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Data for *Mittelstand* Companies in Germany at the IfM Bonn

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1 Introduction

The German *Mittelstand* is supposed to be the backbone of Germany's economy. It earned this appraisal because of its outstanding number of companies and due to its notable status as an employer: In fact, 93.6 % of the total population of companies are *Mittelstand* enterprises and they employ more than six in ten employees subject to social insurance contributions (Wolter/Sauer 2017; Haunschild/Wolter 2010).¹

It is broadly accepted among researchers that *Mittelstand* companies are led by their owners (Gantzel 1962; Wolter/Hauser 2001; Günterberg/Wolter 2003; Welter et al. 2014; Berlemann et al. 2018). The empirical literature, however, mostly examines small and medium-sized enterprises (SME's), which are solely characterised by their firm size and not by ownership. Because most data sets lack information on ownership and management structures, Berlemann et al. (2018) state that as a consequence, almost the entire empirical "*Mittelstand*" research refers to SME's.²

This paper introduces data sets surveyed by the Institut für Mittelstandsforschung (IfM) Bonn, which mostly contain information on firm ownership and firm management, and which in turn help to identify *Mittelstand* companies. In the following, we briefly introduce the IfM Bonn, then describe its data sets, and finally address ways to access the data.

1 Both publications refer to family-led enterprises which are commonly used as synonyms for *Mittelstand* enterprises (Welter et al. 2014).

2 Another reason for the approximation of *Mittelstand* by firm size is the positive correlation between the size of businesses and the unity of ownership and management (Steiner et al. 1979).

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2 The Institut für Mittelstandsforschung (IfM) Bonn

Since its inception in 1957, the IfM Bonn has been examining the specifics of German Mittelstand. Its main task is to analyse the status-quo, challenges, and development of Mittelstand companies, to derive recommendations for SME policies for its founders³ and to disseminate its research results to the general public.

The IfM Bonn accomplishes its tasks by conducting studies within four fields of research: development of Mittelstand businesses, general business management, Mittelstand in the context of society and politics, and Mittelstand statistics. Due to its diverse research agenda, the IfM Bonn processes all forms of available data (e. g. administrative or officially available data sets) and conducts surveys. The primary feature of the IfM Bonn surveys is that they usually include questions, which allow identifying Mittelstand enterprises.

3 Description of available data sets

In the consecutive sections, we present the data sets of the IfM Bonn and briefly describe research design, central variables as well as research potentials. Here, we distinguish between individual- and firm-level data sets (see Table 1).

3.1 Individual-level data sets

3.1.1 Survey on potential drivers of entrepreneurial activities of academics in Germany (Hochschulbefragung des IfM Bonn)

In the year 2013, the IfM Bonn conducted an online survey to assess entrepreneurial intentions as well as entrepreneurial potentials of academics. All researchers and all professors at 73 randomly chosen universities (of applied sciences) at departments in the fields of (business and creative) economics, health and social affairs, social sciences, and STEM were contacted (Bijedić et al. 2015, 2016). About 10,000 individuals responded. In 2016, a follow-up

³ Founders are the Federal Republic of Germany and the Federal State of North Rhine-Westphalia.

Table 1: Data sets of the IfM Bonn.

Data set	Year	Panel data	Number of observations	Main features
Individual-level data (Section 3.1)				
1. Survey on Potential Drivers of Entrepreneurial Activities of Academics in Germany (Hochschulbefragung des IfM Bonn)	2013 and one follow up study in 2016	yes	10,199 (1st wave) 1,252 (2nd wave)	Comprehensive survey of researchers at 73 randomly chosen universities (of applied sciences) at departments in the fields of (business) economics, health and social affairs, social sciences, and STEM. Many questions changed in the follow-up questionnaire. Sample consists of a random set of visitors asked at start-up exhibitions in Germany.
2. The IfM Bonn Founder Panel (Gründerpanel des IfM Bonn)	Initial surveys from 2003 to 2011 and then up to 6 follow-up surveys	yes	16,262 (wave A) 2,370 (wave B) 1,118 (wave C) 1,498 (wave D) 891 (wave E) 604 (wave F) 459 (wave G)	

(continued)

Table 1: (continued)

Data set	Year	Panel data	Number of observations	Main features
Firm-level data (Section 3.2)				
1. Mittelstandsbefragung of the IfM Bonn 2014	2014	No	541	Allows differentiation between Mittelstand companies and other firms.
2. Fast-growing enterprises (Schnell wachsende Unternehmen)	2015/2016	No	693	
3. Internationalisation activities survey	2012	No	827	
(Internationalisierungsbefragung)				
4. Migrant family business data (Familienunternehmen von Migranten)	2016/2017	No	1,390	
5. The Crowdinvesting Database of the IfM Bonn	Firm data: From 2011 to 2014 Telephone interviews: 2015	No	163 funding rounds of 145 companies; 45 of them participated in the additional telephone interviews	Census data on all equity crowdfunding campaigns on four leading platforms in Germany. Several characteristics of young ventures included.

The number of observations refers to the maximum sample size and also includes aborted interviews/surveys.

survey was conducted with more than 1,200 respondents (Bijedić et al. 2017). The focus of the two questionnaires differed: The first wave concentrated on questions about individual intentions during the nascent entrepreneurial stage, the institutional environment as well as patenting, and other (pre)entrepreneurial activities. The follow-up questionnaire was designed to address whether entrepreneurial intentions changed over time. Those respondents who already started their business were asked about their business success. The mentioned studies present more details and descriptive statistics.

The data set offers various research potentials, such as the analysis of network effects or the examination of work conditions in (nascent) entrepreneurship behaviour among academics. Also, subjective opinions, such as the compatibility of science and entrepreneurial independence, might be an exciting field of research. Another focus is on innovation and patenting, which offers the possibility to examine whether and how academics in different areas bring their products and services to the market.

3.1.2 The IfM Bonn founder panel (Gründerpanel des IfM Bonn)

In the period from 2003 to 2011, the IfM Bonn randomly asked visitors of various start-up exhibitions in Germany to participate in a long-term-survey (Kranzusch/Kay 2011; Kay/Kranzusch 2012). Visitors of start-up exhibitions thus comprised the base population for the follow-up questionnaires. Central variables refer to nascent entrepreneurship, gathered from individuals, who have not yet been self-employed when visiting the start-up exhibition. Moreover, visitors have been asked about the self-assessed propensity to start a new business, the motives to start a new business, individual attitudes (e.g. risk preference or profit orientation), the existence of a business idea, and whether the respondent planned to start a new company or would like to take over an existing one. Besides, the questionnaire surveys socio-demographic information as well as human capital and educational background. Follow-up surveys aimed at assessing whether individuals started up businesses and how these businesses have developed. Thus, the IfM Bonn Founder Panel allows for cross-sectional as well as panel analyses. Kay and Kranzusch (2012) provide a detailed description of the IfM Bonn Founder Panel.

This data set has been used, among others, to investigate nascent entrepreneurship in a variety of dimensions (see, among others, Kranzusch 2005; Kay/Schlömer 2009; Kraus/Werner 2012), to investigate the effects of networks in entrepreneurial decisions (Semrau/Werner 2012, 2014), and to examine obstacles to entrepreneurship with a specific focus on migration background (Kay/

Schneck 2012). In a recent study, Brink et al. (in press) analysed the survival of newly founded firms with a particular focus on the founder's age. Although the Gründerpanel is the basis in some studies, the data still offer further research potentials. For example, the panel nature is yet not exploited exhaustively. Also, an examination of changes in individual attitudes and opinions over time provides a promising avenue for further research.

3.2 Firm-level data sets

3.2.1 Mittelstandsbefragung of the IfM Bonn 2014

The Mittelstandsbefragung of the IfM Bonn was conducted in 2014 to gather insights about the characteristics of Mittelstand companies in Germany and their self-perception. In this regard, Welter et al. (2015: 6f) identified a considerable discrepancy between the Mittelstand definition of the IfM Bonn and perception of respondents: While almost nine in ten microenterprises belong to the Mittelstand, only four in ten respondents categorise their businesses as Mittelstand. Larger firms, in turn, are less likely to meet the objective criteria of the Mittelstand, but the respondents more frequently stated to be part of the Mittelstand. The data set consists of more than 500 observations stratified by firm size (sales in Euros) and sector (cf. Welter et al. 2015). The questionnaire addresses in addition to self-perceptions a magnitude of topics, such as, among others, legal form, firm age, firm-specific strategies, outsourcing, acquisitions, and business succession (for details see Welter et al. 2015: 67ff).

Recently, this dataset was used to analyse how far the personal and company goals of Mittelstand companies differ from other enterprise types (Pahnke et al. 2019). Besides, Pahnke and Welter (2019) published selective results based on this data set. May-Strobl and Welter (2015) also used the Mittelstandsbefragung of the IfM Bonn as well as the IfM expert survey and showed some differences in opinions about political discourses between experts and entrepreneurs. Nevertheless, many questions have not been analysed yet: like the questions regarding business market behaviour and competitive environment of Mittelstand companies and their counterparts.

3.2.2 Fast-growing enterprises (Schnell wachsende Unternehmen)

Between October 2015 and January 2016, the IfM Bonn conducted an online survey on fast-growing firms in Germany. The random sampling was based

on firms with at least five employees in the year 2015 and was stratified by sector and size class. As fast-growing firms are seldom (Acs et al. 2008), additional sample collection steps were implemented. In detail, the final sample relies on two draws, whereas draw A consists of 6,728 randomly selected firms, while sample B consists of 7,661 firms randomly drawn from the universe of firms with sales or employment growth rates of at least 72.8 % between years 2010 and 2013. Sample B thus refers to fast-growing firms, which grew by 20 % per year. In total, 693 firms participated in the survey. The questionnaire relates to region, sector, employment, age, ownership structure, business objectives as well as market leadership (Schlepphorst/Schlömer-Laufen 2016). Besides, the data allows distinguishing fast growth following the definition of the OECD and self-assessed rapid growth. Schlepphorst and Schlömer-Laufen (2016) showed that in many cases, perceptions of fast growth do not match with the definition of the OECD. Furthermore, Schlepphorst et al. (in press) utilised the data set to identify the determinants of becoming a market leader and/or a so-called hidden champion. Future research projects might explore growth paths in the context of hidden champions. Also, perceptions about growth provide a promising avenue for further research.

3.2.3 Internationalisation activities survey (Internationalisierungsbefragung)

The IfM Bonn also examines the internationalisation of companies. Most empirical studies within this field of research rely on administrative and official data (Holz et al. 2013; Kranzusch et al. 2016). In 2012, the IfM Bonn conducted an own representative survey to analyse the internationalisation activities of SME's (Kranzusch/Holz 2013). A total of 693 companies participated in the survey. One main result was that approx. 36.8 % of all enterprises entertain direct international business activities. Almost one-fifth of all companies considered starting international business activities for the first time. The population for this online survey were companies of all sizes and sectors based in Germany. The sample is based on two drawings, whereas draw A consists of companies which were already active on international markets and draw B consists of a set of randomly selected firms. In the final data set, draw A represented 80 % of the firms of the total sample. Both draws were stratified by sector and size class.

The survey contains information about firm age, sector, firm size, ownership and management structure as well as questions on the scope and forms of companies' internationalisation activities. The latter is broadly interpreted and

not just restricted to import and export of goods, but also includes other types of internationalisation, such as direct investments, consultancy contracts, or toll manufacturing in an international context. The complete questionnaire, further details on drawing as well as weighting can be found in Kranzusch and Holz (2013: 130 ff.).

The data set offers potentials to research the internationalisation patterns of the Mittelstand. In this regard, the internationalisation of owner-led businesses was not yet subject to investigation.

3.2.4 Migrant family business data (Familienunternehmen von Migranten)

Bijedić et al. (2017) examined the characteristics of migrant-led family businesses⁴ and found that innovation is more common in migrant-led than in native-led family businesses. The data were gathered via an online survey between October 2016 and February 2017. The data set combines information on the ownership-management relationship with information on the migration background of members of the executive board. Individuals are defined to have a migration background when they or at least one parent moved to Germany. In total, more than 1,300 firms (including migrant-led and native-led family businesses as well as non-family companies) participated in the survey. The sample was stratified by industry and number of employees (cf. Bijedić et al. 2017). The focus of the questionnaire was on business demographics, innovation, export, sales, personnel, and succession. In their report, Bijedić et al. (2017) provide a detailed description of the sampling, the weighting, the central variables, and also present descriptive statistics.

The research potentials of this data are manifold. Studies might address not only performance, but also management strategies, employment structure, or international activities.

3.2.5 The crowdfinancing database of the IfM Bonn

The Crowdfinancing Database of the IfM Bonn (Löher et al. 2015) combines publicly available information provided by leading equity crowdfunding platforms in Germany with data gathered by telephone interviews. All equity

⁴ According to Mittelstand definition of the IfM Bonn, the terms Mittelstand, family enterprise, and owner-managed enterprise are considered as synonyms (Welter et al. 2014).

crowdfunding campaigns launched between August 1, 2011, and November 18, 2014, at the four leading equity crowdfunding platforms Companisto, Fundsters, Innvestment, and Seedmatch were included in the data set. In total data on 145 different firms and 163 funding rounds were collected. Eighteen firms already started more than one equity crowdfunding campaign. Among others, the funding goal in Euro, the funding sum in Euro, the number of backers, or the business valuation in Euro were obtained by desk research. In a second step, this data set was augmented by telephone interviews with the CEOs of the firms. Among those 145 identified firms, 45 were willing to participate in the telephone survey between March and May 2015. The telephone interviews helped to add information on financial decisions and financial structure before and after the crowdfunding campaign, on the motives to launch an equity crowdfunding campaign or the founders' financial commitments. A more detailed data description and descriptive statistics can be found in Löher et al. (2015). To date, the Crowdinvesting Database has been utilised to analyse the relationship between the entrepreneurs' financial commitment and crowdfunding success (Löher et al. 2018).

Future research might engage in examining the role of financial alternatives and equity crowdfunding success. Also, the analysis of motives to use equity crowdfunding and its relation to venture success seems to be a promising field of future research. Moreover, the data set also offers possibilities to investigate the educational background and industry-specific experience of entrepreneurial teams.

4 Data access

The described data sets can be requested for non-commercial reasons from the IfM Bonn. To apply for data access, please send your request via email to *Datennutzung(at)ifm-bonn.org*. In case of acceptance, researchers need to sign a data usage agreement. The data will usually be provided in SPSS (.sav) or Stata (.dta) format. Due to reasons of data protection, researchers can access the data only at the IfM Bonn.

The list of available data sets will steadily be updated and can be found online: *www.ifm-bonn.org*.

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