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In the eye of the beholder? Differentiating between SMEs and Mittelstand

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Abstract A common fallacy is that small and medium-sized enterprises (SMEs) are the translation for *Mittelstand* companies. Until today, no common, widely accepted, and consistently applied understanding of what constitutes the Mittelstand exists, and related international research is consequently less coherent as well as a strong evidence-base for policy makers lacking. Most empirical research has relied on data for SMEs, taking quantitative metrics on firm size as constituent features of *Mittelstand* companies. The paper challenges this simplified equation of *Mittelstand* and SMEs and provides a first comparison of different approaches to analyze Mittelstand companies. Focusing on the criteria owner-management, firm size, and a sense of belonging to the Mittelstand, we highlight systematic differences of these approaches. Consequently, we suggest a conceptualization of Mittelstand companies that paves the way for

more comprehensive research by setting the distinctive company identity based on ownership and management at the core of what constitutes the Mittelstand.

Plain English Summary Research on Mittelstand companies is faced with a dilemma. On the one hand, Germany's Mittelstand companies have attracted increased attention in the entrepreneurship literature as well as from policy makers and media at an international level. On the other hand, there is no common, widely accepted and consistently applied understanding of what constitutes the Mittelstand. As a result, research on the Mittelstand is less coherent causing confusion in media, politics, and academia. The paper addresses this ambiguity of the term Mittelstand prevalent throughout the literature and compares different approaches to measuring, identifying, and classifying the Mittelstand. Highlighting their systematic differences, we finally suggest that research, policy makers, and practitioners should set the unity of ownership and management at the core of the Mittelstand. In this way, a more comprehensive and unified understanding of the Mittelstand and its heterogeneity should emerge at all levels.

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1 Introduction

Germany's *Mittelstand* companies have attracted increased attention in the entrepreneurship field as well as from policy makers and media at the international level. Although these companies play a more unique role for German economic development than in other countries, such as the USA or the UK (Audretsch & Elston, 1997), there is some interest in understanding and — to some extent — in emulating the German *Mittelstand* (e.g., Bod, 2014; Logue et al., 2015; Ross Range, 2012), also from policymakers worldwide (Pahnke & Welter, 2019). Not only is West Germany's "economic miracle", the *Wirtschaftswunder* of the 1950s and 1960s, along with the well-known brand "Made in (West) Germany" attributed to the *Mittelstand* (Berghoff, 2006; Muzyka et al., 1997) but also the resilient performance of the German economy in the wake of the financial crisis (e.g., Bruff & Horn, 2012; Lehrer & Schmid, 2015; Pichet & Lang, 2012). The *Mittelstand* is therefore frequently portrayed as the "backbone of the German economy" and as flagship of the country's innovativeness and export success (Audretsch & Lehmann, 2016).

However, research on *Mittelstand* companies is faced with a dilemma: just as there exists no legal or a generally accepted definition (Becker & Ulrich, 2011; Krimphove & Tytko, 2002), there similarly is no broad understanding of what constitutes the *Mittelstand*. At least in German-speaking countries, a longstanding "[...] lively and quite controversial scientific discussion on the question how *Mittelstand* companies can be defined adequately" (Berleermann et al., 2021, p. 1) has emerged over the past 20 years (Berleermann et al., 2018; Wolter & Hauser, 2001). However, both in Germany and internationally, research frequently tends to simply consider and translate *Mittelstand* companies as small and medium-sized enterprises (SMEs) (Schenkenhofer, 2022), because official statistics usually do not contain information about business ownership, for example. Over time, therefore, a small or medium firm size was "[...] erroneously seen as constitutive characteristic of *Mittelstand* companies" (Wolter & Hauser, 2001, pp. 29, translated from German), leading to a large proportion of research on the German *Mittelstand* being in fact research on SMEs (Berleermann et al., 2018).

The practice of equating SMEs and *Mittelstand* has come under criticism, not least because broad

measurement of *Mittelstand* companies is lacking and thus restricting the relevance of research for policy-makers (Cassel & Thomas, 2019), be that in Germany or elsewhere. The problem with this false equivalence between SMEs and the *Mittelstand* is that typical characteristics of a bona fide *Mittelstand* company are "[...] not the size of its workforce or the number on its balance sheets, but rather its corporate governance in a broad sense that encompasses both legal and sociocultural features" (Berghoff, 2006, p. 271). In fact, Welter et al. (2015) have identified a range of characteristics comprising the *Mittelstand* that vary between eight and 18, depending on the perspective and eye of the beholder, while Schenkenhofer (2022) lists a total of 10 (qualitative) key characteristics of *Mittelstand* companies. This ambiguity of what actually constitutes a bona fide *Mittelstand* company, combined with the intractability of measurement for some of the characteristics, such as the extent to which the company is embedded in the local community, has resulted in an inability to actually measure, and classify a company as belonging to the *Mittelstand*.

Our paper addresses this ambiguity arising from equating SMEs with *Mittelstand* companies. We first introduce an analytical framework that incorporates multiple characteristics associated with the *Mittelstand*. In light of the current discourse, we focus on owner-management (ownership criterion) and firm size (size criterion). A sense of belonging to the *Mittelstand* (identification criterion) is introduced as an additional dimension. Such self-assessment of "being part of the *Mittelstand*" has been posited as an important determinant of the success and sustainability of *Mittelstand* companies (e.g., Audretsch & Lehmann, 2016; Berghoff, 2006; Fear, 2014; Pahnke & Welter, 2019).

Taking these three dimensions together, we are able to explore different research approaches to measuring, identifying, and classifying the *Mittelstand*. We therefore challenge the widely applied empirical equivalence of *Mittelstand* with SMEs, instead providing a comparison of different approaches, which has been glaringly absent in the extant entrepreneurship literature. Highlighting their systematic differences, we finally suggest a conceptualization of *Mittelstand* companies that paves the way for more comprehensive approaches in research and facilitates international comparative studies by setting

the distinctive company identity based on ownership and management at the core of what constitutes the *Mittelstand*.

2 Characterizing and defining the Mittelstand

2.1 The importance of owner-management

Owner-management, be that by a single entrepreneur or families, has been recognized as one important criterion distinguishing the Mittelstand (e.g., Berghoff, 2006; Berlemann et al., 2018; Lehrer & Celo, 2016; Lehrer & Schmid, 2015; Welter, 2018).¹ From the vantage point of agency theory, which deals with issues arising from the separation of firm ownership and management (Berle & Means, 1932), owner-managed firms can often circumvent or minimize agency problems — notwithstanding that owner-management may come with its own agency costs as has been shown for family-managed firms (De Massis, Audretsch, et al., 2018; De Massis, Kotlar, et al., 2018). Even though on a case-by-case basis, the actual composition of the management board is important, problems or inefficiencies in management related to principal agent-relationships with employed managers are less likely to occur in such companies (Jensen & Meckling, 1976). This is due to the fact that in owner-managed companies the long-term orientation of the owners is less likely to be opposed by a usually shorter optimization perspective of employed managers (Berlemann et al., 2021).

Moreover, since the unity of ownership and management reflects the legal, economic, and entrepreneurial independence of the owner-manager(s), these are able to better reconcile their personal and business goals (e.g., Chrisman et al., 2014). Owner-managers of *Mittelstand* companies in Germany have been shown to put high emphasis on the strategic preservation of their legal and economic independence

(Pahnke et al., 2019) which can be considered as an important “side condition” (or restriction) for *Mittelstand* companies, too. For example, Mittelstand companies tend to maintain a high equity ratio and are generally not listed on capital markets what increases their autonomy with respect to capital supply and yields a certain independence from economic cycles (Audretsch & Lehmann, 2016; Berghoff, 2006; Welter et al., 2015), although such a financing strategy of the owner-manager will not necessarily exploit the full economic potential of its company (e.g., Hutchinson, 1995; Molly et al., 2019).

In conclusion, owner-managed companies are not solely driven by economic considerations (e.g., Berrone et al., 2012; Michiels & Molly, 2017; Molly et al., 2012; Romano et al., 2001). Personal values of their owner-managers also play an important role (Rau et al., 2019), while the emotional attachment to the company “[...] may also detract from the firm’s focus on economic goals” (Mustakallio et al., 2002, p. 205). Owner-managed businesses may overall have an advantage in that their owners also emotionally and personally invest in their companies. However, if not successful, owner-managers bear, in contrast to employed managers, the entrepreneurial risks and liabilities of these decisions so that economic success (of the company) and private wealth (of its owner-managers) are inseparably linked (Alchian & Demsetz, 1972).

2.2 Owner-management and firm size

In general, owner-managers have been shown to be more focused on the firm’s long-term prospects (Daily & Dollinger, 1993; Whisler, 1988) or the protection of “socio-emotional wealth” (Berrone et al., 2012; Gómez-Mejía et al., 2007) of the owner-family (Arregle et al., 2017) rather than firm growth and a large enterprise size.

Moreover, owners of small firms are also able to pursue their own interests by exerting indirect influence over other managers and employees through the informal organizational structure of such firms and the ambiguity given there (Goffee & Scase, 1985; Whisler, 1988). Owner-managed companies also seem to favor defensive, less growth-oriented strategies to sustain control and to protect their market position (Cromie et al., 1995; Ward, 1987). In contrast, employed managers concentrate more on their

¹ Apart from owner-management, the concepts of SMEs, Mittelstand companies, and family businesses can generally coincide in any constellation, but also appear separately without overlap (Schenkenhofer, 2022). For the purpose of the present paper, we focus on the relation of SMEs and Mittelstand companies only. With respect to the overlap of family businesses and Mittelstand companies in Germany see, for example, Lehrer and Schmid (2015) or Lehrer and Celo (2016).

short-term personal goals which often results in a relatively larger firm size, as managerial remuneration is linked to company profit. Larger firms also provide better career opportunities for managers while their size helps to conceal ineffective decision-making at the same time (Daily & Dollinger, 1993).

Agency theory provides an additional argument for the smaller size of owner-managed companies. By splitting the decision process into the three elements — “decision management” (initiation and implementation of decisions), “decision control” (ratification and monitoring of decision), and (residual) risk bearing — Fama and Jensen (1983) argue that in small noncomplex organizations, the identity of ownership and management, reflected in decision management and decision control is more efficient. In these organizations, the detailed information which is required but costly to transfer among agents (specific knowledge) is concentrated in one or a few agents. Major decision makers are also the major (residual) risk bearers which allows owner-managers to bear a substantial share of the wealth effects of their decisions. However, as soon as (small) organizations grow, (additional) specific knowledge may become more important for and more diffuse within the firm. Therefore, in larger organizations, the separation of management, ownership and control contributes to efficiency and reduces agency costs (Fama & Jensen, 1983).

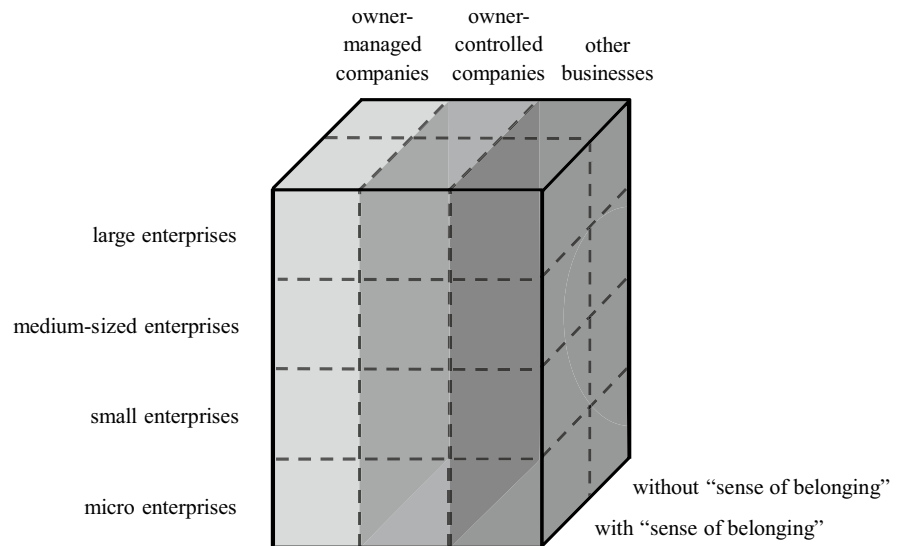
On the one hand, relatively small owner-managed companies may evolve over time to large companies, in which ownership and management are completely separate from each other, and the strategic influence of any single (majority) owner is no longer given. They may also become so-called owner- or family-controlled firms in which “[...] it is possible to own less than a majority of the shares and elect a board of directors that will support the controlling family’s goals” (Tagiuri & Davis, 1982, p. 200). For example, in the case of business succession (i.e., older, and larger companies), companies may start hiring external managers while retaining their ownership and thus a significant influence on strategic decisions. Despite such possibilities to maintain at least control of strategic decisions in larger companies, the growth of owner-managed companies is not automatic. It is ultimately driven and sometimes limited by the strategic posture of the owner-managers, their personal interests, and preferences as well as by their decision-making behavior (Daily & Thompson, 1994).

2.3 The Mittelstand mindset: a sense of belonging

The importance of owner-manager(s) in the *Mittelstand*, as well as of their preferences and goals, is also reflected in a certain sense of belonging or “Mittelstand mindset”. According to Ludwig Erhard (1956), who crafted Germany’s post-war economic miracle as minister of economic affairs, the German *Mittelstand* is less associated with quantitative than qualitative features reflecting a certain ethos and a fundamental disposition of how one acts and behaves in society. In other words, the term *Mittelstand* is associated with a certain “entrepreneurial spirit” in Germany (Parella & Hernández, 2018) and comes with a multitude of positive connotations (Fear, 2014) so that “[...] everybody wanted – and still wants – to belong to the Mittelstand [...]” (Berghoff, 2006, p. 265).

While the existing literature stresses the importance of such an understanding of *Mittelstand* companies, exemplary referring to their long-term orientation and sustainability (Audretsch et al., 2018; De Massis, Audretsch, et al., 2018; De Massis, Kotlar, et al., 2018; Logue et al., 2015; Welter, 2018), there is, however, little empirical evidence (Ruf et al., 2021). Companies or owner-managers perceiving a sense of belonging to the *Mittelstand* are probably committed to corresponding social and entrepreneurial values (Berlemann et al., 2021), which can then spread or persist even beyond the boundaries of the *Mittelstand* company (Pahnke & Welter, 2019). In particular, long-established family businesses in manufacturing, as well as many larger (and older) enterprises, where the identity of ownership and management is no longer given, still perceive themselves as *Mittelstand* (Welter et al., 2015). Even the political discourse in Germany is based on an ownership- and value-driven understanding of the *Mittelstand* which explains why emotions, passion, and feelings of belonging play an additional as well as important role for understanding the (German) *Mittelstand* (Pahnke & Welter, 2019).

Such a “Mittelstand mindset” probably includes values which generally matter in shaping the behavior of an organization, its management, and its employees and their interaction with the environment (Agle & Caldwell, 1999; Donker et al., 2008; Schwartz, 2005). It affects in this way decision-making processes of all organizational members (Klenke, 2005) and could therefore yield or

Fig. 1 Demarcation of the Mittelstand

be considered as competitive advantage of the company (Deal & Kennedy, 1982; Donker et al., 2008). Again, owner-managers of Mittelstand companies are of particular importance in this regard: Given the general significance of values as guiding principles for individuals, it is reasonable to conclude that they actively shape the corporate values of their company (Anderson & Reeb, 2003; Schein, 1983).

2.4 Analytical framework to demarcate the Mittelstand

We now bring together the elements outlined above in an analytical framework that allows — as depicted in Fig. 1 — a comparison of different approaches to the *Mittelstand* along the “ownership”, “size”, and “identification” criteria. The idea is to classify every company of a population along these three criteria. The size criterion does therefore not only refer to SMEs, but also to large enterprises for which no upper-limit regarding their total number of employees and/or annual turnover exists at the end. For the purpose of additional analyses within the group of SMEs, these can be further divided into micro, small, and medium-sized enterprises, according to the current definition of the European Commission (2003).

Within the category “ownership”, we distinguish between owner-managed companies,

owner-controlled companies, and other businesses, because levels of ownership and management vary across companies so that corresponding effects on firms’ strategic decisions and on firm size are likely to differ, too (Chrisman et al., 2005; Melin & Nordqvist, 2007). Companies are owner-managed if (managing) owners are fully dependent on the business income, and fully bear the entrepreneurial risk. Regarding companies where ownership and management are generally separated, we further differentiate between owner-controlled companies, in which natural persons as majority owners are still able to exert significant influence on the strategic decisions of the company but are not concurrent members of its management board, and other businesses, for example, publicly listed firms without such a sufficient large majority ownership of a single shareholder or natural person, respectively.

Finally, the “sense of belonging to the *Mittelstand*” brings in a subjective element to our model. Combined with the attribute “owner-managed”, we then can distinguish four subgroups:

- Owner-managed companies that also have a sense of belonging to the *Mittelstand*
- Owner-managed companies that do not have a sense of belonging to the *Mittelstand*
- Companies that are not owner-managed but have a sense of belonging to the *Mittelstand*
- Companies that are neither owner-managed nor have a sense of belonging to the *Mittelstand*

Of course, a similar categorization of the “sense of belonging to the *Mittelstand*” is also possible in conjunction with the size criterion.

3 Data and key variables

For the empirical analyses based on our model, we rely on survey data for Germany from the *Mittelstandsbefragung 2014*. This (cross-sectional) survey, conducted by the *Institut für Mittelstandsforschung (IfM) Bonn* in 2014, provides detailed information on the ownership and governance structure of surveyed companies, their total number of employees, their annual total turnover, and their sense of belonging to the *Mittelstand* (Schlömer-Laufen & Schneck, 2020). The data therefore allow a definite assignment of every surveyed company according to our analytical framework shown in Fig. 1, while further information on firm characteristics can be used as control variables. The survey is based on a random sample which was drawn from an address database of Creditreform comprising 3.5 Mio. companies with headquarters in Germany and stratified by four industries and four categories of annual turnover. 541 properly completed questionnaires were returned from 14,397 contacted companies, and the response rate (of 3.8% in total) is uniformly distributed over firm sizes and industries (for details, see Welter et al., 2015, p. 67 ff.).

Each company is assigned to a size class based on the SME-definition of the European Commission (2003), which is widely used in the literature and sets ceilings for each category in employee headcount and annual turnover. In particular, micro enterprises are enterprises with up to 9 employees and up to 2 million euros annual turnover, small enterprises are enterprises with up to 49 employees and up to 10 million euros annual turnover (excluding microenterprises), while the threshold for medium-sized enterprises is up to 249 employees and up to 50 million euros annual turnover (excluding micro and small enterprises). Large enterprises exceed these thresholds.

Owner-managed companies are identified using the operationalization suggested by Wolter and Hauser (2001, p. 33): a company is owner-managed if (and only if) (i) up to two natural persons (and/or their close families) hold at least 50% of the voting shares of the company and (ii) these natural persons

or families are, at the same time, members of the management board. Companies for which neither of the criteria holds are classified as not owner-managed. However, companies in which up to two natural persons hold at least 50% of the voting shares but are no concurrent members of the management board are categorized as owner-/family-controlled. The data allow us to assign each surveyed company to one of the ownership-categories of our analytical framework (Fig. 1) in two steps: Companies in the legal form of sole proprietorship were per se and according to German law classified as owner-managed. For the remaining cases, we additionally used information on the composition of the management and the ownership shares of concurrent members of the management board.² The classification with regard to a perceived “sense of belonging” to the *Mittelstand* is based on a self-assessment of the survey respondents (yes/no question), as has been applied in other studies also (e.g., Berleemann et al., 2021).

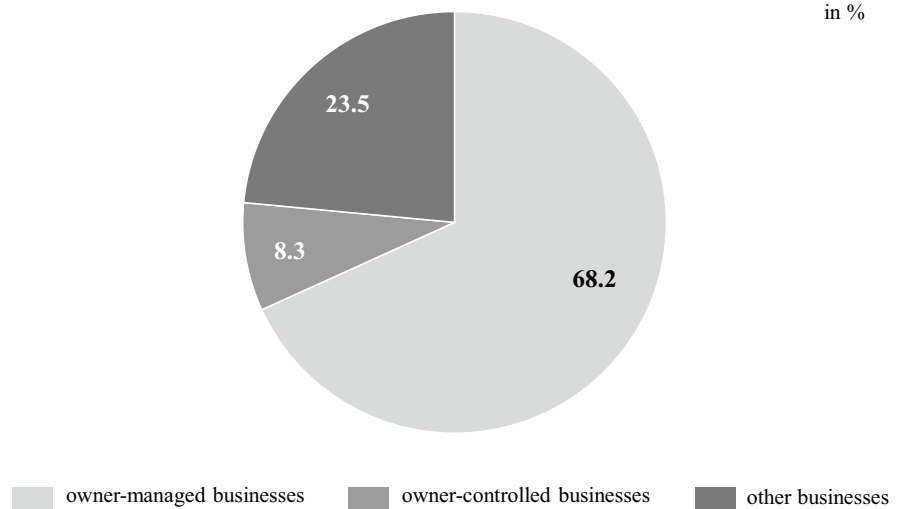
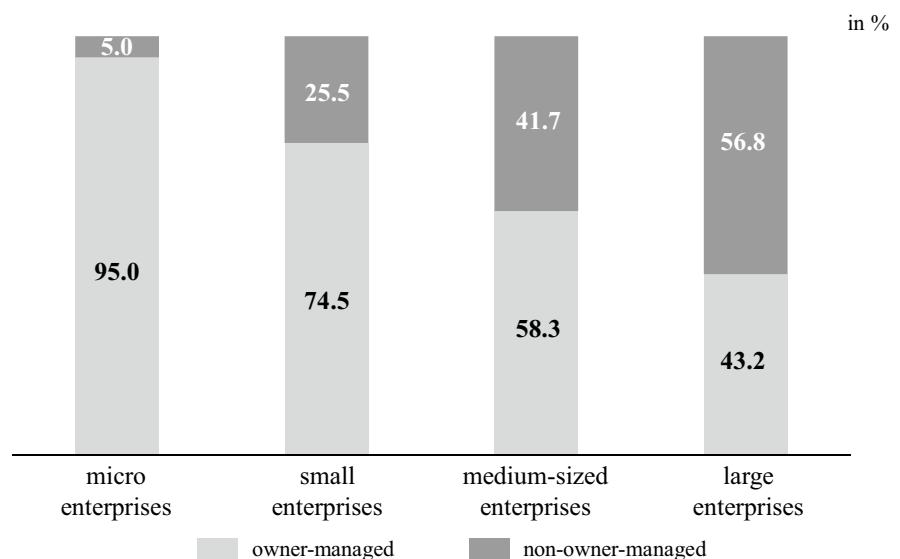
Consequently, we only use observations with complete information on the ownership and management structure, total number of employees, total annual turnover, and the self-assessment, i.e., the sense of belonging to the *Mittelstand*. Otherwise, it is not possible to assign each observation of the sample to a unique category of our model. As a result, the initial total sample size is reduced from 541 to 409 observations due to missing values for at least one of these key variables.

4 Empirical findings

4.1 Ownership and size

We first analyzed our model in terms of ownership and firm size. The majority, i.e., more than two-thirds of surveyed companies can be classified as owner-managed, 32% as non-owner-managed (Fig. 2). However, roughly every fourth non-owner-managed company (or 8.3% of all companies in the sample) is an owner-/family-controlled company. Consequently, 23.5% of the companies in our sample are neither

² Tagiuri and Davis (1982), Handler (1989) or Baker and Mazzarol (2015) suggest similar procedures to identify owner-managed companies.

Fig. 2 Prevalence of owner-managed companies**Fig. 3** Congruence of small and medium-sized enterprises and owner-managed companies

owner-managed nor owner-controlled. Overall, the structure of our data is very similar to the much larger sample of Berleermann et al., (2021, Table 2) which contains 3989 owner-managed companies (67.4%) out of 5845 observations in total.³

Next, we examined owner-managed companies combined with enterprise size (Fig. 3). Our data

emphasize that the common classification equating owner-managed *Mittelstand* companies with SMEs is likely to result in large biases, less coherent and more ambiguities of research results; quite apart from the fact that there are very different approaches to defining SMEs in the literature too (e.g., Baker & Mazzarol, 2015; Berghoff, 2006). While in total 24.2% of all SMEs are not owner-managed in our sample, the overlap between owner-managed companies and SMEs is also decreasing with firm size. The proportion of owner-managed companies is 95.0% for micro enterprises, 74.5% for small enterprises, 58.3% for medium-sized enterprises, and 43.2% for large

³ The approach of Berleermann et al. (2021) for identifying owner-managed companies is different and refers to companies with a maximum of four managers of who at least one owns company shares.

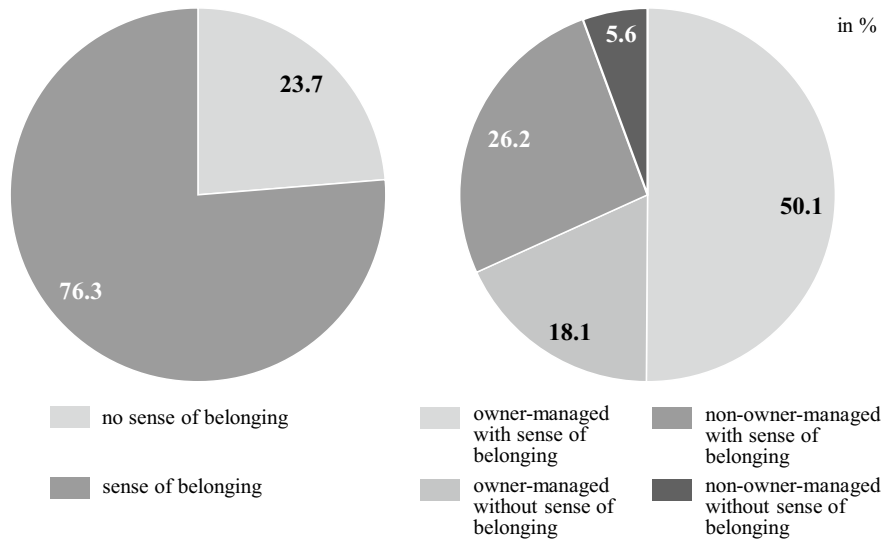
Table 1 Ownership structure in owner-managed and non-owner-managed companies by firm size

	Micro enterprises	Small enterprises	Medium-sized enterprises	Large enterprises
a) All enterprises				
1st main shareholder	90.6	66.7	54.7	35.2
2nd main shareholder	6.4	14.7	9.2	12.1
Additional natural persons	1.0	4.3	4.5	6.5
Legal entities/free float	2.0	14.3	31.6	46.2
Total	100.0	100.0	100.0	100.0
b) Owner-managed companies only				
1st main shareholder	93.6	80.9	84.0	68.6
2nd main shareholder	5.8	16.7	12.2	23.4
Additional natural persons	0.6	1.8	3.0	6.4
Legal entities/free float	0.0	0.6	0.8	1.6
Total	100.0	100.0	100.0	100.0
c) Non-owner-managed companies only				
1st main shareholder	32.2	24.9	13.9	9.7
2nd main shareholder	17.8	8.7	5.0	3.5
Additional natural persons	10.0	11.9	6.5	6.6
Legal entities/free float	40.0	54.5	74.6	80.1
Total	100.0	100.0	100.0	99.9

enterprises. In the light of those results, it is important to emphasize that while owner-managed companies are more prominent in the smallest size categories, there are also larger owner-managed companies. So, when SMEs are used as an approximation for owner-managed companies because of an “insufficient data situation”, for example, such an approach does not only — in view of our results — confound owner- and non-owner managed companies but also systematically exclude large owner-managed companies from the (empirical) analyses; as Handler (1989, p. 259) also concludes, “However, including family businesses in a small business file may serve to camouflage the unique ways family business differ from entrepreneurship and other closely held corporations, thereby making the development of family firm-specific models and frameworks difficult.” The same generally applies to research on the *Mittelstand*, although the severity of such inherent biases (or measurement errors) then depends on the particular research questions studied. Nonetheless, there is a noticeable impact on the comparability of research and its results.

We therefore took a closer look at the ownership structure. Table 1 illustrates that this varies (on

average) not only across firm size but — not surprisingly — also between owner-managed and non-owner-managed companies. Admittedly, the proportion of the first two main shareholders should be relatively high because of the applied definition of owner-managed companies (50% threshold). The results still suggest that ownership and management of such companies mainly lie in one hand. The first main shareholder of an owner-managed company (by definition also the managing director) holds 93.6% of a micro, 80.9% of a small, 84.0% of a medium sized, and still 68.6% of a large enterprise with 250 and more employees. Another important result is that the ownership share of legal entities is very low (and almost meaningless) on average in owner-managed companies. These can therefore act very independently since they are rarely linked — via ownership shares — to other companies. The same applies to larger owner-managed companies where the ownership of other natural persons but not legal entities, gains importance. The ownership-structure in non-owner-managed companies is, again not only different (as expected because of our definition) but nearly the opposite of owner-managed companies: In every size class of the non-owner-managed companies, legal

Fig. 4 Affiliation to the Mittelstand by self-assessment

entities hold the largest proportion of company shares which is additionally increasing with firm size; from 40.0% in micro-enterprises to 80.1% in large enterprises. Hence, the ownership and management structures in both types of companies turn out very differently: while the owner-managed companies are — in accordance with the assessment of Berghoff (2006) — likely to be some kind of “one-person show”, non-owner-managed companies are much more integrated in (larger) corporate structures. Since these findings refer to all size classes, equating owner-managed companies with SMEs becomes even more challenging and problematic the more differences in decision-making or management in general are at the very center of research.

4.2 The sense of belonging to the Mittelstand

Turning to the sense of belonging, the data implies — again in line with comparable evaluations of Berlemann et al. (2021) — that there are actually more companies that perceive themselves as *Mittelstand* than there are *Mittelstand* companies as defined by the owner-management criterion (Fig. 4). However, this “surplus” is not only based on non-owner-managed companies that perceive themselves as part of the *Mittelstand*. There is actually a relatively large proportion of owner-managed companies that have no sense of belonging to the *Mittelstand* (18.1%) but also an even larger proportion of non-owner-managed companies doing so (26.1%).

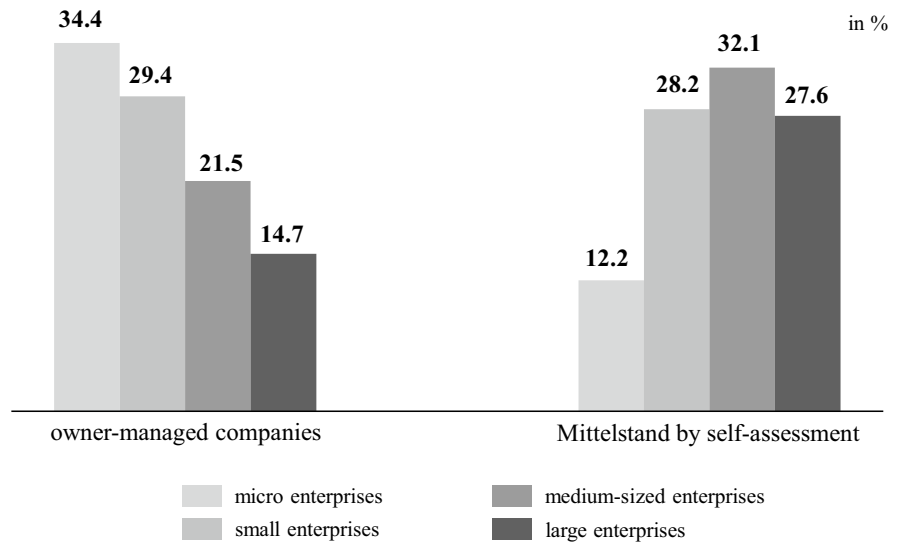
Although nearly every third company with a sense of belonging to the *Mittelstand* is therefore not owner-managed, the majority of owner-managed companies still consider themselves as *Mittelstand*. In fact, 73.5% of all owner-managed, and 82.3% of the non-owner-managed companies do so. Because the sense of belonging to the *Mittelstand* tends to reflect a value-oriented business culture, this finding is important to better understand the impact of the *Mittelstand*, the “phenomenon *Mittelstand*”, on the German economy and society.

While the majority of entrepreneurs do not regard firm size as a constituent feature of the *Mittelstand* (May-Strobl & Welter, 2016), very small companies or micro enterprises are somewhat different. Although most of them are owner-managed, many of them do not perceive themselves as *Mittelstand* (Fig. 5). Similar to relatively larger non-owner-managed companies that regard themselves (still) as *Mittelstand*, it is, however, likely that these micro enterprises will develop a sense of belonging to the *Mittelstand* as they grow and hire their first or new employees.

4.3 Interdependencies between ownership, firm size, and the sense of belonging to the Mittelstand

In a final step of our analysis, we estimate several Probit-models in order to empirically test previously discussed interdependencies between our three criteria: owner-management, firm size as well as sense of

Fig. 5 Firm size differences between owner-managed companies and companies with a sense of belonging to the *Mittelstand*



belonging to the *Mittelstand* and thus validating our analytical model. We focus on the general differences between owner-managed and non-owner-managed companies and the characteristics of companies with a sense of belonging to the *Mittelstand*. Furthermore, we take a closer look at the characteristics of owner-managed companies that do not perceive themselves as *Mittelstand* by comparing them with owner-managed companies that do so. The same is done regarding non-owner-managed companies. In addition to firm size, the control variables now include firm age, the size of the managing board, an indicator for women-led firms (management boards that consist of more than 50% of women), the location of the head office, and industry. Information on the legal form of the companies and personal liability of the owners is not used because these are closely related to the actual identification of owner-managed companies.

In accordance with our previous findings, the comparison of owner-managed and non-owner-managed companies (columns 1a and 1b of Table 2) confirms that smaller enterprises are more likely to be owner-managed. Moreover, the size of the estimated (average) marginal effects reflects smaller proportions of *Mittelstand* companies in the larger size categories. These size effects are also robust with respect to the inclusion of additional control variables, such as firm age, size of the management board or industry, for example, in the estimation model.

Such a high consistency of descriptive and multivariate results can also be seen with respect to the

sense of belonging to the *Mittelstand* (Fig. 4 vs. columns 2a and 2b of Table 2). In general, owner-managed companies are more likely to perceive themselves as *Mittelstand*. However, there is an additional and opposite effect of the firm size. The estimation results therefore confirm that especially owner-managed micro enterprises are less likely to express a sense of belonging to the *Mittelstand*. At the same time, medium-sized enterprises have (ceteris paribus) obviously the highest probability in doing so.

Ironically, this high level of identification with the *Mittelstand* in medium-sized enterprises is the exact reason why the whole size class had to be dropped from the subsample of all owner-managed companies that has been used to determine the characteristics of owner-managed companies which do not perceive themselves as *Mittelstand*. Nevertheless, the results confirm — again in line with descriptive findings (Fig. 5) — that smaller owner-managed companies tend not to associate themselves with the *Mittelstand* (column 3 of Table 2). With respect to the differences between non-owner-managed companies that regard themselves as *Mittelstand* and the remaining non-owner-managed companies (column 4 of Table 2), the estimation results demonstrate once more the robustness of the discussed size effects in relation to the affiliation to the *Mittelstand*. Even in this subsample micro and small enterprises are, once again, less likely to associate themselves with the *Mittelstand* while all other structural variables show no statistically significant effects. Regardless of the

Table 2 Results of Probit-regressions on the interdependencies between owner-management, firm size, and the sense of belonging to the Mittelstand

	Owner-managed companies		Sense of belonging		Owner-managed without sense of belonging	Non-owner-managed with sense of belonging
	(1a)	(1b)	(2a)	(2b)	(3)	(4)
Owner-managed company				0.120*** (0.045)		
<i>Firm size (reference: large enterprises)</i>						
Micro enterprises	0.545*** (0.062)	0.677*** (0.073)	−0.372*** (0.040)	−0.407*** (0.060)	0.535*** (0.135)	−0.418*** (0.142)
Small enterprises	0.260*** (0.051)	0.299*** (0.051)	−0.115** (0.051)	−0.155*** (0.055)	0.234* (0.132)	−0.135** (0.069)
Medium-sized enterprises	0.122** (0.054)	0.143*** (0.051)	0.119* (0.069)	0.113* (0.065)	(omitted)	0.069 (0.070)
<i>Firm age (reference: less than 4 years old)</i>						
4 to 9 years		0.0715 (0.121)		0.112 (0.082)	−0.161 (0.127)	0.0619 (0.138)
10 to 24 years		0.082 (0.115)		0.012 (0.078)	−0.071 (0.121)	−0.105 (0.124)
25 to 49 years		0.116 (0.121)		0.053 (0.085)	−0.054 (0.134)	0.025 (0.132)
50 to 74 years		0.101 (0.124)		−0.025 (0.097)	0.054 (0.160)	−0.067 (0.136)
75 to 99 years		0.046 (0.134)		0.088 (0.121)	−0.273 (0.210)	−0.138 (0.157)
100 years and older		0.011 (0.132)		0.001 (0.100)	−0.165 (0.209)	−0.150 (0.120)
<i>Size of the managing board (reference: 5 and more managing directors)</i>						
1 managing director		−0.085 (0.098)		0.043 (0.088)	0.974*** (0.170)	0.136 (0.109)
2 managing directors		0.055 (0.096)		0.097 (0.086)	0.902*** (0.154)	0.102 (0.101)
3 to 4 managing directors		0.164* (0.099)		0.179* (0.095)	0.729*** (0.152)	0.256* (0.138)
Women-led enterprise		−0.060 (0.083)		0.014 (0.059)	−0.039 (0.083)	−0.015 (0.143)
Head office in West Germany		0.040 (0.051)		−0.004 (0.042)	0.001 (0.067)	0.020 (0.071)
<i>Industry (reference: distribution)</i>						
Manufacturing		0.038 (0.051)		0.041 (0.042)	−0.065 (0.066)	0.053 (0.075)
Corporate services		−0.162*** (0.061)		0.040 (0.055)	−0.082 (0.094)	0.045 (0.082)
Other services		−0.125** (0.062)		0.001 (0.049)	−0.079 (0.078)	−0.097 (0.069)
Log likelihood	−211.909	−192.613	−158.953	−148.423	−97.027	−45.653
Pseudo R ²	0.147	0.225	0.265	0.314	0.282	0.218
Observations	398	398	398	398	212	126

Average marginal effects. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 0.01, 0.05, and 0.10 levels

actual ownership structure, the sense of belonging to the *Mittelstand* is therefore the weaker the smaller the companies are.

5 Discussion and conclusions

To address the lack of a common understanding of the *Mittelstand* in the literature, this paper investigates and compares for the first time different approaches to measuring and analyzing *Mittelstand* companies by focusing on three distinct criteria that are commonly used to characterize the *Mittelstand* in (empirical) research: owner-management, firm size, and a sense of belonging to the *Mittelstand*. Our empirical analyses incorporating these three dimensions of *Mittelstand* companies first suggest that these are in themselves not congruent. In particular, equating owner-managed companies with SMEs, as has been prevalent in the existing literature, is problematic. Many but not all SMEs are owner-managed while there are also larger owner-managed enterprises. At the same time, there are owner-managed companies that do not perceive themselves as *Mittelstand* as well as companies that do so but are not owner-managed. Furthermore, (very) small enterprises generally do not have a sense of belonging to the *Mittelstand*, irrespective of their ownership structure.

Interestingly though, the unity of ownership and management prevailing in owner-managed companies is not only — as discussed in the paper — recognized as the most important criterion of *Mittelstand* companies but is also very likely related to their firm size and the sense of belonging to the *Mittelstand*. The unity of ownership and management “empowers” *Mittelstand* entrepreneurs to determine the growth of their company and to shape its corporate values. In other words, the three criteria, owner-management, firm size, and the sense of belonging to the *Mittelstand*, on which we focused in this paper, are not mutually exclusive but rather interconnected.

In the sense of a lowest common denominator, we therefore propose to set the unity of ownership and management at the core of the *Mittelstand*. In doing so, our analytical framework (Fig. 1) can also be understood as a “*Mittelstand* model” which allows for a more comprehensive demarcation of *Mittelstand* companies. Combining “owner-management” with the “sense of belonging to the *Mittelstand*”, for

example, we can distinguish further between what we would call *pure Mittelstand* (owner-managed with a sense of belonging), *hybrid Mittelstand* (owner-managed without a sense of belonging), *hybrid non-Mittelstand* (non-owner-managed with a sense of belonging), and ultimately *pure non-Mittelstand* (non-owner-managed without a sense of belonging). Similarly, combining the status of owner-management and size would allow us to distinguish between smaller/owner-managed and larger/owner-controlled *Mittelstand*.

Admittedly, the related dichotomy of *Mittelstand* and non-*Mittelstand* is relatively rough still from an empirical point of view. However, it is theoretically of great importance. Such an understanding of the *Mittelstand* as first and foremost owner-managed companies is finally associated with the insight that it is quite heterogeneous and not determined by a certain size or industry affiliation, for example. It should therefore pave the way for more comprehensive empirical analyses because effects emerging from this unique organizational structure can be separated from other effects of interest, which are — in the sense of an expansion of the proposed *Mittelstand* model — not limited to owner-management, firm size, and the sense of belonging to the *Mittelstand*.

An example might be a (conceptual) comparison of family businesses and *Mittelstand* companies in Germany which additionally takes the changing influence or importance of owner-families across firm size into account. Given the international attention for the German *Mittelstand* mentioned in the introduction, future research is particularly needed on the corporate and individual values in the *Mittelstand*. Further knowledge in this area is likely to improve our understanding of the *Mittelstand* in an international context: What is the “*Mittelstand* mindset” exactly and do German owner-managed companies differ from those in other countries with respect to corporate values and the attitudes of their owner-managers? How do economic and political institutions shaping the nature of entrepreneurship and SMEs (Dilli et al., 2018) interact with the *Mittelstand* mindset and its corresponding values? What are the starting points for policy makers who want to emulate the German *Mittelstand* in their country or wish to fine-tune their enterprise policies in this context?

The answer to why we need to distinguish between SMEs and *Mittelstand* is not only of interest for

international comparative research, but also relevant for policy makers. Data limitations still prevent researchers from providing an appropriate evidence-base on the *Mittelstand*; and approximations of *Mittelstand* companies with other parts of the enterprise population are often inevitable. Hence, a precise terminology in research is needed. Research that deals with SMEs in general or certain parts of the *Mittelstand* population should be accordingly labeled and carefully distinguished in order to avoid further confusion and — more importantly — to obtain a better and more coherent picture of the *Mittelstand*. This would provide a great service to countries, where identifying and supporting their own *Mittelstand* has emerged as distinct policy priority.

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Data availability The datasets analyzed during the current study are available for non-commercial reasons upon request from the Institut für Mittelstandsforschung (IfM) Bonn, Germany. Detailed information are available on the internet: <https://www.ifm-bonn.org/en/index/about-us/data-of-the-ifm-bonn-1>

Code availability Data analysis is based on STATA 16.1.

Declarations

Conflict of interest The authors declare no competing interests.

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