

## Data Observer

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# The German Management and Organizational Practices (GMOP) Survey

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## 1 Introduction

The last decade has witnessed the birth of an innovative and growing strand of economic research that has investigated the role of management practices for firm and worker performance (e. g., Bloom and Van Reenen 2007; Bloom and Van Reenen 2010). To date, most of this research has looked at data from the World Management Survey (WMS), with Bender et al. (2016) being a recent example. The WMS is a survey with open ended questions on firm's management practices conducted in several countries.<sup>1</sup> However, the surveys generally only include a relatively small number of establishments per country, for example around 300 for Germany.

The “German Management and Organizational Practices” (GMOP) Survey<sup>2</sup> stems from an effort to provide a larger-scale database on management practices at the establishment-level in Germany. Specifically, the dataset contains establishment-level information on managerial practices in Germany for 2008 and 2013, as well as background information on these establishments. The survey design is based on the “Management and Organizational Practices Survey” (MOPS), which was carried out in the US in 2010 by the US Census Bureau and introduced by Bloom et al. (2013). With information on management practices of 1,927 establishments, the GMOP is the first large scale and systematic survey in Germany that directly aims at investigating management practices and their relationship with establishment performance.

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<sup>1</sup> See [www.worldmanagementsurvey.com](http://www.worldmanagementsurvey.com).

<sup>2</sup> See [www.gmop-survey.de](http://www.gmop-survey.de) and [http://fdz.iab.de/en/FDZ\\_Establishment\\_Data/GMOP.aspx](http://fdz.iab.de/en/FDZ_Establishment_Data/GMOP.aspx).

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The GMOP survey was carried out jointly by the Kiel Institute for the World Economy (IfW), the Institute for Employment Research (IAB) and the Institute for Applied Social Sciences (infas). It was funded by the Leibniz Association. The establishment-level data is available to the scientific community via the Research Data Centre (FDZ) of the Federal Employment Agency at the IAB, a renowned provider of data for employment and labor market research in Germany.

In Section 2 we present the content of the data and in Section 3 the survey design and the data collection process. We then discuss issues of data quality in Section 4 and provide some insights into the research potentials of the data in Section 5. Section 6 describes the data documentation and Section 7 closes with a description of data access options.

## 2 Information contained in the survey

The questionnaire is based on the US MOPS survey in order to allow comparability between the two countries. The survey questions are transferred to the German context in accordance with the original meaning. Thereby, the overall structure of the US questionnaire is retained, however, the questions are reordered, some topics are dropped and some new ones are included. A few questions are adapted to make them suitable to German labor market institutions or regulations, such as for example questions on lay-off practices.

The GMOP questionnaire consists of five different parts: Part A is comprised of a battery of 16 items relating to management practices concerning monitoring practices (e. g., collection and review of performance indicators), the setting and attainment of targets (e. g., in-house communication and timeframe of targets), as well as incentives (e. g., performance bonuses and promotions). These items were developed by Bloom et al. (2013) and based on the WMS (Bloom and Van Reenen 2007, 2010).<sup>3</sup> In addition to the US survey, questions on the provision of health (e. g., the existence of health days or possibilities for healthy diets) and work-family-balance practices (e. g., flexible working time and possibilities to take care of family members), as well as instruments offered by the German Federal Employment Agency (e. g. use of short-time work) are included. Finally, several questions ask managers about their subjective ranking of the importance

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<sup>3</sup> Both the MOPS and the GMOP are related to the World Management Survey although they differ in a number of aspects. Most importantly, while the WMS uses open ended questions in person-to-person interviews, GMOP and MOPS are based on larger samples of establishments and include only closed ended questions, which makes the calculation of an aggregate establishment-level management index quite straightforward.

of certain aspects of management (e. g., on the importance of monetary or non-monetary incentives).

Part B pertains to background information on the establishments and asks, for instance, about ownership structures and the number of employees and managers. Part C relates to performance indicators such as sales, exports, and competition. The existence of an executive board (“Vorstand”), as well as the composition of their members, are surveyed in Part D. The last part of the survey enquires about personal characteristics of the respondent, such as tenure and position in the establishment.<sup>4</sup>

## 3 Survey design

### 3.1 Sampling frame

The study population consists of German establishments in the manufacturing industry with 25 or more employees liable to social security contributions. A disproportionate stratified random sampling design was chosen to adequately reflect the German establishment structure. The sample was drawn from the IAB Establishment History Panel (Betriebs-Historik-Panel - BHP) of 2011 (Schmucker et al. 2016) and restricted to only include establishments with a valid link to Bureau van Dijk (BvD) data.<sup>5</sup>

The thus resulting population of establishments is 54,610. From these, a gross sample of 35,000 establishments was drawn for the survey. This gross sample was based on three stratification variables:

- Establishment size categories: 25–49 employees, 50–99 employees, 100 or more employees subject to social security contributions
- Settlement structures: larger cities, urban regions, rural regions with signs of densifications, sparsely populated rural regions according to the classification of the Federal Institute for Research on Building, Urban Affairs and Spatial Development (Bundesinstitut für Bau-, Stadt-, und Raumforschung - BBSR, 2016)

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<sup>4</sup> The questionnaire can be found in its original German version, as well as an English translation, on the FDZ GMOP homepage [http://fdz.iab.de/en/FDZ\\_Establishment\\_Data/GMOP.aspx](http://fdz.iab.de/en/FDZ_Establishment_Data/GMOP.aspx).

<sup>5</sup> Bureau van Dijk is a commercial data provider from whom the FDZ acquired a dataset which was subsequently linked to the administrative data through record linkage (Antoni et al. 2017). The reasoning behind the sample strategy is to allow for analysis at the company-level including financial information. Access to the GMOP-BvD data is restricted to FDZ employees.

- Industries: food and consumption, consumer products, industrial goods, investment and durable goods, construction

The stratification variables, as well as specific survey weights, are provided in the dataset, such that researchers can correct for the sampling design.

### 3.2 Data collection

The survey was carried out by infas, a company with substantial experience in the field of survey design and administration. During the field phase, a mixed mode with a simultaneous approach was chosen, i. e. the respondents could pick either a paper-pencil (PAPI) or online mode (CAWI). In both cases, the structure of the survey and the questions were identical. Prior to the field phase, all establishments with fewer than 50 employees were called by infas in order to identify the target respondent and correctly mail the questionnaire to this respondent. The pre-test revealed that these refinement calls were only useful for smaller establishments and did not increase response rates for larger establishments with more than 50 employees. Therefore, refinement calls were only made for small establishments in the main field phase.

The chosen target respondents were defined as top managers, i. e. managing directors, CEOs, division or plant managers. This target group was chosen as top managers are believed to have a good knowledge not only of an establishment's processes and structures, but also of individual management measures implemented in the establishments. Therefore, it was assumed that managers would be able to give the most reliable information on the focal topics of the survey.

The field phase took place from November 2014 until May 2015. Several reminders via phone, e-mail and mail were carried out. Overall, 1,927 completed surveys were collected and most were answered by the desired target group. This corresponds to a response rate of 6 percent. Further analysis reveal that the response rates do not vary substantially across the stratification variables establishment size, industry and settlement structure. Small deviations occur in the size categories, where small establishments are slightly underrepresented while the larger establishments are slightly overrepresented. However, these deviations are small. Several reasons explain the relatively low response rates, which are described in detail in Broszeit and Laible (2017a): Bypassing gatekeepers to reach top managers is not easy. Once the questionnaire reached the target respondent, the survey content may not have appealed to all, specifically to those respondents who head R&D or sales branches. Finally, especially large establishments tend to be over-surveyed. Thus, while the specific target group

may have caused some problems concerning response rates, it did ensure a high level of data quality, as the top managers are also the ones most knowledgeable about management practices.

## 4 Data quality and data description

### 4.1 Representativeness

Given the low response rate it is of importance for the usefulness of the data to establish whether they are representative or not. Broszeit and Laible (2017a) provide a detailed discussion on the representativeness and data quality of the GMOP data. In order to assess the representativeness of the survey, they compare participating establishments with all establishments in the target population based on data from the BHP. Differences are apparent in the stratification cells, e. g. size, industry and settlement. These differences are due to the sampling procedure and can be corrected by using the sample weights. As the weights correct for the sample drawing design, i. e. the disproportionate stratified sample, they accurately align the participating establishment's means to those of the total population. It is therefore recommended to use weights in descriptive statistics and include either weights or the stratification variables in the multivariate regressions.

The comparison between participating and non-participating establishments further reveals some small deviations concerning the qualification structure of the employees. Here, the GMOP participants seem to have slightly better qualified employees compared to the population. However, these differences are small and can therefore be neglected. Furthermore, no significant differences are observed for further establishment characteristics. As differences between the participating establishments and the target population are negligibly small or due to the sample design, we consider the data to be representative.

### 4.2 Key descriptive statistics

To provide an overview of some of the key variables in the dataset, Table 1 presents selected summary statistics for the full sample for both observation years. While most questions in the survey were inquired about in 2008 and 2013, the questions which were deemed to pertain to unchanging characteristics were only inquired about in 2013. These are the variables which do not have summary statistics for 2008.

**Table 1:** Summary statistics of the full data.

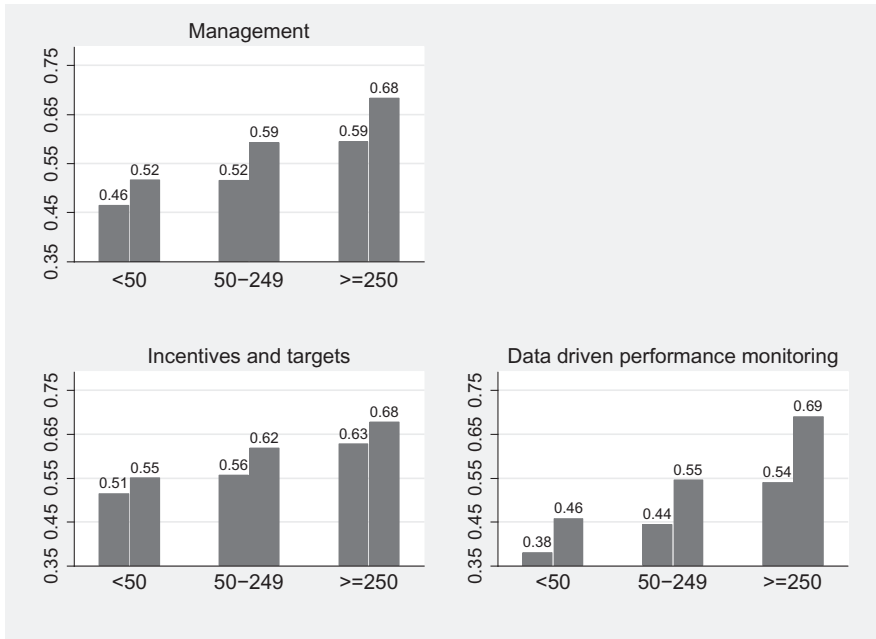
Variable	2008			2013		
	N	Mean	SD	N	Mean	SD
Employees	1,634	144.36	356.70	1,812	159.68	389.50
Managers	1,707	11.67	25.02	1,867	13.33	26.91
Non-Managers	1,684	134.65	338.24	1,828	147.40	372.50
Executive board (D)	1,816	0.20	0.40	1,887	0.20	0.40
FDI (D)	1,813	0.20	0.40	1,893	0.23	0.42
Exports (D)	1,819	0.67	0.47	1,898	0.69	0.46
Offshoring (D)	1,517	0.13	0.34	1,598	0.16	0.36
Innovations (D)	1,560	0.71	0.45	1,759	0.79	0.41
Foreign Ownership (D)	–	–	–	1,921	0.14	0.34
Family Ownership (D)	–	–	–	1,882	0.60	0.49
Collective agreement (D)	–	–	–	1,890	0.40	0.49
Works council (D)	–	–	–	1,880	0.43	0.50
Independent company (D)	–	–	–	1,911	0.79	0.41

Notes: Not weighted. D indicates a dummy variable. Source: Own calculations based on GMOP as found in Broszeit and Laible (2017a).

## 5 Current research topics and further potential

The GMOP is specifically suited to enable researchers to analyze management practices, health measures and work-family-balance measures at the establishment level. These management practices can be looked at individually or they can be aggregated into a management index as in Bloom et al. (2013) or Broszeit et al. (2016), which provides an indicator of how structured management is in an establishment.

Broszeit et al. (2016) calculate this management index using the GMOP data. They find that there is substantial heterogeneity in the use of management practices across establishments, and that large establishments tend to use more structured management practices than small or medium sized establishments. This relationship also holds when regarding the components of the management score separately, e. g. incentives and targets, as well as data driven performance management (Figure 1). They also consider other establishment characteristics that may be correlated with the use of management practices, such as ownership structure or export status. Looking at the link between the management indicator and labor productivity, they find that these two are strongly positively correlated for large and medium sized establishments, but less so for small establishments. This raises new questions about the role of



**Figure 1:** The management score and its components across establishment sizes. Notes: Weighted observations. The first bar respectively relates to 2008, the second bar to 2013. Source: Own calculations based on GMOP as found in Broszeit et al. (2016).

management practices in small establishments in particular, which can be looked at in further research.

Görg and Hanley (2017) also use the management index to look at the relationship between management and establishments' internationalization strategies. Exploiting the two years of data, they find that establishments that enter into exporting or start opening affiliates abroad also increase their management performance as measured by the management index. This can be taken as preliminary evidence that, in line with theory, international competition forces establishments to upgrade their management performance.

Broszeit and Laible (2017b) create a health index analogously to the management index. They examine the relationship between health measures, Anglo-Saxon management practices and labor productivity, as well as median wages. They show that health measures have a distinct effect on their own and are not merely subsumed under the management score. While management practices are significantly related to labor productivity, the health score is not, while the reverse is true for median wages.

Research strands that could be further pursued include the determinants of the existence of management practices, health practices and work-family-balance measures. Furthermore, the effect of individual management practices on establishment productivity, international orientation, employment structures, etc. can be investigated.

The research potential of the GMOP data could further be enhanced by a linkage to administrative data. As informed consent to linkage is mandatory in Germany, the GMOP respondents were asked whether or not they give this consent. Fifty-three percent of the respondents did so, such that information for 1,021 establishments might be linked, for example to the Establishment History Panel (BHP), or an excerpt of the Integrated Employment Biographies (IEB) of the employees working in the GMOP establishments.

## 6 Data documentation

Extensive data documentation can be found on the FDZ's GMOP homepage ([http://fdz.iab.de/en/FDZ\\_Establishment\\_Data/GMOP.aspx](http://fdz.iab.de/en/FDZ_Establishment_Data/GMOP.aspx)). The data report describes the variables found in GMOP (Broszeit and Laible 2016a) and three method reports discuss the data collection process (Schröder and Weiß 2016), the survey design (Broszeit and Laible 2016b) and the data quality (Broszeit and Laible 2017a).

## 7 Data access

Access to the data is possible for researchers through the Research Data Centre (FDZ) of the BA at the IAB. The legal framework that enables data access is based on § 75 book X of the German Social Code. The data set is only accessible by individuals employed by an independent research institution or university, i. e. private companies are not granted permission to use the data. As the GMOP data represent social data ("Sozialdaten"), they are subject to strict data confidentiality rules. In order to comply with the current data protection legislation, the FDZ has implemented several procedures which enable external users to obtain data access. The data is altered as little as possible, i. e. solely information that may lead to de-anonymization is aggregated to comply with the laws, such as for example the number of executive board members.

In order to access the data, an application has to be completed by the external researcher and approved by the Federal Ministry of Labor and Social Affairs. The application process is coordinated by the FDZ and the application can be found on



the FDZ's homepage (<http://fdz.iab.de/en>). In order for the application to be successful, the proposed research project has to pertain broadly to research on social security systems or employment research and be of public interest. After a contract has been signed, the researcher is granted access to the data.

The GMOP data can be accessed via on-site use or remote execution. During the on-site use, the external researcher is granted direct access to the data during a research stay at the FDZ in Nuremberg or its other locations in Germany, the US and the UK.<sup>6</sup> Alternatively, data users can choose to use data access via the Job Submission Application (JoSuA) software (Eberle et al. 2017). Within this software users can upload their programs written in STATA and the results are made available in JoSuA after verification of compliance with the data protection legislation. Researchers can choose between two modes in JoSuA: The mode “internal use” provides quick access to the results, as they are not manually checked for data security. The internal use mode is primarily used for data preparation and preliminary research. However, it is strictly prohibited to publish results from this mode in any way. The “publication/presentation mode” is meant for preliminary and final results which will be presented or published. These results are checked for compliance with data confidentiality and information that may lead to the identification of establishments (or individuals) is deleted (Hochfellner et al. 2014).

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<sup>6</sup> For an overview of the FDZ's locations see: [http://fdz.iab.de/en/FDZ\\_Scope\\_of\\_Services.aspx](http://fdz.iab.de/en/FDZ_Scope_of_Services.aspx)

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