

# **Strategy disclosure and cost of capital: the key role of women directors for family firms**

## **Abstract**

This paper investigates whether and to what extent strategy disclosure influences the cost of capital, comparing family and non-family firms and considering the proportion of women directors. We theorize that voluntary strategy disclosure may be either beneficial or detrimental depending on the perceptions by financial stakeholders about the role of governance attributes. These stakeholders might, indeed, assess strategy disclosure differently based on their stereotyped view of the family firm status and women's involvement on the board of directors. By referring to a sample of 93 listed Italian small and medium-sized enterprises, we show that, unlike with their non-family counterparts, strategy disclosure increases the cost of capital for family firms. However, an increasing proportion of women directors softens this negative effect. Moreover, when a critical mass of women directors is appointed to the board, the strategy disclosure becomes beneficial for family firms too. We consequently offer a threefold contribution to the literature on gender diversity, family business and corporate voluntary disclosure.

**Keywords:** family business, women directors, strategy disclosure, board of directors, cost of capital

## **1. Introduction**

The disclosure of strategy information is pivotal, as it reveals managerial actions and provides stakeholders with the information needed to understand and assess the performance and the competitive advantage of the firm (Beyer et al., 2010; Morris and Tronnes, 2018; Verrecchia, 1983). This type of disclosure provides information on mission, goals and objectives, discusses the main products, markets, and/or the competitive environment the firm operates in, and indicates specific actions taken to implement strategy. As a result, since strategy disclosure can be highly sensitive and proprietary, its effectiveness depends on the stakeholders' evaluation of benefits against costs (Baginski et al., 2017; Ferreira and Rezende, 2007; Prencipe, 2004). In the eyes of financial stakeholders, disclosing strategy information is effective when it decreases the cost of capital (Lev, 1992), that is, when the perceived benefits exceed perceived costs (Healy and Palepu, 2001).

In this regard, although the effectiveness of strategy disclosure has been widely documented in the literature (Botosan, 1997, 2006; Healy and Palepu, 2001; Nekhili et al., 2012; Sieber et al., 2014), scholars have started investigating to what extent it changes when some contingency factors are at play. The governance attributes, in fact, can alter financial stakeholders' perceptions and expectations of the information disclosed, thereby contributing to shape the effects of strategy disclosure on the cost of capital (Lev, 1992). As argued by Adams et al. (2020), family firms are no exception, as the owners' aspirations are crucial to determining the cost of capital. We thus build on this study and suggest that aspirations, subjective needs and/or preferences ascribed to family firms (that make strategy disclosure) can be downplayed, in the eyes of financial stakeholders, when the board composition and, in particular, women directors' involvement are considered. Specifically, relying on the tenets of social construction theory (Berger and Luckmann,

1966), we theorize, in line with a supply-side perspective about gender roles at work (Heilman, 2012; Ryan et al., 2011), about the beliefs and expectations that induce stereotyped views of women when they are appointed to formal power positions such as directors (Ely, 1995). According to this perspective, individuals act on the basis of expectations that are changed or reformulated depending on gender (Bellucci et al., 2010; Heilman, 2001). We refer to gender as the socially constructed roles, expectations and patterns that entail distinctions between masculine and feminine as opposed to physiological characteristics (Acker,1992), whereas the term “gendered” is used to mean that “gender is present in the processes, practices, images and ideologies, and distributions of power in the various sectors of social life” (Acker, 1992, p. 567).

Financial stakeholders, such as investors and creditors who evaluate strategy disclosure, might thus ascribe to women a stereotypical view of their job on the board of directors. Moreover, they might develop different expectations and perceptions of women directors’ roles (Borna and White 2003; Ryan et al., 2011), depending on the specific context in which they work, i.e., considering whether they are appointed to the board of a family or a non-family firm. Our theorizing suggests that, because of socially constructed gender roles, financial stakeholders might assess and perceive strategy disclosure by family firms with a high proportion of women directors differently, thus granting a different cost of capital based on the interplay between family firm status and women’s involvement on the board.

Thus, based on these theoretical arguments and on the literature about voluntary strategy disclosure, we build two hypotheses. First, we hypothesize that family firm status decreases the effectiveness of strategy disclosure, by presenting how financial stakeholders’ perception of family firms, as compared to their non-family counterparts, might affect the way they assess costs and

benefits of strategy disclosure and, in turn, the effect on the cost of capital. Second, we hypothesize that the proportion of women directors counterbalances the effect of family firm status on the strategy disclosure-cost of capital relationship, as the financial stakeholders would ascribe a different contribution to the board to women directors in family firms than to women directors working on the board of non-family firms.

We test our hypotheses on a sample of 93 Italian small and medium-sized enterprises (SMEs) listed on the Euronext Growth Milan (EGM). Our findings suggest that strategy disclosure is not beneficial for family firms: unlike what happens in their non-family counterparts, strategy disclosure increases the cost of capital. However, an increasing proportion of women directors on their boards softens this negative effect. A closer look at this ameliorating effect shows that when a critical mass of women directors is appointed in the board (i.e., 3 women at least) the effect of strategy disclosure on the cost of capital becomes beneficial for family firms too.

This study offers a threefold contribution. First, we contribute to the debate on gender diversity, shedding new light on the role of women directors working on the board of family vs non-family firms (Nekhili et al., 2018; Samara et al., 2019). Indeed, our findings contribute to the emergent stream of studies on women directors in family firms (Campopiano et al., 2019; Martinez Jimenez, 2009; Maseda et al., 2022), advancing the idea that involving more women on family firms' board of directors can limit the negative perceptions associated with the family firm status by financial stakeholders. Second, we propose a contribution to family business literature, providing a different view of family business as a gendered type of organization; we divert from the perspective that highlights family firms as characterized by a patriarchal leadership style and gendered processes that reinforce gender stereotypes (Al-Dajani et al., 2014). Third, we contribute to the corporate voluntary disclosure literature by deepening the understanding of strategy

disclosure effectiveness when governance contingency factors are at play (Nekhili et al., 2012). Our findings, altogether, also have key practical implications aimed at family firms' owners, managers, women directors as well as creditors and investors who evaluate the available strategy information disclosed by firms and might be influenced by knowing the governance attributes characterizing these businesses.

## **2. Theoretical background and hypotheses**

### ***2.1. The effectiveness of strategy disclosure***

Disclosure of strategy information is an important instrument to communicate the business choices and the implementation priorities a firm is pursuing or is going to pursue (Santema et al., 2005; Thompson and Strickland 2003). From an investor's decision-making perspective, receiving insights into a firm's strategic objectives is of considerable relevance: referring to strategy information disclosed by the firm reveals managerial actions and brings different capital market effects such as greater market liquidity, an increase in firms' analysts following (Botosan, 1997; Healy and Palepu, 2001; Kothari et al., 2009; Lang and Lundholm, 1996; Sieber et al., 2014; Vitolla et al., 2020), and an increase in the accuracy of their forecasts (Baginski et al., 2017). All these factors have positive effects on the cost of capital, which is, in the words of Adams et al. (2004), an expression of the expectations of investors. In this regard, Vitolla et al. (2020) identify four main channels by which the nonfinancial disclosure may affect the cost of capital: i) by altering the uncertainty, and in turn, the estimation risks, in the asset pricing models on which investors rely; ii) by influencing the information asymmetries, between managers and investors as well as among investors (Diamond and Verrecchia, 1991); iii) by modifying the monitoring costs for investors; and iv) by influencing the investor recognition, the investor base and by changing risk sharing practices. Furthermore, Gray et al. (1990) argue that the dissemination of strategy

information is bound to stretch the firm's contestability, raising the probability of takeovers and/or mergers, thereby contributing to a reduction in the cost of capital. More specifically, by informing investors and other groups of stakeholders of their strategic plans, companies enhance trust in them, improve public relationships (Higgins and Diffenbach, 1989) and ease external financing (Elliot and Jacobson, 1994). Last, disclosing strategy information is likely to promote an improvement in worker conditions enhancing their morale and cohesiveness, which are vital for companies in search of strategic credibility (Higgins and Diffenbach, 1989). Credibility, in turn, boosts not only employee morale within the company, but also the relationships with the financial community and stakeholders at large (Higgins and Bannister, 1992), thereby affecting the cost of capital. Empirically, the beneficial role of strategy disclosure is revealed also by Baginski et al. (2017), who find that the publication of strategic plans is value relevant for investors and brings an improvement in the accuracy of financial analysts' forecasts of annual earnings. This effect has implications for the cost of capital, which is the outcome of investors' expectations (Adams et al., 2004).

Despite its benefits, disclosure of strategy information entails different potential costs (Diamond and Verrecchia, 1991; Elliot and Jacobson, 1994). First, the communication of the long-term strategy might lead to suboptimal investment decisions since the managers may be reluctant to go back the same way when a change in the strategic direction becomes necessary (Ferreira and Rezende, 2007). Such suboptimal decisions, also known as adverse selection problems, cause investors to stay away from the market, leading to a less liquid and less efficient capital market (Akerlof, 1970), thus provoking an increase in the cost of capital. Second, the disclosure of strategy information may also increase scrutiny of stakeholders and the potential misinterpretation of information that affects future reporting practice decisions and, in turn, also the cost of capital

(Cuadrado-Ballesteros et al., 2016; Diamond and Verrecchia, 1991). Third, proprietary costs need to be considered too (Prencipe, 2004): these costs include not only costs of preparing, disseminating and auditing this type of information, but also potential indirect costs related to the loss of the competitive advantage that may come from communicating crucial information (Prencipe, 2004; Verrecchia, 1983). Indeed, information on strategy affects the cost of capital through the market participant's perceptions and concerns about the firms' capability to generate future cash flow (Lambert et al., 2007).

Last, a separate discussion becomes necessary for the influence that strategy information can exert on the so-called litigation costs, which increase, in turn, the cost of capital (Chava et al., 2010). On the one hand, many scholars suggest that strategy disclosure may be not beneficial, arguing that, when top management's forecasts and plans prove to be inaccurate, disclosing them provokes higher litigation costs (Cheng and Lo, 2006; Sánchez et al., 2011), and in turn, higher cost of capital. On the other hand, disclosing strategy information beyond mandatory requirements is considered beneficial, as it may reduce these costs by providing investors with more realistic expectations about the firm's prospects (Lev, 1992), thereby contributing to a reduction in the cost of capital.

Overall, previous empirical studies on effectiveness of strategy disclosure claim that such practices generate more benefits than costs, as firms that disclose strategy information are characterized by a lower cost of capital (Botosan, 1997; Gietzman and Ireland, 2005; Sieber et al., 2014). Yet we argue that benefits and costs may be contingent on the financial stakeholders' perceptions of the actors governing the company (Anifowose et al., 2017; Nekhili et al., 2012), i.e., owners and directors. In the next sections, we advance the hypotheses that the type of firm

(family versus non-family) and the proportion of women directors on the board challenge the view of financial stakeholders on strategy disclosure, ultimately affecting the cost of capital.

## ***2.2. Theoretical perspectives***

To understand the extent to which financial stakeholders evaluate strategy disclosure, we consider that its effectiveness, as measured by the reduction of the cost of capital, might depend on governance attributes, namely the family firm status and women's representation on the board of directors. The main reasoning is that financial stakeholders enact stereotyped beliefs and expectations, which explain why the cost of capital increases or decreases. To explain our understanding of the perceptions implicitly included in the financial stakeholders' cognitions, we integrate SEW perspective and social construction theory as lenses that can explicate their beliefs and expectations of family firm status and women's involvement on the boards of family vs non-family firms.

Regarding the family firm status, we rely on the assumption that SEW is viewed as the main characteristic that differentiates family from non-family firms (Berrone et al., 2012; Combs et al., 2023; Gómez-Mejía et al., 2007). Defined as the "set of non-financial aspects of the firm that meet the family's affective needs, such as identity, the ability to exercise family influence, and the perpetuation of the family dynasty" (Gómez-Mejía et al., 2007, p. 106), SEW represents the desire to build and preserve the stock of affective value that the family generates from its controlling position and aims to preserve. In particular, the SEW logic assumes that family firms carefully choose their actions and decisions to avoid any threat to their stock of social and emotional wealth. Indeed, as Gómez-Mejía et al. (2014) suggest, when making voluntary disclosure, family firms would use SEW preservation as their main reference point. This makes

family firms' strategies markedly different from non-family firms since family members may be ascribed behaviors aimed at protecting their SEW regardless of financial gains. Thus, financial stakeholders, who are aware of the family firm desire to preserve these stocks of affective endowments, would implicitly take this feature into account when evaluating the effect of strategy disclosure on the cost of capital.

Turning to the role of women directors on the board of family vs non-family firms, we frame it according to the social construction theory. Proposed by Berger and Luckman (1966), the theory argues that human actions are the product of the culture in which people are born and raised. That is, men's and women's identities are not fixed or static but result from social interactions in everyday life (Berkowitz et al., 2010; West and Zimmerman, 1987). Such interactions determine the beliefs and expectations of what men and women can or should do (Nelson, 2020). Socially constructed gender beliefs embody a stereotypic perception of men and women based on differences related to characteristics and abilities ascribed to each sex (Correll, 2001; Ely et al., 2011; West and Zimmerman, 1987). Thus, women are seen as communal, nurturing, caring, helpful, and cooperative, while men are treated as agentic, task-oriented, competitive and decisive (Eagly and Steffen, 1984). These gender differences are instilled from childhood through sex-role socialization (Eagly and Wood 2012; Ruble et al., 2006). They dictate the type of role considered appropriate for women and men and put considerable pressure on women to behave in gendered-type ways, coherent with societal cultural beliefs and expectations (Ridgeway, 2009; Vogel et al., 2003). In general, a stereotype suggests that managerial roles are perceived as more congruent with agentic masculine attributes, thus considering women as incompatible with such a job (Heilman, 2012; Ryan et al., 2011).

In this regard, an increasing number of studies focus on the role of gender in leadership positions. For example, a study by Ely (1995) examines how women's proportional representation in the upper echelons of an organization affects the social constructions of gender. In that study, it is argued that societal and cultural roles, to which women conform, lead to a stereotypical view and are more problematic in firms with a low presence of women. Similarly, Sidhu et al. (2021) assert that beliefs and expectations that harbor generalized collective views about women's personality traits, skills and capabilities are especially salient at the higher management levels, such as the board of directors, from which women have usually tended to be excluded (Eagly and Karau, 2002; Randel 2002). Again, Kirsch (2018), in a recent literature review on board gender composition, claims that there is still a need to apply the knowledge of social constructions of gender differences to the study of directors to better measure and explain the role of women directors.

Stemming from the two theoretical perspectives above, we argue for the financial stakeholders' differential evaluations of the effectiveness of strategy disclosure, in terms of costs and benefits of disclosing strategy information (and cost of capital, accordingly), when considering the family firm status and women's representation on the board of directors.

### ***3. Hypotheses development***

#### ***3.1. The effectiveness of strategy disclosure in family firms***

Stemming from the SEW perspective, we suggest that the affective endowments that families associate with the control of the business generate the discriminant to make financial stakeholders evaluate family and non-family firms in a different way when strategy information is disclosed. We thus suggest that the cost-benefit structure related to strategy disclosure would change, leading to different effects in terms of cost of capital for family vs non-family firms. Indeed, as family

firms are perceived as driven by non-economic goals, some of the costs associated with strategy disclosure (suboptimal investment decisions) are expected to increase, while some benefits (reduction of litigation costs and information asymmetries, a firm's higher contestability and improvement in worker conditions) are likely to shrink, with detrimental effects on the cost of capital.

In particular, with respect to the costs, suboptimal investment decisions, a costly drawback that typically affects disclosing companies and their cost of capital in the medium-long term (Ferreira and Rezende, 2007), can be further magnified. Family firms, which are acknowledged as more conservative and less flexible in their attempt to preserve SEW, might enhance their rigidity towards openness to new investment opportunities or to new partnerships, thereby showing even more reluctance to change in terms of strategic objectives, markets and business focus (Miller et al., 2003). This situation can prevent investors and creditors from giving favorable impressions on firm's openness and forthrightness (Elliot and Jacobson, 1994), thus affecting public relations' benefits and in turn increasing the cost of capital.

Turning to the benefits, the family firm status might imply a lower opportunity to gain benefits from disclosing strategy information for at least three reasons. First, because of the nature and source of the competitive advantage of family firms, revealing strategy information may not reduce their litigation costs. Strategy disclosure reduces information asymmetries by communicating the prospects of the company to external market actors and providers of financial support (i.e., shareholders and bondholders). This situation usually reduces the return required by both shareholders and bondholders due to lower uncertainty (e.g., Barry and Brown, 1984, 1985; Brown, 1979; Coles et al., 1995; Lambert et al., 2007), lower monitoring costs (Lombardo and Pagano, 2002), higher market liquidity (Diamond and Verrecchia, 1991), better lenders' conditions

in assessing the default risk of borrowers (Raimo et al., 2021), higher probability of takeovers (Gray et al., 1990). Yet in the case of family firms, company prospects are closely related to information regarding corporate goals or mission and vision of the company that may reflect the family's culture, values and specific knowledge, which are difficult to communicate (Gjergji et al., 2021; Pearson et al., 2008; Sharma 2008). Therefore, the mitigation of information asymmetries and the related reduction of litigation costs tend to vanish when strategy information is disclosed by a family firm, thereby shrinking their beneficial impact on the cost of capital.

Second, benefits may be limited because family firms do not experience any increase in the contestability of the firm with respect to non-family companies. While for non-family firms, strategy disclosure is likely to increase the probability of a takeover (Gray et al., 1990; Sánchez et al., 2011), thus lowering the cost of capital, family firms remain almost unaffected, as the family holdings tend to exclude their business from the market for corporate control (Franks and Mayer, 1997). Accordingly, the higher probability of takeovers and the new conditions in the market for corporate control remain mostly confined to companies with a diffuse ownership, whereas the presence of block-holding families, who aim to protect SEW across generations, nullifies these potential benefits and the consequent reduction of the cost of capital.

Third, contrary to other companies, disclosing strategy information by family firms is not expected to provoke a significant improvement in worker conditions in terms of increased morale and cohesiveness, which are vital for companies in search of strategic credibility (Higgins and Diffenbach, 1989). Strategic credibility, which refers to how others view the company's overall strategy and its strategic planning capability, boosts employee morale within the company, but also improves the relationships with the financial community and stakeholders at large (Higgins and Bannister, 1992) hence affecting the cost of capital. Therefore, while the dissemination of

strategy information is positively viewed by employees who perceive it as the signal of their greater involvement, the same does not hold for family firms: their workers are already largely involved in the company (Vallejo, 2009) to the extent that they feel and are considered as members of the family (Miller et al., 2009). Thus, non-family firms are expected to enjoy the improvement in workers' involvement and the consequent benefits in terms of productivity (Higgins and Diffenbach, 1989) and cost of capital, whereas companies with a family firm status find this benefit depleted.

In sum, it can be argued that financial stakeholders' perceptions and beliefs, which are used to interpret the way in which the cost-benefit structure of strategy disclosure takes place, offer a more nuanced perspective on the effectiveness of strategy disclosure in family firms. These higher costs and lower benefits that family firms are expected to face, in the eyes of investors and creditors, suggest that family firm status is detrimental to the effectiveness of strategy disclosure, increasing the cost of capital. Accordingly, we develop our first hypothesis as follows:

**HP1:** *The family firm status positively moderates the relationship between strategy disclosure and the cost of capital.*

### ***3.2. The effect of women directors in family firms***

Relying on the social construction theory, we argue that women engender beliefs and expectations that are biased in the financial stakeholders' eyes because of the enacted gender roles both at work and home (Ridgeway, 2009; Vogel et al., 2003). Social pressure related to both gender and managerial roles is different between men and women (Boulouta, 2013). Moreover, enacted gender roles are context-dependent (Borna and White 2003; Ryan et al., 2011). Indeed, as Ryan et al. (2011) argue, a particular type of leader can be seen as effective in one situation but judged as

ineffective in another. We argue that beliefs and expectations that affect financial stakeholders' evaluations, can be based not just on the stereotyped view of women's involvement on the board of directors, but also on the context i.e., the type of organization (considering the family firm status) in which these women work.

We conceptualize on the idea that the contribution of women directors on the boards of family firms might be perceived as different to the contribution of women directors on non-family firms' boards, at least in the eyes of the stakeholders who assess the effects of strategy disclosure on the cost of capital. In this context, the literature provides evidence that the proportion of women on the board is associated with better disclosure processes that in turn reduce the cost of capital (Adams and Ferreira, 2009; Cumming et al., 2015; Gul et al., 2018; Srinidhi et al., 2011). With respect to the previous hypothesis, stemming from the view that strategy disclosure mainly serves SEW needs and preferences of family firms, with a detrimental effect on the cost of capital, including women directors can change this view. Indeed, women directors in family firms are perceived as mediators when conflicting goals emerge (Samara et al., 2019), and support and improve owners' motivations and strategy-related decisions (Cruz et al., 2019). Hence, we claim that the proportion of women directors on family firm boards affects the financial stakeholders' perception of costs and benefits of strategy disclosure, offering a more nuanced view on the effectiveness of strategy information in such firms.

In terms of costs, the disadvantages associated with the voluntary disclosure of strategy information in family firms could disappear if women serve as directors. Supporting the board with advising activities, women can reduce the risk of default being perceived by bondholders as beneficial for their own interests, thus requiring lower risk premia (Tanaka, 2014). Indeed, because women are perceived as multitasking, communicative and able to generate productive discourse,

the involvement of women directors may be assessed as reducing the structural rigidity of family firms, by increasing flexibility (Harrison and Klein, 2007), ultimately reducing the risk of suboptimal investment decisions.

In terms of benefits, the presence of women directors on family firm boards may emphasize the advantages of strategy disclosure for the following reasons. First, litigation costs and information asymmetries, unlike before, may decrease. Indeed, women directors exhibit traits ascribed to a transformational leadership style (Eagly et al., 2003). Their expected higher communicative ability (Konrad et al., 2008) can better reflect family firms' intangible resources such as respect and pride, family values, culture and the importance of the firm's mission, thus exerting an impact on the cost of capital by reducing it.

Second, women are expected to enhance the level of professionalization in terms of higher diffusion and usage of formal governance, strategic planning and managerial control systems (Songini and Gnan, 2009). For example, strategic planning may help the family firm to cope with both the business and the family goals, while reporting systems may help them to ensure delegation and increase openness toward professional managers (Songini and Gnan, 2015). Incentivizing the adoption of these practices also certifies that the firm values both hiring and promotion processes are based more on business achievements than on family ties. Furthermore, being perceived as a professionally managed firm also increases opportunities to obtain public capital in equity markets (Dawson, 2011). In sum, all these aspects might alleviate, in the financial stakeholders' eyes, the drawbacks associated with the family firm status that, as previously discussed, nullify the benefits of strategy disclosure.

Third, the same line of reasoning can hold true when it comes to considering the worker conditions in family firms. Indeed, employees (who already feel like they are part of the family,

see Miller et al., 2009), when perceiving more equal treatment granted by work-performance systems, will feel more motivated and committed to family firms, in turn increasing their productivity. From a financial stakeholders' perspective as well, these benefits become valuable, as they could contribute to reinstating trust from the financial community (Joy, 2008), which in turn enhances the effectiveness of strategy disclosure.

In sum, in line with the assumption that gender roles are a social construction reflecting stakeholders' beliefs and expectations about women, especially in top positions (Boulouta, 2013), along with the fact that these perceptions are also context-dependent (Borna and White 2003; Ryan et al., 2011) and, thus, different between family and non-family firms, we predict that appointing women directors in family firms can reduce the negative effect that the family firm status exerts on the relationship between strategy disclosure and cost of capital. Accordingly, our second hypothesis proposes that:

**HP2:** *The higher the proportion of women directors on the board, the lower the positive effect of family firm status on the strategy disclosure-cost of capital relationship.*

Figure 1 synthesizes our hypotheses on the moderating effects of family firm status and the proportion of women directors on the relationship between strategy disclosure and cost of capital.

[Figure 1 about here]

## **4. Methodology**

### ***4.1. Sample***

The sample used in this study consists of all the companies listed on the Euronext Growth Milan (EGM), i.e., the Italian listed SMEs with a high growth potential. Our initial sample was made up of all listed firms in 2019, which includes 132 cases. We removed those firms pertaining to the financial sector (21), three foreign/non-Italian companies, and 15 others, either because of missing

data (12) or because they were outliers (3<sup>1</sup>). As a result, the final sample includes 93 companies representing the following industries: manufacturing (38.7%), services and technology (17.2%), media (16.1%) and energy (10.8%). Table 1 reports the sample description in terms of industries.

[Table 1 about here]

We believe that the Italian market represents an ideal setting for investigating the interplay between strategy disclosure, family firm status and women directors, for two reasons. First, Italy has a large base of business families able to exert a significant influence on the company affairs (Cucculelli and Bettinelli, 2016), including strategy disclosure. Second, the implementation of a national “pink quotas” law, which imposes an increase in gender diversity on public and state-owned companies’ boards, makes Italy exceed the EU-28 average presence of women directors (Pastore, 2018). Within the Italian context, we focused on the listed SMEs, not only because SMEs provide a significant contribution to the Italian economy, but also because most of the companies that recently entered the Italian stock market are SMEs (Finaldi et al., 2020). Thus, we focused on the market segment of SMEs with high growth potential as their growth orientation pushes them to improve corporate communication (Satta et al., 2015), including strategy disclosure. For all the above-mentioned reasons, we believe this empirical setting is unique and particularly suitable for testing our hypotheses.

#### ***4.2. Measuring the voluntary disclosure of strategy information***

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<sup>1</sup> Two companies have been excluded because they had negative cost of capital and negative leverage, respectively. We also checked for the presence of outliers by estimating the Cook’s Distance (Cook, 1977). Only one observation reported a Cook’s Distance higher than 1 (2.85) and has been excluded.

In order to measure the strategy information voluntarily disclosed by firms, we created an *ad hoc* Strategy Disclosure Index, labelled SDI. In the voluntary disclosure literature, self-constructed indexes represent the most frequently used techniques to study information contained in annual reports (Prencipe, 2004) and/or company websites (Sánchez et al., 2011). These indexes, which are aimed at measuring mainly the extent of the information released by firms, are a partial form of content analysis where items to be studied are defined *ex ante* (Beattie et al., 2004).

We have defined our list of items in line with the work by Botosan (1997), Meek et al. (1995), Eng and Mak (2003), Gul and Leung (2004), Lim et al. (2007), and Allegrini and Greco (2013). Our final list contains 20 items (as reported in Table 2), collected from annual reports and company websites.

[Table 2 about here]

In line with previous studies, the items refer to four main categories of information: (i) corporate background information, consisting of four items – labelled CBG; (ii) corporate strategy information, with four items – CSI; (iii) business strategy information, including nine items – BSI; (iv) R&D information, including three items – RDI. Once the checklist was defined, we prepared a disclosure scoresheet for each sampled company, and then performed a content analysis to identify the level of information disclosed in annual reports or corporate websites. As suggested by Cooke (1989), in order to avoid subjectivity, in constructing the index we considered all disclosed items as being of equal importance, opting for a dichotomous procedure, in which items score 1, if the information is disclosed, and 0 otherwise (Gul and Leung, 2004). Specifically, three researchers completed the disclosure scoresheet for each company, while two other researchers individually checked the accuracy of collected data. Once the scoresheet was compiled, we

computed the unweighted disclosure score indexes by adding the points of the N items that make up each single category. In formula:

$$X_i = \sum_{j=1}^{N_X} \max(s_{\text{annual report}}^j; s_{\text{corporate website}}^j)_i \quad (1)$$

where X represents the four categories (CBI, BSI, CSI, RDI) of the strategy information disclosure checklist and  $N_X$  the number of items included in each category. In other words, we constructed an index for each category by adding the maximum score of each of the N items included in the specific category X. The corresponding individual scores constitute the aggregate Strategy Disclosure Index (SDI) of the *i*-th company, as described by Equation 2:

$$SDI_i = CBI_i + CSI_i + BSI_i + RDI_i \quad (2)$$

Accordingly, the SDI ideally ranges from 0, meaning that the company does not disclose any strategy information, to 20, a score that identifies companies characterized by a full strategy disclosure.

### ***4.3. Other variables and descriptive statistics***

*Dependent variable.* We used the weighted average cost of capital (WACC<sup>2</sup>) of each company provided by Bloomberg (Sharfman and Fernando, 2008; Vena et al., 2020) as a suitable measure to evaluate the effectiveness of strategy disclosure in light of its relevance for companies' stakeholders (McConaughy, 1999). The WACC is a comprehensive measure that synthesizes both

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<sup>2</sup> Throughout the paper, we refer to the weighted average cost of capital either as WACC or simply as cost of capital.

the cost of debt ( $k_D$ ) and the cost of equity ( $k_E$ ) as expressed by the following formula:  $WACC = \frac{k_D D + k_E E}{D + E}$

*Independent variables.* Our independent variables are: (i) the Strategy Disclosure Index (SDI), which measures the level of voluntary strategy information disclosed by the company and computed as presented in Section 4.2; (ii) the *Family firm status*, a dichotomous variable taking value of 1, in the case of companies with a family firm status, 0 otherwise. Using proprietary data supplied by IR TOP, we identified family firms as those companies that meet the following two criteria: (a) the family holds at least 10% of voting rights, either directly or indirectly; and (b) at least 1 family member sits on the board or is the CEO of the company (La Porta et al., 1999; Faccio and Lang, 2002); (iii) *Women directors* calculated as the percentage of women directors with respect to the board size of the company (Amore et al., 2014; Joecks et al., 2013; Nekhili et al., 2018).

*Moderators.* Following Dawson (2014), we test first the main effects of Family firm status and Women directors, independently, on the WACC, and then in order to test the moderation effect we included three interaction terms calculated as the product of the originating variables, that is *SDI•Family firm status*, *SDI•Women directors* and *SDI•Family firm status•Women directors*.

*Control variables.* We selected several control variables based on previous studies on voluntary disclosure and firms' cost of capital. We included: *Size*, measured by the natural logarithm of market capitalization; *Leverage*, computed as the ratio of total assets to total capital, to model the effects of capital structure decisions on WACC; *FRQ*, the proxy for financial reporting quality proposed by Ball and Shivakumar (2006), to take into account the role played by the quality of financial information in the investors' decision-making processes (Francis et al., 2008); the level of return on sales, *ROS*, to control for potential profitability effects; *Growth*,

calculated as the average sales growth over the last three years (Dhaliwal et al., 2006); *Asset tangibility*, calculated as the net value of property, plant and equipment divided by total assets, as greater asset tangibility indicates lower financial risk (Botosan, 1997; Vander Bauwhede et al., 2015). Lastly, we take into account the higher riskiness of those firms defined by Italian Decree law 3/2015 as *Innovative firms*<sup>3</sup>, i.e., firms identified as small to medium-sized companies managed with the explicit purpose of developing, producing and commercializing innovative products of high technological value. The variable *Innovative firms* takes value 1 if the firm is innovative, and 0 otherwise.

All data refer to year end 2018 and, with the sole exception of the SDI score, are retrieved from Bloomberg and PMI Capital (the vertical digital platform that supports firms during their listing process on the Euronext Growth Milan). In Table 3, we provide both descriptive statistics (mean and standard deviation) and correlations.

[Table 3 about here]

With respect to the governance structure, the 93 companies under scrutiny appear fairly well distributed as regards the family firm status (55%). The cost of debt and equity capital (WACC) is, on average, 7.82%, from a minimum of 2.27% to a maximum of 18.66% (standard deviation of 2.89%). Yet, regardless of the governance, sampled firms appear quite heterogeneous: the market cap ranges between 0.92 and 410.46 million Euro, averaging 47.45. Sampled companies even differ in terms of sales growth, which fluctuates from a minimum of -0.11 to a maximum of 17.51, with a mean value of 0.87. With respect to the variables related to our

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<sup>3</sup> According to the Italian Law, an SME assumes the status of “Innovative SME” if it meets at least 2 of the following 3 requirements: (i) Incurred R&D expenses are at least 3% of the higher value between turnover and production costs; (ii) employees are highly qualified personnel (at least 1/5 PhDs, PhD students or researchers, or at least 1/3 with master's degrees); (iii) company has registered at least one patent or is owner of a registered software.

hypotheses, the same situation holds: the SDI ranges around the mean value of 10.29, from 4 to 14. In other words, the average company discloses strategy information on more than half of the selected items.

Turning to women directors, the average value is close to 15%. This pattern aligns with previous studies that show a similar, or inferior, representation of women: 6% (Galbreath, 2018; Rossi et al., 2017), 8% (Joecks et al., 2013), 10% (Holst and Schimeta, 2011; Nadeem et al., 2017), 11% (Nadeem, 2020; Saggese et al., 2021), and 13% (Yarram and Adapa, 2021) constitute valuable examples. As expected, correlations among selected variables are quite low, suggesting the absence of collinearity. In line with this, the estimated VIFs emerging from the models presented in the next section never exceed 1.42, denoting the lack of multicollinearity issues.

#### ***4.4. The regression model***

To test our hypotheses, we build and estimate several cross-sectional OLS models, all embedded in the most complete version presented in Equation 3: on the left hand, the WACC and, on the right hand, the independent variables, the interaction terms and the control variables.

$$WACC_i = \beta_0 + \beta_1 SDI_i + \beta_2 \text{Family Firm status}_i + \beta_3 \text{Women directors}_i + \beta_4 SDI_i \cdot \text{Family firm status}_i + \beta_5 SDI_i \cdot \text{Women directors}_i + \beta_6 SDI_i \cdot \text{Family firm status}_i \cdot \text{Women directors}_i + \beta_7 X_i' + \epsilon_i \quad (3)$$

In particular, the interaction term  $SDI_i \cdot \text{Family firm status}_i$  analyzes the effect of strategy disclosure on the cost of capital in the specific context of family firms (Hypothesis 1). Should the coefficient related to this variable be statistically significant, we may infer that the strategy

disclosure–cost of capital relationship is moderated by the family firm status. According to our first hypothesis, the estimated coefficient is expected to be positive: all else being equal, the negative strategy disclosure-cost of capital relationship may be shrunk, or even reversed, by the family firm status. The remaining two interaction terms directly assess our second hypothesis. Yet while the first one investigates whether women’s involvement on the board of directors moderates the strategy disclosure-cost of capital relationship regardless of the governance structure (i.e.,  $SDI_i \cdot Women\ directors_i$ ), the second one (i.e.,  $SDI_i \cdot Family\ firm\ status_i \cdot Women\ directors_i$ ) makes it possible to appreciate whether the positive moderation effect of family firm status is reduced at higher levels of women’s involvement on the board of directors. In this sense, to support our second hypothesis, the coefficient related to this three-way interaction term is expected to be negative and statistically significant.

Standard errors are clustered by industry to account for common unobserved correlated components of outcomes within groups (Hansen, 2007). Even though we build our models based on the insights offered by the literature, we also checked how much greater the effects of unobserved variables should be to eliminate the estimated effects, adopting the procedure proposed by Altonji et al. (2005). The results confirm the validity of our evidence and are readily available upon request.

## **5. Findings**

Both presentation and discussion of the results will focus on the contingency role of the family firm status and the proportion of women directors in the strategy disclosure-WACC relationship. Table 4 depicts the results for our tests through eight cross-sectional OLS models. Model 1 offers a test of the control variables only. Models 2 to 4 present, respectively, the direct effect of the

strategy disclosure index (*SDI*), family firm status, and the proportion of women directors (*Women directors*) on the cost of capital. Models 5 to 7 include the interaction terms (*SDI·Family firm status* and *SDI·Women directors*), considered singly (Models 5 and 6) and jointly (Model 7). Model 8 includes them all together with the three-way interaction term (*SDI·Family firm status·Women directors*). The two subplots in Figure 2, respectively focusing on hypotheses 1 and 2, provide a graphical representation of our findings.

[Table 4 and Figure 2 about here]

As expected, and in line with previous studies (Botosan, 1997; Kothari et al., 2009; Sieber et al., 2014), the coefficient associated with the *SDI* is negative (from -0.21 to -0.29) and statistically significant at the 5% level in most of the cases (p-values range from 0.07 to 0.013), while neither family firm status nor women directors are directly and significantly related to the cost of capital (the p-value of the related coefficients is never below 30%). Thus, independently of the governance structure, the disclosure of strategy information contributes to a reduction in the cost of capital.

Turning to the interaction terms, Hypothesis 1 argues that the family firm status positively affects the relation between strategy disclosure and cost of capital. The interaction term *SDI·Family firm status*, which is positive and statistically significant at the 5% level (coeff. = 0.69, p-value < 0.05, Table 4, Model 5), provides empirical support to our first hypothesis. Figure 2a synthesizes this result. Indeed, by adding this value to the coefficient of the variable *SDI*, we get insights into the relationship between strategy disclosure and cost of capital for family firms. In particular, the relationship is negative for non-family firms (coeff. = -0.25, p-value < 0.05, Table 4, Model 8) and is reversed for companies with a family firm status (slope: 0.302 = -0.249 + 0.551). Indeed, Model 8 in Table 4 shows that the estimated coefficient related to the family firm status is

positive and statistically significant (coeff. = 0.551, p-value < 0.05) This evidence is further corroborated by the other models (Model 5 and 7 in Table 4), as the coefficient associated with the variable *SDI·Family firm status* remains positive and statistically significant (coeff. = 0.69, p-value < 0.05), regardless of the presence of all the other two-way interaction terms. The magnitude of such a regression coefficient is so high that the effect of strategy disclosure on WACC in family firms turns positive: in other words, while the relationship between strategy disclosure and cost of capital is negative for non-family firms, companies with a family firm status experience the opposite.

No clear pattern, on the other hand, emerges in Table 4 from the interaction terms between strategy disclosure and women directors, as the related coefficient (ranging from -0.20 to 0.16) fails to reach statistical significance both at 5% and at the loosest threshold of 10% level.

Model 8, however, explicitly focuses on the proportion of women directors in the specific context of family firms. More precisely, thanks to the three-way interaction term (*SDI·Family firm status·Women directors*), this model directly assesses whether the relation between strategy disclosure and cost of capital in family firms is moderated by the proportion of women directors (Hypothesis 2). The coefficient associated with the three-way interaction term is negative and statistically significant (coeff. = -0.84, p-value < 0.05), thus providing empirical support to our second hypothesis. Accordingly, the adverse effect of family firm status on the strategy disclosure-WACC relationship seems to be mitigated by the proportion of women directors. The magnitude of such a regression coefficient is so high that the effect of strategy disclosure on WACC in family firms turns negative once the percentage of women on the board of directors reaches the level of 36%. This means that for family firms the SDI-WACC relationship depends on the percentage of women directors, its slope being  $-0.241 + 0.551 - 0.840 \cdot \text{Women directors}$ . Thus, as Figure 2b

shows, the estimated line presents a positive slope when women directors count for less than 36% of the board size (representing the so-called tokens) and a negative slope when the women directors' proportion in the board is above 36% (reaching a critical mass). Indeed, when we translate this percentage into the number of women directors (that is, when we calculate 36% of the average board for companies with a family firm status), we find that, on average, the critical mass is obtained when at least three women sit on the board of directors. The percentage of cases in which the critical mass of women is reached in the whole sample is 5.4%, and almost 8% when we restrict it to the family firms only, revealing that this situation rarely occurs.

### ***5.1. Robustness checks***

Before turning to the discussion of our results, in this section we assess their robustness through some additional analyses. For the sake of brevity, we do not report here any output related to robustness checks, although any results or checks commented on are readily available upon request. More in detail, we have estimated several additional models with the aim of checking the consistency of our results and mainly their independence from those variables which can be affected by the discretion of researchers: SDI, family firm status, and women's involvement in the board of directors.

First, with respect to the index of strategy disclosure, we follow Cooke (1989) to compute a rescaled SDI (labelled %SDI) by dividing the scores by the total number of items. The corresponding %SDI ranges from 0%, which means that the company does not disclose strategy information, to 100%, a situation that characterizes highly transparent companies, i.e., those that fully disclose their strategy information. Results are supported.

Second, instead of using the canonical threshold of a 10% holding to identify companies with a family firm status, we re-test our model by using a stricter threshold, that is 20% (see, for

example, Faccio and Lang, 2002; La Porta et al., 1999). Results obtained with this more restrictive threshold (even though it is mainly used in studies that focus on private companies) are in line with those previously presented.

Third, the involvement of women directors is assessed through a different proxy. Indeed, rather than using the percentage of women directors, we use a dummy variable that takes value 1 if the women directors reach a critical mass (i.e., if more than two women sit on the board), and 0 otherwise (i.e., if the number of female directors is 0, 1 or 2). Once again, the use of this proxy does not seem to alter our evidence, as the magnitude of coefficients, their signs and significance remain qualitatively similar, proffering additional support to our hypotheses.

## **6. Discussion and conclusion**

The findings of this study contribute to the literature on gender diversity on the boards of family firms (Barret and Moores, 2020; Mubarka et al., 2022). In line with a SEW perspective, which characterizes family firms with respect to their non-family counterparts (Gómez-Mejía et al., 2007; Gómez-Mejía et al., 2011), we advance the notion that this characteristic influences the effectiveness of strategy information disclosed to the public. Our findings suggest that financial stakeholders' beliefs and expectations about the role of strategy disclosure depend on the family firm status of companies disclosing strategy information. Moreover, relying on social construction theory, in line with a supply-side perspective about gender stereotypes at work (Heilman, 2012; Ryan et al., 2011), for explaining our findings about the proportion of women on the board of family vs non-family firms, we advance the theory that financial stakeholders like investors and creditors ascribe different stereotypical attributes to women appointed to those boards.

In line with previous studies (Botosan 1997; Kothari et al., 2009; Sieber et al., 2014), our data analysis shows, as a general result, that the disclosure of strategy information helps investors

to better assess the economic risk of their investment (Elliot and Jacobson, 1994) leading them to require a lower return. However, this result is contingent upon the ownership type of the business, as our findings show that the family firm status negatively moderates the strategy disclosure-cost of capital relationship. We suggest that family firms, which are assumed to pursue non-economic goals and to preserve SEW (Gómez-Mejía et al., 2007), are associated with higher costs and lower benefits of strategy disclosure by investors and creditors. The beliefs and expectations of these stakeholders thus translate into a higher cost of capital for family firms.

When considering the role of women's involvement in the board, we find that the interaction term between SDI and the proportion of women directors is not statistically significant. This result seems to suggest that the proportion of women directors does not moderate the SDI-WACC relationship evenly in family and non-family firms.

A more nuanced picture, instead, emerges when considering the proportion of women directors in the specific context of family firms: their presence, indeed, ameliorates the negative effect that the family firm status has on the relationship between strategy disclosure and cost of capital. This evidence paves the way for more fine-grained considerations. The involvement of women directors is beneficial for family firms in terms of effectiveness of strategy disclosure, as an increasing number of women directors translates for family firms into a smaller increase in the cost of capital, compared to similar non-family firms. Interestingly, the emergence of a critical mass (the predictions suggest at least three women directors in the board of family firms) offsets the negative effects of the family firm status to the extent that, even for this group of companies, strategy disclosure contributes to a reduction of the cost of capital. Such a pattern provides additional empirical support to the studies by Torchia et al. (2011), Nadeem (2020) and Bannò et

al. (2022), which claim that achieving a critical mass of women directors changes the board dynamics and contributes to improving its functioning (Francoeur et al., 2008).

In our study, building on the social construction theory, we advance the theory that the specific traits ascribed to women are perceived to be impactful depending on whether or not women are appointed as directors on the boards of family versus non-family firms. In line with our hypothesis the negative effect of family firm status on the strategy disclosure-cost of capital relationship is mitigated by the presence of women directors. We argue that, in non-family firms, women directors are stereotyped by financial stakeholders as confined to certain roles, mainly contributing to the social agenda of the business but not to strategy topics (Campopiano et al., 2023). Instead, when women directors are appointed to the board of a family firm, beliefs and expectations by these financial stakeholders change. Rather than limiting the role of women in such top positions (Bannò et al., 2022; Ely, 1995), the social pressures related to gender-based and managerial-based stereotypes (Boulouta, 2013) lead, in the financial stakeholders' view, to a positive contribution of women directors in family firms. We interpret our finding suggesting that investors and creditors ascribe to women directors in family firms the ability and opportunity to prompt different ideas far from family-centered path-dependent approaches, thus counterbalancing the higher costs and lower benefits that they would attribute to family firm status. We explain this finding advancing the idea that financial stakeholders believe women directors help family firms reduce their rigid posture (Harrison and Klein, 2007), making them more flexible in confronting and changing ideas, thus reducing the risk of suboptimal investment decisions. Additionally, women directors can help to allay tensions between socioemotional and economic goals (Cruz et al., 2012; Samara et al., 2019), leading overall to a change in the perceptions of costs and benefits that make strategy disclosure effective.

In other words, family firms with a high proportion of women directors can experience, especially when a critical mass is reached, at least, a twofold benefit. First, women perceived as caretakers of family goals, are better suited to help family firms meet both business and family goals (Cruz et al., 2012). Second, women directors who, in family firms, are often positively associated with strategic planning and managerial control mechanisms, increase professionalization (Songini and Gnan, 2009) by preventing unmerited treatment of unqualified family members (Samara and Arena, 2017). Thus, having numerous women directors may serve as a positive signal to the market, affecting financial stakeholders' assessment of the strategy information disclosed by family firms compared to non-family firms.

In sum, our study shows that the external perception of family firm status and women's involvement in the board offers a more complex picture about the importance of SEW and social construction. Altogether, the discussion of our findings prompts the idea that SEW is not gender-neutral and should serve to communicate to family firms the need for recognition of women's contribution to family businesses, at least in the eyes of financial stakeholders, thus paving the way for future research.

### ***6.1. Theoretical contributions and practical implications***

This study contributes to three streams of literature: gender diversity, family business and corporate voluntary disclosure. First, we contribute to the literature on gender diversity, shedding new light on the contribution of women directors working on the board of family vs non-family firms (Nekhili et al., 2018; Samara et al., 2019). Indeed, our findings suggest that having a high proportion of women directors and, even more, reaching a critical mass of women directors in family firms, rather than in non-family firms, induces financial stakeholders to change the

evaluations of costs and benefits associated with strategy disclosure, thus influencing the cost of capital. This contributes to the broader debate on women's involvement in family firms (Maseda et al., 2022), offering a different view of the stereotypical traits ascribed to women directors, which usually experience some constraints on their role in such a top leadership position (Bannò et al., 2022). The novelty of our findings is that, at least in the view of financial stakeholders like investors and creditors, women directors can ameliorate the perceptions associated with family firms, which are assumed to be driven by SEW in strategy disclosure. Our results, in this sense, provide novel insights into the debate on women directors and their contribution to firm outcomes (e.g., Nielsen and Huse, 2010; Rao and Tilt, 2016; Terjesen et al., 2009).

Second, we advance a contribution to family business, as a gendered type of organization (Al-Dajani et al., 2014). Our contribution, in particular, shows that, in the eyes of investors and creditors, women directors in family firms can contribute in a way that counterbalances the high costs and low benefits of strategy disclosure that are ascribed to family firm status. Hence, our findings prompt us to discuss the notion that SEW is not gender-neutral and challenge the idea that it just relates to constraints imposed on women working in family firms.

Third, we contribute to the voluntary disclosure literature (Ali et al., 2007; Chen et al., 2008), and especially strategy disclosure outcomes (e.g., Schmid et al., 2014; Vural, 2018), by deepening the understanding of its effectiveness when governance contingency factors are at play (Nekhili et al., 2012). With respect to extant literature, we show that the interplay between different governance attributes (i.e., ownership and board composition) influences the effectiveness of voluntary disclosure (Ferreira and Rezende, 2007; Sieber et al., 2014).

Our study offers several practical implications that are relevant to different stakeholders. Our findings reveal that when firms make strategy information available to the public, financial

stakeholders, such as investors and creditors, can be influenced in their assessment about putting money into those companies in which family logics prevail. Their evaluations can change when incorporating the effect of women directors: thus, family owners should design more gender-balanced boards, as only when a critical mass of women is appointed, is the board able to overcome stereotypes (Bannò et al., 2022) and become particularly beneficial for the effectiveness of strategy disclosure. Indeed, more gendered boards contribute to the equal treatment of women directors and increase the participation of underrepresented groups in decision-making (Kumar and Zattoni, 2016; Seierstad, 2016), thus becoming vital for value-creating boards (Huse, 2018).

Regulators and policy makers should encourage higher levels of strategy disclosure as, in general, it proves effective. However, in light of our findings that show the detrimental effect of family firm status, we suggest that the intervention of policy makers should regard measures and/or incentives to counterbalance the potential drawbacks of strategy disclosure in family firms but also to further promote and endorse legislation aimed at increasing women's representation on the board (e.g., Nekhili et al., 2020), since this can influence the effectiveness of strategy disclosure when a critical mass is achieved.

## ***6.2. Limitations and future research directions***

This study is not free from limitations, although these can pave the way for further research. First, it would be relevant to discuss whether, in addition to the proportion of women directors in family firms, their contribution, complemented by human capital variables such as the education level or previous professional experiences (Campopiano et al., 2017; D'Allura et al., 2021; Gull et al., 2018), may have a different impact on the effectiveness of strategy disclosure. In other words, qualifications of directors and their expertise may determine the quality of reporting and, thus, its

effectiveness. In view of this study's findings, investigating also the role and influence of women appointed as CEO or chairperson might provide novel insights on boards' decision-making dynamics (Kahn and Vieito, 2013; Martin et al., 2009).

Second, our study does not distinguish between women directors who are members of the controlling family and those who are not. Recent research in this regard emphasizes women as a heterogeneous group and that differences among them in terms of family ties must be considered (Garcia-Meca et al., 2022). Indeed, women directors with family ties can share common values and non-economic goals, as they have been socialized within the family since childhood (Cruz et al., 2010; Garcia-Alvarez et al., 2002). Accounting for these differences might enact gender stereotypes in the eyes of financial stakeholders, who would consider that belonging to the family could affect the way women directors contribute or not to the family agenda. Future research might investigate whether the women directors' status, being a family member or not (Bauweraerts et al., 2022; Campopiano et al., 2019), might change the effectiveness of strategy disclosure, designing a research study focused on family firms only, thus contributing to the debate on the use of social construction theory in the family firm domain.

Third, we did not consider the heterogeneity of family firms, given that this is the first study on the topic. Further research may consequently assess to what extent the percentage of family ownership, the number of family members involved on the board of directors (Vural, 2018), the number of family generations involved in the business (Clemente-Almendros et al., 2021; Sciascia et al., 2014; Sreih et al., 2019), the family level of commitment (Koropp et al., 2013), the CEO's features (Ali et al., 2007) or the specific SEW dimensions (Berrone et al., 2012) may affect the relationship between strategy disclosure and the cost of capital.

Fourth, our sample consists of companies listed on Euronext Growth Milan and is thus composed of Italian firms only. Further research may, therefore, shed new light on how the effect of gender-diverse boards may vary with the context or even whether country-related features may alter, if at all, our evidence. In the spirit of Vena et al. (2020), future studies could evaluate, if and how countries' cultural dimensions interact with governance structure to affect the way disclosure influences the cost of capital.

Fifth, considering the time horizon, our study focuses only on year end 2018, while a longitudinal analysis may allow for both appreciation of the current level of disclosure and also its pattern over time, thereby providing a better setting for examining the effectiveness of strategy disclosure. Moreover, leveraging on time trends, further research may assess whether the effects we find persist over time or whether, on the other hand, strategy disclosure influences the cost of capital only in the initial years.

In conclusion, further analyses may also be necessary to directly measure the costs and benefits of strategy disclosure to assess whether there is an optimal level of strategy disclosure, an aspect that our study has not directly addressed. Indeed, while we focus on those attributes that alter the strategy disclosure-cost of capital relationship, we do not directly assess whether there is a level of disclosure considered to be optimal by companies and desirable by financiers.

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Figure 1. Family firm status, proportion of women directors and strategy disclosure effect on the cost of capital

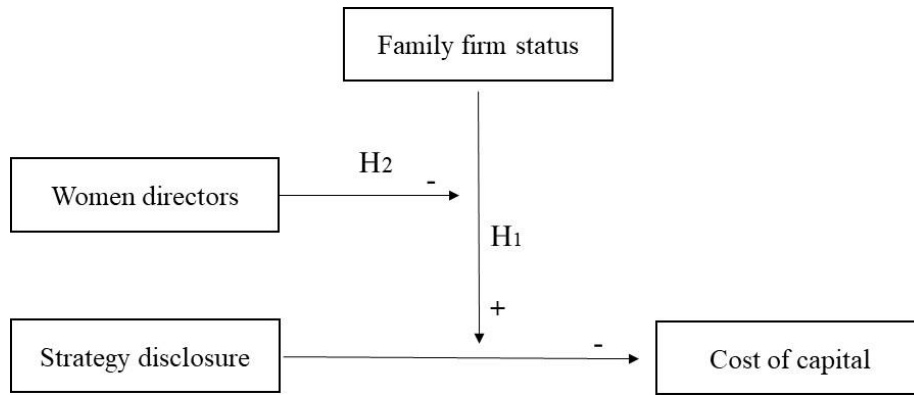
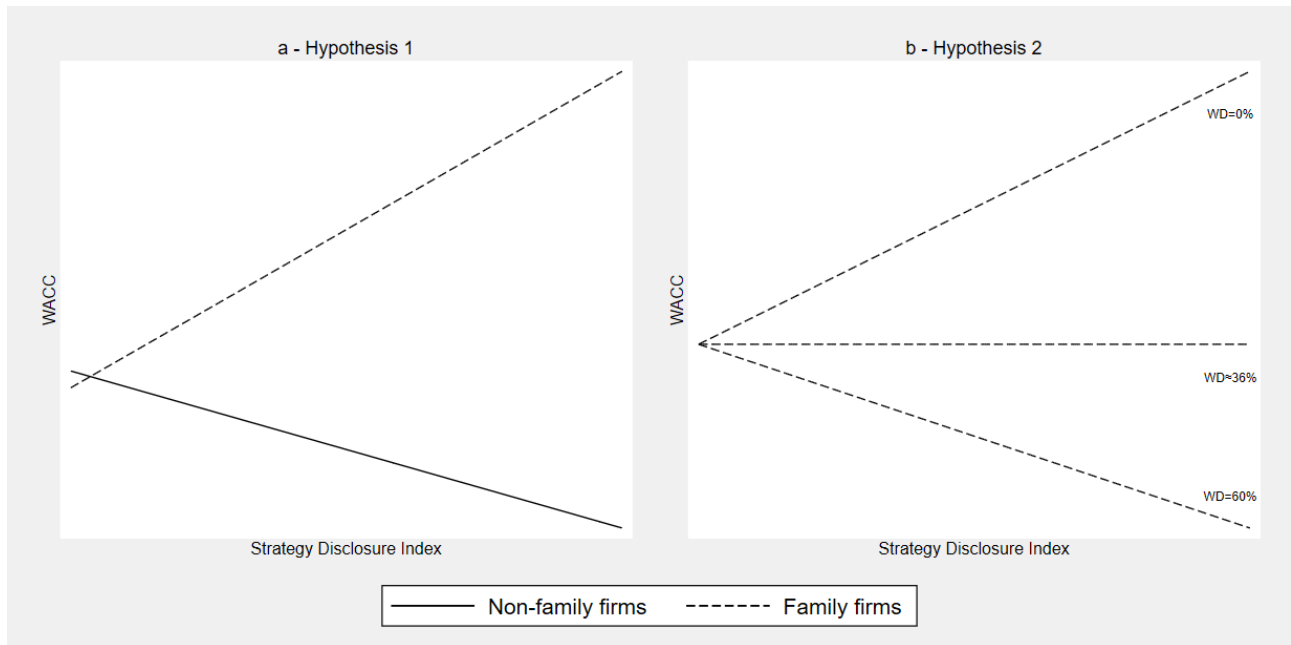


Figure 2. Hypotheses and findings



The figure shows the results related to our two hypotheses. The subplot on the left (a) analyzes the relationship between strategy disclosure (SDI) and cost of capital (WACC) in non-family (solid line) and family firms (dashed line). The subplot on the right (b) shows how, for family firms, the SDI-WACC relationship varies when the percentage of women directors (WD) is taken into account.

Table 1. Sample descriptive statistics in terms of industries

<b>Industry</b>	<b>Percentage of firms</b>	<b>Average market capitalization</b>	<b>Average WACC</b>	<b>Average SDI</b>
Energy	10.8%	23.81	5.67	11.10
Manufacturing/industrial	38.7%	69.65	7.60	10.06
Media	16.1%	32.87	9.05	9.47
Services	17.2%	43.00	8.25	10.19
Technology	17.2%	30.40	8.04	11.19

Table 2. List of voluntary strategy disclosure items

<b>I. Corporate Background Information</b>	
a. Brief history of company	<i>"Founded in 2015 - bringing with it over 15 years of experience of its founding shareholders [...] the company has become the major player in the Milan residential property development market"</i>
b. Corporate structure	We considered the corporate organization/structure chart included in the financial report and/or the corporate website.
c. General description of business/activities	<i>"Implementing urban redevelopment projects involving the purchase [...] demolition and the building of new residential complexes"</i>
d. The management organization chart	We considered the management organization chart included in the financial report and/or the corporate website.
<b>II. Corporate Strategy Information</b>	
a. Statement of corporate goals or objectives	<i>"Communication strategy and production is the new mission of our company: to support the business of companies with strategic communication plans, creativity and communication assets"</i>
b. Actions taken during the year to achieve the corporate goals	<i>"With a view to supporting the Group's development and growth [...] the Company entered into a new medium/long-term credit line facility agreement [...] to support their ongoing development and market growth"</i>
c. Macro-economic scenario discussed	<i>"Fiscal year 2018 was characterised by continuing global growth [...] The Eurozone grew by only 1.2% falling behind more dynamic and flexible economies, such as the USA and China"</i>
d. Preparation of a strategic/industrial plan	<i>"Adjustments of the 2018-2021 business plan adapting the reward system of the company"</i>
<b>III. Business Strategy Information</b>	
a. Main products	<i>"The company operates in the B2B chemical pharmaceutical field. In particular, the company operates [...] in the sector of generic drugs [...] of zoo technical products [...] main products of the company are veterinary medicines"</i>
b. Main markets	<i>"The company's main markets remain Europe, [...], United States that are [...], and China that [...]"</i>
c. Competitive environment discussed	<i>"The company has outlined a strategy that allows it to hold a position on the market with clear competitive advantages over competitors of the reference market. This strategy [...]"</i>
d. Regulation and legislation affecting business discussed	<i>"The turnover and the result were positively influenced by the introduction of the IFRS 15 accounting principle [...]"</i>
e. Distribution of the customers (by type or by geographic area)	<i>"The following table shows the distribution of revenues by geographical area achieved in 2018 compared to 2017"</i>
f. Description of the brands/trademarks	<i>"The company brands' portfolio includes owned brands such as [...] and licensed brands such as [...]"</i>
g. Quantitative and non-financial information about production or sales (e.g., number of tons produced)	<i>"Production in energy has increased by about 1.7 Gwh"</i>
h. Competitor analysis	<i>"The competitive scenario of the company in the medium / high segment is characterized by the presence of a few players both in Italy and [...]"</i>
i. Market share analysis	<i>"The following graphs show the market share analysis of the firms"</i>
<b>IV. Research and Development Information</b>	
a. Company policy on research and development	<i>"The concept of R&amp;D is an integral component of the more general Corporate Culture of the firm. In fact [...] dedicated resources are allocated to research and development in order to offer continuously innovative product"</i>
b. R&D expenses	<i>"During 2018, R&amp;D expenses exceeded 3% of turnover"</i>
c. Number employed in research and development	<i>"The development of technological innovations was made possible thanks to an R&amp;D staff of over 60 employees"</i>

Table 3. Descriptive statistics and correlations

Variables	Correlations													
	Mean	St Dev	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
WACC	(1)	7.82	2.89	1.00										
Mkt cap	(2)	47.45	60.02	0.04	1.00									
Leverage	(3)	3.89	3.29	-0.32**	-0.13	1.00								
FRQ	(4)	0.06	0.06	0.23*	-0.05	-0.04	1.00							
ROS	(5)	0.07	0.86	-0.11	0.10	-0.04	-0.16	1.00						
Growth	(6)	0.87	2.75	0.19 <sup>†</sup>	0.06	0.19 <sup>†</sup>	0.29**	-0.01	1.00					
Innovative firms	(7)	0.37	0.48	0.18 <sup>†</sup>	-0.24*	-0.08	0.19 <sup>†</sup>	0.11	0.04	1.00				
Asset tangibility	(8)	0.16	0.17	-0.26*	0.09	0.04	-0.09	-0.15	0.07	-0.25*	1.00			
SDI	(9)	10.29	2.27	-0.22*	0.03	0.02	0.00	0.04	-0.11	-0.01	0.03	1.00		
Family firm status	(10)	0.55	0.50	-0.03	0.09	0.13	-0.19 <sup>†</sup>	-0.09	0.00	-0.16	0.23*	-0.03	1.00	
Women directors	(11)	0.14	0.15	0.15	-0.10	-0.14	-0.01	-0.12	-0.03	0.00	0.07	0.05	0.08	1.00

Note: The Table shows mean and standard deviation of the variables used to assess the effectiveness of Strategy Disclosure Index (SDI) and the correlations among them. We thus have: WACC (%)—the weighted average cost of capital; Mkt cap (in EUR mln)—the firm's market capitalization as a proxy of size; Leverage—a debt indicator computed as the ratio between total assets and total equity; FRQ— the proxy for financial reporting quality proposed by Ball and Shivakumar (2006); ROS—return on sales, a profitability indicator, computed as the ratio between earnings before interest and taxes (Ebit) and sales; Growth—the average of percentage of growth in sales over the last three years; Asset tangibility—calculated as the net value of property, plant and equipment divided by total assets; Innovative firms: dummy variable taking value 1 if the firm is an innovative one and 0 otherwise; Family firm status: dummy variable taking value 1 for family firms, 0 otherwise; Women directors: calculated as the ratio between number of women on the board and the size of the board; SDI— the aggregate index of the voluntary strategy information released by the company.

N=93 observations

<sup>†</sup>, \*, \*\*, and \*\*\*, respectively, denote statistical significance at the 10%, 5%, 1% and 0.1% confidence levels.

Table 4. Results of regressing cost of capital on strategy disclosure, family firm status and proportion of women directors

	WACC (1)	WACC (2)	WACC (3)	WACC (4)	WACC (5)	WACC (6)	WACC (7)	WACC (8)
Mkt cap (mln)	0.043 (0.861)	0.134 (0.589)	0.137 (0.588)	0.131 (0.605)	0.228 (0.356)	0.123 (0.617)	0.221 (0.361)	0.038 (0.880)
Leverage	-0.261*** (0.000)	-0.259*** (0.000)	-0.274*** (0.000)	-0.265** (0.001)	-0.257** (0.001)	-0.265** (0.001)	-0.257** (0.001)	-0.248** (0.001)
FRQ	-0.001 (0.164)	-0.001 (0.110)	-0.001 <sup>†</sup> (0.067)	-0.001 <sup>†</sup> (0.068)	-0.001 (0.171)	-0.002 <sup>†</sup> (0.061)	-0.001 (0.146)	-0.002 <sup>†</sup> (0.057)
ROS	-0.622** (0.001)	-0.608** (0.001)	-0.598** (0.003)	-0.536** (0.008)	-0.586** (0.003)	-0.526** (0.009)	-0.577** (0.004)	-0.524* (0.011)
Growth	0.258** (0.007)	0.231* (0.015)	0.224* (0.031)	0.226* (0.031)	0.216* (0.024)	0.226* (0.030)	0.217* (0.025)	0.233* (0.020)
Innovative firms	0.720 (0.220)	0.691 (0.241)	0.753 (0.219)	0.710 (0.247)	0.846 (0.165)	0.719 (0.246)	0.854 (0.165)	0.551 (0.405)
Asset Tangibility	-2.940* (0.045)	-2.951* (0.030)	-3.223* (0.028)	-3.311* (0.025)	-3.964** (0.009)	-3.160* (0.034)	-3.819* (0.013)	-3.592* (0.031)
SDI		-0.206 <sup>†</sup> (0.070)	-0.205 <sup>†</sup> (0.070)	-0.219 <sup>†</sup> (0.059)	-0.278* (0.014)	-0.227* (0.040)	-0.286* (0.011)	-0.249* (0.013)
Family firm status			0.626 (0.328)	0.566 (0.385)	0.580 (0.350)	0.581 (0.373)	0.594 (0.340)	0.611 (0.316)
Women directors				2.085 (0.359)	1.948 (0.397)	2.198 (0.332)	2.054 (0.371)	2.619 (0.237)
SDI * Family firm status					0.693* (0.019)		0.690* (0.020)	0.551* (0.031)
SDI * Women directors						-0.203 (0.485)	-0.191 (0.502)	0.160 (0.651)
SDI * Family firm status * Women directors								-0.840* (0.035)
Constant	8.731*** (0.000)	10.494*** (0.000)	10.089*** (0.000)	10.039*** (0.000)	10.272*** (0.000)	10.119*** (0.000)	10.347*** (0.000)	10.670*** (0.000)
No._obs	93	93	93	93	93	93	93	93
R2	0.2923	0.3154	0.3245	0.3346	0.3850	0.3384	0.3884	0.4292
R2_adj	0.1962	0.2127	0.2134	0.2152	0.2652	0.2095	0.2596	0.2999
F test	8.11***	6.75***	5.88***	5.73***	6.23***	5.48***	6.00***	6.38***

<sup>†</sup> p<0.1, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001