Ownership, governance, and internationalization in family firms: a replication and extension

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Abstract In one of the most influential studies on family firm internationalization, Sciascia et al. (2012) advance a curvilinear relationship between family ownership and firm internationalization. We replicate their study adopting a three-step approach. First, we use the same measures on a different sample to test the generalizability of their findings. Second, we change the independent variable and hypothesize a negative relationship between family involvement in the board of directors and firm internationalization. Third, we introduce and measure the moderating role of firm age and firm size in this relationship. Our study advances the family firm internationalization literature both theoretically and methodologically. Theoretically, we show that it is not so much family ownership per se, but the influence the family obtains through board directorship that affects the family firm internationalization strategy. In addition, we show that this effect is moderated by firm age and size. Methodologically, our study is an important step forward toward increasingly transparent and replicable family business research.

Plain English Summary Ownership does not automatically imply control over corporate action. Rather, it is the influence through representation on the board of directors that really matters. Yet, in one of the most cited studies in the family firm internationalization literature, Sciascia et al. (2012) neglect the prominent role of family directors. Drawing on stewardship and stagnation arguments, they only hypothesize that family ownership and international expansion have an inverted U-shaped relationship. To assess the generalizability of their findings, we test their hypothesis on a different sample. In addition, we extend their study to develop a more complex theoretical foundation of the influence of family representation on the board of directors, and the relative moderating role of firm age and size, on firm internationalization. While unable to replicate the results of their study, we find empirical support for our theoretical arguments. Our study offers two key implications. First, the need for replication studies to contribute to theory development. Second, the different effects of the juxtaposition of

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family and non-family directors on firm internationalization according to firm age and size.

Keywords Family firms · Internationalization · Replication · Board of directors · Firm age · Firm size

JEL Classification F23 · G30 · L26

1 Introduction

The family firm (FF) internationalization literature has advanced considerably in recent years. In particular, recent studies show that the increasing interest from scholars in various fields has more than doubled the FF internationalization literature in the last decade (Arregle et al., 2021; Debellis et al., 2021b; Rondi et al., 2022). Unfortunately, very little research has been dedicated to replicating the results of past scientific work, thus contributing to what entrepreneurship and international business scholars call the "replication crisis" (Aguinis et al., 2017). This is regretful because the development of academic knowledge necessarily entails assessing the external validity of scientific results (Crawford et al., 2022). In addition, the replication of past studies is a fundamentally valuable tool for knowledge creation, as replication can "fine-tune theory by reconsidering where, who and when aspects" (Dau et al., 2021, p. 216). Furthermore, replication is especially relevant when the object is "prior work that is both highly influential and in need of theory improvement" (Dau et al., 2021, p. 222). The need to validate published conceptual arguments (Hambrick, 2007) is even greater in the family business field where scholars have the tendency to build on the empirical results of a few seminal studies, and the risk of false positives can negatively affect the resulting managerial and policy implications (Brinkerink et al., 2022).

Based on this premise, and with the intent of contributing to the FF internationalization literature, the present study aims to assess the reliability of our knowledge of the drivers of FF internationalization decisions. To this end, we attempt to replicate the results of one of the most cited FF internationalization studies and improve knowledge by revisiting their original theoretical arguments and introducing new variables. Eleven years ago, Sciascia et al. (2012) published their paper titled "The role of family

ownership in international entrepreneurship: Exploring nonlinear effects" in Small Business Economics. Part of a special issue (Vol. 38, Issue 1) on "The Entrepreneuring Family," this study has been one of the most impactful in the FF internationalization literature (with over 420 citations at the time of writing) and investigates whether FF internationalization intensity depends on the size of the family's ownership stake. Specifically, the authors combine stewardship theory (Davis et al., 1997) and the stagnation perspective (Miller et al., 2008; Schulze et al., 2001) to argue that family ownership has both a positive and negative effect on the extent of FF internationalization. Theorizing that the negative effect prevails over the positive effect only at low and high levels of family ownership, they propose that family ownership and internationalization are linked by an inverted U-shaped relationship. The analyses of a sample of small American FFs provide empirical support for their prediction.

Notwithstanding the undoubted value and relevance of Sciascia et al.'s (2012) study, it is our opinion that a re-examination of their work is timely for several reasons. First, the authors are likely to have been too parsimonious in their theoretical foundation and explanation of the trigger that turns the effect of family ownership from positive to negative, and why this should result in a curvilinear functional effect (as opposed to, for instance, a moderated linear effect). Second, over the past decade, a number of factors have been identified as especially influential for FF internationalization, including family involvement in governance (Debellis et al., 2022; Ray et al., 2018), firm age (D'Angelo & Buck, 2019; Santoro et al., 2021), and firm size (Fang et al., 2016), but not considered in Sciascia et al.'s (2012) theorizing. It would thus be valuable to extend their original theory by examining how family involvement in FF governance could result in higher or lower levels of internationalization, and the effect of contingency variables on this relationship. Third, as their sample only comprises small US firms, we do not know whether their findings also hold for larger firms in different institutional and cultural contexts (Daspit et al., 2021; González & González-Galindo, 2022). In sum, we believe that there are good reasons to replicate the findings of Sciascia et al. (2012), especially in light of the impact their work has had on FF internationalization research.

To ascertain the generalizability of Sciascia et al.'s (2012) findings and uncover missing variables that could shed light on how family control affects FF internationalization, we conducted a quasi-replication using multi-country data collected from the Family Business Network via a survey in 2017 in the attempt to replicate "the original study with data drawn from a population that differs from the original" (Bettis et al., 2016, p. 2196). Furthermore, to examine the role of family influence—rather than ownership—in key internationalization decisions, we look at family members' representation on the board of directors. In so doing, we extend Sciascia et al. (2012) with a different theoretical explanation of the link between family governance and FF internationalization. Indeed, we contend that family involvement in the firm's strategic decisions affects internationalization behavior more than family ownership. Finally, we extend Sciascia et al. (2012) by considering the effect of firm age and firm size. These variables have been shown to be highly influential in corporate governance (Aguilera et al., 2015, 2018; Chhaochharia & Grinstein, 2007), recognized as important contingency factors in the family business literature (Fang et al., 2016; Gomez-Mejia et al., 2011; van Essen et al., 2015). These variables may also be highly influential in the relationship between family involvement and FF internalization, since the family's capabilities and priorities differ substantially when FFs grow and mature. Hence, we advance that family involvement may have a positive effect on internationalization in larger and more mature FFs and a negative one in smaller and younger ones.

Our study makes several contributions to FF internationalization research. First, we provide evidence that the actual involvement of the family in the firm's governance affects the firm's strategic choices more than mere equity ownership, offering a new perspective to the discussion on the importance of governance mechanisms for the international expansion of FFs. In so doing, we contribute to the debate on how board composition influences family business international strategies (Kano & Verbeke, 2018; Pongelli et al., 2023). Furthermore, by theorizing that board composition may affect FF internationalization depending on firm size and life-cycle stage, we highlight that stewardship considerations may lead families to refrain from international expansion, and not necessarily toward it as Sciascia

et al. (2012) argue. This finding underlines the relevance of the chrono-context (De Massis et al., 2018; Fang et al., 2018) for FF internationalization decisions. Finally, to the best of our knowledge, our study is the first to attempt to replicate the findings of an influential FF internationalization study. The fact that we were unable to find empirical support for Sciascia et al.'s (2012) predictions raises questions about the risk of basing theories on insufficiently tested assumptions (Brinkerink, 2022), emphasizing the need for replication studies to advance theory development. In particular, our study shows the need for further empirical analyses and theoretical developments on the link between family involvement and FF internationalization.

2 Replication method

To pursue our goals of replicating and extending Sciascia et al.'s (2012) study, we followed prior replications and adopted a multi-step approach (Chandler et al., 2022; Ghosh et al., 2016).

First, we directly tested Sciascia et al.'s (2012) hypothesis using a different sample, the same and two different operationalization of the dependent variable. Second, following prior replication studies (e.g., Chadwick et al., 2016; Chandler et al., 2022), we extend the original study by enhancing the analysis of the impact of family governance on FF internationalization with additional control variables. In particular, we substitute the family ownership independent variable with family representation on the board of directors, hypothesizing a negative relationship with firm internationalization. Third, we hypothesize the moderating role of two variables that remain under-researched in the family firm setting: firm age and firm size. Both these variables are recognized as important contingency factors (Gomez-Mejia et al., 2011), yet are mostly used as control variables, assuming that their effect on firm outcomes is direct. Instead, it is important to understand how these firm characteristics alter other aspects (Fang et al., 2016), such as family control.

In the following, we first summarize Sciascia et al.'s (2012) theoretical arguments and hypothesis. Then, we advance theoretical arguments to support hypotheses that extend Sciascia et al. (2012).

Thereafter, we present our methodology, data, and findings. Finally, we conclude with the discussion of the results.

3 Theoretical background and hypothesis of the original study

Family business scholars have used two different perspectives to examine why and how business families influence FF behavior. On the one hand, building on constructs derived from psychology and sociology, stewardship theory (Davis et al., 1997) states that individuals in an organization identify with the firm and put its interests before their own, thus acting with the precise goal of benefitting the firm. This perspective implies that by associating business reputation and success with the family, family owners manage the FF with a long-term view and aim to ensure its continuity. As such, the FF is also seen as a vehicle that keeps the family together in the future (Miller et al., 2008) and provides family members with career prospects and relevance in the community (Arregle et al., 2007; Gomez-Mejia et al., 2007). These theoretical lenses hence posit that the family's personal motivations, organizational philosophy, and the values transmitted by family leaders translate into a stewardship culture (Davis et al., 1997; Eddleston & Kellermanns, 2007) that tends to favor participative governance, long-term orientation, and human capital. Importantly, these factors are deemed conducive to entrepreneurial growth choices, such as international expansion (Eddleston et al., 2012).

Family business scholars contend that a stewardship culture manifests in three substantial forms (Miller et al., 2008, 2009). First, family members aim to ensure the firm's continuity and longevity, so that strategic choices are oriented toward long-term success. This same desire for continuity manifests in two other fundamental aspects of stewardship: community culture, whereby all organizational members, family and non-family alike, are loyal to the FF and share its objectives and priorities (Arregle et al., 2007); stewardship toward outside stakeholders, i.e., the orientation to create strong connections with the outside world, especially with customers whose loyalty is considered as fundamental to guard against difficult times. This stewardship culture has been linked to both an increased propensity to internationalize and

successful internationalization. In fact, the family-owners' long-term vision makes them more inclined to pursue strategies that could bring enduring corporate success, such as internationalization. In addition, the greater ease of communication, stronger relationships, and richer social capital of family members can facilitate sharing experiences and knowledge, leading to a clearer understanding of the firm's mission, thus creating the trust and flexibility to succeed in international contexts (Debellis et al., 2021a).

On the other hand, family business scholars adopting the stagnation perspective suggest that family ownership can hinder FF internationalization. Concentrated family ownership is often accompanied by tight corporate control, which tends to lead to several downsides. First, business families need to keep the majority of their wealth invested in the FF to retain corporate control, making family-owners risk-averse (Lude & Prügl, 2019), namely avoiding risky strategies, such as internationalization (Arregle et al., 2021; Catanzaro & Teyssier, 2021). Second, the family's desire to retain corporate control (Berrone et al., 2012) substantially constrains the ability to successfully operate in international markets. In fact, retaining corporate control requires owning a majority of the FF's equity, thus making business families reluctant to utilize external financial capital to avoid dilution, but also significantly reducing financial resources to pursue international growth (Molly et al., 2019; Wai et al., 2020). In addition, to retain control, business families place family members in key organizational positions, often regardless of their expertise and abilities, which may be especially problematic for entering and successfully competing in international markets (Fang et al., 2021; Hennart et al., 2019).

In the attempt to reconcile these theoretical perspectives that have opposite implications regarding the effect of family governance on FF internationalization, Sciascia et al. (2012) hypothesize (and find) an inverted U-shaped relationship between family ownership and internationalization. In particular, they argue that from low to medium levels of family ownership, the positive effects of family stewardship will prevail over the downsides of family control, resulting in a positive effect of family ownership on FF internationalization. Conversely, at higher levels of family ownership, the negative effects will prevail, resulting in stagnation and constraining internationalization. The hypothesis put forward by Sciascia et al. (2012)

is therefore: "There will be an inverted U-shaped relationship between family ownership and international entrepreneurship.[1] Moderate levels of family ownership will be associated with the highest levels of international entrepreneurship" (Sciascia et al., 2012, p. 20).

4 Extensions of the original study

4.1 Extension 1: family involvement in the board and firm internationalization

While ownership certainly conveys values and guidelines for business growth, the firm's administration increasingly needs appropriate governance tools, especially in terms of expanding into other markets. A limitation of the current literature is not adequately distinguishing between family involvement in ownership, management, or the board (Liang et al., 2014). In fact, if ownership promotes the values to be followed and creates the basis for a positive organizational climate, and if management is involved in daily administration routines (Alayo et al., 2019), the board of directors has a crucial role in defining the firm's key strategies, including choices related to internationalization (Barroso et al., 2011; Kumar & Zattoni, 2019). In general, the board has two major functions: ensuring that managers act in the owners' interests and providing resources for major strategic decisions (Hillman & Dalziel, 2003). With regard to the monitoring role, elements such as the altruism of family members create kinship obligations that reduce traditional agency problems between owners and managers, although there may be other types of agency problems, such as between parents and offspring, sibling rivalry, or conflicts between majority and minority owners (Chrisman et al., 2004; Stanley et al., 2017).

Beyond the role of monitoring to reduce the level of intra-family agency costs (Bammens et al., 2011), for our purposes, we focus on the other key board function, i.e., the "service" role. When a firm internationalizes, it often suffers from the liability of outsidership, i.e., the need to be insiders in relevant networks in host markets (Johanson & Vahlne, 2009). Research has shown that directors' social capital is the main vehicle through which organizations develop their key strategic decision-making processes (Chen et al., 2017; Kim & Cannella, 2008), and the board's level of knowledge, experience, and skills significantly affects the firm's degree of internationalization (Barroso et al., 2011; Debellis et al., 2022). In this respect, the board of directors plays a crucial role as a provider of resources, such as legitimacy, strategic advice, and connections to other organizations (Hillman & Dalziel, 2003). The role of directors is therefore essential to access knowledge and control valuable external resources (Bettinelli, 2011), thereby providing human, relational, and information capital (Hillman & Dalziel, 2003; Zahra et al., 2009). The social capital that directors provide in terms of advice, legitimacy, external connections, and support to management is crucial for any business, but even more so for family businesses.

The board of directors in FFs is usually characterized by a predominance of family directors, but often suffering from a lack of general international business knowledge (Bammens et al., 2011; Zattoni et al., 2015), leading to capital and managerial constraints (Carney, 2005) that can be detrimental in the international context. Family members often have only redundant information, lacking resources and connections outside the family circle (Liang et al., 2014). Thus, family members are often bereft of the skills to ensure the firm's legitimacy, networks, and access to critical resources in foreign markets. As a result, the multiple perspectives that can increase the pool of knowledge and connections at the firm's disposal are absent (Heider et al., 2022; Sundaramurthy et al., 2014). In this sense, family directors may be at a disadvantage, as they often only have experience in their own organization and may therefore be fossilized and closed to new strategies appropriate in foreign markets. These characteristics can then lead to a fear of

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[1] Sciascia et al. (2012) use the term "international entrepreneurship" although only using an ordinal measure of foreign sales over total sales. In line with recent studies (e.g., Rondi et al., 2022), we consider foreign sales as suitable only in a very limited way to describe international entrepreneurship, which requires the discovery, enactment, evaluation, and exploitation of opportunities across national borders, and a specific focus on internationalization modes beyond exports. Hence, while we maintain the original formulation of Sciascia et al.'s (2012) hypothesis, in the remainder of the paper, we more generally refer to "internationalization" as opposed to "international entrepreneurship.".

loss of control, resulting in greater stagnation that hinders international growth.

Non-family members, on the other hand, given their freedom from emotional attachment to the family, are more prone to change and growth (Poza et al., 1997). They are also more likely to risk strategic initiatives, such as internationalization, so that they can increase their human capital, personal prestige, and potential rewards (Bammens et al., 2011). Non-family directors are typically prominent individuals with high skills and expertise hired to increase the firm's legitimacy and mitigate the lack of experience and capabilities of family members. Their presence also brings more human and relational capital, which increases the probability of success in the international scenario where being able to weave relationships with foreign stakeholders and governments is crucial (Hitt et al., 2006). Non-family directors are essential to facilitate the inflows and outflows of information and tangible resources. These directors, especially those who hold (or have held) important roles in other firms, provide a variety of information, knowledge, and experience crucial to identifying the risks and opportunities of entering new foreign markets (Sciascia et al., 2013). In this sense, we see the presence of family members on the board as a barrier to internationalization. As family directors are less likely to be able to effectively guide the FF's expansion into international markets due to comparatively lower human and social capital relative to outside directors, stewardship considerations lead the FF to avoid internationalization when a large number of family directors sits on the board. Therefore, we hypothesize:

H1: Family involvement in the board of directors is negatively related with FF internationalization.

4.2 Extension 2: the moderating role of firm age

Firm age is a fundamental variable used in organization science to analyze the transformation of organizational processes (Naldi & Davidsson, 2014). Indeed, during its lifecycle, important changes take place in the organization (Fang et al., 2018). As such, the chrono-context, "which consists of the life courses of the family and business systems and encompasses factors that lead to evolutionary or punctuated changes along the family's and the business's life" (De Massis et al., 2018, p. 12), clearly has a fundamental role. Consistently, the family business literature acknowledges that the characteristics and needs of FFs change over time (Bammens et al., 2008; De Massis et al., 2018), as does their governance structure (Hülsbeck et al., 2019). For instance, research shows that the importance of socioemotional wealth and family-centered noneconomic priorities tends to decrease in subsequent generations (Gomez-Mejia et al., 2011), so that the prominence of economic considerations prevails in more mature FFs (Fang et al., 2018). These arguments suggest that the firm's chrono-context may have a significant effect on how the changing family priorities affect the internationalization behavior of FFs.

At inception, family founders are very strongly attached to and identify with the firm, leading them to protect their socioemotional wealth, even at the expense of economic objectives. Moreover, young firms often suffer from a paucity of resources and lack the legitimacy needed to successfully operate in foreign markets (Kor & Misangyi, 2008). Accessing vital resources is thus essential at this stage. In addition, in young FFs, managers and directors are often family members of the founding generation (Fang et al., 2018) who may be skeptical about international expansion because it requires external directors and managers who provide the external links and technical advice to successfully operate in the international context. As a result, family members may fear losing relevance within the FF due to these outsiders, as well as control over corporate decisions.

Instead, when firms are at a more mature stage of the lifecycle, family members are likely to be more willing and able to pursue international expansion. On the one hand, the experience and international knowledge of later generations usually increase as a result of education, professionalization, and inherited business- and industry-level knowledge (Corbetta & Salvato, 2004). On the other hand, family members of later generations are keen to show their predecessors and external stakeholders that their role in the FF is due to merit rather than nepotism (Fang et al., 2018). They will therefore be very willing to take decisions that show change and growth in the firm, such as the choice to internationalize. The entry of younger members of new generations can therefore boost the organizational culture, encourage the firm to take

more risks, and consider expanding further abroad (Zahra, 2003). Therefore, firm age can trigger the process of stewardship prevailing over stagnation.

Based on these evolving socio-psychological dynamics (Arregle et al., 2007), we contend that stewardship considerations lead family members to make very different internationalization decisions in mature vs young FFs. In particular, in mature FFs, the greater competence and growth objectives of family members from later generations lead to considering international expansion as both a desirable and viable strategic priority that may benefit the FF's long-term prospects. Conversely, in younger FFs, internationalization is more likely to be seen as a threat because family members lack the necessary skills and knowledge to successfully handle the complexities of international expansion and because outsiders who might compensate for such weaknesses may reduce the family's centrality in the business. Hence, stewardship considerations may lead family directors to either encourage or discourage international expansion depending on the FF's age, thus moderating the relationship between family involvement and internationalization. We thus hypothesize:

H2: In young (mature) FFs, family involvement negatively (positively) affects internationalization.

4.3 Extension 3: the moderating role of firm size

The international business literature shows that internationalization is particularly challenging for small firms (e.g., Lu & Beamish, 2001), as small size is often linked to the lesser availability of resources and trained management, greater difficulties in raising external capital (Bruderl & Schussler, 1990; Lee et al., 2012), and more problems in developing critical external networks that enable the internationalization process (Johanson & Vahlne, 2009). Small firms are thus exposed to the liability of smallness, which puts them at a disadvantage vis-à-vis larger firms that can leverage greater managerial professionalism and resource availability (Munjal et al., 2019; Westhead et al., 2001).

These critical issues, regardless of firm ownership type, have led family business scholars to argue that large FFs significantly differ from smaller FFs in a

number of aspects (Daspit et al., 2021), including their governance structure (Miller et al., 2013). Indeed, as the internationalization hazard is higher for organizations with fewer resources, the stewardship logic suggests that family directors of small FFs should avoid international expansion because the combination of risks deriving from smallness and the uncertainty of foreign markets might endanger their survival and long-term prospects. As a result of smaller resource endowments and less developed capabilities, family directors of small FFs may prefer focusing on their domestic market, building a credible reputation in their home country, and expanding into international markets only after they have consolidated their competitive position domestically. In addition, in smaller FFs, family members often occupy prominent positions—including in the board of directors—due to family membership rather than actual skills and expertise. As a result, they might lack the external connections (Liang et al., 2014) and the general international business knowledge (Bammens et al., 2011) needed to successfully compete in international markets. This inferior capacity to pursue growth through international expansion implies that family directors of smaller FFs may avoid internationalization to preserve the wealth that the family has vested in the FF.

These arguments lead us to advance that family involvement in the board of directors is likely to affect FF internationalization in different ways depending on the size of the business, since family directors in smaller FFs may have neither the resources nor the ability to compete credibly in international markets, whereas family directors in larger FFs have more resources to successfully pursue international strategies. Hence, we hypothesize:

H3: In small (large) FFs, family involvement negatively (positively) affects internationalization.

5 Methodology

5.1 Data collection

To test our hypotheses, we use data collected from a web-based survey conducted in 2017. Respondents were identified through the Family Business Network (FBN), the world's leading organization counting 4000 business families in 65 countries. To obtain the

Table 1 Percentiles, mean, and standard deviations of key sample characteristics

Percentiles	Family owner-ship (%)	Employees	Firm age (years)	Revenues (Mln USD)	International revenues (Mln USD)	Foreign sub-sidiaries	Family directors
1%	25	8	7	0.1	0	0	0
5%	53.7	25	19	2.38	0	0	1
10%	75	60	25	5	0	0	1
25%	100	200	41	28	1	0	2
50%	100	500	66	90	15	2	3
75%	100	1300	97	340	100	8	4
90%	100	3500	138	900	450	25	6
95%	100	5061	179	2000	990	35	8
99%	100	41,486	200	8000	2000	80	15
Mean (Std. dev.)							
Sciascia et al. (2012)	93.34 (18.17)	84 (n.a.)	26.72 (20.4)	28.69 (251.63)	n.a. (n.a.)	n.a. (n.a.)	n.a. (n.a.)
Our sample	93.75 (15.68)	1976 (6004)	74.66 (85.4)	451 (1240)	178 (634)	8.19 (14.88)	3.34 (3.16)

highest possible response rate, we contacted family members of all the 4000 firms via their private email address, allowing a higher response rate, increasing the quality of responses, and reducing errors (Heerwegh et al., 2005; Pielsticker & Hiebl, 2020). To ensure responses of the highest possible quality, we only contacted family members that served in either an advisory or operational committee. In addition, to avoid that multiple observations refer to the same firm, we contacted only one family member per firm. Each potential respondent received a personalized link to ensure the questionnaire could only be completed once. To increase the response rate, the completeness of data and their reliability, we sent a cover letter with the survey assuring confidentiality (Minichilli et al., 2014). The data were collected over a 4-month period from January to April 2017. A total of 287 questionnaires were returned in full, corresponding to a response rate of 7.18%. In line with other recent family business studies that use survey data (e.g., De Massis et al., 2020; Pongelli et al., 2023), the response rate is deemed satisfactory.

To provide an account of the characteristics of the FFs in our sample, we present the distribution of some key dimensions in Table 1 and compare these with those of Sciascia et al.'s (2012) sample. On average, the families in our sample own 93.75% of company shares, which is very close to the mean and standard deviation in Sciascia et al.'s (2012) sample.

The most significant differences between our two samples relate to the age, size, and geographic origin of the firms. While the average firm age in our sample is 74.66 years, in the original study, it is 26.72, with a standard deviation of 20.4 years. Comparing this to the percentiles of our sample shows that nearly 90% of firms in our sample are older than the average in the original study. At the same time, firm age in our sample ranges from 5 to 200 years, thus a more accurate representation of FFs worldwide. Regarding firm size, our firms have on average 1976 employees, whereas those in Sciascia et al. (2012) have only 84. Although more than 75% of firms in our sample are considerably larger than 84 employees, the median in our size distribution is exactly 500 employees, while 95% of firms have 5000 employees or fewer. Exactly half of our sample therefore represents small to medium enterprises, and the other half represents larger FFs. One last major difference between our sample and the original study is geographic origin. While Sciascia et al. (2012) rely on US data, roughly half the firms in our sample (56%) are from German-speaking countries in Europe, and the remainder from other countries.

All in all, we believe that our sample reflects the variety of FFs worldwide while also closely mimicking ownership concentration in the original study. This enables us not only to test the generalizability of the findings of the original study but also confounding

Table 2 Descriptive statistics and correlation matrix

N Variable	Obs	Mean	Std. Dev.	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1 International Entrepreneurship	287	2.10	1.41	0.00	4.00	1.00																										
2 Foreign Sales (LN)	287	0.29	0.29	0.00	1.00	0.92	1.00																									
3 Foreign Sales (pct)	287	14.43	6.32	0.00	22.80	0.74	0.57	1.00																								
4 Family Directors	287	3.34	3.16	0.00	40.00	-0.08	-0.06	-0.03	1.00																							
5 Family Executives	284	0.51	0.33	0.00	1.00	-0.16	-0.15	-0.20	0.25	1.00																						
6 Firm Age	287	74.66	45.84	5.00	200.00	0.21	0.19	0.22	0.04	-0.24	1.00																					
7 Family Ownership	284	93.75	15.86	15.00	100.00	-0.04	-0.07	-0.03	-0.02	0.18	0.02	1.00																				
8 Family Ownership^2	284	9040	2288.52	225	10000	-0.04	-0.07	-0.03	-0.03	0.18	0.03	0.99	1.00																			
9 Foreign Subsidiaries	287	8.19	14.88	0.00	120.00	0.41	0.48	0.41	0.02	-0.19	0.21	-0.13	-0.13	1.00																		
10 Revenues (LN)	285	18.30	1.93	11.51	23.12	0.26	0.25	0.53	-0.02	-0.30	0.27	-0.06	-0.06	0.51	1.00																	
11 Foreign Capex (LN)	287	10.34	6.78	0.00	20.72	0.56	0.46	0.74	-0.04	-0.23	0.18	-0.03	-0.03	0.36	0.51	1.00																
12 Total Employees (LN)	287	6.23	1.65	1.39	10.99	0.34	0.34	0.56	-0.02	-0.29	0.24	-0.07	-0.07	0.59	0.88	0.50	1.00														
13 Agriculture	287	0.03	0.16	0.00	1.00	-0.11	-0.10	-0.14	0.04	0.03	0.02	-0.06	-0.06	-0.08	-0.12	-0.10	-0.15	1.00													
14 Manufacturing	287	0.41	0.49	0.00	1.00	0.21	0.18	0.22	-0.02	0.10	0.12	0.11	0.11	0.04	0.01	0.16	0.05	-0.14	1.00												
15 Consumer goods	287	0.07	0.26	0.00	1.00	-0.12	-0.07	-0.18	-0.02	0.03	-0.08	-0.03	-0.03	-0.05	-0.07	-0.19	-0.08	-0.05	-0.23	1.00											
16 Transportation	287	0.05	0.22	0.00	1.00	0.05	0.04	0.06	-0.02	0.01	-0.04	0.09	0.10	-0.06	-0.02	-0.01	0.00	-0.04	-0.20	-0.07	1.00										
17 Commerce	287	0.02	0.15	0.00	1.00	0.00	-0.03	-0.02	-0.07	-0.05	0.07	-0.03	-0.02	-0.03	-0.03	0.01	0.01	-0.03	-0.13	-0.04	-0.04	1.00									
18 Finance	287	0.05	0.21	0.00	1.00	-0.01	-0.02	-0.08	0.02	-0.03	-0.12	-0.13	-0.15	-0.07	-0.14	-0.08	-0.14	-0.04	-0.18	-0.06	-0.05	-0.04	1.00								
19 Technology	287	0.03	0.16	0.00	1.00	-0.20	-0.15	-0.25	-0.05	-0.08	-0.09	-0.02	-0.02	-0.09	-0.01	-0.18	-0.04	-0.03	-0.14	-0.05	-0.05	-0.03	-0.04	1.00							
20 Health	287	0.03	0.18	0.00	1.00	0.04	0.04	-0.01	0.09	-0.05	0.08	0.04	0.04	-0.05	0.02	0.00	0.09	-0.03	-0.16	-0.05	-0.05	-0.03	-0.04	-0.03	1.00						
21 Distribution	287	0.08	0.28	0.00	1.00	-0.14	-0.12	-0.14	0.00	-0.03	-0.03	-0.01	0.01	-0.05	0.06	-0.03	0.03	-0.05	-0.25	-0.09	-0.09	-0.05	-0.07	-0.05	-0.06	1.00					
22 North America	287	0.02	0.15	0.00	1.00	-0.01	-0.06	0.02	0.09	-0.04	-0.10	0.00	0.00	0.01	-0.09	0.02	-0.03	-0.03	0.05	-0.04	0.00	-0.04	-0.03	-0.03	-0.03	0.03	1.00				
23 South America	287	0.07	0.25	0.00	1.00	-0.19	-0.16	-0.21	0.02	0.02	-0.11	-0.07	-0.07	-0.12	0.01	-0.12	0.12	-0.11	0.20	0.00	-0.04	-0.04	0.01	0.04	-0.04	-0.03	-0.04	1.00			
24 Southern Europe	287	0.05	0.22	0.00	1.00	-0.04	-0.03	0.01	0.29	0.01	-0.01	-0.02	-0.02	0.01	0.01	-0.05	-0.04	0.03	0.00	0.01	0.01	-0.04	0.02	-0.04	0.13	-0.02	-0.05	-0.06	1.00		
25 Central Europe	287	0.09	0.29	0.00	1.00	0.10	0.12	0.07	-0.02	-0.04	-0.01	-0.05	-0.05	0.05	0.07	0.12	0.05	-0.05	-0.14	-0.05	0.07	0.03	0.11	0.10	0.01	-0.05	-0.05	-0.08	-0.07	1.00	
26 Northern Europe	287	0.12	0.32	0.00	1.00	0.05	0.11	-0.02	-0.04	-0.06	-0.01	0.05	0.05	-0.06	-0.05	-0.12	0.01	0.08	-0.01	-0.01	0.00	-0.06	0.03	0.01	0.07	-0.03	-0.06	-0.10	-0.08	-0.11	1.00
27 Asia & Middle East	287	0.09	0.28	0.00	1.00	-0.09	-0.09	-0.10	0.03	0.11	-0.10	0.00	0.00	-0.09	-0.08	0.00	0.10	0.10	-0.02	0.06	-0.07	-0.05	-0.07	-0.05	0.01	0.00	-0.05	-0.08	-0.07	-0.10	-0.11	1

Reference categories: Geographic dummies (German speaking countries - 56%); Industry dummies (Other - 22%)

Table 3 International entrepreneurship sample distribution

International entrepreneurship	Freq	Percent	Cum
0	47	16.38	16.38
1	65	22.65	39.02
2	50	17.42	56.45
3	61	21.25	77.7
4	64	22.3	100
Total	287	100	

factors, such as family influence, while extending the boundaries of the original study in terms of age, size, and geography (Dau et al., 2021). The descriptive statistics of our sample and the correlation matrix of our variables are reported in Table 2.

5.2 Description of variables

5.2.1 Dependent variable

As a dependent variable, we use the same internationalization measure adopted in Sciascia et al. (2012), i.e., an ordinal measure of foreign sales they call "international entrepreneurship." This measure takes value 0 if the percentage of foreign over total sales is 0, value 1 if the percentage ranges between 1 and 10, value 2 if the percentage ranges between 11 and 25, value 3 if the percentage ranges between 25 and 50, and value 4 if the percentage is above 51 (see Table 3 for the distribution of this measure in our sample). Importantly, while our dependent variable is called the same as in Sciascia et al. (2012) (see footnote 1), we do not agree with labeling it "international entrepreneurship." In fact, recent studies (e.g., Rondi et al., 2022) highlight that international entrepreneurship involves the discovery, enactment, evaluation, and exploitation of opportunities across national borders, tasks that are not adequately captured with foreign sales but measures that reflect entry modes involving equity (i.e., FDIs).

To analyze the data, we ran an ordered logistic regression, essential given the nature of the dependent variable (McCullagh, 1980). To check the robustness of the results on different operationalizations of foreign sales, we used the percentage of foreign sales

(Lu & Beamish, 2001) and the natural logarithm of foreign sales analyzed with OLS regressions.

5.2.2 Independent variable

As per Sciascia et al. (2012), we measure family ownership using the percentage of firm equity held by the owning family. Interestingly, the distribution of this measure (average 93.75, standard deviation 15.86) is almost the same as in Sciascia et al. (2012) (average 93.34, standard deviation 18.17). However, as equity ownership does not necessarily reflect the extent to which families are involved in business operations and decision-making (Arzubiaga et al., 2018), we also use the number of family members who serve as directors (Minichilli et al., 2014) as an independent variable for our hypothesis. In addition, we use the number of those serving as executives as a robustness check. For the sake of transparency, we note that Sciascia et al. (2012) also include a measure of family involvement in the FF in their analysis as a control variable (measured through the percentage of employees who are family members).

5.2.3 Moderator variables

We use firm age (in years) and firm size (natural log of n. employees) as our moderator variables, also employed in Sciascia et al. (2012) as control variables.

5.2.4 Control variables

As per Sciascia et al. (2012), we control for industry type. While the original study uses 17 different industry dummies, which unnecessarily inflates the number of predictors and weakens the statistical power of the analysis, we collapsed the 20% of industries rarely mentioned into the category "other," using this as the baseline category in the regression. In addition, since foreign sales depend on the firm's infrastructure in the host country, we also control for the value of foreign investments (natural log of foreign capital expenditure) and the number of foreign subsidiaries. Finally, since we use a multi-country sample, we also include dummies that reflect the geographic region of the firms in our sample. Here, we use German-speaking countries as a baseline category, as it is the largest.

Table 4 Results of the replication: ordered logistic regressions on international entrepreneurship

Ordered logistic regression	Model 1				Model 2				Model 3			
Number of obs	282				279				279			
Wald chi^2(20)	62.980				61.510				61.580			
Prob > chi^2	0.000				0.000				0.000			
Pseudo R^2	0.085				0.086				0.086			
Log pseudolikelihood =	−412.303				-407.366				−407.359			
	Coef	Robust SE	P > z		Coef	Robust SE	P > z		Coef	Robust SE	P > z	
Family ownership					−0.008	0.007	0.269		−0.014	0.051	0.781	
Family ownership^2									0.000	0.000	0.906	
Revenues (LN)	0.253	0.081	0.002	**	0.252	0.080	0.002	**	0.252	0.080	0.002	**
Firm age	0.003	0.003	0.310		0.002	0.003	0.339		0.002	0.003	0.340	
Family executives	−0.527	0.393	0.180		−0.484	0.400	0.227		−0.485	0.400	0.226	
Agriculture	−0.417	0.611	0.495		−0.453	0.647	0.485		−0.452	0.645	0.483	
Manufacturing	0.628	0.274	0.022	**	0.667	0.277	0.016	**	0.666	0.276	0.016	**
Consumer goods	−0.442	0.585	0.450		−0.442	0.621	0.476		−0.447	0.622	0.472	
Transportation	0.626	0.593	0.292		0.682	0.594	0.251		0.677	0.593	0.254	
Commerce	0.209	0.685	0.760		0.196	0.661	0.767		0.203	0.668	0.762	
Finance	0.408	0.623	0.513		0.363	0.633	0.566		0.370	0.635	0.560	
Technology	−2.578	0.937	0.006	**	−2.570	0.965	0.008	**	−2.567	0.966	0.008	**
Health	0.756	0.664	0.255		0.807	0.658	0.220		0.806	0.657	0.220	
Distribution	−0.906	0.432	0.036	**	−0.917	0.438	0.036	**	−0.928	0.457	0.042	**
North America	−0.084	0.363	0.816		−0.111	0.337	0.741		−0.107	0.341	0.753	
South America	−1.444	0.577	0.012	**	−1.494	0.579	0.010	**	−1.489	0.586	0.011	**
Southern Europe	−0.678	0.604	0.262		−0.731	0.613	0.232		−0.722	0.615	0.240	
Central Europe	0.472	0.410	0.250		0.433	0.414	0.295		0.434	0.414	0.294	
Northern Europe	0.232	0.430	0.589		0.227	0.445	0.611		0.229	0.446	0.607	
Asia and Middle East	−0.527	0.494	0.287		−0.533	0.491	0.278		−0.530	0.492	0.281	
/cut1	2.580	1.596			1.812	1.775			1.632	2.368		
/cut2	4.111	1.610			3.347	1.789			3.167	2.379		
/cut3	4.968	1.628			4.190	1.805			4.010	2.388		
/cut4	6.093	1.657			5.291	1.834			5.111	2.409		

Reference categories: geographic dummies (German speaking countries: 56%); industry dummies (other: 22%)

6 Results

6.1 Results of the replication

To compare the baseline results with Sciascia et al. (2012), we test whether family ownership has a curvilinear effect on internationalization, but find no statistical significance (see Table 4). We also do not obtain significant results when using the log of foreign sales or the percentage of foreign sales as alternative operationalizations of the dependent variable. All in all, we are thus unable to reproduce the curvilinear effect of family ownership on international entrepreneurship that Sciascia et al. (2012) obtained. We also explore the possibility of a curvilinear relationship between family involvement (proxied by the number of family members serving as directors and the number of those serving as executives) and internationalization, but also in this case, we do not obtain a statistically significant result.

6.2 Results of the extension

To extend Sciascia et al.'s (2012) study, we contend that family involvement in the board is a better proxy of the family's influence on internationalization

Table 5 Results of the extension: ordered logistic regressions on international entrepreneurship

Ordered logistic regression	Model 1				Model 2				Model 3				Model 4				Model 5			
	Coef	Robust SE	P > z		Coef	Robust SE	P > z		Coef	Robust SE	P > z		Coef	Robust SE	P > z		Coef	Robust SE	P > z	
Number of obs	287				287				287				287				287			
Wald chi²(22)	117.320				118.350				116.530				117.840				118.750			
Prob > chi²	0.000				0.000				0.000				0.000				0.000			
Pseudo R^2	0.202				0.203				0.205				0.213				0.212			
Log pseudo-likelihood =	−362.902				−362.355				−361.441				−357.931				356.727			
Family directors									−0.048	0.027	0.077	*	−0.280	0.086	0.001	**	−0.580	0.171	0.001	**
Firm age					0.002	0.003	0.491		0.002	0.003	0.431		−0.007	0.004	0.117		0.001	0.003	0.645	
FD*firm age													0.003	0.001	0.003	**				
Total employees (LN)					−0.085	0.125	0.497		−0.085	0.118	0.471		−0.131	0.102	0.199		−0.430	0.160	0.007	**
FD*total employees (LN)																	0.089	0.029	0.002	**
Family ownership	0.000	0.008	0.983		−0.001	0.008	0.946		−0.001	0.008	0.946		−0.002	0.008	0.783		−0.004	0.008	0.593	
Foreign subsidiaries	0.069	0.023	0.003	**	0.074	0.029	0.010	**	0.074	0.027	0.006	**	0.084	0.024	0.001	**	0.091	0.027	0.001	**
Foreign Capex (LN)	0.172	0.026	0.000	***	0.178	0.026	0.000	***	0.179	0.027	0.000	***	0.181	0.026	0.000	***	0.181	0.026	0.000	***
Agriculture	0.116	0.543	0.831		0.017	0.561	0.975		0.034	0.528	0.948		0.230	0.526	0.661		0.138	0.517	0.790	
Manufacturing	0.701	0.301	0.020	**	0.693	0.315	0.028	**	0.661	0.313	0.035	**	0.733	0.311	0.018	**	0.732	0.310	0.018	**
Consumer goods	0.294	0.577	0.610		0.300	0.595	0.614		0.261	0.595	0.661		0.370	0.590	0.531		0.292	0.580	0.614	
Transportation	1.081	0.500	0.030	**	1.099	0.494	0.026	**	1.039	0.502	0.039	**	1.068	0.497	0.032	**	1.038	0.483	0.031	**
Commerce	0.159	0.710	0.823		0.126	0.696	0.856		0.042	0.687	0.952		0.057	0.672	0.932		0.059	0.702	0.933	
Finance	0.886	0.652	0.174		0.874	0.653	0.181		0.873	0.653	0.181		0.746	0.676	0.269		0.757	0.723	0.295	
Technology	−1.049	0.703	0.136		−0.982	0.720	0.172		−1.052	0.745	0.158		−1.096	0.804	0.173		−1.125	0.724	0.120	
Health	1.096	0.731	0.134		1.095	0.724	0.130		1.081	0.742	0.145		0.944	0.649	0.146		1.153	0.728	0.113	

Table 5 (continued)

	Model 1				Model 2				Model 3				Model 4				Model 5			
Distribution	-0.713	0.354	0.044	**	-0.681	0.361	0.059	*	-0.716	0.364	0.049	**	-0.702	0.375	0.062	*	-0.647	0.386	0.094	*
North America	-0.585	0.623	0.347		-0.554	0.633	0.382		-0.503	0.602	0.403		-0.233	0.541	0.667		-0.073	0.502	0.884	
South America	-1.112	0.446	0.013	**	-1.023	0.458	0.026	**	-1.003	0.452	0.027	**	-0.925	0.441	0.036	**	-0.905	0.445	0.042	**
Southern Europe	-0.533	0.719	0.459		-0.502	0.723	0.488		-0.328	0.732	0.654		-0.336	0.667	0.615		-0.642	0.721	0.373	
Central Europe	-0.217	0.388	0.576		-0.227	0.396	0.567		-0.207	0.394	0.599		-0.137	0.406	0.737		-0.332	0.441	0.452	
Northern Europe	0.024	0.406	0.952		-0.001	0.418	0.998		-0.015	0.416	0.971		0.020	0.420	0.963		0.045	0.415	0.913	
Asia and Middle East	-0.741	0.411	0.072	*	-0.711	0.410	0.083	*	-0.679	0.409	0.097	*	-0.548	0.419	0.191		-0.664	0.417	0.111	
/cut1	-0.039	0.858			-0.376	1.100			-0.534	1.076			-1.611	1.119			-2.929	1.335		
/cut2	1.949	0.892			1.619	1.121			1.474	1.095			0.423	1.132			-0.880	1.337		
/cut3	3.025	0.924			2.699	1.145			2.561	1.119			1.526	1.152			0.222	1.342		
/cut4	4.372	0.971			4.049	1.176			3.916	1.156			2.904	1.187			1.614	1.359		

Reference categories: geographic dummies (German speaking countries: 56%); industry dummies (other: 22%)

decisions than mere equity ownership. Based on our arguments in Sect. 4.1, we hypothesize that boards populated by family members negatively affect FF international expansion (H1). Consistently with our arguments, we find a negative and significant linear effect of family involvement (measured as the number of family directors) on internationalization. These results are reported in Model 3 of Table 5. In Table 6, we also report the marginal effects of this regression to provide an account of how family directors affect the various outcomes of the dependent variable.

To check the robustness of our results, we ran additional analyses using different operationalizations of both the dependent and independent variables. These analyses reveal that our results are unstable when using alternative measures of internationalization as we find no significant effect of family directors on either the log or the percentage of foreign sales. However, we do find a negative and significant effect when using the number of family members who serve as executives as an alternative measure of family involvement in corporate decision-making. These results hold with all three operationalizations of the dependent variable (the ordinal measure of foreign sales in Sciascia et al. (2012), the log, and the percentage of foreign sales). Overall, these results are consistent with our hypothesis that family involvement in corporate decision-making is negatively associated with FF international expansion.

Our second hypothesis aims to extend the original study by predicting that the negative effect of the number of family directors on international expansion is amplified in young FFs and weakened in older FFs. Consistently with this hypothesis, we find that the negative effect of family directors is moderated by firm age (see Model 4 of Table 5). The analysis of the marginal effects indicates that—in younger firms—the number of family members serving as directors reduces the likelihood that foreign sales exceed 25% and increases the likelihood of remaining below the 10% (see Fig. 1). In older firms, instead, the number of directors who are family members increases the likelihood that foreign sales exceed 50% and decreases the likelihood that they remain below 10% (see Fig. 2). We also tested the robustness of this result to alternative operationalizations of both the dependent (log and percentage of foreign sales) and independent variables (number of family executives). These analyses confirm

Table 6 Marginal effects of family directors on international entrepreneurship (Model 3 of Table 5)

Intnl. ent. level	0			1			2			3			4		
Foreign sales pct	0%			0<%≤10			10<%≤25			25<%≤50			>50%		
y=Pr	0.072			0.295			0.265			0.237			0.130		
	dy/dx	SE	P>z	dy/dx	SE	P>z	dy/dx	SE	P>z	dy/dx	SE	P>z	dy/dx	SE	P>z
Family directors	0.003	0.002	0.089 *	0.008	0.005	0.087 *	0.000	0.001	0.991	−0.006	0.003	0.085 *	−0.005	0.003	0.074 *
Firm age	0.000	0.000	0.438	0.000	0.000	0.430	0.000	0.000	0.991	0.000	0.000	0.433	0.000	0.000	0.434
Family ownership	0.000	0.001	0.946	0.000	0.001	0.946	0.000	0.000	0.991	0.000	0.001	0.946	0.000	0.001	0.946
Foreign subsidiaries	−0.005	0.001	0.001 **	−0.012	0.005	0.008 **	0.000	0.002	0.990	0.009	0.004	0.015 **	0.008	0.003	0.014 **
Foreign Capex (LN)	−0.012	0.003	0.000 ***	−0.030	0.006	0.000 ***	0.000	0.004	0.991	0.021	0.005	0.000 ***	0.020	0.003	0.000 ***
Total employees (LN)	0.006	0.008	0.462	0.014	0.020	0.472	0.000	0.002	0.990	−0.010	0.014	0.472	−0.010	0.014	0.481
Agriculture	−0.002	0.034	0.947	−0.006	0.087	0.948	0.000	0.002	0.977	0.004	0.063	0.948	0.004	0.061	0.949
Manufacturing	−0.043	0.019	0.025 **	−0.107	0.050	0.032 **	−0.005	0.015	0.759	0.076	0.036	0.035 **	0.079	0.041	0.056 *
Consumer goods	−0.016	0.033	0.625	−0.043	0.096	0.657	−0.004	0.017	0.838	0.030	0.066	0.649	0.032	0.079	0.685
Transportation	−0.048	0.016	0.003 **	−0.154	0.063	0.015 **	−0.052	0.048	0.284	0.092	0.029	0.001 **	0.162	0.100	0.106
Commerce	−0.003	0.045	0.951	−0.007	0.113	0.952	0.000	0.003	0.979	0.005	0.081	0.952	0.005	0.080	0.952
Finance	−0.042	0.022	0.052 *	−0.133	0.086	0.122	−0.038	0.057	0.497	0.083	0.041	0.043 **	0.130	0.122	0.287
Technology	0.108	0.110	0.328	0.149	0.069	0.031 **	−0.056	0.071	0.430	−0.119	0.071	0.094 *	−0.082	0.040	0.040 **
Health	−0.048	0.022	0.025 **	−0.158	0.086	0.066 *	−0.057	0.073	0.432	0.092	0.030	0.003 **	0.172	0.153	0.261
Distribution	0.062	0.041	0.128	0.112	0.052	0.030 **	−0.025	0.027	0.366	−0.085	0.041	0.038 **	−0.065	0.029	0.023 **
North America	0.042	0.060	0.491	0.081	0.091	0.373	−0.014	0.036	0.685	−0.060	0.070	0.389	−0.048	0.047	0.313
South America	0.098	0.063	0.119	0.147	0.050	0.004 **	−0.048	0.042	0.262	−0.115	0.047	0.013 **	−0.082	0.029	0.004 **
Southern Europe	0.025	0.063	0.692	0.054	0.117	0.645	−0.006	0.027	0.825	−0.040	0.088	0.654	−0.033	0.066	0.614
Central Europe	0.015	0.030	0.622	0.034	0.065	0.598	−0.002	0.009	0.809	−0.025	0.048	0.601	−0.022	0.040	0.578
Northern Europe	0.001	0.028	0.971	0.002	0.069	0.971	0.000	0.001	0.986	−0.002	0.050	0.971	−0.002	0.047	0.971

Table 6 (continued)

Intnl. ent. level	0			1			2			3			4		
Foreign sales pct	0%			0 < % ≤ 10			10 < % ≤ 25			25 < % ≤ 50			> 50%		
y = Pr	0.072			0.295			0.265			0.237			0.130		
	dy/dx	SE	$P>z$	dy/dx	SE	$P>z$	dy/dx	SE	$P>z$	dy/dx	SE	$P>z$	dy/dx	SE	$P>z$
Asia and Middle East	0.058	0.043	0.175	0.107	0.060	0.076 *	−0.022	0.030	0.451	−0.081	0.048	0.092 *	−0.062	0.030	0.034 **

Reference categories: geographic dummies (German speaking countries: 56%); industry dummies (other: 22%)

Fig. 1 Marginal effects of family directors on international entrepreneurship at low levels (-1 SD) of firm age
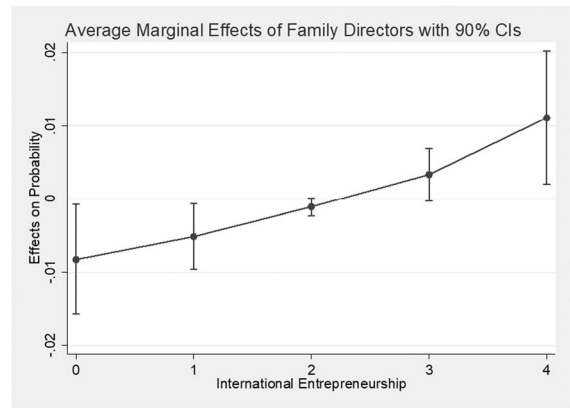
Fig. 2 Marginal effects of family directors on international entrepreneurship at high levels ($+1$ SD) of firm age

the robustness of our results to all three alternative measures, thus providing strong empirical support for our theoretical arguments.

Our last extension of the original study hypothesizes another moderation of the relationship between family directors and internationalization. Specifically, we posit that the effect of the number of family directors on international expansion is negative in small FFs and positive in large ones (H3). Consistently with our arguments, we find that the negative effect of family directors is moderated by the number of employees (LN), which we use as a proxy of firm size (see Model 5 of Table 5). Again, to provide a better account of how the effect of family directors varies at various levels of the moderator, we analyzed
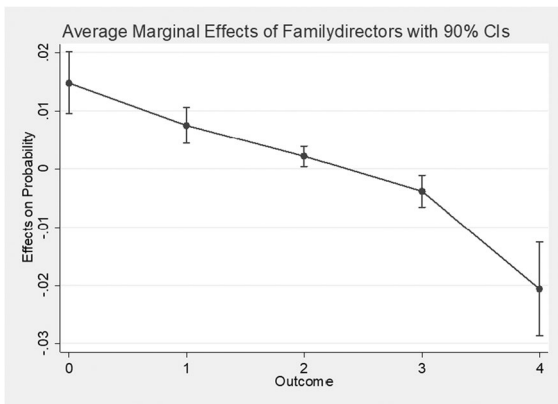
Fig. 3 Marginal effects of family directors on international entrepreneurship at low levels (−1 SD) of employees (LN)
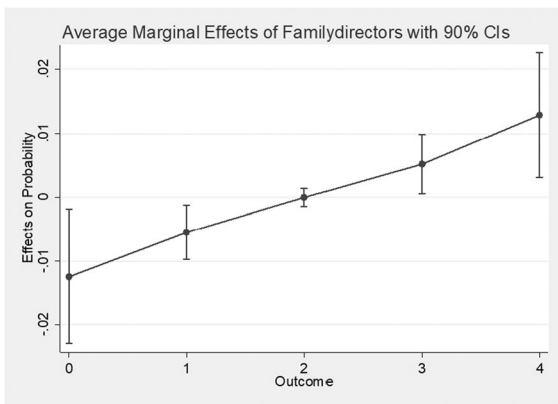
Fig. 4 Marginal effects of family directors on international entrepreneurship at high levels (+1 SD) of employees (LN)

25% and increases the likelihood they remain below 25%. In larger firms, the number of directors who are family members increases the likelihood that foreign sales exceed 25% and decreases the likelihood they remain below 10% (see Fig. 4). To test the robustness of this result, we ran additional regressions with alternative operationalizations of the dependent variable, finding significant results using both the log of foreign sales (p-value of the interaction term = 0.92) and percentage of foreign sales (p-value of the interaction term = 0.32). Conversely, we find non-significant results using the number of family executives as an alternative measure of family involvement. Finally, Table 7 reports the predicted probabilities from our ordered logistic regressions of the complete models with interaction terms (Models 4 and 5 of Table 5).

7 Discussion and conclusions

The FF internationalization literature has grown exponentially in the last decade (Arregle et al., 2021; Debellis et al., 2021b; Rondi et al., 2022). However, the distinct effect of family ownership and family involvement in governance on firm internationalization has not been sufficiently investigated (Debellis et al., 2021b; Liang et al., 2014). In this regard, scholars highlight the need to better investigate the actual role of family control and the institutional context (Arregle et al., 2017), as well as other contingency variables in influencing firm internationalization (De Massis et al., 2018). Moreover, the family business field faces a "replication crisis," where theory is often

	International entrepreneurship	Obs	Model 4 (interaction with firm age)				Model 5 (interaction with employees (LN))			
Value	% of foreign sales		Mean	Std. dev	Min	Max	Mean	Std. dev	Min	Max
0	0	284	0.17	0.22	0.00	0.89	0.17	0.22	0.00	0.89
1	0 < % ≤ 10	284	0.25	0.14	0.00	0.47	0.24	0.14	0.00	0.47
2	10 < % ≤ 25	284	0.17	0.08	0.00	0.27	0.17	0.08	0.00	0.27
3	25 < % ≤ 50	284	0.19	0.12	0.00	0.33	0.19	0.12	0.00	0.33
4	> 50%	284	0.22	0.24	0.00	1.00	0.23	0.24	0.00	1.00

Table 7 Predicted probabilities from the ordered logistic regressions (Models 4 and 5 of Table 5)

the marginal effects. The results are very similar to those relating to H2. As Fig. 3 shows, in smaller FFs, the number of family members serving as directors reduces the likelihood that foreign sales exceed

built on a few seminal studies, and thus the risk of managerial implications based on false positives and insufficiently tested assumptions (Brinkerink et al.,

2022). Furthermore, the fact that many studies use samples of firms from only one country raises the question of the generalizability of the findings and building theories accordingly.

Based on this premise, our study replicates and extends the work of Sciascia et al. (2012), noteworthy in the FF internationalization literature as one of the first studies to go beyond the family vs non-family business dichotomy, thus paving the way to a "second wave" of research aimed at understanding variance in FF internationalization patterns (Debellis et al., 2021b). In particular, Sciascia et al. (2012) propose that family ownership is linked to international expansion through a curvilinear inverted U-shaped relationship because the advantages of stewardship—prevailing at low and medium levels of ownership—more than compensated the disadvantages of stagnation. We replicate and extend this study in a three-part process. In the first part, we develop a quasi-replication of Sciascia et al.'s (2012) study using a multi-country empirical setting (whereas their sample includes only US SMEs), but were unable to provide support for their hypothesis. We interpret this (absent) empirical result as an indication that equity ownership per se—while certainly important—may not be sufficient to explain FF internationalization. Indeed, we maintain that it is not necessarily equity ownership that allows exercising control over the firm's strategic decisions (Pinelli et al., 2020), but representation in the board of directors, the apical entity in all firm strategic decisions (Kumar & Zattoni, 2019).

In the second part of our study, we theorize the role of family directors in FF internationalization choices. Building on stewardship theory, we find that family directors influence the strategic decisions of firms in a way that benefits the prosperity and long-term prospects of both the FF and the family most, driving them to avoid international markets in favor of the domestic market where they have more knowledge and connections.

In the third part of our study, we theorize that this effect tends to weaken as FFs grow and become mature due to changes in their socio-psychological dynamics (Arregle et al., 2007; De Massis et al., 2018). Specifically, we argue that family directors of later generations in more mature FFs are better equipped and have stronger incentives to pursue international expansion. Likewise, we argue that when the FF is larger, placing family members without business

qualifications on the board is no longer ascribable to family-centered goals alone (Chrisman et al., 2004), and that larger FFs have more resources to dedicate to expansion projects (Sievinen et al., 2020). Interestingly, our empirical results show not only that the negative relationship between family directors and internationalization weakens with the increasing age and size of FFs, but the sign also changes over time, suggesting that family directors in mature and larger FFs actually foster international growth. Therefore, our extended study highlights that the effect of board composition goes far beyond an ideal one-size-fits-all. In particular, a dynamic approach taking into account the firm's different needs depending on its age and size highlights the relevance of the chrono-context in FF internationalization (De Massis et al., 2018). In addition, the lack of empirical support in replicating Sciascia et al. (2012) suggests the importance of always considering the exo-context of the locus of operations, i.e., the economic, social, political, legal, and cultural environment (De Massis et al., 2018). We hope that our study will serve as a forerunner for more replication studies that can shed light on the contingencies that affect family firm dynamics and their heterogeneity in the international pathway.

7.1 Theoretical and practical implications

Our results have several theoretical implications for the literature at the FF governance and internationalization intersection. First, ours is the first to replicate an influential study on FF internationalization. The fact that the hypothesis advanced in Sciascia et al. (2012) is not supported does not imply rejecting their results, but raises questions about the effective influence of equity ownership on FF internationalization. We thus propose that an even more important role may be played by the skills, knowledge, goals, and incentives of family members in a position to exercise influence over the FF's strategic decisions. In so doing, we enrich the debate on how governance mechanisms affect international growth (Kano & Verbeke, 2018) and, in line with recent studies (e.g., Debellis et al., 2021a), show that the board of directors is an especially relevant factor of FF willingness and ability to operate in international markets. In particular, young and small family businesses benefit from external directors on their boards, and the younger and smaller the family business, the more

important external knowledge is. The age and size of the business weakens this effect, as established or older businesses have built up sufficient know-how and skills and are therefore no longer as dependent on external knowledge.

Second, our theoretical arguments provide a different interpretation of the effects of stewardship theory and the stagnation perspective. Sciascia et al. (2012) use stewardship theory to explain how the socioemotional attachment of the family to the firm, its employees, and customers acts as a powerful incentive to expand internationally. Specifically, they adopt the stagnation perspective to explain how risk aversion, resource constraints, conservativism, and personal conflicts act as barriers to FF internationalization. In other words, they use stewardship arguments to explain the positive effects and stagnation arguments to explain the negative effects on internationalization. Yet, the exact mechanisms that may cause one of these effects to prevail over the other remain rather obscure in their formulation. Instead, our study is theoretically more parsimonious and consistent, as we only adopt arguments from stewardship theory to advance that family involvement in the firm's decisions may result in either higher or lower internationalization depending on firm-level factors (i.e., firm age and size) that determine when and why internationalization can benefit the FF's long-term prospects.

Finally, our results have important managerial implications, as they offer FFs insights on key factors to consider when entertaining the possibility of expanding in international markets. Our study suggests that there may be trade-offs between the family's ability to ensure that corporate control is preserved and its ability to compete successfully in international markets. Knowledge and experience in international business as well as strong relationships with foreign networks are important predictors of internationalization success. If family members lack either of these assets, the feasibility of international expansion may be compromised. In this case, the family could rely on external advisors, managers, and directors, but at the risk of diluting control of the firm. Indeed, the role played by these actors in maintaining and expanding foreign operations, and the FF's dependence on these actors, will increase as the scale of foreign operations becomes more relevant. A better alternative may be to substantially invest in developing the social and human capital of family members—particularly

younger ones—to ensure that the family possesses and conserves the assets needed to do business internationally. Therefore, our recommendation is to carefully evaluate the balance between international expansion ambitions and the competences and connections currently available to the family, as well as planning for international expansion well in advance.

7.2 Limitations and future research directions

Our study has several limitations, which also open avenues for future research. First, we do not consider institutional variables. However, the fact that our replication based on a global scale did not provide the same results as Sciascia et al. (2012) suggests a possible breakthrough for future research. In particular, we call into question the generalizability of results based on a single country. In this regard, the meta-analysis of Arregle et al. (2017) shows that formal and informal country-level aspects are crucial in guiding internationalization choices. Other recent studies follow this direction stating that the country of origin has a fundamental role in internationalization success (e.g., Eddleston et al., 2019). For example, drawing on the studies of sociologist Emmanuel Todd, Arregle et al. (2019) identify seven types of family structures that have different characteristics from country to country (with differences even at the subnational level) that strongly affect internationalization choices. We invite future research to take into account how institutional aspects affect FF international growth.

Another limitation is the dependent variable we adopt to measure internationalization. To replicate the original work of Sciascia et al. (2012), we used the same variable (i.e., the ratio of foreign sales to total sales (FSTS)), which however has several critical issues. First, it does not allow distinguishing between internationalization scale and scope, so that all the idiosyncratic challenges related to coping in different institutional contexts are neglected (Verbeke & Brugman, 2009). Furthermore, FSTS does not take into account the psychic distance of the target market. Future research should not only consider the characteristics of the home market, but also those of the target market. Finally, FSTS does not allow appreciating whether, for example, sales derive from exports or subsidiaries abroad. Thus, future research should investigate how certain governance mechanisms invalidate entry modes beyond exports, which

require high commitment and more sophisticated knowledge (Stoian et al., 2018), making the investment less reversible and thus more risky. In this case, the dynamics for consensus-building and the development of cognitive and relational conflict in the board between family and non-family members may also significantly differ.

Moreover, as in Sciascia et al.'s (2012) study, we use cross-sectional data, whereas longitudinal studies would allow empirically demonstrating the nexus of causality between board composition and internationalization. Third, when assessing board composition, we simply distinguish between family and non-family directors. However, in considering the inclusion of non-family members on the board as a proxy of new and unique knowledge for the exploitation of international growth opportunities, we have not directly measured the actual knowledge, international experience, and background of these directors. Therefore, future research could more directly and in-depth explore the knowledge and most relevant skills of non-family directors to provide theorists and practitioners with suggestions on the skills that should be evaluated when selecting directors. Finally, we focus on the differences between family and non-family directors, without considering other differences in the board. To open the black box of board processes (Strike et al., 2018; Zona & Zattoni, 2007), future research could therefore go beyond the family vs non-family dichotomy and focus more on micro-process questions, such as how consensus is reached and how this changes over the firm's lifecycle.

Last but not least, with this study, we hope to pave the way for a greater propensity to replicate relevant studies and help solve the replication crisis in family business research (Brinkerink et al., 2022). Although an extremely valuable tool for knowledge creation and extension, replication studies remain an overlooked aspect of the scientific method (Coffman et al., 2017; Mueller-Langer et al., 2019). This is often the case because replication is seen as lacking theoretical novelty. However, our study shows that replication is precisely a way to improve theory, reflect on the theoretical assumptions of influential studies, and revisit them with the substitution/addition of key variables. We thus echo the recent call of scholars (e.g., Aguinis et al., 2017; Crawford et al., 2022; Dau et al., 2021) for scientific progress by replicating analyses that might produce discordant outcomes and can help

fine-tune theories establishing boundary conditions in terms of time and space.

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