Working Paper

Institut für Mittelstandsforschung

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Working Paper 02/16

Suggested citation: Kay, R.; Schlömer-Laufen, N. (2016): Gender Diversity in Top-Management Positions in Large Family and Nonfamily Businesses, in: IfM Bonn: Working Paper 02/16, Bonn.

Impressum

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Working Paper 02/16
ISSN 2193-1879 (Internet)
ISSN 2193-1860 (Print)

Bonn, Juni 2016

Das IfM Bonn ist eine Stiftung des privaten Rechts.

Gefördert durch:

Bundesministerium für Wirtschaft und Energie

aufgrund eines Beschlusses des Deutschen Bundestages

Ministerium für Wirtschaft, Energie, Industrie, Mittelstand und Handwerk des Landes Nordrhein-Westfalen

GENDER DIVERSITY IN TOP-MANAGEMENT POSITIONS IN LARGE FAMILY AND NONFAMILY BUSINESSES

Rosemarie Kay[1] and Nadine Schlömer-Laufen[2]

Abstract

(Why) does the sex ratio in top-management positions in large family and nonfamily businesses differ? Using a unique data set and estimating (fractional) logit regressions we show that the female share in top-management positions in family businesses exceeds the one in nonfamily businesses. One reason is the selection mechanism social homophily from which females in family businesses benefit more because of a higher female share in the decision making body in family businesses. Another reason is the pathway self-appointment as (co-) leader of one's own business which is more common in family businesses. Nepotism seems not to play a role.

JEL-Classification: J16, M14, M51

Keywords: gender diversity, top-management positions, family businesses, selection mechanisms, pathways into top-management

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Paper presented at Diana International Research Conference, Nord University Business School and Nordland Research Institute, Bodø, Norway, June 12-14, 2016.

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INTRODUCTION

Women traditionally are underrepresented in leading positions, in Germany as well as in many other countries (European Commission 2013). They are especially scarce in top-management positions, despite a steady progress in recent years (Holst/Kirsch 2014). Evidence from Germany suggests that representation of women in leading positions differ between family and nonfamily businesses (Kay 2012; Kohaut/Möller 2013). Even though there is a lack of women in key positions in family businesses as well (Jimenez 2009), the female share in top-management positions in family businesses exceeds the one in nonfamily businesses (Kay 2012; Kohaut/Möller 2013).

This finding raises the question of the underlying reasons. Though there is a huge amount of studies on the reasons for the underrepresentation of women in leading positions in general, only a very few investigated the situation of females in management positions in family businesses in comparison to nonfamily businesses (Montemerlo et al. 2013: 1). This paper aims to close this research gap by analysing the sex ratio in top-management positions in large family and nonfamily firms. Two research questions are leading this analysis. Firstly, we have to keep in mind that family and nonfamily firms not only differ in the female share in top-management positions but also in respect to size, industry, legal form and other characteristics (e. g. Schlömer-Laufen et al. 2014; Gallo et al. 2004; Jorissen et al. 2002). Some of these characteristics in turn have an impact on the female share in leading positions (e. g. Kohaut/Möller 2016, Holst et al. 2015, Carter et al. 2003). Hence, the first question is whether family and nonfamily firms actually differ in relation to female representation in the top-management, even if controlling for various differences between family and nonfamily businesses. If this holds true, the subsequent question is: what are the reasons?

Answering this second question we mainly focus on the demand side, the company that appoints top-managers, and neglect the supply side, female and male candidates for management positions.[1] Since there is no comprehensive theory that explains the appointment of top-managers we provide a framework for the rather complex decision process of appointing top-managers. This framework helps us to develop an understanding of what determines the observed differences. Among others, we look into the applied selection mechanisms as well as into the pathways that lead into corporate top-management. These pathways are manifold (Dumas 1998) and differ, for example, depending on the ownership structure of the company (Oehmichen et al. 2012) and whether or not the executive belongs to the owner-family. In doing so we pick up the research question posed by Jeminez (2009) whether forming part of the firm's owner-family is an additional handicap for women who are trying to reach highest management positions or whether this helps them.

We focus on large firms for several reasons: firstly, the role of women in large family firms is scarcely researched, secondly, their underrepresentation in large firms is especially pronounced and, thirdly, large firms' ownership- and management team-structures are more diverse than those of smaller ones. Thus, examining large firms promises deeper insights.

The paper proceeds as follows. We first introduce a conceptual framework as a basis for both analysing the appointment of top-managers in large family and nonfamily businesses and formulating hypotheses. Then, we describe our sample and methods and subsequently report our empirical results. Finally, we discuss our findings in the light of previous research and outline some practical implications.

CONCEPTUAL FRAMEWORK

Previous literature

As already mentioned above, there are virtually no comparative studies on the representation of females in key positions in family and nonfamily businesses.[2] Nevertheless, a few studies analysed the determinants of female representation in corporations' boards of directors in general. Broad international empirical evidence proves that firm size plays an important role – however, the findings are inconsistent: While some studies indicate that the proportion of females in top-management positions rises with firm size (e. g. Carter et al. 2003; Randøy et al. 2006), others indicate the opposite (e .g. Kay 2007; Kohaut/Möller 2016), and Montemerlo et al. (2013) found no influence. Hillmann/Canella (2007) as well as Carter et al. (2003) found that the bigger the firm the higher is the probability that at least one woman is in the board of directors whereas Oehmichen et al. (2012) found the opposite. Finally, Farrell/Hersch (2005) show that the bigger the firm the higher is the probability that a woman will be added to the board of directors.

Board size affects the presence of females in these very boards positively (e. g. Goodman et al. 2003, Carter et al. 2003; Oehmichen et al. 2012). Whether board size also affects the proportion of females in top-management teams is ambiguous. Carter et al. (2003) found no influence whereas Montemerlo et al. (2013) found a positive one. Furthermore, the likelihood of a firm adding a woman to its board is negatively affected by the number of females already on the board (Farrell/Hersch 2005).

Industry type also has an impact (e. g. Goodman et al. 2003; Randøy et al. 2006) because of, among other things, the percentage of females in the workforce of each industry. The higher the percentage of females in the workforce of an industry (Hillman/Canella 2007), of a firm (Kay 2007) or in lower management positions (Goodman et al. 2003) the higher is the likelihood of having women in the board of directors. Apparently, a bigger pool of female candidates within the firm or the industry increases the chances of females reaching top-management positions. Average management salaries, on the other hand, are negatively related to the likelihood of having women in the top-management (Goodman et al. 2003). Firms with relatively low remuneration levels do not seem to always be able to attract enough male candidates and subsequently have occasionally to make do with females (Kay 2012).

Finally, though the ownership structure seems to affect the female representation in top-management positions the findings are inconsistent. Kang et al. (2007) found that shareholder concentration is negatively associated with gender diversity of the board of directors whereas Oehmichen et al. (2012) found that shareholder concentration per se does not play a role but the specific type of owner, namely individual investors and foreign institutional investors. The higher the percentage of shares held by individual investors and foreign institutional investors, respectively, the higher is the likelihood of at least one female in the top-management. Keeping in mind that a high percentage of shares held by individuals indicates that a firm might be a family firm this finding points at a positive impact of the "familiness" of a firm on female representation in top-management teams. This interpretation is supported by the findings of Kay (2007) and Montemerlo et al. (2013). Farrel/Hersch (2005), finally, show that the percentage of institutional ownership is positively related to the likelihood of adding a female to the board of directors.

These findings do not provide any clues why females might have better chances to reach the top of family firms compared to nonfamily firms. Albeit, they underline the necessity of both, carefully constructing explanation models and including various control variables.

Appointing top-managers: a framework

Since there is also no comprehensive theory that explains the appointment of top-managers we start with providing a framework for the rather complex decision process of appointing top-managers. In detail, we explicate who the decision makers and the candidates are, which pathways lead into the top-management, and last but not least which selection criteria and selection mechanisms are applied.

Generally, the owners of a company decide on who fills the top-management positions. In family firms these owners are by definition, exclusively or by majority, a limited number of individual owners and their family members. Further individual investors as well as institutional or strategic investors may add to the ownership of a family firm. In nonfamily firms the ownership consists of individual, institutional and strategic investors as well as free float. In large nonfamily firms a supervisory board usually represents the ownership and makes strategic decisions as the one considered here. In large family firms supervisory boards are less prevalent. Lamsfuß/Wallau (2012: 21) found that about one half of large German family firms possess a supervisory or advisory board. Therefore, even the owners of large family firms often make strategic decisions themselves. The owners of large family firms as well as the members of the supervisory or advisory boards of large firms are predominantly male (Haunschild/Wolter 2010; Holst/Kirsch 2014), not only in Germany (Marinova 2010; Henrekson/Stenkula 2009; Adams/Ferreira 2009; Grosvold et al. 2007; Kang et al. 2007).

Both in family and nonfamily businesses candidates for top-management positions either stem from the owners' families or have no affiliation with the owners' families. Even though females are rarely considered as top-managers, in principle there are both male and female candidates for such leading positions.

Generally, there are four different pathways into the top-management. The first one is being selected as a manager with no affiliation with the owner's family. This pathway is not only the standard one in nonfamily firms but is also often trodden in large family firms.[3] The other three pathways could primarily be found in family businesses.[4] The second one is founding a business and appointing oneself as executive director. This pathway is common in newly found (and therefore usually small) family firms and firms that have been taken over by individuals (in the course of a management-buy-out or a management buy-in). The third pathway is being selected as a member of the owner's family as a successor of the founder (or as the successor of the successor in family businesses of the third, fourth and so on generation). The fourth pathway, finally, is being selected as a member of the owner's family as an additional member of the management board. This pathway may be of some empirical relevance because the majority of management boards of large family firms have two or more members (Montemerlo et al. 2013: 313; Lamsfuß/Wallau 2012: 16) and comprise usually more than one member of the owner's family (Lamsfuß/Wallau 2012: 16).

Finally, we have a look at possible selection criteria and selection mechanisms which are applied in the course of appointing members of the management board. Unfortunately, we do not have any information on selection criteria concerning the qualification of the candidates. We argue that this lack of data is not that important because due to the complexity of selection decisions, simple selection mechanisms are often applied anyway. We identified two such mechanisms which seem to be crucial in the context at hand: nepotism and social homophily.

Nepotism refers to kinship and means favouritism granted to relatives. Nepotism clearly has a negative connotation. Nevertheless, nepotism plays a significant role especially in family businesses (Bellow 2003). Even though this might sometimes be a rather irrational affair, preferring family members might also sometimes follow a rationale. Drawing on the socio-emotional wealth (SEW) model (Gomez-Mejia et al. 2007, Berrone et al. 2012) we assume that owner-families prefer family members as executives because this allows them to exert control und influence over the firm's affairs (and to reduce agency problems). A special variety of nepotism is primogeniture which alludes to the right of the first born male child to inherit the family estate, in preference to siblings. Regarding the top-management, primogeniture means appointing a male member of the owner's family, preferably a son, as successor.

Another rather prevalent selection mechanism is social homophily or homosocial reproduction (Kanter 1977), especially in recruiting executives (Kurtulus/Tomaskovic-Devey 2012; Kay 2007; Staffsud 2006; Gorman 2005). Homophily means that recruiters select individuals who are similar to themselves, i. e. in regard to gender, race, or age.

Hypotheses

Unfortunately, we do not have all necessary information on hand for testing all possible effects on female representation among top-managers. Therefore, we have to focus on some more general connections which could be distilled from the above considerations. In detail, we look at the selection mechanisms social homiphily and nepotism and its interconnections as well as at selected pathways into top-management.

Selection mechanisms. Due to a preference for the same sex female (male) decision makers are more likely to select female (male) candidates for a top-management position. Since these selection decisions usually are not made by one single person but rather by a decision making group (e. g. supervisory or advisory board) we have to look at the sex-composition of this group. Keeping in mind that not every member of such a group has necessarily the same weight in the decision making we also look at the percentage of shares held by male and female owners of a firm. This leads us to the following two hypotheses:

Hypothesis 1a: The higher the female share in the decision making body, the higher is the female share in the top management board.

Hypothesis 1b: The higher the percentage of shares held by females, the higher is the female share in top management boards.

However, in family firms the general rule of social homophily might be moderated by the affiliation of the candidate with the owner's family. This will, if at all, mostly be the case if there is no candidate of the appropriate sex who stem from the owner's family. If family ties outweigh the sex of a candidate, male (female) decision makers will prefer female (male) members of the owner's family to male (female) candidates with no affiliation to the owner's family. Since decision makers are predominantly male, nepotism thus results in a higher proportion of females than males being appointed as top-managers. However, we have to bear two facts in mind. Firstly, we suppose that social homophily trumps nepotism and, secondly, in the concrete situation there has to be a suitable candidate of the appropriate sex with affiliation with the owner's family. But even nowadays male members of entrepreneurial families are more often encouraged to prepare themselves for a leading role in the family business, for example as successor (Hauck/Prügl 2015: 43). Taking all this considerations together we, nonetheless, assume that nepotism does help to increase the likelihood of females of being appointed as top-managers, at least slightly.

Hypothesis 2: The percentage of women in top management positions of family firms is higher than in top-management positions of nonfamily firms.

Pathways into the top-management. Within our conceptual framework, nepotism is not only a selection mechanism but also refers to the third and fourth pathway into the top-management. Insofar, hypothesis 2 does not only represent a connection between the selection mechanism nepotism and female representation at the top of large businesses but also between the mentioned pathways and female representation at the top of large businesses.

The information on hand allows us also to look at the second pathway: founding a business and appointing oneself as executive director. In this case the founder (and sole owner) of a business is both the decision maker and the candidate, nobody else interferes with the decision making. A female (male) founder will most likely appoint herself (himself) as executive director. From a candidate's point of view, this pathway into the top-management comes along with the highest probability of attaining a top-management position. This likelihood decreases when several people own a business and not every owner moves into the top-management. If a business belongs to a group of females (males) there is a rather high probability that some of these females (males) will be appointed as members of the top-management team. If a business belongs to a group of both males and females the likelihood of a female (male) co-owner to be appointed as top-manager depends on, among other things, the shares held by this female (male) co-owner and therewith her (his) weight in the decision making. According to this, having a certain weight in the decision making and being interested in serving as an executive director at the same time helps a female (male) to attain a top-management position.

Hypothesis 3: The higher the percentage of shares held by females belonging to the top-management of a firm, the higher is the female share in top-management boards.

EMPIRICAL DATA

Sample

The data set originally was created for the purpose of investigating the economic development of large family and nonfamily firms (Schlömer-Laufen et al. 2014). It consists of 3,723 large family and 2,852 large nonfamily businesses in Germany of all private industries that are included in the databases MARKUS and DAFNE provided by Creditreform, a German credit agency. Following prevalent SME-definitions a business is regarded as large if its annual turnover amounts to 50 million Euro or more. All companies are independent. In case of affiliated companies the parent company was included whereas both domestic and foreign subsidiaries were excluded from the data set.

For the current study we added information regarding the management and owner structure to the original data set. In practice, we added the name and title of up to ten top managers as well as the name and title of up to ten owners. These owners hold the highest shares in the company. Based on this data we could generate further information such as size of management board, number of females and males on the management board, number of females and males in the ownership of a company, percentage of shares held by females and males and percentage of shares held by females on the management board.

Variables

Dependent variables. The representation of females in top-management positions of a firm is measured in two ways: as the female share in top-management positions and as the presence of at least one woman in the top-management. Based on the title of a top-manager we decided whether a person is male or female, so that we could count the number of male and female top-managers in each firm and consequently compute the *overall ratio of female managers* within the top-management positions of each firm as well as the *presence of at least one woman* in the top-management. The last variable is coded as a dummy variable with value 1 if at least on woman is present in the top-management board, and 0 otherwise.

Independent variables. The independent variables are all related to the ownership of a business. The first one – *family ownership* – is a rather global one. It is coded as a dummy variable with value 1 if up to two individuals or their family members hold at least 50 percent of shares and at the same time are members of the top-management board, and 0 otherwise.[5] The second independent variable is *percentage of females in owners*. We counted the number of male and females owners of a company and computed the female share in all owners. For the third independent variable *percentage of shares held by females* we added the shares held by males and females and computed the ratio of shares held by females. And finally, the fourth independent variable measures the *percentage of shares held by females who* at the same time *belong to the top-management board*.

Control variables. Control variables include various measures both at the firm and the top-management level. All these variables aim to capture other possible influences on the representation of women in top-management positions besides the variables mentioned above. *Firm size* is measured as the logarithmic transformation of the number of employees of a given firm. *Listing* is coded as 1 if the firm is listed at a German stock exchange, and 0 otherwise. *Return on equity* is the ratio between previous year's profit and equity of a given firm, as stated in the used data source. *Place of business* is coded as 1 if the firm is located in West Germany, and 0 if in East Germany. The legal form of a business is captured in the form of a set of dummy variables. *Business partnerships* includes among others the legal forms general partnership, limited partnership and partnership under the Civil Code. *Corporations* comprises among others the legal forms corporation, limited liability company and limited partnership with a limited liability company as a general partner. *Other legal forms* includes all legal forms which are neither business partnerships nor corporations. Industry classification is also captured in the form of a set of dummy variables which represent the industrial sectors *processing trade, construction trade, trade*, *professional, scientific and technical services*, *real estate and housing*, *finance and i*nsurance, *information and communication*, *transport and storage*, *education, health care and welfare*, and *other industries*.

At the top-management level we include the logarithmic transformation of the *number of top-managers*. All logarithmic transformations have been performed to adjust for skewed distribution of the original variables.

EMPIRICAL ANALYSES

The results of our descriptive analyses confirm that females are strongly underrepresented in the higher echelons of large businesses. Only 6.5 percent of all top-management positions are filled with women (table 1). As expected, the female share in family firms (7.6 percent) exceeds the one in nonfamily firms (4.9 percent). Given this small fraction, it does not come as a surprise that only 18 percent of family firms and 11 percent of nonfamily firms have appointed at least one female executive director. On average, there are 0.2 female top-managers in family firms and 0.12 female top-managers in nonfamily firms.

To test our hypotheses, we applied multivariate regression analysis. Given the high ratio of firms which have not appointed even one female executive director, we decided to run both logistic regression models and fractional regression models. Table 2 presents the results of the logit-models and table 3 the results of the fractional regression models. In order to better understand the impact of the various independent variables, we include them stepwise into the models.

Regardless of all other information on ownership, model 1 shows that females are indeed more often present in the top-management of family firms than in nonfamily firms, even if controlling for various other factors (table 2). As expected, the presence of females in top-management positions is positively correlated with the percentage of females in owners of the business (model 2a). The higher the female representation among the owners the higher is the likelihood of at least one female in the top-management. The same holds true for the percentage of shares held by females (model 2b). Model 3 indicates that the percentage of shares held by females who at the same time belong to the top-management has an even stronger impact on the presence of females in the top-management. Furthermore, inserting this variable into the model results in family ownership losing its impact on female representation in the higher echelons of large firms.

Table 1: Descriptives (Means)

Variables	Family firms	Nonfamily firms	All firms
Presence of females in top-management (yes)	0.18	0.11	0.15
Percentage of females in top-management	0.08	0.05	0.07
Percentage of females in owners	0.24	0.12	0.18
Percentage of shares held by females	0.14	0.07	0.11
Percentage of shares held by females who belong to the top-management	0.09	0.01	0.05
Number of top-managers	2.6	2.4	2.5
Firm size (number of employees)	1,099.4	3,384.0	2,111.8
Listing (yes)	0.02	0.08	0.04
Return on equity	11.0	10.8	10.8
Place of Business (West Germany)	0.94	0.86	0.90
Corporations	0.97	0.89	0.93
Business partnerships	0.03	0.02	0.02
Other legal forms	0.01	0.09	0.04
Processing trade	0.29	0.24	0.27
Construction	0.03	0.01	0.02
Trade	0.30	0.17	0.24
Professional, scientific and technical services	0.23	0.23	0.23
Real estate and housing	0.03	0.04	0.04
Finance and insurance	0.04	0.06	0.05
Information and communication	0.01	0.03	0.02
Transport and storage	0.03	0.03	0.03
Education, health care and welfare	0.01	0.12	0.05
Other industries	0.04	0.07	0.05
Observations	2,331	1,759	4,090

Source: Own calculations

Table 2: Logit-models: presence of at least one female top-manager

	1	2a	2b	3	4
Family ownership (yes)	0.593***	0.405***	0.473***	0.161	0.178
Percentage of females in owners		2.615***			0.560
Percentage of shares held by females			0.0282***		0.00749
Percentage of shares held by females who belong to the top-management board				0.0386***	0.0276***
Number of top-managers (ln)	1.251***	1.259***	1.286***	1.266***	1.267***
Firm size (ln)	-0.00238	-0.0305	-0.0206	-0.00356	-0.0117
Listing (yes)	-0.254	0.207	0.187	-0.0173	0.109
Return on equity	-0.00366+	-0.00441*	-0.00485*	-0.00549*	-0.00547*
Place of Business (West Germany)	-0.402**	-0.597***	-0.586***	-0.501**	-0.552***
Legal form (reference: corporations)					
Business partnerships	-0.144	-0.564	-0.654	0.315	0.0249
Other legal forms	0	0	0	0	0
Industry (reference: processing trade)					
Construction	0.389	0.443	0.357	0.469+	0.447
Trade	0.213	0.256+	0.281*	0.319*	0.317*
Professional, scientific and technical services	0.142	0.129	0.131	0.114	0.114
Real estate and housing	1.023***	1.138***	1.122***	1.005***	1.048***
Finance and insurance	0.498+	0.535+	0.567*	0.506+	0.513+
Information and communication	0.204	0.292	0.344	0.257	0.281
Transport and storage	0.443+	0.611*	0.612*	0.553+	0.596*
Education, health care and welfare	0.965***	1.327***	1.338***	1.079***	1.191***
Other industries	0.392+	0.570*	0.562*	0.537*	0.565*
Constant	-3.036***	-3.129***	-3.229***	-3.106***	-3.141***
Observations	4,090	4,090	4,090	4,090	4,090
F-Wert	224.9***	398.0***	425.53***	468.45***	481.67***
R²	0,07	0.14	0.15	0.17	0.17

Heteroscedasticity-consistent standard errors; + p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001

Source: Own calculations

Model 4, finally, comprises all four independent variables and all control variables. Of all independent variables only the percentage of shares held by females who at the same time belong to the top-management exerts statistically significant influence on the presence of females in the top-management of a large firm. According to these findings we can state, firstly, that family ownership per se does not result in a better representation of females in top-management positions. Hence, compared to large nonfamily businesses, large family businesses do not favour females while appointing managers for key positions. With regard to hypothesis 2, we cannot find any support for nepotism favouring female members of the owners' families generally. This means at the same time that, for females, pathways 3 and 4 do not come along with higher probabilities of attaining top-management positions compared to pathway 1.

Secondly, social homophily seems not to play a role in appointing top-managers, regardless in which way social homophily is represented in the regression models. Thus, our findings do support neither hypothesis 1a nor hypothesis 1b. That both variables which represent social homophily are not statistically significant anymore seems to be due to the insertion of the variable "percentage of share held by women who at the same time belong to the top-management". In other words: The female weight in the decision making body in general is not crucial but the percentage of female owners who at the same time act as members of the top-management board is. However, this variable does not reflect social homophily but the self-appointment of female owners of large firms as top-managers of these firms. This finding therefore supports hypothesis 3.

Several of the control variables are also statistically significant. The number of top-managers is positively correlated to the presence of women in the top-management of a large business. This finding is in line with previous research and seems mainly to be a statistic effect as the probability of at least one women being in a top-management board rises with the size of this board. Large businesses located in West Germany are less likely to have at least one woman in the top-management than businesses located in East Germany.[6] This finding is not surprising as there are still some differences in the attitude towards work and the actual employment behaviour between West and East German women. For example, women with children in the German Democratic Republic (GDR) more often worked full time than their counterparts in the Federal Republic of Germany (FRG), especially so because East German society accepted the labour market participation of women. Even though the employment behaviour of East and West German women has converged East German women still have a preference for full time employment (Drasch 2013). They also benefit from better childcare availability. Furthermore, women in Eastern Germany occupied and still occupy more often male-typed jobs (Rosenfeld et al., 2004). All these factors add up to better opportunities for East German women to strive for top-management positions.

Expectedly, we found some industry effects. Especially large businesses in the service sectors real estate and housing as well as education, health care and welfare are more likely of having at least one woman in the top-management than large businesses in the processing trade.

The fractional logit models that explain the overall ratio of females in the top-management show rather similar results to the logit regression models (table 3). There are only a very few differences, namely in model 8. The most important one is that the percentage of females in owners exerts statistically significant influence on the female share in top-management positions. As expected, the proportion of females in top-management positions is positively correlated with the female share in owners of the business (model 8). The more females are among the owners the higher is the female share in top-management. This finding supports hypothesis 1a and indicates that homophily might play a role after all, if not for the presence of females in the higher echelons generally but for the extent in which females are present.

Table 3: Fractional regression models: overall ratio of female managers

	5	6a	6b	7	8
Family ownership (yes)	0.538***	0.337**	0.401***	0.110	0.0963
Percentage of females in owners		2.415***			0.960**
Percentage of shares held by females			0.0244***		0.00162
Percentage of shares held by females who belong to the top-management board				0.0315***	0.0228***
Number of top-managers (ln)	0.238*	0.158	0.163	0.128	0.124
Firm size (ln)	-0.00196	-0.0297	-0.0183	0.00111	-0.00869
Listing (yes)	-0.473*	-0.0309	-0.0581	-0.226	-0.117
Return on equity	-0.00320	-0.00388+	-0.00426*	-0.00473*	-0.00467*
Place of Business (West Germany)	-0.422**	-0.602***	-0.569***	-0.498***	-0.548***
Legal form (reference: corporations)					
Business partnerships	-0.788	-1.168+	-1.226+	-0.400	-0.575
Other legal forms	0	0	0	0	0
Industry (reference: processing trade)					
Construction	0.320	0.356	0.283	0.347	0.371
Trade	0.103	0.135	0.152	0.177	0.177
Professional, scientific and technical services	0.230+	0.229+	0.223	0.212	0.217
Real estate and housing	0.960***	1.069***	1.043***	0.928***	0.974***
Finance and insurance	0.403	0.406	0.440+	0.406	0.397
Information and communication	0.147	0.285	0.333	0.231	0.265
Transport and storage	0.419+	0.604*	0.575*	0.490+	0.548*
Education, health care and welfare	0.874***	1.192***	1.174***	0.911***	1.015***
Other industries	0.429+	0.595*	0.587*	0.551*	0.592*
Constant	-2.998***	-3.025***	-3.105***	-2.993***	-3.006***
Observations	4,090	4,090	4,090	4,090	4,090
F-Wert					
R²					

Heteroscedasticity-consistent standard errors; + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Source: Own calculations

Another notable difference is related to the control variable number of top-managers. In contrast to model 4 the size of the top-management board has no impact on the overall ratio of female managers. This finding supports the notion that the effect found in model 4 was a mere statistical one.

DISCUSSION AND IMPLICATIONS

Our empirical analyses prove that the female share in top-management positions is rather low, albeit slightly higher in large family businesses than in large nonfamily businesses. The latter holds true, even if controlling for various other factors. Thus, what are the facts driving this difference? We assumed that certain selection mechanisms and pathways to the top of a firm are crucial drivers for a better representation of females in the higher echelons. Our empirical analyses show that only social homophily seems to be a selection mechanism that contributes to the higher female share in top-management positions in large family businesses – and that because the percentage in female owners is higher in family than in nonfamily businesses. However, we have to bear in mind that social homophily not only means that female owners decide in favour of other women while appointing top-managers but that male owners reversely decide in favour of other men. Consequently, the gender imbalance on the side of the decision makers perpetuates the gender imbalance on the management boards.

Though we did neglect the supply side, the candidates for top-management positions, some findings of the entrepreneurship research with regard to the likelihood of becoming self-employed might be important in the context at hand. Entrepreneurship literature clearly shows that having self-employed parents increases the probability of becoming self-employed (e. g. Lapita et al. 2012; Schoon & Duckworth 2012; Fairlie & Robb 2007). Hoffmann et al. (2015: 102f.) reveal that the probability of becoming self-employed depends on the sex of the children as well as on the sex of the self-employed parent. The relative effect of having a self-employed father (mother) on the probability of becoming self-employed is roughly twice as high for males (females) as for females (males). Self-employed parents seem to serve as role models and induce their offspring in becoming entrepreneurs. Transferring these findings into the context at hand, we can conclude that the lack of female owners of family businesses results in fewer daughters of owners of family businesses to strive for a leading role in these family businesses. Thus, the small portion of female owners of family businesses does take a double negative effect on female representation at the top of (family) businesses.

Getting back to our empirical analyses, we should remember that our results imply that social homophily has no impact on the presence of women in top-management boards in general but on the female share in these boards. We assume that the female weight in the decision making body might not have a linear effect on the representation of females in the top-management board. Put differently: Up to a certain threshold the female representation in top-management positions might not depend on the female weight in the decision making body. Figuratively, an isolated woman might attain a top-management position for various, rather random reasons. But in order to reach a higher female share in the top-management a higher female weight in the decision making body is necessary.

Anyway, social homophily is a selection mechanism equally applied in family and nonfamily businesses. Nepotism does not moderate this general rule. In any case, nepotism does not seem to generally help female members of the owners' families in attaining top-management positions, be it via the pathway succession or the pathway being appointed as an additional member of the management board. In contrast, Ahrens et al. (2015) findings indicate that nepotism favours male family members over female family members (in the context of family succession). But, the authors do not control for the sex of the decision maker. For this reason the relationship between nepotism and gender preferences remains vague. However, due to some shortcomings in the applied data our conclusions are to be taken cautiously. Further research is required to clarify comprehensively the role that nepotism plays in appointing top-managers in large firms.

Even though we cannot strictly differentiate between the various pathways into top-management, there is no doubt that self-appointment is an important pathway for females (as well as for males). Though appointing oneself as leader of one's own firm, e. g. as (co-)founder or (co-)heir(ess), is also possible in nonfamily businesses, it is much more common in family businesses. Therefore, self-appointment is another explanation for a better female representation at the top of large family businesses compared to nonfamily businesses. Hence, there are many factors supporting the notion that founding a business – alone or in a female team – is the most promising way for women to reach a top-management position. As this kind of businesses are usually family businesses by definition and the founder of a family firm is also part of the firm's owner family one might argue that forming part of the firm's owner family is clearly an advantage and not an additional handicap for women who are trying to reach highest management positions. But Jeminez (2009) certainly had something different in mind when she posed that question quoted at the beginning. Our empirical results indicate that having an affiliation with the owner's family neither helps nor hinders females reaching the top of family firms.

To summarize, the gender imbalance on the side of the decision makers perpetuates the gender imbalance on the management boards. Thus, it needs external stimuli for changing this situation. Otherwise, the female share in top-management positions will continue to increase slowly. Based on our findings there are two policy approaches: Firstly, encouraging especially highly qualified females to start-up businesses in industries with great potential for growth. The result could be female led businesses which grow in the medium term that much that they will fall into the category of large businesses. This way, the overall gender diversity in top-management teams will improve but the difference between family and nonfamily businesses will persist or even deepen. Secondly, introducing a law which forces businesses to improve female representation at their top. That is the way the German Government chose last spring, after a voluntary commitment of the main German federations of commercial enterprises did not achieve the desired results. About 3,500 large firms have to satisfy this law by defining specific female shares in the supervisory board, the management board or the top-management team for which the companies have to strive within a certain period of time. The future will show whether this regulation improves the female representation in top-management positions significantly.

Footnotes

[1] Individuals usually are attracted to organisations that they perceive will fit their skills, values, and personalities (Dickson et al. 2012: 99f.). Dickson et al. (2012: 102ff.) argue in detail why family members usually are more attracted to their family's firm than other candidates. Whether female and male candidates for management positions are similarly attracted to family firms cannot readily be answered.

[2] In contrast to the majority of studies in the field of top-management teams Montemerlo et al. (2013) included non-publicly listed firms in their analysis of determinants of women's involvement in top-management teams but all firms are family controlled.

[3] About 70 percent of large German family firms have managers in the top-management with no affiliation to the owner‘s family (Lamsfuß/Wallau 2012: 16). Among small and medium-sized family businesses this percentage is much lower (Welter et al. 2015: 16).

[4] These pathways may also be of relevance in such nonfamily businesses which are predominantly owned by more than two individuals and their family members.

[5] There are countless definitions of what a family business is. We draw on the family business definition of the Institut für Mittelstandsforschung (IfM) Bonn (Wolter/Hauser 2001: 33), among other

things because we use a data set that used just this definition (Schlömer-Laufen et al. 2014). Since the assignment of businesses to the groups of family and nonfamily businesses is rather laborious we decided to stick to the original classification. Moreover, this definition is established in Germany and proved successful.

[6] Kohaut and Möller (2016) support this finding. Since 2004 the female share in top-management positions of East German establishments lies between 4 and 7 percent points above the one in West German establishments of all sizes.

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