e.g. because of a plant closure. These two groups were deleted from the sample and did not receive a questionnaire. 199 establishments were not reached by phone. Further 140 were summarized under the group 'Nonresponse other', which includes establishments that indicated that the target person is not available during the field phase. For the remaining 864 establishments it is unknown whether the establishment belongs to the target group, because there was no telephone connection available.⁸

Subsample 2 includes 18,071 establishments with 50 or more employees.

Establishments, for which the name of the target person was determined, received the questionnaire with a covering letter directly addressed to the manager, CEO, etc. The remaining establishments, which did not refuse to take part and were not closed down, as well as the establishments of subsample 2 were mailed a questionnaire that was not personally addressed. Instead the salutation 'Head Office' was used.

⁸ A detailed table is given in Schröder and Weiß (2016).

Table 2 Screening process

	N	%
Subsample 1 (25-49 employees)	16,929	48.4
Interview realized	10,152	60.0
Nonresponse-Refusal	4,975	29.4
Not eligible	599	3.5
Non-contact	199	1.5
Nonresponse other	140	0.8
Unknown eligibility	864	5.1
Subsample 2 (50 or more employees)	18,071	51.6
Total	35,000	100

Source: Schröder and Weiß (2016).

5 Field phase

5.1 Response rates

The field phase of the subsample without screening started on 10th November 2014 by dispatching the questionnaires. For the establishments in the screened subsample the questionnaires were sent out on 15th January 2015. For both groups, the latest date for submitting the questionnaire was 11th May 2015. The survey design scheduled two reminders via email respectively telephone, which increased the response rate substantially. If desired, the establishments received a new questionnaire.

Altogether 1,927 valid interviews were realized, 1,368 of them by PAPI, 554 online and in five cases infas received both a PAPI and CAWI version (see Table 3). The total response rate thus is 5.5%. Out of subsample 1 – with screening – 4.3% of the establishments took part. Among the unscreened establishments the response rate was 6.6%.

Table 3 Response

	Subsample 1		Subsample 2		Total	
	N	%	N	%	N	%
Gross sample	16,991	100	18,009	100	35,000	100
Realized interviews (total)	739	4.3	1,188	6.6	1,927	5.5
- PAPI	527	3.1	841	4.7	1,368	3.9
- CAWI	21*	/	34*	/	554	1.6
- PAPI + CAWI	/	/	/	/	5	0.0
Break-off during questionnaire	113	0.7	139	0.8	252	0.7
Not realized	16,139	95.0	16,682	92.6	32,821	93.8

Source: Schröder and Weiß (2016). Single values deleted for data protection reasons.

5.2 Reaching the target group

At the end of questionnaire, we asked the respondents about the position, they held in the year 2013. Table 4 shows the answers. In over 90% of the cases, the preferred target group was reached. 65% of the respondents were executive officers or CEOs. 4% were manager of multiple establishments, 10% of one establishment and 11% within an establishment. Only 3% indicated that they have no responsibility for managing other employees. The responding persons have an average tenure of 17 years. About 80% are males.

Table 4 Target persons

	N	%
Executive Officer, CEO	1,259	65.3
Manager of multiple establishments	85	4.4
Manager of one establishment	187	9.7
Manager within an establishment	220	11.4
Non-manager	63	3.3
Other	63	3.3
No response	50	2.6
Total	1,927	100

Source: Schröder and Weiß (2016).

6 Weighting

Since the gross sample was drawn randomly stratified by the dimensions size, industry and settlement, the representativeness of the interviewed establishment can be analyzed by comparing the realized sample with the gross sample.

Table 5 displays the proportion of participating establishments on all establishments in the sample. In total there is no systematic nonresponse.⁹ However there are some small, moderate deviations in single matrix cells. Small establishments with less than 50 employees as well as establishments from the construction industry are underrepresented, whereas medium and large sized establishments are overrepresented.

Table 5 Response by industry and size

	25-49	50-99	100 or more	Total
Food and consumption	69 (4.6)	65 (5.7)	63 (5.4)	197 (5.2)
Consumer products	75 (5.5)	57 (6.7)	58 (7.3)	190 (6.3)
Industrial goods	133 (6.4)	105 (6.4)	143 (8.0)	381 (6.9)
Investment and durable goods	314 (4.6)	265 (6.8)	284 (7.2)	863 (5.9)
Construction	148 (2.9)	96 (5.0)	52 (6.0)	296 (3.7)
Total	739 (4.3)	588 (6.2)	600 (7.0)	1,927 (5.5)

Source: Own calculations.

In order to compensate disproportionalities in the sample design and outages, infas provided survey weights. They were calculated by adjusting all establishments from the survey to the known distribution of the establishments in the target population.

7 Participating establishments

7.1 Key figures

Table 6 shows some key figures of the participating establishments. 86% of them are in German ownership and 60% are owned by a family. Around one third exported in 2013. 79% are independent companies, meaning that they are neither a business/branch of a larger company nor a head office or a middle-level authority. About 40% have a collective agreement and/or a works council.

⁹ The same holds for the stratification variable settlement.

Table 6 Key figures

	Mean	SD	Min	Max	N
German ownership	0.86	0.34	0	1	1,921
Family owned	0.60	0.49	0	1	1,882
Exports	0.69	0.46	0	1	1,898
Independent company	0.79	0.41	0	1	1,911
Collective agreement	0.40	0.49	0	1	1,890
Works council	0.43	0.50	0	1	1,880

Source: GMOP 2013; own calculations; unweighted values.

7.2 Agreement to panel participation and merging of data

The respondents were asked if they are willing to take part in a further survey in the future and agree with the storage of their contact details. 738 establishments (38%) agreed (see Table 7). It was made clear that the further participation is voluntary and that the agreement can be withdrawn at any time.

Moreover, the participants were asked for their agreement to link their information to other data that is available at the IAB. Of course, this consent was also optional. In total, 1,021 establishments (53%) agreed. About one third of the establishments did not agree. 10% marked the box 'I am not authorized' and a further 6% did not respond at all. Thus, for linking the survey data with other data sets, such as the BHP or individual-level data from the Integrated Employment Biographies (IEB), we can use the information of 1,021 establishments.

Table 7 Panel participation and merging of data

		Panel participation		
		Agreement	No agreement	Total
Merging of data	Agreement	502 (26.1)	519 (26.9)	1,021 (53.0)
	No agreement	141 (7.3)	465 (24.1)	606 (31.4)
	Not authorized	72 (3.7)	114 (5.9)	186 (9.7)
	No response	23 (1.2)	91 (4.7)	114 (5.9)
	Total	738 (38.3)	1,189 (61.7)	1,927

Source: GMOP. Own calculations.

8 Conclusion

The GMOP survey is the first large-scale survey on management practices and firm performance in Germany that is addressed to the top management level. The data contains information on over 1,900 establishments in the manufacturing and construction industry for two observation years within a span of five years.

List of abbreviations

ASM	Annual Survey of Manufacturing
BA	Federal Employment Agency
BBSR	Federal Institute for Research on Building, Urban Affairs and Spatial Development (Bundesinstitut für Bau-, Stadt- und Raumforschung)
BeH	Employment History
BHP	Establishment History Panel
BvD	Bureau van Dijk
CATI	Computer-assisted telephone interview
CAWI	Computer-assisted web interview
FDI	Foreign direct investment
FDZ	Research Data Centre of the German Federal Employment Agency at the Institute for Employment Research
GMOP	German management and organizational practices survey
IAB	Institute for Employment Research
IEB	Integrated Employment Biographies
IfW	Kiel Institute for the World Economy
infas	Institute for Applied Social Sciences
KPI	Key performance indicators
MOPS	Management and organizational practices survey
PAPI	Paper and pencil interview
WEM	Well-being enhancing measures
WFB	Work-family balance

References

Antoni, M., Koller, K., Laible, M.-C., and Zimmermann, F. (2017): Orbis-ADIAB: From Record Linkage Key to Research Dataset. Combining Commercial Data with Administrative Employer-Employee Data. FDZ-Methodenreport, forthcoming.

BBSR, Bundesinstitut für Bau-, Stadt- und Raumforschung (2015): Retrieved from: <http://www.bbsr.bund.de/BBSR/DE/Raubeobachtung/Raumabgrenzungen/Kreistypen4/kreistypen.html?nn=443270> (11.03.2016).

Bloom, N., Brynjolfsson, E., Foster, L., Jarmin, R., Saporta-Eksten, I., and van Reenen, J. (2013): Management in America, CES Discussion Paper 13-01, US Census Bureau.

Bloom, N. and van Reenen, J. (2010): Why do management practices differ across firms and countries? Journal of Economic Perspectives, 24(1), 203-224.

Destatis, Statistisches Bundesamt (2015): Retrieved from: <https://www.destatis.de/DE/Methoden/Klassifikationen/GueterWirtschaftsklassifikationen/Content75/KlassifikationWZ08.html> (17.11.2015).

Gruhl, A., Schmucker, A., and Seth, S. (2012): The Establishment History Panel 1975-2010 * handbook version 2.2.1. FDZ-Datenreport, 04/2012 (en), Nürnberg, 105p.

Schild, C.-J. (2016): Linking “Orbis” Company Data with Establishment Data from the German Federal Employment Agency, German RLC Working Paper No. wp-grlc-2016-02.

Schröder, H. and Weiß, T. (2016): Management practices, organizational behaviour and firm performance in Germany – Haupterhebung, FDZ-Methodenreport, 05/2016 (de), Nürnberg, 42p.

Appendix

A 1 Settlement structures

Larger cities (‘Kreisfreie Großstadt’)	Self-governed cities with at least 100.000 inhabitants.
Urban regions (‘Städtischer Kreis’)	Regions with a population share living in large and medium sized cities of 50% and more and a population density of 150 inhabitants/km ² and more as well as regions with a population density excluding large and medium sized cities of 150 inhabitants/km ² and more.
Rural regions with signs of densification (‘Ländlicher Kreis mit Verdichtungsansatz’)	Regions with a population share living in large and medium sized cities of 50% and more but with a population density of less than 150 inhabitants/km ² as well as regions with a population share living in large and medium sized cities of less than 50% and a population density excluding large and medium sized cities of 100 inhabitants/km ² and more.
Sparsely populated rural regions (‘Dünn besiedelter ländlicher Kreis’)	Regions with a population share living in large and medium sized cities of less than 50% and a population density excluding large and medium sized cities of less than 100 inhabitants/km ² .

Source: BBSR (2015).

A 2 Industries

Industry acc. to GMOP	WZ 2008	Description
Food and consumption	C10	Manufacture of food products
	C11	Manufacture of beverages
	C12	Manufacture of tobacco products
	C13	Manufacture of textiles
Consumer products	C14	Manufacture of wearing apparel
	C15	Manufacture of leather and related products
	C16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles
	C17	Manufacture of paper and paper products
Industrial goods	C18	Printing and reproduction of recorded media
	C19	Manufacture of coke and refined petroleum products
	C20	Manufacture of chemicals and chemical products
	C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
	C22	Manufacture of rubber and plastic products
	C23	Manufacture of other non-metallic mineral products
	C24	Manufacture of basic metals
Investment and durable goods	C25	Manufacture of fabricated metal products, except machinery and equipment
	C26	Manufacture of computer, electronic and optical products
	C27	Manufacture of electrical equipment
	C28	Manufacture of machinery and equipment n.e.c.
	C29	Manufacture of motor vehicles, trailers and semi-trailers
	C30	Manufacture of other transport equipment
	C31	Manufacture of furniture
	C32	Other manufacturing
	C33	Repair and installation of machinery and equipment
Construction	F41	Construction of buildings
	F42	Civil engineering
	F43	Specialized construction activities

Source: Destatis (2015). Own classification.

Imprint

FDZ-Methodenreport 6/2016 (EN)

Publisher

The Research Data Centre (FDZ)
of the Federal Employment Agency
in the Institute for Employment Research
Regensburger Str. 104
D-90478 Nuremberg

Editorial staff

Dana Müller, Dagmar Theune

Technical production

Dagmar Theune

All rights reserved

Reproduction and distribution in any form, also in parts,
requires the permission of FDZ

Download

http://doku.iab.de/fdz/reporte/2016/MR_06-16_EN.pdf

Internet

<http://fdz.iab.de/>

Corresponding author:

Sandra Broszeit
Institute for Employment Research (IAB)
Research Data Centre (FDZ)
Regensburger Str. 104
D-90478 Nürnberg
Phone: +49-911-179-6858
Email: Sandra.Broszeit@iab.de