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**Working Paper**

## Family business succession planning: Are the outcomes dependent on the predominant gender in the management board?

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# Working Paper

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Rosemarie Kay, André Pahnke, Friederike Welter

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**Family business succession planning:  
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**Abstract**

While existing research on business successions stresses the importance of the economic situation of family business in this context, research on women's entrepreneurship, however, suggests that women-led businesses may be less economically attractive for potential successors because of structural differences in comparison to men-led business. Moreover, the business owner's gender may have an impact on the business succession process and its outcome too. Based on one the largest German establishment surveys which is augmented by additional administrative data, this chapter seeks to further link the two research strands by providing first insights into the impact of family businesses owner's gender on both business succession planning and the outcome of the business succession process. Regarding the outcome of business successions, the results indicate that differences between women- and men-led businesses are not related to gender but to characteristics of the businesses to be handed over.

**Keywords:** Gender, family businesses, business succession

**JEL Classification:** J16, L26, M2

## 1 Introduction

The concept of family businesses is often associated with the idea of successfully managed companies that are transferred within the owner-family from one generation to the other. While some authors regard such a generational transfer as an essential feature of family businesses (e.g., Davis, 1968; Churchill & Hatten, 1987; Daley & Thompson, 1994), the emergence of multigenerational family businesses, however, is linked to two central conditions. On the one hand, these businesses must succeed and remain in the market for the long term. On the other hand, these businesses must successfully meet the challenges of a business succession too. However, there are interdependencies between these aspects, notably the general economic success of the family business, its strategic focus, its management and organizational structure, and the outcome of its succession process itself (Fuchs et al., 2000; Miller et al., 2003). Firm performance and firm size, for example, are related to the financial attractiveness of the family business for a potential successor and therefore to his or her evaluation of other (employment) opportunities outside the firm (Sharma et al., 2001; Stavrou, 1999; Venter et al., 2005).

In contrast, research on women's entrepreneurship suggests that women-led (family) businesses may be less attractive for potential successors when it comes to business succession as they differ from men-led businesses in many ways. Most notably, empirical evidence indicates that women-led businesses typically are smaller, more service-based and grow more slowly than men-led businesses (e.g., Fels & Wolter, 2022; Kiefer et al., 2022; Kay et al., 2018; Farhat & Mijid, 2018; OECD & European Commission, 2017). Little is known, however, about how these structural characteristics affect the business succession of women-led family businesses, especially in comparison to men-led family businesses. Regarding business succession planning, there should *ceteris paribus* be no differences between women-led family businesses and men-led family businesses, if the gender of the business owner is irrelevant.

Correspondingly, women-led family businesses should have the same chances of being handed over as similar men-led family businesses.

However, it is conceivable that the business owner's gender still plays a role in this context, for two reasons: firstly, compared to men business owners, women business owners may more frequently hold distorted beliefs about the economic situation of their businesses (as women in general tend to do with respect to key economic indicators (e.g., D'Acunto et al., 2020; Bjuggren & Elert, 2019)) and thus about their chances of a successful business succession. A possible root of such distorted beliefs lies in a less pronounced optimism of women in general (e.g., Bjuggren & Elert, 2019; Jacobsen et al., 2014). Now, if such distorted beliefs of female business owners actually prevail, female business owners are likely to anticipate relatively lower chances of successfully handing over their business resulting in a gender-related lower engagement in business succession planning. Secondly, discrimination against women-owned and women-led businesses – in the sense of Becker's (1957) "taste for discrimination" – might occur in the corporate market too. If this is the case, business successions of women-led businesses should be less likely compared to men-led businesses.

This chapter seeks to shed some light on the impact of gender on both planning a family business succession and its outcome. The chapter contributes to the still limited research on gendered business succession and the survival of women-led family businesses in this regard. The empirical analyses are based on one of the largest German establishment panel surveys, the IAB Establishment Panel, and additional administrative data. Linking the panel data with administrative data enables us to generate information on the outcomes of the observed business succession processes, regardless of whether a surveyed business participates in subsequent surveys or not. Thus, this study further contributes to the family business succession literature as it applies a sophisticated research design overcoming some methodological limitations of previous research on business successions.

## 2 Conceptual considerations

Although the body of literature on business successions is steadily growing, there remains a dearth of studies on at least two topics which are of special importance for answering our research question: first, the incumbent's gender and its relation to succession in family business (Harveston et al., 1997; Koffi et al., 2014; Ramadani et al., 2017; Kubiček & Machek, 2019) and second, the outcome of the business succession process, especially the chances of a family business being handed over.

It is rather astonishing, that the incumbent's gender has so far played a negligible role in business succession research. Although women-led businesses are less prevalent than men-led businesses in many countries, they after all constitute an essential part of the individual economies (Elam et al., 2021; OECD & European Commission, 2017). In Germany, for example, about a fifth of all businesses are mainly owned and led by women (Fels & Wolter, 2022; Kay et al., 2018). Regarding the few studies in this context, Harveston et al. (1997) suggest that women- and men-led businesses attach similar importance to business succession planning, although the determinants of the comprehensiveness of involved succession processes differ between the two groups. Sonfield and Lussier (2009) also found no impact of the incumbent's gender on having succession plans. Taking into account same- and cross-gender successions, Sharma et al. (2003) identified no differences in satisfaction with the business succession process between these two groups. A negative relationship between a CEO's inability to let go and the level of business succession planning is revealed by Umans et al. (2021). However, the influence of the emotion of being unable to let go on business succession planning is smaller for female CEOs than male CEOs. The results of Schlömer-Laufen and Kay (2015) show that female business owners are more likely than male ones to consider daughters as successors, while male and female business owners adopt different behavioural strategies to bring credibility to their successors (Koffi et al., 2014).



With respect to the outcomes of the business succession process, there seems often to be the implicit assumption in the business succession literature that all family businesses which are about to be transferred generally meet the necessary economic preconditions for doing so. However, this is obviously not always the case. For example, the results of Pahnke et al. (2021) show that about a quarter of all German (family) businesses whose managers had intended a business succession within 2012 and 2016 were eventually closed by the end of this period. In detail, businesses characterised by an insufficient earnings situation, smaller firm size, a relatively low state of technology, and low capital investments prior to the planned succession were more likely to be closed or shut down.<sup>1</sup> In line with Wennberg and DeTienne (2014) and Meroño-Cerdan (2022), these findings stress the importance of a family business' economic situation in the context of a (successful) business succession. From the potential successor's point of view, the firm's competitiveness and future viability is finally crucial for his or her decision on taking over the family business (Hauser et al., 2010), albeit (compensating) non-monetary factors, such as socioemotional wealth (e.g., Gomez-Mejia et al., 2007; Berrone et al., 2012) are important too.

A general transferability of a family business is not given, not only because of an insufficient economic situation, but perhaps also due to the predominant gender in the management board. After all, it is conceivable that discrimination – in the sense of Becker's (1957) "taste for discrimination" – against women-owned and women-led businesses occurs in the corporate market too. Potential buyers might hold prejudices or dislikes and therefore either have a lower willingness to pay or completely refrain from buying women-owned and women-led (family) businesses. Moreover, female business owners might be more likely to have distorted beliefs than male business owners about their businesses' transferability chances, as women in general

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<sup>1</sup> Pahnke et al. (2021) were not able to investigate the reasons for these "unintended plant closures" due to lack of information, especially on the level of the owner-family and involved individuals.

tend to do with respect to key economic indicators (e.g., D'Acunto et al., 2020; Bjuggren & Elert, 2019; Jacobsen et al., 2014; Armantier et al., 2013). These distortions might be related to the observation that women tend to be less optimistic than men (e.g., Briel et al., 2020; Bjuggren & Elert, 2019; Jacobson et al., 2014). Applying this finding to the context at hand, it seems possible that female business owners are also less optimistic than male business owners regarding the outcome of a business succession or its probability of success. However, tightly related research on overconfidence suggests that differences in confidence are not universal but depend among other things on the context too (Muthukrishna et al., 2017). There is also further evidence indicating that in the context of business succession planning male and female business owners do not differ in the assessment of their own abilities or of the possible outcomes of the business succession process (Kay et al., 2018). Thus, general gender differences in optimism might not apply to the population of business owners.

Given the current state of research, there are, in summary, three possibilities regarding the impact of family business owner's gender on both business succession planning and the outcome the business succession process which need to be empirically tested:

1. If the gender of the business owner is irrelevant and possible structural differences of women- and men-led businesses are taken into account, there should be no differences between these two groups of businesses with respect to business succession planning and the outcome of the business succession.
2. If the gender of the business owner is relevant because of distorted beliefs of female business owners and possible structural differences of women- and men-led businesses are taken into account, female business owners should be less likely to engage in business succession planning.
3. If the gender of the business owner is relevant because of discrimination of female business owners and possible structural differences of women- and men-led businesses are taken into

account, (successful) business successions of women-led businesses should be less likely in comparison to men-led businesses.

### **3 Data and methodology**

#### **3.1 Data basis**

The main data basis is the German IAB Establishment Panel (Bellmann et al. 2020) carried out by the Institute for Employment Research (IAB) in Nuremberg, Germany.<sup>2</sup> The Panel is based on a stratified random sample of the population of all establishments with at least one employee covered by social insurance which is stratified by industries and employment size categories for each federal state. The sampling basis is the Federal Employment Agency's establishment file, which contains approximately two million establishments. The data are augmented regularly to correct for panel mortality, exits, and newly founded firms. Taken in conjunction with other extension samples, the panel has grown over time and now includes around 16,000 establishments surveyed (Ellguth et al., 2014). The currently available time series of the IAB Establishment Panel ends in 2020. So far, (solely) in 2012 the survey comprised a set of questions on business succession which is the main reason why further analyses substantially build on information from this cross-section. In detail, the available information on business successions covers the intention of the business owners to execute a business transfer in the foreseeable future, the scheduled year, the type of the intended business succession as well as its planning status and expected difficulties in this context.

However, participation in the survey is not mandatory so that establishments cannot be readily equated with plant closures if they are no longer observed in the data. Moreover,

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<sup>2</sup> Data access via remote data execution was provided by the Research Data Centre (FDZ) of the German Federal Employment Agency (BA) at the IAB.

available information on the ownership and leadership structure in the survey is insufficient to unambiguously identify corresponding changes in the context of business successions over a specific period – even if establishments can be continuously observed. We therefore add an additional set of variables, based on the so-called Establishment History Panel (BHP)<sup>3</sup> of the IAB. These variables were originally developed by Hethey and Schmieder (2010) in order to improve the identification and measurement of establishment and business turnover in German administrative data. They generally allow to observe the continued existence of surveyed establishments independently from their further participation in the survey. They therefore also allow to observe the actual outcome of an intended business succession according to information from the 2012 cross-section of the IAB Establishment Panel.

From a technical point of view, the approach of Hethey and Schmieder (2010) is not only taking emerging and disappearing identifiers into account but also worker flows because there is a high probability that records in two consecutive years relate to the same establishment if the workforce remains identical. As a result, especially cases in which identifiers change due to changes in ownership, the legal form or other restructuring events (e.g., mergers, acquisitions, and outsourcing) are not regarded as firm exit in one and an entry in the next period. Following Pahnke et al. (2022), who adapted this approach to the context of business successions, we specifically distinguish between three outcomes of a business succession if they occur at about the same time a business succession should have taken place according to the information from the IAB Establishment Panel survey: partial or complete business successions, plant closures, and still existing businesses. For the definition of these outcomes see Table 1.

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<sup>3</sup> For a detailed description of the Establishment History Panel (BHP) 1975-2019 see Ganzer et al. (2020). As both, the BHP and the sampling frame of the IAB Establishment Panel, are based on German social security records, the data sets can be linked by utilizing a unique establishment identification number.

**Table 1**  
Possible outcomes of business successions

Outcome	Definition
Complete business succession	More than 80 percent of all employees of a closed establishment are seamlessly employed in another establishment in the subsequent year.
Partial business succession	Less than 80 percent of all employees of a closed establishment are seamlessly employed in another establishment in the subsequent year but still account for more than 80 percent of the total workforce there.
Plant closure	Neither an establishment (or its unique identification number) nor sufficient large worker flows are observed in the subsequent year.
Still existing business	An establishment cannot be assigned to any of the other outcomes.

### 3.2 Key variables and methodological approaches

In line with existing research (e.g., Ballarini & Keese, 2002; Battisti & Okamuro, 2010; Zellweger, Sieger, & Halter, 2011), we restrict our analyses to business successions that are expected to occur within the subsequent five years. In such cases, the business succession process should have started (Sharma et al., 2003, p. 674) and therefore impact the decision-making within the family business or the entrepreneurial behaviour of its owner(-familie)s (Werner et al., 2021).

Hence, our first variable, *upcoming business succession*, is related to the occurrence of a business succession within 2012 and 2016. The dummy variable takes the value 1 if the business stated that a transfer will occur within this period, and 0 if it will neither occur in the years afterwards nor in the foreseeable future at all. It is then used as dependent variable in Logit-regressions to determine the characteristics of family businesses planning a business succession within the next five years in comparison to those that did not do so at the time of the survey in 2012.

The second step of our analyses focusses on the observed outcomes of these planned business succession processes by the end of 2016. As described above, we can differentiate between three outcomes for each family business. Hence, we apply multinomial Logit-regressions in order to investigate differences in firm characteristics between family businesses

experiencing a “successful” business succession, a – unintended – plant closure or none of those. Since there are observational gaps in our data, these estimations rely on pooled data. Consequently, causal effects are harder to identify but sample size increases, and estimates become more precise (Wooldridge, 2016). However, available information on the year for which a potential business succession was intended allows us to take every (available) observation five years prior to this date into account. For example, if a business succession was planned for 2013, all information since 2008 is considered. If a business succession was, however, planned for 2015, all available information since 2010 is used accordingly.

Now, regarding the impact of the family business owners’ gender in this context, it is important to note that we do not analyse gender differences on the individual but on the business level and distinguish between women-led and men-led family businesses based on the proportion of women in the management board. Finally, (family) businesses are not always exclusively managed by one individual. Hence, a dummy variable is used to identify women-led family businesses in which 51 percent or more of the members of the management board are women. Nonetheless, we also refer to two alternative approaches to account for the proportion of women in the top-management of family businesses and thereby check the robustness of our results. In the first additional set of estimations, a metric variable representing the proportion of women in the management board is used. Moreover, for a second additional set of estimations, we created a set of dummy variables which virtually splits the proportion of women in the management board into four categories: up to 25 percent, more than 25 percent and less than 51 percent, at least 51 percent but less than 76 percent, 76 percent and more.

Further control variables include information on insufficient earnings situations in the previous year (dummy variable), unclear business expectations for the upcoming year (dummy variable), the total investment volume per capita (logarithmised), the state of technology in comparison to the industry standard (in the range of 1 = very low to 5 = very high), the share of

exports in total sales, the business' engagement in research and development activities (dummy variable), in apprenticeship training (dummy variable) as well as in further training (dummy variable). We also consider the total number of employees (logarithmised), solely owner-managed businesses (dummy variable), and additional dummy variables referring to the validity of a collective agreement, the age and the legal form of the enterprise, the region as well as the population density at the location of the enterprise, and finally the industry.

### **3.3 Sample selection**

Non-owner-managed (family) businesses or establishments whose legal or organizational structure generally does not permit a business succession are already excluded from the sample due to the design of the questionnaire. In addition, only independent companies (without any other places of business) and head offices of a company (with other places of business, offices or branches) had to answer the questions on business successions. Nonetheless, head offices of a company were dropped from the sample so that there are technically no differences between enterprises and establishments in the sample. This ensures that further information on firm characteristics from the survey optimally correspond to the family businesses of interest and not only to a potentially smaller subsidiary or the head office only, for example. For similar reasons, the sample also does not include the public sector, non-profit organizations, financial institutions, and insurance companies. With respect to the 2012 cross-section of the IAB Establishment Panel, which is at the centre of the analysis, the sample finally contains 6,746 observations with complete information on all variables of interest.

## **4 Empirical analyses**

Given the importance of firm characteristics not only with respect to the business succession process but also to the longevity of family businesses, we initially compare the key

characteristics of women- and men-led family business in general to identify potential structural differences between them (see Table 2). First, in line with recent estimations of Fels and Wolter (2022) for German family businesses, 20 percent of all family businesses with at least one employee covered by social insurance are led by women. Second, the average number of members in the management board is close to one in both groups of family businesses. This suggests that in most cases the management board of women- and men-led family businesses consists of one person only. Finally, the proportion of women in the management board is 99.4 percent in women- and 5.5 percent in men-led family businesses while nearly 95 percent of both are solely managed by their owners. Simply put, there are – on average – no notable differences in the ownership and leadership structure of women- and men-led family businesses besides the sex of the managing directors, of course.

Interestingly though, about every fifth women- and roughly every seventh men-led family business had been closed by the end of 2016 or within the next five years after the survey in 2012. Moreover, we also observe some but sometimes not very pronounced structural differences between women- and men-led family businesses. Thus, women-led family businesses were on average relatively smaller (based on the number of employees), younger, less likely to earn at least 10 percent of their annual turnover through exports, less often engaged in research and development, (entitled to) apprenticeship training or a member of the chamber of handicrafts while they did invest less per capita too.<sup>4</sup>

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<sup>4</sup> Logit-regressions on the firm characteristics of women-led family businesses (in comparison to men-led family businesses) yield very similar results (see Table A1 in the Appendix).



**Table 2**  
Comparison of firm characteristics by the predominant gender in the management board

	All family businesses	Comparison of women- and men-led family businesses		
		Women-led family busi- nesses	Men-led family busi- nesses	Significant difference
	(1)	(2)	(3)	(4)
Women-led businesses (d)	0.200 [0.185, 0.215]			
Number of members in the management board	1.273 [1.255, 1.292]	1.117 [1.086, 1.148]	1.312 [1.291, 1.334]	Yes
Proportion of women in the management board	0.243 [0.228, 0.258]	0.994 [0.991, 0.997]	0.055 [0.049, 0.061]	Yes
Solely owner-managed (d)	0.944 [0.938, 0.951]	0.957 [0.941, 0.972]	0.941 [0.934, 0.949]	No
Intended business succession within the next 5 years (d)	0.066 [0.057, 0.074]	0.064 [0.045, 0.083]	0.066 [0.056, 0.076]	No
Plant closure by 2016 (d)	0.159 [0.145, 0.173]	0.200 [0.166, 0.233]	0.149 [0.134, 0.164]	Yes
Total number of employees (ln)	2.002 [1.979, 2.024]	1.835 [1.789, 1.880]	2.044 [2.018, 2.069]	Yes
Founded before 1990 (d)	0.348 [0.331, 0.366]	0.280 [0.241, 0.318]	0.365 [0.346, 0.385]	Yes
Total investment volume p.c. (ln)	0.831 [0.793, 0.869]	0.623 [0.550, 0.695]	0.883 [0.840, 0.926]	Yes
Share of exports more than 10% of turnover (d)	0.073 [0.065, 0.082]	0.045 [0.028, 0.062]	0.080 [0.071, 0.090]	Yes
Insufficient earnings situations (d)	0.047 [0.040, 0.055]	0.056 [0.038, 0.075]	0.045 [0.037, 0.054]	No
Unclear business expectations (d)	0.090 [0.079, 0.100]	0.100 [0.074, 0.127]	0.087 [0.075, 0.099]	No
State of technology	3.798 [3.770, 3.827]	3.786 [3.719, 3.854]	3.801 [3.770, 3.833]	No
Research and Development (d)	0.047 [0.040, 0.055]	0.019 [0.009, 0.029]	0.054 [0.046, 0.063]	Yes
Apprenticeship training (d)	0.612 [0.594, 0.630]	0.542 [0.500, 0.584]	0.630 [0.610, 0.650]	Yes
Further training (d)	0.504 [0.485, 0.522]	0.527 [0.485, 0.569]	0.498 [0.478, 0.518]	No
Validity of a collective agreement (d)	0.576 [0.558, 0.594]	0.553 [0.511, 0.595]	0.582 [0.561, 0.602]	No
Member of chamber of handicrafts (d)	0.281 [0.265, 0.297]	0.183 [0.150, .215]	0.306 [0.288, 0.324]	Yes
Legal form: individual company (d)	0.637 [0.620, 0.654]	0.787 [0.755, 0.820]	0.599 [0.579, 0.619]	No
Operating site in West Germany (d)	0.781 [0.769, 0.793]	0.722 [0.690, 0.754]	0.796 [0.783, 0.809]	Yes
Number of observations (not weighted)	6,746	1,085	5,661	

Notes: Weighted means. Upper and lower bounds of 95% confidence intervals are shown in square brackets. Dummy variables are denoted by (d). Last decimal is rounded.

Source: IAB Establishment Panel, Wave 2012.

Hence, the question arises to which extent the predominant gender in the management board and/or certain characteristics are related to business succession planning as well as the outcome of the business succession process. We therefore utilize two separate model specifications for each of the corresponding Logit and multinomial Logit regressions (as described in the previous section). In addition to the “complete model” covering all variables of interest and necessary control variables, we use also a “reduced model” which only includes the variable(s) to identify a women-led family business.<sup>5</sup>

Against this background, both Logit regression models estimating the likelihood of a family business planning a business succession within the next five years do not show any statistically significant differences between women- and men-led family businesses (see column 1 of Table 3). This also applies to most of the other variables. While family businesses which are not able to give an estimate about the development of its operation within the next 12 months are, however, less likely to plan a business succession within the next five years, such an intention is obviously only positively affected by the age of the business. Hence, the age of the family business, which is probably also related to the age of the (managing) business owners and the length of their working lives<sup>6</sup>, can be regarded as the major driver of business succession planning.

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5 In the following, we focus on the results based on the utilisation of a dummy variable to identify women-led business. Comparable results based on alternate approaches – as discussed in the previous section – can be found in the appendix.

6 The data does not provide any personal information on the business owners.

**Table 3:**  
Regression results: impact of firm characteristics on business succession planning  
and the outcome of the business succession process

	Business suc- cession plan- ning (Logit)	Observed outcomes (Multinomial Logit)		
		(partial) busi- ness succes- sion	plant closure	still existing business
<b>a) Reduced model</b>	(1)	(2)	(3)	(4)
Women-led business	-0.009 (0.009)	0.032** (0.015)	0.071*** (0.019)	-0.102*** (0.023)
Time dummies (9)	No	Yes	Yes	Yes
<b>b) Complete model</b>				
Women-led business	0.003 (0.010)	0.015 (0.015)	0.007 (0.018)	-0.021 (0.022)
Solely owner-managed	0.018 (0.011)	0.055** (0.021)	-0.039 (0.027)	-0.016 (0.031)
Intra-family succession		-0.048*** (0.016)	-0.070*** (0.018)	0.118*** (0.021)
Sale of business		0.021 (0.017)	0.035* (0.019)	-0.055** (0.023)
Succession (partly) arranged		0.004 (0.014)	-0.065*** (0.016)	0.062*** (0.019)
Expected difficulties		-0.004 (0.014)	0.022 (0.017)	-0.018 (0.020)
Insufficient earnings situations	-0.013 (0.016)	-0.017 (0.023)	0.062*** (0.024)	-0.045 (0.031)
Unclear business expectations	-0.029** (0.014)	-0.005 (0.026)	-0.036 (0.032)	0.041 (0.038)
Total investment volume p.c. (ln)	-0.005 (0.003)	-0.002 (0.006)	-0.016* (0.008)	0.018* (0.009)
State of technology	-0.003 (0.005)	-0.005 (0.008)	-0.011 (0.009)	0.016 (0.011)
Research and Development	0.003 (0.012)	0.012 (0.022)	-0.009 (0.033)	-0.003 (0.036)
Apprenticeship training	0.013 (0.008)	-0.004 (0.015)	-0.011 (0.017)	0.015 (0.021)
Further training	0.013* (0.007)	0.022 (0.014)	-0.023 (0.016)	0.001 (0.019)
Total number of employees (ln)	-0.001 (0.004)	0.011 (0.007)	-0.067*** (0.018)	0.056*** (0.012)
Founded before 1990	0.064*** (0.007)	0.080*** (0.017)	-0.008 (0.018)	-0.072*** (0.022)
Exports more than 10% of turnover	0.020* (0.011)	0.010 (0.018)	-0.122*** (0.030)	0.112*** (0.031)
Validity of a collective agreement	-0.002 (0.007)	-0.003 (0.013)	0.003 (0.016)	-0.001 (0.019)
Member of chamber of handicrafts	0.007 (0.008)	-0.026 (0.017)	0.056*** (0.020)	-0.030 (0.024)
Legal form: individual company	-0.004 (0.008)	0.041** (0.016)	0.027 (0.018)	-0.067*** (0.022)
Operating site in West Germany	-0.017** (0.007)	-0.010 (0.017)	-0.007 (0.018)	0.016 (0.022)
Dummies for population density at operating site (6)	Yes	Yes	Yes	Yes
Industry dummies (8)	Yes	Yes	Yes	Yes
Time dummies (9)	No	Yes	Yes	Yes
Number of observations (both models)	6,746		2,341	

Notes: (Multinomial) Logit estimations of average marginal effects. Robust standard errors in parentheses. Results are statistically significant at the \*\*\* 1%-, \*\* 5%- and \* 10%-level. Last decimal is rounded.

Source: IAB Establishment Panel, Waves 2007-2016, BHP 1975-2019.

The picture changes, however, when it comes to the observed outcomes of business succession processes which should have taken place between 2012 and 2016 (columns 2 to 4 of Table 3). Actually, the results of the reduced model first indicate that women-led family businesses whose owners originally intended a business succession during the observation period were less likely to be still existing by the end of 2016 than their men-led “counterparts” (-10.2 percentage points). This is related to a statistically significant higher probability of plant closures (+7.1 percentage points) as well as of (partial) business successions (+3.2 percentage points) for women-led family businesses.

However, these statistically significant effects are no longer observed and much smaller when we control for a wide range of firm characteristics. Interestingly, many of the correlations which we identify based on the complete model are also related to those firm characteristics in which women- and men-led family businesses differ (on average). While women-led family businesses tend to be smaller and generate at least 10 percent of their annual turnover abroad less often than men-led family businesses, larger and more export-orientated family business – *ceteris paribus* – had less often been closed and were more often still existing by the end of the observation period. In general, this also applies to investments per capita albeit the statistical significance of the corresponding effects is relatively small. Moreover, the proportion of older businesses is smaller within the group of women-led family business while we observe relatively more (successful) business successions for older businesses (founded before 1990). In contrast, membership in the chamber of handicrafts, which is more common for men-led family businesses, is positively correlated with plant closures.

With regard to firm characteristics in which women- and men-led family businesses did not differ we found that an insufficient earnings situation is positively correlated with plant closures during the business succession process. The opposite holds with respect to the intention to transfer the business within the owner-family as well as the degree to which the business

succession was already arranged at the time of the survey in 2012. On a side note, the – somewhat surprising – negative correlation between the intention to transfer the business within the owner-family and an actual observed business succession (column 2 of Table 3) is possibly due to the fact that the unique establishment identification number can be kept by a new business owner upon request. In such cases, the family business would be identified as “still existing” by the end of 2016 instead of as being transferred.<sup>7</sup>

## 5 Discussion and Implications

This study investigated for the first time the impact of owner-managers’ gender both on the likelihood of family businesses planning a business succession in the near future and the outcome of such business succession plans. Our results show that women-led family businesses are as likely as men-led family businesses to engage in business succession planning – even without controlling for structural differences between the two groups. Drawing on our conceptual considerations, this clearly indicates that female business owners do not hold more frequently distorted beliefs than male business owners about their businesses’ chances of successful succession. This finding supports the notion that women are not generally less optimistic than men (Muthukrishna et al., 2014).

Regarding the outcome of intended business successions, we found that women-led family businesses are more frequently transferred as well as closed down in comparison to men-led family businesses. However, when controlling for structural differences, no gender-related differences remain. Put differently, women-led family businesses are as likely as male-led family businesses to be handed over as well as to be shut down during the observation period. Drawing

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<sup>7</sup> Unfortunately, no further information is available so that the proportion or number of identified and observed business successions should be regarded as a lower limit.

again on our conceptual considerations, this finding suggests that women-led businesses are not discriminated against on the market for business transfers.

However, we only considered the likelihood of a business being transferred. Women-led family businesses might still suffer a disadvantage in the context of business successions. As we do not have any information on the prices realized by transferring women- and men-led family businesses, it is conceivable that managers of women-owned family businesses had to accept price reductions in order to hand over the business. Discrimination against women-led family businesses in the context of business succession cannot, thus, be completely ruled out.

It is important to record, not only from a technical point of view, that all findings on the impact of being a women-led family business on both intending a business succession and the outcomes of an intended business succession do not depend on how women-led family businesses are distinguished from men-led family businesses. Alternative approaches of capturing the predominant gender in the management board of family businesses do yield essentially the same results as the ones presented above. This might be due to the skewed distribution of women and men at the top of women- and men-led family businesses: The majority of women- and men-led family businesses, respectively, are led by one woman or one man. The similarity of the results of the various estimations do not only prove their robustness, they also suggest that mainly other firm characteristics than the gender ratio in the management board determine whether a family business intends a business succession in the near future or is handed over.

It is good news that women-led family businesses seemingly suffer no disadvantages in the business succession process. However, we have to bear in mind that they face more frequently a plant closure, compared to men-led family business, if not controlling for structural differences. Characteristics as a smaller firm size or relatively less investments, for example, dampen the longevity of female-led family businesses. Marlow and McAdam (2013) pointed out that starting small in industries providing little growth opportunities reduces the survival

rate of (family) businesses, regardless of who leads the business. However, as women-led (family) businesses are relatively more prevalent in this group of businesses, this fact reduces their ability to increase their share of the family business stock. At least in Germany, the share of women-led family businesses has not changed significantly over the last two decades (Fels & Wolter, 2022).

If women are to play a greater role in the family business landscape, it is not sufficient pushing more of them to set up businesses. Their business survival chances rather need to improve. All these findings have important policy implications. Firstly, there is no need for special support for incumbent women entrepreneurs in the succession process. Instead, secondly, incentives should be put in place which encourage women to start larger businesses or businesses in growth promising industries from the outset. This is undoubtedly a huge task which needs perseverance as mere easily implemented business support measures will not make a big difference. On the contrary, the general division of labour between men and women has to be addressed to provide women unrestricted choices. This may be achieved by, for example, the adaption of labour market regulations, the provision of appropriate childcare, appropriate incentives for an egalitarian labour market participation of men and women or for egalitarian occupational choices. Such changes of formal institutions may also slowly influence informal institutions as gender roles or stereotypes (Giménez & Calabro, 2018, p. 872), both resulting in reduced differences between women- and men-led family businesses in the long run.

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## Appendix

**Table A1**  
Results of Logit-regressions on the firm characteristics of women-led family businesses  
in comparison to men-led family businesses

	All family businesses	Solely owner-managed family businesses
	(1)	(2)
Solely owner-managed	0.004 (0.016)	
Insufficient earnings situations	0.042** (0.018)	0.029 (0.021)
Unclear business expectations	0.015 (0.015)	0.016 (0.017)
Total investment volume p.c. (ln)	-0.028*** (0.005)	-0.033*** (0.006)
State of technology	-0.006 (0.006)	-0.008 (0.006)
Research and Development	-0.037* (0.021)	-0.048* (0.026)
Apprenticeship training	-0.012 (0.010)	-0.010 (0.011)
Further training	0.032*** (0.009)	0.033*** (0.010)
Total number of employees (ln)	-0.022*** (0.005)	-0.020*** (0.006)
Founded before 1990	-0.034*** (0.010)	-0.040*** (0.011)
Share of exports more than 10% of turnover	-0.043** (0.018)	-0.030 (0.021)
Validity of a collective agreement	0.013 (0.009)	0.019* (0.010)
Member of chamber of handicrafts	-0.047*** (0.012)	-0.053*** (0.013)
Legal form: individual company	0.053*** (0.011)	0.062*** (0.012)
Operating site in West Germany	-0.045*** (0.009)	-0.045*** (0.010)
Dummies for population density at operating site (6)	Yes	Yes
Industry dummies (8)	Yes	Yes
Number of observations	6,746	5,697

Notes: Logit estimations of average marginal effects. Robust standard errors in parentheses. Results are statistically significant at the \*\*\* 1%-, \*\* 5%- and \* 10%-level. Last decimal is rounded.

Source: IAB Establishment Panel, Wave 2012.

**Table A2**  
Regression results: impact of firm characteristics on business succession planning  
and the outcome of the business succession process (first alternative)

	Business suc- cession plan- ning (Logit)	Observed outcomes (Multinomial Logit)		
		(partial) busi- ness succe- sion	plant closure	still existing business
<b>a) Reduced model</b>	(1)	(2)	(3)	(4)
Proportion of women in the management board (reference: 25% at most):				
more than 25% but less than 51%	0.038*** (0.009)	-0.015 (0.018)	-0.014 (0.023)	0.029 (0.027)
at least 51% but less than 76%	0.059** (0.026)	0.082** (0.033)	0.039 (0.057)	-0.121* (0.064)
at least 76%	-0.008 (0.010)	0.019 (0.017)	0.072*** (0.020)	-0.091*** (0.025)
Time dummies (9)	No	Yes	Yes	Yes
<b>b) Complete model</b>				
Proportion of women in the management board (reference: 25% at most):				
more than 25% but less than 51%	0.031*** (0.009)	-0.030 (0.019)	0.026 (0.022)	0.004 (0.026)
at least 51% but less than 76%	0.056** (0.026)	0.077** (0.031)	0.121** (0.054)	-0.198*** (0.059)
at least 76%	0.003 (0.010)	-0.006 (0.017)	0.001 (0.019)	0.05 (0.023)
Solely owner-managed	0.015 (0.011)	0.053** (0.022)	-0.044 (0.027)	-0.009 (0.031)
Intra-family succession		-0.050*** (0.016)	-0.072*** (0.018)	0.122*** (0.021)
Sale of business		0.023 (0.017)	0.033* (0.019)	-0.056** (0.023)
Succession (partly) arranged		0.004 (0.014)	-0.067*** (0.016)	0.063*** (0.019)
Expected difficulties		-0.002 (0.014)	0.021 (0.017)	-0.018 (0.020)
Insufficient earnings situations	-0.012 (0.016)	-0.017 (0.023)	0.061*** (0.023)	-0.044 (0.031)
Unclear business expectations	-0.029** (0.014)	-0.002 (0.026)	-0.035 (0.032)	0.037 (0.038)
Total investment volume p.c. (ln)	-0.005 (0.003)	-0.001 (0.006)	-0.016* (0.008)	0.017* (0.009)
State of technology	-0.002 (0.005)	-0.006 (0.008)	-0.011 (0.009)	0.017 (0.011)
Research and Development	0.005 (0.012)	0.013 (0.022)	-0.007 (0.033)	-0.006 (0.036)
Apprenticeship training	0.013 (0.008)	-0.004 (0.015)	0.013 (0.017)	0.017 (0.021)
Further training	0.013* (0.007)	0.0232* (0.0139)	-0.0234 (0.0158)	0.0002 (0.0189)
Total number of employees (ln)	-0.002 (0.004)	0.010 (0.007)	-0.072*** (0.011)	0.062*** (0.012)
Founded before 1990	0.063*** (0.007)	0.081*** (0.017)	-0.008 (0.018)	-0.074*** (0.022)
Exports more than 10% of turnover	0.020* (0.011)	0.009 (0.018)	-0.119*** (0.030)	0.110*** (0.031)
Validity of a collective agreement	-0.002 (0.007)	-0.004 (0.013)	0.002 (0.016)	0.002 (0.019)
Member of chamber of handicrafts	0.008 (0.008)	-0.028* (0.057)	0.057*** (0.023)	-0.028 (0.024)
Legal form: individual company	-0.00003 (0.00838)	0.041** (0.016)	0.027 (0.018)	-0.069*** (0.022)
Operating site in West Germany	-0.018** (0.007)	-0.009 (0.017)	-0.009 (0.018)	0.018 (0.021)
Dummies for population density at operating site (6)	Yes	Yes	Yes	Yes
Industry dummies (8)	Yes	Yes	Yes	Yes
Time dummies (9)	No	Yes	Yes	Yes
Number of observations (both models)	6,746		2,341	

Notes: (Multinomial) Logit estimations of average marginal effects. Robust standard errors in parentheses. Results are statistically significant at the \*\*\* 1%-, \*\* 5%- and \* 10%-level. Last decimal is rounded.

Source: IAB Establishment Panel, Waves 2007-2016, BHP 1975-2019.

**Table A3**  
Regression results: impact of firm characteristics on business succession planning  
and the outcome of the business succession process (second alternative)

	Business suc- cession plan- ning (Logit)	Observed outcomes (Multinomial Logit)		
		(partial) busi- ness succes- sion	plant closure	still existing business
<b>a) Reduced model</b>	(1)	(2)	(3)	(4)
Proportion of women in the management board	0.005 (0.008)	0.019 (0.017)	0.061*** (0.020)	-0.079*** (0.024)
Time dummies (9)	No	Yes	Yes	Yes
<b>b) Complete model</b>				
Proportion of women in the management board	0.015 (0.009)	-0.005 (0.017)	0.009 (0.018)	-0.004 (0.023)
Solely owner-managed	0.018 (0.011)	0.056*** (0.022)	-0.040 (0.027)	-0.016 (0.031)
Intra-family succession		-0.048*** (0.016)	-0.070*** (0.018)	0.0117*** (0.021)
Sale of business		0.022 (0.017)	0.034* (0.019)	-0.056** (0.023)
Succession (partly) arranged		0.004 (0.014)	-0.065*** (0.016)	0.061*** (0.019)
Expected difficulties		-0.003 (0.014)	0.022 (0.017)	-0.019 (0.020)
Insufficient earnings situations	-0.013 (0.016)	-0.016 (0.023)	0.062*** (0.024)	-0.046 (0.031)
Unclear business expectations	-0.029** (0.014)	-0.005 (0.026)	-0.036 (0.032)	0.041 (0.038)
Total investment volume p.c. (ln)	-0.004 (0.003)	-0.002 (0.006)	-0.016* (0.008)	0.018* (0.009)
State of technology	-0.003 (0.005)	-0.006 (0.007)	-0.011 (0.009)	0.017 (0.011)
Research and Development	0.003 (0.012)	0.011 (0.022)	-0.008 (0.033)	-0.002 (0.036)
Apprenticeship training	0.013 (0.008)	-0.004 (0.015)	-0.012 (0.017)	0.015 (0.021)
Further training	0.013* (0.007)	0.0228 (0.014)	-0.0232 (0.0159)	0.0004 (0.0189)
Total number of employees (ln)	-0.0004 (0.0036)	0.011 (0.007)	-0.067*** (0.011)	0.056*** (0.012)
Founded before 1990	0.064*** (0.007)	0.079*** (0.017)	-0.008 (0.018)	-0.071*** (0.022)
Exports more than 10% of turnover	0.020* (0.011)	0.009 (0.018)	-0.121*** (0.030)	0.112*** (0.031)
Validity of a collective agreement	-0.002 (0.007)	-0.002 (0.013)	0.003 (0.016)	-0.001 (0.019)
Member of chamber of handicrafts	0.008 (0.008)	-0.028 (0.017)	0.056*** (0.020)	-0.029 (0.024)
Legal form: individual company	-0.004 (0.008)	0.043*** (0.016)	0.026 (0.018)	-0.069*** (0.022)
Operating site in West Germany	-0.017** (0.007)	-0.009 (0.017)	-0.007 (0.018)	0.016 (0.022)
Dummies for population density at operating site (6)	Yes	Yes	Yes	Yes
Industry dummies (8)	Yes	Yes	Yes	Yes
Time dummies (9)	No	Yes	Yes	Yes
Number of observations (both models)	6,746		2,341	

Notes: (Multinomial) Logit estimations of average marginal effects. Robust standard errors in parentheses. Results are statistically significant at the \*\*\* 1%-, \*\* 5%- and \* 10%-level. Last decimal is rounded.

Source: IAB Establishment Panel, Waves 2007-2016, BHP 1975-2019.