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Entrepreneurial by Design: How Organizational Design Affects Family and Non-family Firms' Opportunity Exploitation

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ABSTRACT Opportunity exploitation is a key aspect of the corporate entrepreneurship process and is particularly important to maintain a family firm through multiple generations. Drawing on an organizational design perspective, we investigate opportunity exploitation in family versus non-family firms. The empirical analyses on survey data from a sample of 224 Italian firms reveal that family firms exploit significantly fewer opportunities than non-family firms, and this result is fully mediated by the organization of their TMT. Our findings show that how family firms organize is crucial for opportunity exploitation, thus extending and enriching prior corporate entrepreneurship research, highlighting the importance of bringing an organizational design perspective to corporate entrepreneurship and family business studies.

Keywords: corporate entrepreneurship, family business, opportunity exploitation, organizational design, top management team

INTRODUCTION

Corporate entrepreneurship is the process through which firms innovate, set up new businesses, and transform themselves (Guth and Ginsberg, 1990; Sharma and Chrisman, 1999; Teng, 2007; Zahra, 1991, 1993; Zahra et al., 1999) by actively creating and exploiting opportunities (Ireland et al., 2009; Teng, 2007). Product innovation, process innovation, and entering new businesses are just some examples of corporate entrepreneurship (Covin and Slevin, 1991; Miller, 1983; Zahra et al., 2000). Through corporate entrepreneurship, firms can positively affect their survival, growth, wealth, and competitive advantage (Bhardwaj et al., 2006; Bojica and Fuentes, 2012; Dess et al., 2003;

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Zahra, 1991, 1993). It is therefore seen as vital to the long-term prosperity of family firms (Kellermanns and Eddleston, 2006; Uhlaner et al., 2012).

The importance of corporate entrepreneurship to family firms' prosperity has spurred research investigating differences between family and non-family firms (e.g., Duran et al., 2016; Kellermanns and Hoy, 2017; Zahra et al., 2004), as well as differences among family firms (Eddleston et al., 2012; Kellermanns and Eddleston, 2006; Minola et al., 2016). However, the findings are mixed (i.e., Kellermanns and Eddleston, 2006; Naldi et al., 2007; Patel and Fiet, 2011; Ratten et al., 2017; Sciascia et al., 2012; Zahra et al., 2004; Zellweger and Sieger, 2012), which may be due to the field's predominant focus on opportunity recognition (also labelled opportunity formation, and creation), which is just one side of the corporate entrepreneurship coin (Barney et al., 2018; Foss et al., 2013). Indeed, there is a difference between *recognizing* an opportunity and taking action to *exploit* that opportunity (McMullen and Shepherd, 2006).

Opportunity exploitation refers to the deployment of actions, resources, and investments to exploit opportunities that have previously been formed (Cha and Bae, 2010; Eckardt and Shane, 2003; Foss and Klein, 2012; Foss et al., 2013; Shane and Venkataraman, 2000). Thus, opportunity formation[1] and opportunity exploitation are two key aspects of corporate entrepreneurship (Barney et al., 2018). For example, once a firm has recognized an opportunity to develop a new product (i.e., opportunity formation), it must then decide whether to take action to exploit that opportunity, which often includes identifying resources and investments, and making decisions related to production, marketing, and sales. To date, the scarce articles that focus on family firms' opportunity exploitation are largely conceptual (e.g., Goel and Jones, 2016; Sharma and Salvato, 2011). We therefore lack understanding of what drives opportunity exploitation in the context of family firms, despite recent organizational design research stressing the importance of capturing a firm's ability to *realize* entrepreneurial opportunities (Foss et al., 2013, 2015).

Organizational design is expected to be related to a firm's exploitation of opportunities because it reflects how an organization and its top management team (TMT) are structured to realize its goals, and how different structures are particularly suitable for the performance of certain activities (Nadler and Tushman, 1997; Russo and Harrison, 2005). Specifically, *organizational design* is defined as the roles, processes, and structures created by an organization to establish accountability and responsibility, and to develop and implement its strategies (Greenwood and Miller, 2010). As such, it is seen as the architecture of an organization that calls for a configurational approach that considers the holistic, interdependences of a firm's structural elements rather than simply studying each element in isolation (e.g., Ennen and Richter, 2010; Foss et al., 2013; Greenwood and Miller, 2010). The underlying principle of organizational design is that it is only possible to understand the actual effect of the whole organization (i.e., the joint effect of the design of its organizational elements) on firm behavior by simultaneously considering the interdependent elements (Ennen and Richter, 2010; Thompson, 1967). Key organizational design elements expected to affect a firm's opportunity exploitation are: delegation, incentives, coordination, communication, formalization, and organization size (Foss et al., 2013, 2015). Thus, although contingency theory recognizes that there is no 'one best way to organize' (e.g., Galbraith, 1973; Mintzberg, 1979; Shetty and Carlisle, 1972),

some organizational designs may be more conducive to opportunity exploitation than others.

Accordingly, organizational design may help to elucidate family firms' entrepreneurial behavior. For example, in comparison to non-family firms, family firms tend to be more centralized and CEO-centric (Carney, 2005; Feltham et al., 2005; Martin et al., 2016), with less incentive compensation (De Massis et al., 2016; Neckebrouck et al., 2018), and less formalization (Stewart and Hitt, 2012; Zhang and Ma, 2008). Research has long recognized that family ownership is associated with unique governance practices (Carney, 2005; König et al., 2013; Lubatkin et al., 2007; Schulze and Gedajlovic, 2010) and the desire for strong control over decision-making that can limit the top management team's participation (Gomez-Mejia et al., 2001, 2007; Kammerlander and Ganter, 2015; Schulze, 2016). Thus, if family firms tend to have a different organizational design than non-family firms, this may explain why they are less entrepreneurial. Further, differences in organizational design among family firms may explain why some family firms exploit more opportunities than others.

In this paper, we thus aim to answer the following research questions: (i) *Do family and non-family firms differ in the extent to which they exploit opportunities?* and (ii) *Can differences in opportunity exploitation be explained by the organizational design of family firms and non-family firms?* Accordingly, we extend organizational design principles (e.g., Galbraith, 1974; Hambrick and Mason, 1984) to the study of corporate entrepreneurship by exploring whether family firms' propensity to design a more centralized organizational structure explains why their opportunity exploitation differs from that of non-family firms. In so doing, and consistent with the principles of organizational design, we follow the suggestions of previous studies (Ennen and Richter, 2010; Foss et al., 2013; Jansen et al., 2005) and adopt a configurational approach, which allows us to capture the interplay and complementarities among different organizational design elements rather than study single elements in isolation (Jensen, 1998; Thompson, 1967). This approach has been adopted in management research (e.g., Burns and Stalker, 1961; Gruber et al., 2010; Mendelson, 2000; Miller, 1981, 1996; Mintzberg, 1979; Weber, 1947), as 'a study of configurations leads to insights that would otherwise be unattainable or that would at least be out of the scope of research that focuses only on the effects of individual elements' (Gruber et al., 2010, p. 1338). Moreover, studies focusing on opportunity exploitation (e.g., Foss et al., 2013) highlight the specific need to study organizational design elements in the form of configurations to further our understanding of organizations' ability to exploit opportunities.

We build on Ireland et al.'s (2009) idea of a 'pro-entrepreneurial organizational architecture' and propose that a *participative TMT configuration* (i.e., a TMT where organizational elements are designed so that all members participate in decision-making in a coordinated way) promotes opportunity exploitation, while a more *CEO-centric TMT* configuration hinders it. While we theorize the existence of two TMT configurations, the cluster analysis of the six organizational design elements (i.e., delegation, incentives, coordination, communication, formalization, and organization size) unexpectedly revealed the presence of three TMT configurations[2]: the CEO-centric TMT organizational configuration, and two participative organizational configurations that we label *integrated TMT* and *incentive-based TMT*, which differ in the mechanisms used to align TMT members' objectives with those of the CEO (i.e., coordination and communication

mechanisms in the integrated TMT configuration, and incentives in the incentive-based TMT configuration).

We contribute to the literature by first demonstrating differences in how family and non-family firms tend to configure their TMTs. In turn, we find that these TMT configurations explain why family firms exploit fewer opportunities than non-family firms; family firms have a strong tendency to adopt a CEO-centric TMT. Moreover, we contribute to research on family firm heterogeneity by going beyond the vast amount of research that focuses on their differences in terms of family ownership and management (Revilla et al., 2016; Sciascia and Mazzola, 2008), by showing that family firms can vary in their organizational design which, in turn, affects their opportunity exploitation. Specifically, we demonstrate that although family firms tend to have a CEO-centric TMT, those with a more participative TMT configuration have the same level of opportunity exploitation as non-family firms. As such, our study not only contributes to research explaining differences between family and non-family firms' corporate entrepreneurship, but also differences among family firms. Investigating how family firms configure their TMT thus sheds light on the mixed findings of previous corporate entrepreneurship research: if they do not organize their TMTs with a participative configuration, as non-family firms tend to do, their opportunity exploitation will suffer.

THEORETICAL BACKGROUND AND HYPOTHESES

Opportunity Exploitation as a Key Aspect of Corporate Entrepreneurship

Corporate entrepreneurship refers to activities designed to revitalize and rejuvenate the business through the formation and exploitation of entrepreneurial opportunities (Ireland et al., 2009), and has been linked to firm distinctiveness, growth, and profitability (Eddleston et al., 2008; McGrath, 2001; Zahra et al., 2004). Corporate entrepreneurship is realized when a firm actively forms and then exploits opportunities (Carmeli and Halevi, 2009). As such, for a business to accrue the possible benefits of corporate entrepreneurship, it must take *action* to exploit opportunities that are deemed worthy of pursuit (McMullen and Shepherd, 2006).

Consistent with this view, recent research has highlighted that opportunity formation is just one aspect of corporate entrepreneurship (Barney et al., 2018), and previously formed opportunities are not necessarily exploited since this requires decision-making, taking risks, and dedicating resources (Choi and Shepherd, 2004; Foss et al., 2015). Research on corporate entrepreneurship acknowledges the importance of opportunity exploitation in increasing a firm's innovation capacity and performance (Bojica and Fuentes, 2012; Rauch et al., 2009). The ability to exploit opportunities may be particularly important to sustain the performance of family firms, since they are often mired in tradition, resistant to change, and anchored to the status quo (e.g., Kellermanns and Eddleston, 2006; Strebel, 1996; Sydow et al., 2009). While some studies have identified the determinants of opportunity formation in family firms (Patel and Fiet, 2011), little is known about the *exploitation* of previously formed opportunities in family firms, with only a few articles, mainly conceptual, having touched on this topic (e.g., Goel and Jones,

2016; Sharma and Salvato, 2011). Research is therefore needed to understand what leads family firms to take entrepreneurial action and why opportunity exploitation may vary between family and non-family firms. Accordingly, we first present our baseline hypothesis comparing opportunity exploitation of family and non-family firms. We then extend organizational design principles to the study of family firm opportunity exploitation by proposing that the way family and non-family firms tend to organize their TMT explains their difference in opportunity exploitation.

Family Firms and Opportunity Exploitation

Family business research has traditionally explored the distinctive behavior of family firms vis-à-vis their non-family counterparts (e.g., Kellermanns and Hoy, 2017). However, regarding corporate entrepreneurship the findings have been mixed. While some studies comparing family and non-family firms' corporate entrepreneurship show that family firms have an advantage, others show that they have a disadvantage (i.e., Kellermanns and Eddleston, 2006; Naldi et al., 2007; Patel and Fiet, 2011; Ratten et al., 2017; Sciascia et al., 2012; Zahra et al., 2004; Zellweger and Sieger, 2012). For example, although some research demonstrates that family firms have an advantage over nonfamily firms in recognizing opportunities (Patel and Fiet, 2011), other research contends that family firms are more conservative, and therefore, display less corporate entrepreneurship (Morris, 1998). However, in acknowledging the tendency for research to compare family and non-family firms' recognition and exploration of opportunities, Sharma and Salvato (2011) called for studies to focus on opportunity exploitation. They further stressed the need for studies to investigate why family firms differ in their ability to exploit opportunities given mixed findings in the literature regarding their corporate entrepreneurship. Accordingly, there is a need to better understand differences in family and non-family firm opportunity exploitation since this is an essential element of corporate entrepreneurship (e.g., Choi and Shepherd, 2004; Ireland et al., 2009; Shane, 2001; Teng, 2007) that is not yet well understood (Goel and Jones, 2016; Sharma and Salvato, 2011).

Opportunity exploitation requires the willingness to take action to pursue an opportunity (Foss et al., 2015). As such, it commonly implies taking risks by committing resources to projects whose results are unknown (Bojica and Fuentes, 2012; Covin and Slevin, 1991; Miller, 1983). However, these risks may prevent family firms from undertaking opportunity exploitation. Family firms tend to be conservative and reluctant to change (Beckhard and Dyer, 1983). They are often unwilling to take the risks associated with entrepreneurship (Zahra, 2005; Zahra et al., 2004), such as investing in new ventures (Cabrera-Suarez et al., 2001), or pursuing new strategies (Levinson, 1987). Family firms are often disinclined to change because the family has a strong emotional attachment to the firm's original business model and strategies (Kellermanns and Eddleston, 2006; Zahra, 2005). That is, family firms often feel pressure to stay true to their legacy and founding conditions, whereas non-family firms experience greater freedom to make wholesale changes to their business model and exploit new opportunities (Goel and Jones, 2016). Scholars also suggest that family firms may exploit less opportunities because they do not want to jeopardize the family's wealth, thus causing them to invest less in entrepreneurial endeavours than non-family firms (Goel and Jones, 2016; Naldi et al., 2007). Our baseline hypothesis is thus:

Hypothesis 1: Family firms exploit fewer opportunities than non-family firms.

Family Firms and TMT Organization

Organizational design captures the structure and coordination of a firm, and thus includes elements associated with delegation, incentives, coordination, communication, formalization, and organization size (Burton and Obel, 1998; Foss et al., 2015). Accordingly, organizational design research typically focuses on the structural configuration of firm governance and leadership, particularly as they relate to the TMT (e.g., Daspit et al., 2018; Ma and Seidl, 2018), since firms are generally considered to be a reflection of their TMT (Cyert and March, 1963; Hambrick and Mason, 1984). To the best of our knowledge, an organizational design perspective has not yet been applied to family firms despite the fact that research has long recognized their unique governance practices stemming from family control which also reflect common organizational design elements such as formalization (Lansberg, 1983; Lubatkin et al., 2005; Stewart and Hitt, 2012), communication (Kellermanns and Eddleston, 2007), and compensation/incentives (Alessandri et al., 2018; Gomez-Mejia et al., 2003). Thus, family firms' unique organizational design, as reflected by their TMT organizational configuration, may explain why, on average, they are less entrepreneurial than non-family firms. Indeed, Ireland et al. (2009) suggested that firms that fail to develop an organizational architecture characterized by a participative structure and aligned incentives will struggle to realize entrepreneurial opportunities. We therefore propose that the distinct TMT configuration of family and non-family firms explains why family firms exploit fewer opportunities than non-family firms.

Scholars have dedicated substantial efforts to studying TMTs. However, they mainly focus on TMT members' demographic characteristics, that is, TMT composition in terms of age, nationality, language, gender, and education (e.g., Bantel and Jackson, 1989; Boeker, 1997; Eisenhardt and Bourgeois, 1988). The vast majority of studies on family firms focus on TMT diversity in relation to family involvement (Alessandri et al., 2018; Vandekerkhof et al., 2017) instead of applying organizational design elements to identify whether they have a unique TMT configuration. In addition, research has tended to study only organizational design elements in isolation, without considering the main elements in concert (Ennen and Richter, 2010; Foss et al., 2013; Jansen et al., 2005). For example, studies have considered the allocation of decision-making authority within the TMT (e.g., Ling et al., 2008; Oehmichen et al., 2015), the use of incentives (e.g., Baixauli-Soler and Sanchez-Marin, 2011; Carpenter and Sanders, 2002), and the TMT size (e.g., Haleblian and Finkelstein, 1993). Yet, understanding the complexity of firms and their TMT requires a holistic approach to their organizing that considers all its interdependent parts and elements (Jensen, 1998; Thompson, 1967) (e.g., strategy, structure, coordination mechanisms, organization of work, delegation). This entails identifying the interplay and complementarities among the diverse organizational design elements (Ennen and Richter, 2010), which can be captured through the adoption of a configurational approach (Gruber et al., 2010; Guedri and McGuire, 2011; Mendelson, 2000).

In general, the TMT configuration depends on the managerial style and behavior of the CEO who leads the TMT (Lewin and Stephens, 1994; Mintzberg and Waters, 1985). For example, the CEO is directly responsible for selecting, rewarding, and organizing the TMT, as well as deciding how much decision-making authority to delegate to them (Ling et al., 2008). Whether a CEO decides to make decisions more autonomously or to decentralize decision-making by involving the TMT is a key factor that appears to link organizational design elements (Burton and Obel, 1998; Dessein, 2002; Foss et al., 2013; Ling et al., 2008). For instance, greater decentralization is often associated with higher levels of coordination and communication to ensure that the TMT is guided by the objectives of the CEO and the firm (Dessein, 2002). As decentralization increases, it is also likely that incentives and formalization mechanisms are put in place to foster the TMT's commitment and help shape their decision making (Alonso et al., 2008; Dessein, 2002; Mintzberg, 1979). A larger TMT is also associated with greater decentralization, since delegating decision-making authority to the TMT reduces the CEO's information overload (Colombo and Delmastro, 2008). Conversely, when the CEO centralizes decision-making authority, there is less need to create a highly structured TMT. Rather, the CEO makes most strategic decisions and the TMT is charged with monitoring the operational processes of those decisions (Mintzberg, 1979). Thus, following research that portrays centralization/decentralization as one of the most basic organizational design concepts (Fredrickson, 1986; Love et al., 2002; Mintzberg, 1979) associated with several organizational design elements (Burton and Obel, 1998; Dessein, 2002; Ling et al., 2008), we use it as an umbrella concept to capture TMT configuration. We thus expect that a CEO may organize the TMT to be more CEO-centric or more decentralized and participative. A CEO-centric TMT is one where the CEO controls decisions, and therefore the organization does not require a great deal of coordination, communication exchange, or formalization. In contrast, a participative TMT is characterized by shared control and decentralized decision-making, as well as high coordination and open communication (Davis et al., 1997; Ling et al., 2008).

Regarding the TMT configuration of family vs. non-family firms, research suggests that family firms centralize more decision-making authority (Feltham et al., 2005; Martin et al., 2016), and tend to manage their firms in a less formalized way than non-family firms (e.g., Stewart and Hitt, 2012). Family ownership encourages the family to exercise dominance over the business, which is reflected by their choice of CEO, who is most often a family member (Chen et al., 2010). In turn, when the CEO is a family member or hand-selected by the family, the direction of the firm is expected to be led by the CEO (Carney, 2005; Schulze et al., 2001). In addition, in comparison to non-family firms, family firms are typically governed more by informal mechanisms that depend on strong personal relationships (Daily and Dalton, 1992), and rely less on formal, written procedures (De Massis et al., 2015).

Given family firms' proclivity to entrust the majority of decision-making authority to their CEO, they are likely to feel little need for formal coordination, formalized practices, or open communication, particularly since these practices may limit the CEO's discretion (Le Breton-Miller and Miller, 2006; Schulze et al., 2001). Research suggests that family firm CEOs prefer to exercise complete authority, dictate strategy, and choose the developmental path of their firms with little participation from others (Schulze et al.,

2003a). Further, studies suggest that performance incentives, bonuses, and compensation are likely to be lower in family firms than non-family firms, since the family governs more through shared values than formal control (Bandiera et al., 2015; Dyer and Whetten, 2006). That is, because their managers' interests are typically aligned with those of the family firm, additional compensation is often not required to synchronize managerial and ownership interests (Neckebrouck et al., 2018). Taken together, research therefore suggests that family firms are more likely to have a CEO-centric TMT configuration than non-family firms. Conversely, non-family firms' willingness to decentralize decisions, and be more formalized and coordinated (Stewart and Hitt, 2012), suggests they will be more likely to have a participative TMT configuration:

Hypothesis 2: While family firms are more likely to adopt a CEO-centric TMT configuration, non-family firms are more likely to adopt a participative TMT configuration.

TMT Organization and Opportunity Exploitation

The TMT is responsible for making strategic decisions (Amason, 1996; Collins and Clark, 2003) and deciding what resources to put in place to pursue strategic opportunities (Foss et al., 2015; Ling et al., 2008). As such, the TMT is key in transforming entrepreneurial ideas into actions (Damanpour, 1991; Stevenson and Jarillo, 1990). Although organizational design elements have typically been studied individually, those associated with a more participative TMT configuration appear to be most conducive to encouraging opportunity exploitation. For example, Ling et al. (2008) suggest that shared decision-making, information, and effort among the TMT members increase the firm's commitment to new entrepreneurial initiatives. Further, Foss et al. (2015) show that opportunity realization is highest when both decentralization and formalization are at their highest. The authors explain that while decentralization gives managers the discretion to transform opportunities into action, formalization streamlines the work processes and provides a roadmap of tasks that help the firm successfully realize a new opportunity. Moreover, the combination of high decentralization and managers' coordination facilitates opportunity exploitation (Foss et al., 2013). As such, a more participative TMT configuration leverages TMT members' specific knowledge and external connections (Foss et al., 2013; Jensen and Meckling, 1992) and encourages the information exchange (Cao et al., 2010; Foss et al., 2013) and knowledge integration (Daft and Lengel, 1986) that are essential to exploiting entrepreneurial strategies (Cao et al., 2010; Mihalache et al., 2014). It therefore follows that a participative TMT configuration will enhance a firm's opportunity exploitation.

Conversely, a CEO-centric TMT configuration may hamper a firm's ability to exploit opportunities because its TMT is not given the discretion to pursue opportunities (Foss et al., 2015). Previous research has documented a negative relationship between centralization and entrepreneurial behavior (Caruana et al., 1998; Ling et al., 2008). In firms where decision-making authority is centralized with the CEO, the TMT members have little motivation to recognize or act on entrepreneurial opportunities, since they would require the CEO's approval (Ling et al., 2008). With a CEO-centric TMT configuration,

it therefore appears that TMT members will lack the latitude and discretion to pursue entrepreneurial opportunities.

Hypothesis 3: Firms with a participative TMT configuration experience greater opportunity exploitation than those with a CEO-centric configuration.

Taken together, we posit that the TMT configuration will mediate the relationship between family firm status and opportunity exploitation. The organizational design literature suggests that the organization of the TMT reflects the underlying organizational structure of the firm (e.g., Beckman and Burton, 2011; Chandler, 1962; Guadalupe et al., 2014). Research also demonstrates a significant relationship between TMT characteristics and firm performance (e.g., Hambrick et al., 1996; Minichilli et al., 2010; Simsek et al., 2005). Accordingly, it appears that firms need to have the appropriate organizational design of their TMT to pursue opportunities (Foss et al., 2013, 2015; Ireland et al., 2009; Ling et al., 2008). Put differently, the type of organizational configuration adopted by the TMT may determine the firm's ability to make decisions and implement actions to exploit opportunities. We thus argue that family firms exploit fewer opportunities than non-family firms due to their propensity to adopt a CEO-centric TMT configuration. This type of configuration limits the involvement of TMT members, thereby lessening the firm's opportunity exploitation. Conversely, non-family firms are expected to experience greater opportunity exploitation than family firms due to their propensity to adopt a participative TMT configuration. Accordingly, we argue that the TMT configuration is the mechanism through which differences in family and non-family firms' opportunity exploitation are explained. We synthetize our hypotheses in Figure 1 below.

Hypothesis 4: The adoption of a more CEO-centric vs. participative TMT configuration mediates the relationship between family firm status and opportunity exploitation.

METHODS

Sample Data

To test our hypotheses, we relied on unique survey data collected from the CEOs of Italian firms (Rovelli and Rossi-Lamastra, 2018), since information on opportunity

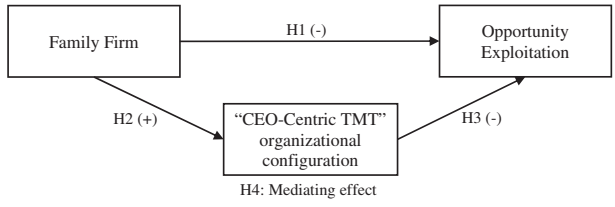

Figure 1. Hypothesized relationship between family firms and opportunity exploitation, and the mediating effect of TMT organizational configuration

exploitation and TMT organization are not publicly available from secondary sources. 6,108 firms were randomly sampled from the population of 50,341 Italian firms with at least 20 employees[3] operating in the manufacturing and service industries. The sample was stratified by size, industry, and geographic location. The questionnaire was then administered to 3,899 CEOs (and firms) whose contact information was available. The survey comprised several questions and multi-item constructs previously validated in the literature, which were translated into Italian and then back-translated to English to ensure that the original meaning was preserved (Dillman, 2000; Kriauciunas et al., 2011). The survey was then pilot tested (Andrews et al., 2003; Collins, 2003) and pre-tested (Kriauciunas et al., 2011). A total of 363 questionnaires were returned. Thus, the overall response rate is 9.31 per cent, in line with similar studies on CEOs and TMTs (e.g., Garcés-Galdeano et al., 2017; Graham et al., 2013; Poterba and Summers, 1995; Schulze et al., 2003b; Simsek, 2007; van Doorm et al., 2017; Zellweger et al., 2012). However, only 241 CEOs provided complete information, mostly due to the sensitive nature of some questions.

To assess the quality of data, we ran some analyses to assess the representativeness, the absence of non-response bias, and the reliability of CEOs' answers. In terms of the three dimensions used to stratify the sample (i.e., size, industry, and geographic location), the chi-squared tests showed that the sample is representative of the population.[4] The tests also indicated no particular issues with non-response bias: we compared (i) respondents vs. non-respondents, (ii) early vs. late respondents, and (iii) full vs. dropped respondents (i.e., those who only partially answered the survey). For respondents vs. non-respondents, we considered the same dimensions above and found differences only for geographic location. Early vs. late respondents, and full vs. dropped respondents were then compared considering the three dimensions used to stratify the sample and two CEO characteristics (gender and age). In these cases, we found differences only for the geographic location of early and late respondents (i.e., CEOs closer to the university that administered the survey responded faster). Finally, the reliability of CEOs' answers was confirmed by crosschecking them with secondary sources of information where possible, and administering a second questionnaire to their Chief Human Resource Officer (CHRO). Contact information for the CHROs was provided in the questionnaire completed by the CEOs. 114 CEOs provided this information, and the corresponding CHROs were contacted. 43 CHROs returned the questionnaire (response rate of 37.72 per cent). Their answers were matched with those of the corresponding CEOs and their interrater reliability was evaluated along all constructs assessed via Likert-type scales, including those we used to test the hypotheses. Following Danneels (2015), we compared the CEO and CHRO data by computing the Average Deviation Index (ADI; Burke and Dunlap, 2002). The interrater agreement was acceptable for all items and constructs (i.e., lower than 0.80 in the case of five-point scales and 1.20 for seven-point scales; Burke and Dunlap, 2002). Moreover, the ADI was always lower than one, meaning that the responses of the CEOs and CHROs differed by an average of less than one scale point (Danneels, 2015). For the items that did not refer to constructs (30 items out of 43; 69.77 per cent), the ADI was lower than 0.05, demonstrating an average difference lower than 0.50 scale points.

General firm characteristics and balance-sheet data were collected from secondary data sources (i.e., the AIDA database). Due to missing data, the sample used to test the

hypotheses consists of 224 Italian firms, 116 of which (51.79 per cent) are family firms. Family firm status was determined by self-identification as a family firm and family ownership, as explained below. The post hoc power analysis suggested that the power levels were acceptable (e.g., Cohen, 1988; Mazen et al., 1987a, 1987b) for both the full sample (statistical power = 0.9962) and the subsample of only family firms (statistical power = 0.9385).

Uncovering the TMT Organization

Testing the hypotheses first required identifying whether and what kind of TMT configuration exists. Mirroring prior research (e.g., Gruber et al., 2010; Ichniowski et al., 1997; Milgrom and Roberts, 1990), we applied a configurational approach to six organizational design elements (e.g., Burton et al., 2006; Child, 1972; Daft, 2010; Galbraith, 1973; Jones, 2010; Mintzberg, 1993) to capture TMT configurations. As Table I reports, these elements are: delegation, incentives, coordination, communication, formalization, and size (Burton et al., 2006; Child, 1972; Daft, 2010; Jones, 2010; Mintzberg, 1993).

Following previous studies (e.g., Gibson and Birkinshaw, 2004; Gruber et al., 2010; Guedri and McGuire, 2011), we identified the TMT configuration by performing a two-step cluster analysis, which is a well-known methodology for data reduction purposes (e.g., Kaufman and Rousseeuw, 2009; Rogerson, 2001; Wang et al., 2017), and identifying similar groups (i.e., configurations) based on a set of variables (for some examples, see Birley and Westhead, 1990; Covin and Slevin, 1988; Forte et al., 2000; Gruber et al., 2010; Youndt et al., 2004). Table I reports the variables and multi-item constructs we used to identify the TMT configurations.

We determined the number of clusters using the hierarchical cluster analysis of Ward (1963), assigning the firms in the sample to clusters using the k-mean clustering method. The Scheffe pairwise comparison of means then determined which pairs of clusters were significantly different among all variables. Variables were standardized and checked for outliers, since cluster analysis tends to be sensitive to these.

The cluster analysis revealed the existence of three clusters (i.e., TMT configurations) instead of the two configurations that we had theorized to build our hypotheses. Table II presents the cluster means for each of the eight variables considered in the analysis.[5] We also report the overall sample mean and the p-values of the one-way analysis of variance (ANOVA) tests. All variables are statistically different at 99% among the clusters. Inspired by Gruber et al. (2010), and based on the results of the Scheffe post-hoc tests, we indicate for each variable when their mean is statistically different among the clusters. The same superscript label indicates that there are no statistical differences among the clusters. Also, the highest mean is labelled with superscript 'a', the next highest with 'b', and the lowest with 'c'. Table III provides a description of the clusters, which translates the statistical differences highlighted by these labels.[6] Based on their characteristics, we named the three clusters: *CEO-centric TMT*, *integrated TMT*, and *incentive-based TMT*.

The CEO-centric TMT configuration is characterized by the lowest level of delegation. Indeed, *TMT delegation* is lower and statistically different from the integrated and incentive-based TMT (p-value = 0.000 and 0.000, respectively). No significant difference emerged with respect to *TMT delegation* for the integrated or incentive-based TMT

Table I. Key organizational design elements (adapted from Burton et al., 2006; Child, 1972; Daft, 2010; Jones, 2010; Mintzberg, 1993) and their measures (multi-item constructs)

Organizational design element	*Description*	*Key references*	*Construct*	*Measure*
Delegation	The way in which decision authority is allocated within the TMT (i.e., centralized with the CEO or delegated and assigned to other managers)	Aghion and Tirole (1997); Hempel et al. (2012); Lin and Germain (2003)	*TMT delegation*	Average level of delegation over a set of 18 strategic decisions evaluated by CEOs indicating the lowest hierarchical level that has authority: 1 = CEO's corporate superior (e.g., the board of directors or the CEO of the parent company); 2 = CEO; 3 = first line managers, with formal authorization from the CEO; 4 = first line managers, autonomously; 5 = middle managers). Decisions made by the CEO's corporate superior (i.e., with a value of 1) were excluded so as to consider only those made either by the CEO or the TMT (adapted from Colombo and Delmastro, 2008)
Incentives	Variable compensation to align TMT members' objectives with those of the CEO	Athey and Roberts (2001); Carpenter and Sanders (2002); Foss et al. (2011); Jensen and Meckling (1992); Rivkin and Siggelkow (2003); Steinbach et al. (2017)	*TMT variable compensation* *CEO variable compensation*	Average level of TMT members'/CEO's variable compensation over the last 3 years, evaluated by CEOs using a six-point scale: 1 = 0%; 2 = between 0% and 10%; 3 = between 10% and 20%; 4 = between 20% and 30%; 5 = between 30% and 50%; 6 = more than 50% (adapted from Castañer and Kavadis, 2013)

Table I. *Continued*

Organizational design element	*Description*	*Key references*	*Construct*	*Measure*
Coordination	Mechanisms aimed at facilitating the coordination of TMT members' decisions and actions	Henderson and Fredrickson (2001); Mom et al. (2009); Srikanth and Puranam (2011)	*Formal coordination*	Three items factor ($\alpha = 0.56$) obtained through a Principal Component Analysis (PCA) applied to the following items evaluated by CEOs using a 7-point Likert-type scale (from 1, 'never', to 7, 'very often') to indicate how often (i) formal committees, (ii) temporary cross-functional work groups, and (iii) liaison committees involving TMT members are adopted (adapted from Foss et al., 2013)
			Tacit coordination	Five items factor ($\alpha = 0.85$) obtained through a PCA applied to the following items assessed by CEOs using a 7-point Likert-type scale (from 1, 'no effort', to 7, 'very high effort') to evaluate the effort in: (i) organizing team building activities to develop a common vision and mutual understanding, (ii) helping TMT members to understand other members' decisions, and encouraging (iii) TMT meetings to understand how to work better together, (iv) the adoption of a common language in the TMT, and (v) exchange and sharing working experience within the TMT (adapted from Srikanth and Puranam, 2011)
Communication	Mechanisms aimed at facilitating communication, information exchange, and mutual adjustment among TMT members	Cao et al. (2010); Smith et al. (1994); Srikanth and Puranam (2011)	*Ongoing communication*	Four items factor ($\alpha = 0.84$) obtained through a PCA applied to the following items rated by CEOs over a 7-point Likert-type scale (from 1, 'no effort', to 7, 'very high effort') to indicate the effort in: i) training initiatives for TMT members on remote collaboration tools, (ii) developing or adopting a dedicated IT communication network, and (iii) using electronic tools for remote collaboration and (iv) remote communication (adapted from Srikanth and Puranam, 2011)

Table I. *Continued*

Organizational design element	*Description*	*Key references*	*Construct*	*Measure*
Formalization	Degree to which rules, procedures, instructions, and communications are formalized or written down to reduce TMT members' discretion	Baum and Wally (2003); Caruana et al. (1998); Jansen et al. (2005)	*TMT formalization*	Average of the following items evaluated by CEOs using a 7-point Likert-type scale, that provide an indication of (i) whether communications between TMT members mainly occur in a verbal form (1) or written form (7), and (ii) whether tools such as meeting agenda and minutes are 'not very important' (1) or 'very important' (7) in TMT decision-making (adapted from Clark and Maggitti, 2012)
Size	Number of top executives in the TMT	Amason and Sapienza (1997); Haleblian and Finkelstein (1993); Hoffman et al. (1997)	*TMT size*	Number of top executives in the TMT

Table II. Cluster analysis results

		1	*2*	*3*	
		(n = 80)	*(n = 80)*	*(n = 77)*	
Variables	*Sample mean*	*CEO-centric TMT*	*Integrated TMT*	*Incentive-based TMT*	*ANOVA p-value*
TMT delegation	2.6909	2.4951[b]	2.7935[a]	2.7877[a]	0.0000
TMT variable compensation	2.6878	2.2250[b]	2.0750[b]	3.8052[a]	0.0000
CEO variable compensation	2.9156	2.3500[b]	1.8875[c]	4.5714[a]	0.0000
Formal coordination	0.0090	−0.8279[b]	0.5373[a]	0.3298[a]	0.0000
Tacit coordination	−0.0049	−0.8617[c]	0.5742[a]	0.2837[b]	0.0000
Ongoing communication	0.0127	−0.7551[c]	0.7354[a]	0.0596[b]	0.0000
TMT formalization	3.8797	3.5438[b]	4.2250[a]	3.8701[a,b]	0.0059
TMT size	6.4231	4.4762[c]	6.7228[b]	8.1343[a]	0.0000

The table reports the cluster means. For each variable, if cluster means have the same superscript label, then there are no statistical differences among them based on the Scheffe post-hoc test. The superscript 'a' represents the highest value, 'b' the next highest value, and 'c' the lowest value.
Sample size = 237 (224 + 13 firms that present missing data on opportunity exploitation, but report information on all the organizational design elements considered to identify TMT configurations).

Table III. Verbal description of the three TMT organizational configurations

	1	*2*	*3*
Variables	*CEO-centric TMT*	*Integrated TMT*	*Incentive-based TMT*
TMT delegation	Low	High	High
TMT variable compensation	Low	Low	High
CEO variable compensation	Medium	Low	High
Formal coordination	Low	High	High
Tacit coordination	Low	High	Medium
Ongoing communication	Low	High	Medium
TMT formalization	Low	High	Low, High
TMT size	Small	Medium	Large

Two groups: high, low.
Three groups: high, medium, low.
Clusters belong to two groups when cluster means are not statistically different.

configurations (p-value = 0.996). The lower level of delegation in the CEO-centric TMT is paired with a low level of TMT coordination, both formal and informal, and TMT communication. Specifically, while the integrated TMT and the incentive-based TMT present the same level of formal delegation (p-value = 0.267), they both statistically differ from the CEO-centric TMT (p-value = 0.000 and 0.000, respectively). When comparing pairs of TMT organizational configurations, statistical differences always emerge with respect to *tacit coordination* (CEO-centric TMT vs. integrated TMT, and CEO-centric TMT vs. incentive-based TMT: p-value = 0.000; integrated TMT vs. incentive-based TMT: p-value = 0.070); the same holds for *ongoing communication* (p-value = 0.000 for each pair of TMT organizational configurations). Moreover, CEO-centric TMTs are smaller and less formalized than the other configurations. The results show that *TMT size* significantly differs when comparing pairs of clusters (CEO-centric TMT vs. integrated TMT, and CEO-centric TMT vs. incentive-based TMT: p-value = 0.000; integrated TMT vs. incentive-based TMT: p-value = 0.003); *formalization* is instead significantly different when comparing CEO-centric TMT with integrated TMT (p-value = 0.006), while there are no differences between the CEO-centric TMT and incentive-based TMT (p-value = 0.309), and between the latter and integrated TMT (p-value = 0.249). Finally, considering the three configurations, in the CEO-centric TMT, the variable compensation (i.e., incentives) settles at an intermediate level for the CEO and at the lowest level for the TMT. Specifically, the level of *CEO variable compensation* is always statistically different when comparing all pairs of clusters (CEO-centric TMT vs. integrated TMT: p-value = 0.025; integrated TMT vs. incentive-based TMT: p-value = 0.000; and CEO-centric TMT vs. incentive-based TMT: p-value = 0.000). However, *TMT variable compensation* is greater in incentive-based TMT compared to CEO-centric TMT (p-value = 0.000) and integrated TMT (p-value = 0.000), while between the latter it does not differ (p-value = 0.500).

We can thus conclude that firms not only differ in their preference for a CEO-centric or participative TMT, but for those preferring a participative TMT, they also differ in whether they prefer an integrated or incentive-based TMT. The structure of the two participative TMT configurations favours internal interactions, the use of managers' knowledge, and the mobilization and coordination of resources, knowledge, and activities. While they are both characterized by the highest level of delegation, they differ in the mechanisms used to align managers' goals with those of the firm. In the integrated TMT, coordination and communication mechanisms are used, while in the incentive-based TMT, incentives are the main instrument. Moreover, in the integrated TMT, the use of formalization is high, while TMT size is intermediate. In comparison, the incentive-based TMT has the largest TMT size.

To obtain a first indication of the adoption of these three TMT organizational configurations by family and non-family firms, we explored their distribution depending on the family firm status. The chi-squared test revealed a statistically significant difference between family and non-family firms with respect to the adoption of the TMT organizational configurations (p-value = 0.000). Specifically, over 40 per cent of the family firms in the sample (e.g., 43.10%) were found to adopt the CEO-centric TMT configuration, as opposed to only 25 per cent of the non-family firms. These findings therefore reveal differences between family and non-family firms' adoption of the CEO-centric TMT configuration which may, in turn, lead to differences in their opportunity exploitation. Utilizing results from the configuration analysis, we next explore whether differences in family and non-family firms' opportunity exploitation can be explained by their TMT organizational configurations.

Measures

Dependent variable. The main dependent variable is *Opportunity exploitation*, which is measured with a multi-item construct developed by Foss et al. (2013, 2015). CEOs were asked to evaluate via a 7-point Likert-type scale the amount of opportunities exploited that led to improvements in financial performance. The scale ranged from 'no opportunities' (1) to 'many opportunities' (7). Seven types of opportunities were provided: (i) new products and services (excluding marginal changes); (ii) new production technologies; (iii) entry into new markets; (iv) changes in the organization; (v) new ways to manage human resources, (vi) research and development, and (vii) accounting and finance. The seven items were averaged whereby higher values indicate a higher number of opportunities exploited.

Independent variables. Family firm is a dummy variable equal to one in case of family firms and zero for non-family firms. To identify family firms, we first utilized the self-identification criterion (e.g., Harveston et al., 1997; Mahto et al., 2010) by asking CEOs whether they identify their firm as a 'family firm' whereby for family firms, 50 per cent or more of the capital is owned, directly or indirectly, by one or more relatives, as defined by blood or marriage (Minichilli et al., 2010). We then cross-checked the answers using ownership data from the AIDA database. Following the above mentioned definition, we categorized firms as family firms when the same family owned more than 50 per cent of shares (Minichilli et al., 2010). The self-identification criterion (i.e., a proxy for the family

'essence') and the ownership analysis (i.e., a proxy for family involvement) led to the same sample of family firms. We can thus conclude that family firms were identified through both the involvement and essence criteria (Chrisman et al., 2012).

CEO-centric TMT captures the TMT organization and is a dummy variable equal to one when the firm adopts this configuration, and zero when the TMT is either integrated or incentive-based.

Control variables. We included several control variables in our models. At the firm level, we controlled for *Firm size*, measured as the logarithm of employees in 2013; *Industry*, which indicates whether the firm operates in the manufacturing (1) or service industry (0); *Geographic location*, corresponding to the three main Italian geographic areas (i.e., North, Center, and South); and *Legal status* (i.e., joint-stock company, limited liability company, others).[7] We also included the logarithm of the number of the *Firm's hierarchical levels* and *Firm age*. In addition, we controlled for whether the firm is a *Subsidiary firm* and whether it is *Controlled by a foreign firm*. Finally, *Market competition* and *Market evolution* provide an indication of the environment in which the firm operates. These variables were both measured using survey data. CEOs were asked to evaluate with a 5-point Likert-type scale whether the market size is rapidly shrinking (1) or rapidly growing (5); the technological change is very slow (1) or very rapid (5); the market has few (1) or many (5) competitors; and industry competitive intensity is very low (1) or very high (5). The PCA revealed two distinct factors: *Market competition* includes the first two items, while *Market evolution* the last two.

At the individual level, we included three control variables that capture CEO characteristics. *Female CEO* is a dummy equal to one when the CEO is a woman, while *CEO's MBA* is equal to one in case s/he holds an MBA. *CEO's tenure* measures the number of years since s/he was appointed CEO in the current firm.

Analysis Methods

To test the hypotheses, we used a series of logit and OLS models, given the nature of the dependent variable under investigation. To investigate the relationship between family firms and opportunity exploitation, and the hypothesized mediating effect of TMT configuration, we combined the traditional four-step approach of Baron and Kenny (1986) with the more modern bootstrapping approach (Bollen and Stine, 1990; Shrout and Bolger, 2002). The former implies testing four models. Apart from Model 0 that contains the baseline model of control variables, Model 1 is an OLS model in which the dependent variable *Opportunity exploitation* is regressed against the treatment (*Family firm*). Model 2 is a logit model in which we estimate the mediator (*CEO-centric TMT*) given the treatment. Models 3 and 4 are OLS models in which the outcome (*Opportunity exploitation*) is regressed against the mediator, and then the mediator and treatment together. To support the results of the four-step approach, we also adopted several contemporary approaches to test mediation. As an additional step, (i) we tested in Model 5 whether *CEO-centric TMT* significantly moderates the relation between *Family firm* and *Opportunity exploitation*, (ii) we followed Hicks and Tingley (2011) to compute the Average Causal Mediate Effect (Stata command: *medeff*) and performed sensitivity analyses (Stata command: *medsens*),

(iii) we performed the Sobel (1982) test and tested the significance of the indirect effect (Stata command: *sgmediation*), (iv) we applied the bootstrapping method (Bollen and Stine, 1990; Shrout and Bolger, 2002) (Stata command: *bootstrap*), and finally, (v) we followed the most recent approach of Emsley and Liu (2013) (Stata command: *paramed*). Taken together, these models allowed us to test our four hypotheses.

RESULTS

Table IV presents the descriptive statistics and correlations. *Opportunity exploitation* is negatively but not significantly correlated with *Family firm* (rho = −0.094, p-value = 0.173), while it is negatively and significantly correlated with *CEO-centric TMT* configuration (rho = −0.349, p-value = 0.000).

To exclude multicollinearity, we performed variance inflation factor tests and computed the condition indexes, which were lower than the thresholds generally associated with multicollinearity problems (Belsley et al., 1980). Moreover, while some procedural remedies were implemented while collecting data, we checked whether our results were affected by common method variance (Podsakoff et al., 2003, 2012), as the majority of the variables were retrieved through a survey. To this end, we resorted to two analyses. First, we used the Harman (1967) single factor test, which is the most widely used technique to assess the presence of common method variance (Podsakoff et al., 2003; Podsakoff and Organ, 1986). The factor analysis revealed six factors with eigenvalues greater than 1, which account for 62.11 per cent of the total variance. Because the first factor did not explain the majority of the variance (but only 28.02 per cent), the analysis confirmed that common method bias is not a concern (Podsakoff and Organ, 1986). Second, to provide further support to this test, we followed Podsakoff et al. (2003) and resorted to a structural equation model with a common latent factor. Considering all the items used to measure the main constructs of the study, we controlled for the effect of an unmeasured common latent factor (CLF), which should capture the common variance among them. We used a confirmatory factor analysis approach introducing the CLF and relating all items to it. We constrained the paths to be equal and the common variance of the CLF to one. We then estimated the common variance as the square of the common factor of each path before standardization. The model revealed that items share a common variance of 7.29 per cent, proving that common method bias is not a significant problem. In addition, we relaxed the path constraints and ran two models, with and without the CLF. We then compared the standardized regression weights of the items resulting from these two models, computing their difference. The analysis revealed that no item is affected by common method bias, as all showed a difference lower than the reference point of 0.200. Based on these analyses, we can thus conclude that common method bias is not a concern in our study.

Table V presents the results of the models we used to test our four hypotheses, and includes the four steps of Baron and Kenny (1986) to test mediation. Model 0 contains the baseline of control variables. Generally, larger firms (p-value = 0.001) and those operating in highly competitive (p-value = 0.000) and rapidly changing (p-value = 0.055) environments exploit a significantly greater amount of opportunities. Also, opportunity exploitation is lower in subsidiaries controlled by foreign firms (p-value = 0.009).

Table IV. Descriptive statistics and correlations (p-values in parentheses)

		Mead	*SD*	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*	*(13)*	*(14)*	*(15)*
(1)	Opportunity exploitation	4.07	1.06	1.00														
(2)	Family firm	0.52	0.50	−0.09	1.00													
				(0.17)														
(3)	Family CEO	0.67	0.47	−0.10	0.71	1.00												
				(0.30)	(0.00)													
(4)	Founder CEO	0.13	0.34	0.09	0.26	0.37	1.00											
				(0.35)	(0.00)	(0.00)												
(5)	CEO-centric TMT	0.34	0.48	−0.35	0.31	0.15	−0.16	1.00										
				(0.00)	(0.00)	(0.43)	(0.58)											
(6)	Firm's size	585.21	1554.91	0.18	−0.13	−0.23	−0.03	−0.30	1.00									
				(0.01)	(0.05)	(0.01)	(0.77)	(0.00)										
(7)	Firm's hierarchical levels	2.56	1.31	0.09	−0.09	−0.13	−0.09	−0.13	0.34	1.00								
				(0.17)	(0.20)	(0.18)	(0.35)	(0.04)	(0.00)									
(8)	Firm's age	26.52	17.32	−0.07	0.18	−0.03	−0.27	−0.03	0.06	−0.05	1.00							
				(0.31)	(0.01)	(0.72)	(0.00)	(0.66)	(0.36)	(0.45)								
(9)	Subsidiary firm	0.49	0.50	0.04	−0.46	−0.48	−0.02	−0.30	0.33	0.08	−0.08	1.00						
				(0.55)	(0.00)	(0.00)	(1.00)	(0.01)	(0.00)	(0.21)	(0.21)							
(10)	Controlled by a foreign firm	0.16	0.37	−0.15	−0.53	−0.65	0.03	−0.23	0.01	−0.03	−0.06	1.00	1.00					
				(0.02)	(0.00)	(0.00)	(1.00)	(0.12)	(0.93)	(0.68)	(0.34)	(0.00)						
(11)	Market competition	−0.04	0.98	0.28	−0.05	0.11	0.14	−0.10	0.01	0.00	−0.18	0.02	−0.02	1.00				
				(0.00)	(0.41)	(0.24)	(0.13)	(0.13)	(0.84)	(0.99)	(0.01)	(0.72)	(0.72)					
(12)	Market evolution	0.02	0.97	0.12	0.09	−0.13	0.00	0.00	−0.02	0.02	−0.02	−0.07	−0.03	−0.01	1.00			
				(0.09)	(0.18)	(0.17)	(0.98)	(0.97)	(0.73)	(0.72)	(0.81)	(0.33)	(0.66)	(0.85)				

Table IV. *Continued*

	Mead	*SD*	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*	*(13)*	*(14)*	*(15)*
(13) Female CEO	0.10	0.30	−0.03	−0.09	0.41	0.16	0.29	−0.12	−0.04	−0.04	−0.18	−0.35	0.01	0.04	1.00		
			(0.63)	(0.65)	(0.16)	(0.62)	(0.06)	(0.06)	(0.55)	(0.58)	(0.26)	(0.22)	(0.87)	(0.60)			
(14) CEO's tenure	8.59	9.42	−0.02	0.33	0.35	0.42	0.07	−0.09	−0.11	0.06	−0.19	−0.15	0.02	0.08	0.01	1.00	
			(0.78)	(0.00)	(0.00)	(0.00)	(0.27)	(0.19)	(0.09)	(0.37)	(0.00)	(0.03)	(0.77)	(0.26)	(0.91)		
(15) CEO's MBA	0.21	0.40	0.10	−0.03	−0.04	0.00	0.01	0.00	0.04	−0.08	0.02	−0.03	−0.02	0.09	0.13	−0.17	1.00
			(0.14)	(0.87)	(0.81)	(1.00)	(1.00)	(1.00)	(0.60)	(0.22)	(1.00)	(1.00)	(0.78)	(0.16)	(0.41)	(0.01)	

For correlations between dummy variables, we computed the tetrachoric correlation, while between dummy and continuous variables, we computed the point biserial correlation. Sample size = 224; descriptive statistics and correlations of *Family CEO*, and *Founder CEO* were computed considering only family firms (sample size = 116).

Table V. Results of the empirical models testing the relationship between family firms and opportunity exploitation, and the mediating effect of TMT organization

	Model 0	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*
	OLS	*OLS*	*Logit*	*OLS*	*OLS*	*OLS*
	Opportunity exploitation	*Opportunity exploitation*	*CEO-centric TMT*	*Opportunity exploitation*	*Opportunity exploitation*	*Opportunity exploitation*
Family firm	-	−0.2878†	0.9012*	-	−0.1791	−0.2243
		(0.1511)	(0.3654)		(0.1433)	(0.1679)
CEO-centric TMT	-	-	-	−0.6443**	−0.6167**	−0.7021**
				(0.1460)	(0.1489)	(0.1941)
Family firm * CEO-centric TMT	-	-	-	-	-	0.1465
						(0.2785)
Firm's size	0.2053**	0.2023**	−0.5991**	0.1338*	0.1350*	0.1324*
	(0.0619)	(0.0622)	(0.1477)	(0.0587)	(0.0590)	(0.0593)
Firm's hierarchical levels	−0.0248	−0.0294	−0.1539	−0.0418	−0.0440	−0.0401
	(0.1517)	(0.1478)	(0.3771)	(0.1440)	(0.1418)	(0.1425)
Firm's age	−0.0014	−0.0006	−0.0094	−0.0024	−0.0019	−0.0020
	(0.0038)	(0.0039)	(0.0104)	(0.0039)	(0.0039)	(0.0039)
Subsidiary firm	0.1259	0.0678	0.0426	0.1034	0.0682	0.0773
	(0.1570)	(0.1568)	(0.3761)	(0.1436)	(0.1434)	(0.1447)
Controlled by a foreign firm	−0.4980**	−0.5845**	−0.3345	−0.5672**	−0.6180**	−0.6194**
	(0.1876)	(0.1949)	(0.5634)	(0.1811)	(0.1864)	(0.1868)
Market competition	0.3131**	0.3091**	−0.2446	0.2795**	0.2784**	0.2790**
	(0.0626)	(0.0618)	(0.1582)	(0.0613)	(0.0608)	(0.0610)
Market evolution	0.1404†	0.1479*	−0.0749	0.1310†	0.1360*	0.1362*
	(0.0727)	(0.0722)	(0.1709)	(0.0673)	(0.0674)	(0.0676)

Table V. (Continued)

	Model 0	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*
	OLS	*OLS*	*Logit*	*OLS*	*OLS*	*OLS*
	Opportunity exploitation	*Opportunity exploitation*	*CEO-centric TMT*	*Opportunity exploitation*	*Opportunity exploitation*	*Opportunity exploitation*
Female CEO	−0.0749	−0.0880	0.5561	−0.0010	−0.0123	−0.0226
	(0.1961)	(0.1900)	(0.5004)	(0.1722)	(0.1718)	(0.1753)
CEO's tenure	−0.0084	−0.0044	−0.0008	−0.0070	−0.0046	−0.0044
	(0.0067)	(0.0069)	(0.0171)	(0.0068)	(0.0070)	(0.0070)
CEO's MBA	0.1999	0.2111	−0.0474	0.1995	0.2065	0.2060
	(0.1636)	(0.1627)	(0.3969)	(0.1576)	(0.1574)	(0.1568)
Industry dummy	YES	YES	YES	YES	YES	YES
Geographical area dummy	YES	YES	YES	YES	YES	YES
Legal status dummy	YES	YES	YES	YES	YES	YES
Constant	3.1556**	3.1301**	3.3433**	3.8686**	3.8222**	3.8658**
	(0.5350)	(0.5451)	(1.2179)	(0.5220)	(0.5324)	(0.5362)
Observations	224	224	224	224	224	224
R-squared	0.2374	0.2499	0.1403	0.3094	0.3142	0.3151
Log-likelihood	−299.7	−297.8	−123.9	−288.6	−287.8	−287.6

Robust standard errors in parentheses.
**p < 0.01; *p < 0.05; †p < 0.10.

Model 1 shows that family firms exploit fewer opportunities than non-family firms, supporting our baseline Hypothesis 1. The coefficient of *Family firm* is indeed negative and significant (p-value = 0.058). Model 2 tests the effect of family firm status on TMT configuration, and shows that *Family firm* is positive and significant (p-value = 0.014), confirming Hypothesis 2. Specifically, the likelihood of adopting a CEO-centric TMT configuration (rather than participative TMT configurations) is 0.169 percentage points greater for family firms than for non-family firm. In Model 3, we test the effect of TMT configuration on opportunity exploitation. Consistent with Hypothesis 3, *CEO-centric TMT* negatively and significantly relates to *Opportunity exploitation* (p-value = 0.000).

Model 4 tests the mediating effect of the CEO-centric TMT configuration on the relationship between family firm status and opportunity exploitation (Hypothesis 4). While the coefficient of *CEO-centric TMT* is negative and significant (p-value = 0.000), *Family firm* loses its significance (p-value = 0.213). This result indicates the presence of full mediation and is confirmed by both the absence of a moderating effect and by more contemporary approaches to test mediation. That is, Model 5 demonstrates that *Family firm* does not significantly moderate the negative relation between *CEO-centric TMT* and *Opportunity exploitation*, which thereby provides further support for the mediating effect. Further, following Hicks and Tingley (2011) and Sobel (1982), the average causal mediation effect is negative (coef. = −0.087) and significant, as well as the indirect effect (p-value = 0.035) and the total effect (p-value = 0.063), while the direct effect of *Family firm* is not significant (p-value = 0.233); the percentage of the total effect that is mediated by *CEO-centric TMT* is equal to 0.378. The Sobel and the Goodman tests are also significant (p-value = 0.035 and 0.031). Coherent results also emerge using the modern bootstrapping approach (Bollen and Stine, 1990; Shrout and Bolger, 2002) whereby the indirect effect is negative and significant (p-value = 0.046), while the direct effect is not significant (p-value = 0.226). Finally, the mediating effect is also confirmed by the most recent approach of Emsley and Liu (2013), which resulted in a natural direct effect of *Family firm* as negative and not significant (coef. = −0.179, p-value = 0.233), while the natural indirect effect (coef. = −0.109, p-value = 0.035) and the total effect (coef. = −0.288, p-value = 0.063) are negative and statistically significant. Altogether, these results confirm Hypothesis 4.

Robustness Checks

We conducted additional analyses to test the robustness of the results. First, we checked whether family firms that do *not* adopt the CEO-centric TMT configuration are similar to non-family firms in terms of opportunity exploitation. We thus ran Model 1 excluding family firms that adopt this configuration. Results showed that being a *Family firm* is no longer significantly related to opportunity exploitation (p-value = 0.647). We can thus further corroborate that family firms adopting a participative TMT configuration appear to exploit as many opportunities as non-family firms.

Second, to test the negative relation between *CEO-centric TMT* and *Opportunity exploitation*, we ran additional models that consider only family firms, and examined whether the relationship changes with CEO status. We found that the effect of *CEO-centric TMT* is negative and significant (p-value = 0.020) when considering only family firms. Moreover,

having a *Family CEO* neither directly affects *Opportunity exploitation* (p-value = 0.728) nor moderates the negative relationship between *CEO-centric TMT* and *Opportunity exploitation*.

Third, we ran models testing the four hypotheses substituting *CEO-centric TMT* with the two participative configurations: *Integrated TMT* and *Incentive-based TMT*. Results confirmed that the adoption of one of these configurations (rather than *CEO-centric TMT*) is positively and significantly associated with opportunity exploitation (p-value = 0.000 and 0.000, respectively). These results hold regardless of whether the business is a family or non-family firm, and are confirmed by additional analyses conducted on the family firm subsample that considered CEO status.

Fourth, we performed a robustness check concerning the computation of the multi-item constructs we used to measure some of the six organizational design elements considered to identify the TMT organizational configuration: *formal coordination*, *tacit coordination*, and *ongoing communication*. As mentioned in Table I, to compute these variables, we applied Principal Component Analyses (PCA) to the corresponding items. While it is generally preferred as a data reduction method (Muca et al., 2013), one may argue that as PCA imposes orthogonality, it might not be appropriate. Therefore, we computed these three variables by using the maximum likelihood method, and then reran all the subsequent analyses.[8] The results are in line with those presented above and are available upon request.

Finally, we tested whether our results are robust to the definition of family firms adopted. While we originally followed the family essence and family involvement criteria to identify family firms, as recommended in the family business literature (see e.g., Chrisman et al., 2012), the TMT configuration may depend on whether a family firm is family owned and managed or is *only* family owned. Following this approach, we identified 87 firms that are family owned and managed and 29 firms that are only family owned. Adopting a more restrictive definition, we thus ran our estimates considering only family firms that are both family owned and managed. In addition, we considered a continuous measure that captures the percentage of the TMT who are family members. In so doing, we substituted our *Family firm* variable with (i) a dummy variable equal to 1 in case at least one member of the TMT (which includes the CEO) belongs to the family that owns the firm, and (ii) a continuous variable that measures the percentage of TMT members who belong to the family owning the firm. In both cases, the results are in line with our original analyses, thus providing further support for family firms' tendency to adopt a CEO-centric TMT configuration. Further, our results utilizing the continuous measure of family involvement on the TMT revealed a positive, significant effect such that a one standard deviation increase in the percentage of family members involved in the TMT was associated with a 0.401 percentage point increase in the likelihood of adopting a CEO-centric TMT configuration (as opposed to a participative TMT configuration). These results are available from the authors upon request.

DISCUSSION

We have investigated opportunity exploitation in family firms, applying an organizational design perspective. The data reveal that family firms exploit fewer opportunities

than their non-family counterparts. However, they can overcome this negative difference by organizing their TMT in a participative way, as non-family firms tend to do. Results showed that the adoption of a more CEO-centric TMT configuration mediates the negative relationship between family firm status and opportunity exploitation. As such, family firms tend to organize their TMT substantially differently from non-family firms, preferring the CEO-centric TMT configuration to the participative configurations, namely, integrated TMT or incentive-based TMT. Further, our robustness test revealed that family firms' preference for a CEO-centric TMT increases as the percentage of family members on the TMT increases. In turn, the CEO-centric TMT configuration was found to negatively affect opportunity exploitation. It is the adoption of a CEO-centric TMT configuration that therefore explains (i.e., fully mediates) the negative relationship between family firms and opportunity exploitation. As such, our study suggests that it is the distinctive choices that family firms tend to make in organizational design that explain differences in family and non-family firms' opportunity exploitation, and not the firm's family status *per se*.

Our paper advances the literature in numerous directions. First, we add to the debate on corporate entrepreneurship in family firms by studying the exploitation of previously formed opportunities, which remained under-investigated in relation to family firms (Kellermanns and Eddleston, 2006; Kraus et al., 2012; McKelvie et al., 2014). Following the call of McKelvie et al. (2014), we contribute to this debate by adopting an organizational design perspective to explain why family and non-family firms vary in exploiting opportunities. Existing family business research largely overlooks the role of organizational design in controlling and coordinating the activities necessary to achieve a family firm's goals, assuming that once an opportunity is identified, successful opportunity exploitation will follow (Chrisman et al., 2016). This may, however, not always be the case. Our study shows that how a family firm organizes its TMT has a profound effect on its ability to exploit opportunities. Thus, the extent to which a family firm is able to exploit opportunities depends on the family firm's capacity to organize, that is, to choose an appropriate TMT configuration. From a contingency theory perspective (e.g., Galbraith, 1973; Mintzberg, 1979; Shetty and Carlisle, 1972), our results therefore suggest that a TMT's configuration is often contingent on a firm's family status; however, the results also suggest that an integrated or incentive-based TMT configuration appear 'best' in fostering opportunity exploitation.

Organizational design therefore offers an important piece of the puzzle in understanding family firms' opportunity exploitation since it allowed us to discover how family and non-family firms tend to organize their TMTs in distinct ways and, in turn, how the TMT's configuration influences a firm's opportunity exploitation. As such, our findings should encourage family business scholars to move beyond their primary focus on family ownership and management (Revilla et al., 2016; Sciascia and Mazzola, 2008) to also consider the organization's design and specifically, the TMT's configuration. We therefore hope to see additional research that places the principles of organizational design at the center of family business theory and research. Further, because our study demonstrates that it is not family status *per se* that explains family firms' lower opportunity exploitation, but rather, their choices in organizational design, we call on family business scholars to further leverage mainstream management theories to explore how

the business-owning family influences key choices of their firm. Although family business scholars often express a need to develop theories specific to family firms, our study suggests that mainstream management theories can be usefully applied to the study of family firms. Further, with their extension to the family firm context, such research could contribute to the wider management literature by demonstrating how family ownership alters the assumptions and predictions of mainstream management theories.

In addition , by adopting a configurational approach, we were able to simultaneously study organizational design elements that had previously been addressed separately, and capture their interplay (Ennen and Richter, 2010), thereby extending organizational design research as well as the limited empirical research on opportunity exploitation determinants (Foss et al., 2013, 2015). In turn, this allowed us to add to the stream of comparative studies aiming to understand differences between family and non-family firms (Chirico et al., 2019; Kellermanns and Hoy, 2017), and differences among family firms (Alessandri et al., 2018; Kellermanns and Eddleston, 2006), which mainly focus on heterogeneity in terms of ownership and family involvement (Revilla et al., 2016; Sciascia and Mazzola, 2008). We identify the TMT configuration as an important factor that not only explains why family firms tend to exploit fewer opportunities than non-family firms, but also why variance exists among family firms' opportunity exploitation. In so doing, we take a step further with respect to prior family business studies that have focused on the demographic characteristics of TMTs (e.g., Ling and Kellermanns, 2010; Minichilli et al., 2010) by highlighting the importance of the TMT configuration from an organizational design perspective. We also extend research that has characterized family firms as more likely to centralize decision-making authority (Feltham et al., 2005; Martin et al., 2016) and to be less formalized than non-family firms (Stewart and Hitt, 2012) by using a configurational approach which revealed that almost 45 per cent of family firms, but only 25 per cent of non-family firms, adopt a CEO-centric TMT configuration. However, this also suggests that more research is needed to explore why some family firms choose to adopt an integrated TMT or incentive-based TMT configuration. Given the strong findings of our study, we suspect that how family firms organize their TMT will have consequences beyond opportunity exploitation such as, for instance, their diversification and internationalization strategies, and investment in R&D.

Aside from these contributions, our study has limitations that not only represent the boundaries of its insights but also provide opportunities for future research. First, while investigating the TMT configuration adds a novel perspective to the family business literature, other elements may also affect opportunity exploitation. For instance, future research should go beyond the structural aspect of organizational design, and assess whether CEOs' and TMT members' individual characteristics (e.g., culture, personality traits, educational background, work experience), and the firms' cultural aspects matter. For instance, TMT diversity in terms of family involvement might be a key driver in the choice of organizational configuration adopted, with important consequences for family firms' opportunity exploitation. However, studies that link family involvement and organizational design are still lagging behind, and more research is needed in this realm. Second, to the best of our knowledge, no alternative proxy of opportunity exploitation exists thus far. While the measure we used is still the only one at the core of the opportunity exploitation literature, we welcome future scholars to develop alternative ways of

measuring firms' opportunity exploitation. Third, our study is limited to one country, hence issues regarding the generalizability of results may arise, and further tests in other empirical settings are advised to validate our findings in alternative contexts. Finally, to test our hypotheses, we took advantage of a unique cross-sectional database of survey data. However, longitudinal studies would be useful to gain a deeper understanding of how organizational design and opportunity exploitation decisions may change over time, and the underlying cause-effect relationships.

Despite limitations, our findings also have important implications for family firms. They caution family business owners and managers that their firms may be disadvantaged in exploiting opportunities compared to non-family firms, and highlight how their TMT organization is at the core of such disadvantage. Family firms should therefore keep in mind that their natural tendency toward centralizing decision-making authority with the CEO and limiting the use of incentives, formalization, communication, and coordination mechanisms, can jeopardize their ability to successfully exploit business opportunities. Thus, if the family firms' TMT configuration is CEO-centric, their opportunity exploitation is likely to suffer. However, by organizing their TMT in a more participative way, they can significantly bolster their ability to exploit opportunities. Indeed, those family firms that adopted an integrated TMT or incentive-based TMT configuration had a similar level of opportunity exploitation as non-family firms. As such, they should mimic non-family firms' organizational design by adopting an integrated or incentive-based TMT configuration.

CONCLUSION

This study extended organizational design principles to the study of family and nonfamily firms' corporate entrepreneurship by investigating how their TMT's configuration affects their opportunity exploitation. We show that family firms exploit significantly fewer opportunities than non-family firms because they tend to adopt a CEO-centric TMT configuration, whereas non-family firms adopt an integrated TMT or incentive-based TMT configuration. Thus, it is not being a family firm, *per se*, that leads to less opportunity exploitation than non-family firms, but rather, family firms' strong tendency to adopt a CEO-centric TMT configuration. For those family firms with a more participative TMT configuration (i.e., integrated or incentive-based), there was no significant difference in their opportunity exploitation and that of non-family firms. Our work therefore extends and enriches research on corporate entrepreneurship, family business, and organizational design by bringing organizational design to the forefront of entrepreneurship and family business research, and demonstrating that how family firms organize their TMT is crucial to their opportunity exploitation.

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NOTES

[1] Opportunity formation is defined as 'the process of forming a (likely loosely defined) idea into a workable project that can potentially be exploited' (Barney et al., 2018, p. 1327).
[2] This is consistent with the exploratory nature of a configurational approach, which makes it difficult to theorize and hypothesize *ex-ante* the number and types of configurations that are instead revealed by the data (e.g., Gruber et al., 2010).
[3] In line with wide-spread practices (e.g., Revilla et al., 2016), firms with fewer than 20 employees were excluded from the target population as they typically do not have a stable and structured TMT.
[4] Statistical differences emerged with respect to size measured as classes of employees. Specifically, firms with 50 or fewer employees are under-represented, while those with at least 250 employees are over-represented. This is likely due to difficulty in finding contact information for CEOs of the smallest firms. However, the proportion of firms in the usable sample and contacted sample is quite similar, suggesting that the sample is representative with respect to the number of employees.
[5] While we standardized variables to perform the cluster analysis, here we report non-standardized values to make interpretation easier.
[6] For instance, regarding *TMT delegation*, two separate groups emerged: the first, with the superscript 'a' includes clusters two and three, indicating no statistical difference with respect to *delegation*. The second group consists of cluster one, identified with the superscript 'b' indicating that *delegation* in cluster 1 is statistically different from that of clusters two and three. In Table III, which translates the superscript with verbal group names, clusters two and three are labeled 'high' and cluster one is labeled 'low'.
[7] This control variable is important in the Italian context, which is characterized by alternative types of legal status with different legal constraints that could affect a firm's ability to exploit opportunities.
[8] We thank an anonymous reviewer for pointing out and recommending this.

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