BOUNDED RATIONALITY AND BOUNDED RELIABILITY: A STUDY OF NON-FAMILY MANAGERS' ENTREPRENEURIAL BEHAVIOR IN FAMILY FIRMS

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BOUNDED RATIONALITY AND BOUNDED RELIABILITY: A STUDY OF NON-FAMILY MANAGERS' ENTREPRENEURIAL BEHAVIOR IN FAMILY FIRMS

We use transaction cost economics to explain the individual-level entrepreneurial behavior of family and non-family managers in family firms. We argue that non-family managers exhibit lower entrepreneurial behavior than family managers, particularly after the founder's departure from the business. Moreover, we identify an expanded set of factors through which family firms can facilitate non-family managers' entrepreneurial behavior, including monitoring, incentives, distributive justice, access to the top management, and job control perceptions. We test these hypotheses in a sample of 296 family firm managers, contributing new insights on non-family managers and corporate entrepreneurship in family firms.

INTRODUCTION

Corporate entrepreneurship is crucial for family firms' long-term performance and survival (Eddleston, Kellermanns, & Zellweger, 2012; Kellermanns & Eddleston, 2006), and it critically depends on the individual-level entrepreneurial behavior of managers (Kuratko et al., 2005) - their willingness and ability to discover and exploit entrepreneurial ideas and opportunities (Hornsby et al., 2009). Because the necessary managerial knowledge and skills may not always be available within the business family, family firms must often tap into external managerial talent (Gedajlovic, Lubatkin, & Schulze, 2004). This indicates the relevance of non-family managers for family firms' corporate entrepreneurship, but quite surprisingly, empirical evidence about differences in entrepreneurial behavior between family and non-family managers is very limited, and the literature on the drivers of non-family managers' entrepreneurial behavior provides conflicting views.

Scholars largely agree that family managers have strong motivations to act in the family firm's best interest (e.g., Cruz, Gómez-Mejía, & Becerra, 2010) but provide two divergent views regarding non-family managers' motivations and behaviors. Agency theory suggests that opportunism and adverse selection problems complicate the attraction and retention of capable non-family managers (Chrisman, Memili, & Misra, 2014) and restrict their participation in strategic processes (Patel & Cooper, 2014). Seeing non-family managers

as self-motivated agents, agency scholars highlight monitoring and incentives as means to align interests and foster non-family managers' pro-organizational behavior (e.g., Chrisman et al., 2014). In contrast, stewardship theory challenges the opportunism assumption and the effectiveness of related agency control mechanisms (e.g., James, Jennings, & Jennings, 2017). It argues that non-family managers have natural incentives to act in the best interest of the firm and its owners (e.g., Miller, Le Breton-Miller, & Scholnick, 2008), for instance by engaging in entrepreneurial and pro-organizational behaviors (Eddleston et al., 2012).

Despite much research and debate, the extent to which non-family managers act as stewards or agents remains unclear. While stewardship will prevail over agency under specific conditions of family leadership and governance (e.g., Madison, Kellermanns, & Munyon, 2017; Miller, Minichilli, & Corbetta, 2013), family firms' stewardship has been shown to apply to the firm's financial assets but not to their relationships with non-family stakeholders (Neckebrouck, Schulze, & Zellweger, 2017). This unresolved dialectic has persisted without compromise, and the prevailing emphasis on opportunism may have overshadowed the importance of other important drivers of non-family managers' behavior.

To extend research beyond the agency-stewardship dialectic, we draw on recent work applying transaction cost economics (TCE) to family firms (Chrisman et al., 2014; Gedajlovic & Carney, 2010; Verbeke & Kano, 2010, 2012). TCE qualifies family firms' human assets in terms of asymmetric contracting arrangements, socialization processes, and motivations between family and non-family managers (Verbeke & Kano, 2012), suggesting that family firms' human assets require firm-specific investments in order to economize and create value from them (e.g., Gedajlovic & Carney, 2010). Thus, TCE replaces opportunism with two broader microfoundations of family and non-family managers' behaviors (Chrisman et al., 2014; Kano & Verbeke, 2015): (1) *bounded rationality*, which suggests that regardless of their purported opportunistic tendencies, non-family managers will have lower ability than

family managers to understand the variety of family business goals and identify entrepreneurial opportunities that align with those goals; and (2) *bounded reliability*, which suggests that, over time, non-family managers are more likely to experience benevolent preference reversals and identity-based discordances, limiting their ability to comply with initial promises and leading to lower entrepreneurial behavior compared to family managers.

Our analysis of 296 managers in family firms shows that non-family managers are generally less entrepreneurial than family managers, especially after the founder's departure from the family firm. We also show that non-family managers' entrepreneurial behavior varies depending on how family firms govern their human asset base and economize on bounded rationality and bounded reliability issues. Specifically, we find that traditional agency control mechanisms have mixed effects on non-family managers' entrepreneurial behavior, whereas perceptions of distributive justice, access to top management positions, and perceived control over the job have a consistently positive effect.

Our study advances current understanding of the microfoundations of corporate entrepreneurship in family firms (Zahra & Wright, 2011) by relaxing the rigid assumptions in the agency-stewardship dialectic and providing a basis for explaining the extent to which an entrepreneurial gap between family and non-family managers materializes in different types of family firms. Moreover, it contributes to the literature on non-family managers (e.g., Tabor et al., 2017) by explicating the theoretical mechanisms and related practices that create the conditions for non-family managers to effectively engage in entrepreneurial behavior.

THEORETICAL DEVELOPMENT AND HYPOTHESES

Existing research on antecedents of corporate entrepreneurship in family firms has primarily focused on firm-level factors to explain differences between family and non-family firms and heterogeneity among family firms (e.g., Eddleston et al., 2012; Randolph, Li, & Daspit, 2017). A critical antecedent of firm-level corporate entrepreneurship, however, is managers'

individual-level entrepreneurial behavior. It refers to managers' actions aimed at discovering and exploiting entrepreneurial ideas and opportunities (Smith & Di Gregorio, 2002), including the recognition and generation of innovative and entrepreneurial ideas (Burgelman, 1983; Kraut et al., 2005) and every effort made to support and stimulate other employees in engaging in entrepreneurial initiatives (Kuratko et al., 2005), and is the means through which corporate entrepreneurship is actually practiced and put into action (Kuratko et al., 2005).

Antecedents of individual-level entrepreneurial behavior include organizational factors such as management support, work discretion, reward systems, and time availability (Hornsby et al., 2002), and personal and psychological attributes (Sieger, Zellweger, & Aquino, 2013). Regrettably, prior research does not address the important differences between family and non-family managers, including contracting arrangements, socialization processes, and motivations (Patel & Cooper, 2014; Verbeke & Kano, 2010). These differences are acknowledged as a major distinctive feature of family firms' human assets (Chrisman et al., 2007; Verbeke & Kano, 2012), but virtually no research has addressed their implications for the individual-level entrepreneurial behavior of managers in family firms.

Agency and Stewardship Assumptions about Family and Non-Family Managers

Some insights about the behaviors of family and non-family managers can be gained from research on the upper echelons of family firms. Scholars tend to assume that family managers are by nature emotionally attached and committed to their firm and its idiosyncratic values and goals (Corbetta & Salvato, 2004; Cruz et al., 2010). Although opportunistic behaviors may exist among family managers (e.g., Chrisman et al., 2007), they are commonly seen as stewards who will behave in the best interest of the family. For example, they are often exempt from agency costs associated with monitoring and control (Cruz et al., 2010; Gómez-Mejía, Nunez-Nickel, & Gutierrez, 2001). Moreover, they possess in-depth

knowledge about the firm and its business (Lee, Lim, & Lim, 2003), which benefits strategic decision making and enhances financial performance (e.g., Ensley & Pearson, 2005).

Whether the same attributes extend to non-family managers is not as clear. On the one hand, scholars using agency theory (Jensen & Meckling, 1976) emphasize that non-family managers' goals are in conflict with those of family owners; non-family managers will therefore exploit information asymmetries through shirking, consumption of perks, or behaviors that contradict the goals of family owners (Chua, Chrisman, & Bergiel, 2009; Gómez-Mejía et al., 2001). On the other hand, the assumption of agent opportunism is challenged by scholars using a stewardship theory view (Davis, Schoorman, & Donaldson, 1997), arguing that non-family managers are stewards who maximize their own utility by aligning their goals with those of the firm and its principals (Corbetta & Salvato, 2004).

Unfortunately, consensus is still far from being reached (Chrisman et al., 2007; Miller et al., 2013). This unresolved agency-stewardship dialectic points to the overly rigid assumptions about the "model of man" underlying each of the two perspectives (Corbetta & Salvato, 2004). Thus, scholars have recently called for research that relaxes rigid assumptions in order to explain managerial behavior within organizations in which pro-organizational attitudes and self-serving motives coexist (e.g., Verbeke & Kano, 2012).

Transaction Cost Economics and (Non-)Family Managers' Entrepreneurial Behavior

A more general explanation of family and non-family managers' behavior is provided by the TCE-based theory of the family firm (Gedajlovic & Carney, 2010; Verbeke & Kano, 2010). TCE is based on the concept of asset specificity, or the difficulty in transferring assets to alternative uses (Williamson, 1985). Because highly specific assets allow one party involved in a transaction to extract superior rents at the expenses of other parties, TCE suggests that firms have advantages in developing and exploiting highly specific assets inside the firm rather than through other governance arrangements (Williamson, 1985).

Applied to family firms, TCE suggests that family managers are a special class of assets that is firm-specific, easy to deploy to alternative uses, but difficult to buy or sell (Gedajlovic & Carney, 2010). These attributes stem from their early socialization within the family firm, which provides the opportunity to develop highly specific knowledge about the firm and its goals (Lee et al., 2003; Verbeke & Kano, 2012). As family managers can be easily exploited inside the family firm but cannot be easily traded, family firms are motivated to make firm-specific investments that reduce their employment and compensation risk (Chrisman et al., 2014; Gedajlovic & Carney, 2010). In contrast, non-family managers do not have the same opportunities to develop firm-specific knowledge (Verbeke & Kano, 2012) and have greater mobility in the job market (Chrisman et al., 2014), suggesting that family firms will be reluctant to invest in these assets. For example, family firms are found to offer lower compensation and worse employment conditions to non-family members than non-family firms (Neckebrouck et al., 2017) and adopt insider-oriented hiring and promotion policies (Lee et al., 2003; Gómez-Mejía et al., 2001). This, in turn, explains their difficulty to hire and retain capable non-family managers (Chrisman et al., 2014).

In sum, TCE emphasizes the special features of family firms' human asset base and the unique contracting relationship between family owners and family managers as compared to typical employment contracts with non-family managers. Interestingly, the focus on family firms' human asset specificity provides a broader explanation of differences in family and non-family managers' motivations and behaviors that goes beyond the disputed assumption of managerial opportunism in the agency-stewardship debate. Specifically, rather than trying to explain managers' likelihood of engaging in pro-organizational behavior only as an expression of opportunism (or lack thereof), the TCE perspective introduces two core micro-foundations of managerial behavior: bounded rationality and bounded reliability.

Bounded Rationality. Bounded rationality suggests that managers have inherent cognitive limitations that restrict their ability to know all the alternatives, account for uncertainty about exogenous events, and calculate the consequences of their decisions (Simon, 1979). Given their limited ability to process information, managers cannot maximize a given utility function, but use cognitive shortcuts such as satisficing and heuristics, which inevitably create errors and biases (e.g., Foss & Weber, 2016).

Extending bounded rationality to family firms implies that non-family managers are not simply less willing than family managers to align their behavior to the goals of the family firm because of self-interest and opportunism, but that they may fail to do so because they face greater challenges in understanding the wide array of economic and non-economic goals of family owners (Chrisman et al., 2014). The early socialization of family managers is likely to reduce bounded rationality problems because it gives them the opportunity to more deeply understand and appreciate its particularistic goals (Gedajlovic & Carney, 2010), to overcome information asymmetries through close contact (Fang et al., 2016), and to develop deep tacit knowledge of the family firm's value proposition and potential customers (Lee et al., 2003). Thus, they can base their decisions on intuitive or particularistic criteria that better align with the goals of the family firm. On the contrary, because non-family managers do not benefit from the same socialization processes, they need to put greater cognitive efforts in order to fully understand family firms' non-economic goals (Mitchell et al., 2003). It follows that, compared to family managers, non-family managers will find it harder to understand whether pursuing certain entrepreneurial opportunities would be in line with the family's desires and the family businesses' overall strategy, and they may fail to behave in the best interests of family owners even if they are in good faith.

Bounded Reliability. Bounded reliability introduces another reason why managers may fail to behave in the firm's best interest that does not necessarily imply intentional

deceit. Specifically, it suggests that managers may experience good faith reprioritization of commitments due to benevolent preference reversals (i.e., temporal discounting biases that lead managers to place a lower value on future outcomes than on more proximate outcomes) and identity-based discordances (i.e., contradictions between initial commitments and managers' personal or professional identity) (Verbeke & Greidanus, 2009).

Extending bounded reliability to family firms suggests that non-family managers are more likely to engage in good faith reprioritization than family managers (Kano & Verbeke, 2015). First, family managers' commitments are less likely to diminish over time because of their longer time orientation and long-term goals such as passing a wealthy firm to the next generation of family members (Miller & Le Breton-Miller, 2005). Non-family managers do not have the same long-term orientation; hence, they are more likely to postpone initial commitments and identify alternative options over time which may offer more immediate benefits, to the point that the initial commitments can no longer be fulfilled. Family managers have also the opportunity to develop experiential knowledge over long periods of time, which can reduce evaluation biases and overcommitment. Boundedly rational non-family managers, in turn, are more likely to make too many commitments in response to the variety of family firms' goals, which are more likely to be scaled back ex post (Kano & Verbeke, 2015).

Second, non-family managers may feel part of the business but not of the family system, leading to a greater likelihood of identity-based discordances compared to family managers (Kellermanns & Eddleston, 2004). Family managers are likely to identify more strongly with the family firm and are therefore more likely to maintain a strong identity fit over time (Deephouse & Jaskiewicz, 2013). By contrast, non-family managers are likely to embrace an identity characterized by professionalism, financial orientation, and emotional distance (Block, 2011). Over time, this identity may conflict with non-family managers'

initial good faith commitment to fulfill the family goals, leading to a greater likelihood of breach of contract or unfulfilled promises in good faith (Kano & Verbeke, 2015).

Differences in Entrepreneurial Behavior between Family and Non-Family Managers

Irrespective of opportunism assumptions, the TCE perspective thus suggests that the combination of bounded rationality and bounded reliability will limit non-family managers' ability and willingness to engage in entrepreneurial behavior compared to family managers. First, bounded rationality limits non-family managers' understanding of the family firm's economic and non-economic goals; thus, they are likely to experience greater challenges compared to family managers to understand whether pursuing certain entrepreneurial opportunities would be in line with the family's desires and the family businesses' strategy. This, in turn, is likely to reduce their ability to engage in entrepreneurial behavior compared to family managers. Second, due to bounded reliability, non-family managers are more likely to experience benevolent preference reversals and identity-based discordances because they do not have the same long-term orientation and identification with the family system as family managers. Therefore, even if non-family managers make good faith commitments to engage in entrepreneurial behavior, they are more likely to scale them back over time. Thus:

Hypothesis 1a. *In family firms, non-family managers exhibit lower entrepreneurial behavior than family managers.*

The application of TCE to family firms' human assets also suggests that the degree to which bounded rationality and bounded reliability issues materialize is not the same in all family firms (e.g., Verbeke & Kano, 2012). In particular, we expect that there will be important differences between founder-generation and later-generation family firms.

Family firm founders embody a stronger entrepreneurial identity, implying a greater emphasis on ensuring that the business survives and grows before it is possibly passed on to

later generations (Le Breton-Miller & Miller, 2013). Therefore, they are likely to outline clearer and more unified goals for non-family managers, which should ameliorate the latter's bounded rationality issues. Founder-generation family firms are also less likely to suffer from bounded reliability issues because as family firm founders have made a critical contribution in creating and growing the firm, their competence and expertise is unlikely to be questioned (Miller et al., 2013) and they are less likely to be concerned about giving non-family managers greater career opportunities. It follows that non-family managers are more likely to believe that they will be able to enjoy the positive effects of their own entrepreneurial behavior and the resulting firm-level corporate entrepreneurship in the long run, thereby reducing the likelihood of benevolent preference reversals. Also, seeing a future in the family firm should reduce the likelihood of identity-based discordances over time.

After the family founder leaves the firm and hands over the business to later generations, however, family firms are progressively imbued with family-specific attributes through the gradual involvement of later-generation family members in leadership positions. In this process, the family founders' strong desire for growth is likely to be superposed by an increasing number of non-economic goals (Kotlar et al., 2017; Miller et al., 2011) which likely increases non-family managers' bounded rationality issues. Likewise, we expect that also bounded reliability issues will become more pronounced after the family founder's departure from the business. First, given the higher number of family business goals, non-family managers are more likely to overcommit to multiple goals, increasing the risk of benevolent preference reversals. Second, as family members' perceptions of belonging (Zellweger & Astrachan, 2008) and their identification with the family firm (Deephouse & Jaskiewicz, 2013) increase over the family firm's lifecycle, family firms are likely to attach greater importance to the family identity, leading to a higher possibility that non-family managers experience identity-based discordances over time.

Thus, because non-family managers' bounded rationality and bounded reliability are likely to intensify after the family founder has left, we expect that the entrepreneurial gap between family and non-family managers will be greater in later-generation family firms:

Hypothesis 1b. *The gap in entrepreneurial behavior between family and non-family managers is smaller in family firms where the family founder is still involved in the firm compared to family firms where the family founder has left the business.*

Heterogeneity of Non-Family Managers' Entrepreneurial Behavior

The TCE perspective not only provides an explanation for why non-family managers may engage in lower entrepreneurial behavior compared to family managers, but it also suggests that non-family managers' entrepreneurial behavior is likely to vary depending on how family firms govern their human asset base (Gedajlovic & Carney, 2010) and economize on bounded rationality and bounded reliability issues (Verbeke & Kano, 2012). Specifically, TCE provides a basis to understand heterogeneity among non-family managers by refining our existing understanding of how traditional agency control mechanisms (i.e., monitoring and incentives) may work in relation to non-family managers' willingness and ability to exhibit entrepreneurial behavior. Also, TCE allows us to introduce other governance mechanisms previously overlooked in the agency-stewardship literature, such as perceptions of distributive justice, access to top management positions, and perceived job control.

Monitoring. The agency literature emphasizes the importance of agency cost control mechanisms in order to align non-family managers' goals and curb unproductive behaviors (e.g., Chrisman et al., 2004; Gómez-Mejía et al., 2001). Monitoring is described as an accountability mechanism limiting information asymmetries and constraining non-family managers' ability to pursue self-serving goals (Eisenhardt, 1989). Thus, it should ameliorate opportunism issues and encourage non-family managers to act in the best interest of family owners. However, monitoring is primarily concerned with improving the odds of good outcomes and reducing the odds of bad ones, which may lead non-family managers to

become defensive, adopt shortened time horizons, and favor low-variance projects (e.g., Goranova et al., 2017). Also, non-family managers may interpret monitoring as distrust, 'second-guessing', or lack of respect from the family (e.g., McDonald & Westphal, 2010), which can reduce their willingness to engage in entrepreneurial behavior (e.g., Zahra et al., 2004).

While agency theory provides mixed insights into the effect of monitoring, TCE refines this view by emphasizing the value of monitoring not only as a goal-alignment mechanism but also as an efficient way to economize on family firms' human assets by addressing non-family managers' bounded rationality and bounded reliability issues (e.g., Chrisman et al., 2014; Verbeke & Kano, 2012). First, monitoring can help family firms economize on bounded rationality issues by making family owners' goals more explicit and easy to understand by non-family managers, thereby helping them recognize when entrepreneurial behavior aligns with the family firm's goals. Second, monitoring can also be an efficient way to economize on bounded reliability issues because it allows family firms to continuously inform non-family managers about changes in goals and priorities and to provide feedback and guidance regarding their behavior over time (e.g., Langfred, 2004). Therefore, it reduces the possibility that non-family managers make unrealistic commitments and experience benevolent preference reversals. Similarly, monitoring is likely to improve non-family managers' ability to commit to the family firm's goals in the long term by helping family firms detect potential conflicts between non-family managers' professional identity and their expected behavior, which reduces the emergence of identity discordances that could lead to good faith reprioritization of commitments. Given the positive effects of monitoring on non-family managers' bounded rationality and bounded reliability issues we propose:

Hypothesis 2. *In family firms, non-family managers engage in greater entrepreneurial behavior under higher levels of monitoring.*

Incentives. Another important set of agency cost control mechanisms relates to monetary incentives for managers in the form of share ownership (e.g., Martin, Gómez-Mejía, & Wiseman, 2013) or performance-based pay (Eisenhardt, 1989). Like monitoring, agency theory suggests that monetary incentives reduce information asymmetries, align goals, and motivate non-family managers to engage in behaviors that benefit the family and the business. We argue that the same mechanisms can help ameliorate bounded rationality and reliability issues, thereby facilitating non-family managers' entrepreneurial behavior.

First, share ownership as a form of equity-based pay links managers' income directly to the measures of firm success that are relevant to family owners, and is therefore seen as a powerful mechanism to align goals and incentives between firm owners and managers (Jensen & Meckling, 1976). Next to ameliorating agency conflicts, share ownership can help non-family managers reduce bounded rationality issues by facilitating their understanding of family owners' goals and priorities, thus enabling them to engage in entrepreneurial actions that benefit both the family and the business. Moreover, the observation that non-family managers are often concerned about the lack of equity in their compensation (Poza, Alfred, & Maheshwari, 1997) suggests that share ownership can address bounded reliability issues. Indeed, ownership provides non-family managers with a claim on a share of the future growth of the family firm's market value and thus incentivizes them to take strategic actions that can potentially increase the firm's value in the long term (Martin et al., 2013). Therefore, the provision of ownership shares to non-family managers will likely increase the long-term commitment of non-family managers and reduce the likelihood of benevolent preference reversals and identity-based discrepancies over time. For these reasons, we expect:

Hypothesis 3a. *In family firms, non-family managers engage in greater entrepreneurial behavior when they own shares of the family firm.*

Second, prior agency theory literature suggests positive effects of performance-based pay on agency costs in family firms (e.g., Chrisman et al., 2004; Gómez-Mejía et al., 2001).

TCE further illuminates how performance-based pay can address bounded rationality and bounded reliability problems. Specifically, the TCE perspective suggests that non-family managers are likely to be particularly concerned with asymmetric compensation policies driven by family owners' aversion to dilute family control (e.g., Block, 2011; Gedajlovic & Carney, 2010; Verbeke & Kano, 2012). The use of performance-based incentives can reduce these concerns and resolve the cognitive ambiguity entailed by the family firm's variety of goals. Thus, performance-based pay can help non-family managers overcome ambiguity and risk aversion. Moreover, performance-based pay is likely to increase non-family managers' beliefs that they will be rewarded for their entrepreneurial activity and success (Hornsby et al., 2002), suggesting that they will adopt an extended temporal window to evaluate their actions and related outcomes, which should in turn reduce the likelihood that they scale back their initial commitment to the family firm's goals over time. Accordingly, we propose:

Hypothesis 3b. *In family firms, non-family managers engage in greater entrepreneurial behavior when they receive performance-based pay.*

Importantly, the TCE perspective suggests that family firms can address the challenges associated with family-based human asset specificity by economizing on various expressions of bifurcation bias in human resource practices (Verbeke & Kano, 2012). Examples are adopting human resource practices that embody unbiased family values, including justice and equality among owners and managers. Accordingly, we now turn to non-family managers' perceptions of distributive justice, their access to top management positions, and job control perceptions to assess the drivers of within-non-family manager heterogeneity with regard to entrepreneurial behavior.

Perceptions of Distributive Justice. Organizational justice research suggests that issues related to the distribution of outputs such as equality (equal treatment of the parties in reward decisions) and equity (fairness in view of the parties' contributions) drive managers' ability and willingness to engage in pro-organizational behaviors (e.g., Colquitt, 2001).

Specifically, managers are more concerned about the fairness of rewards than their absolute level (Colquitt, 2001); they compare their own input/output ratio to that of others and perceive inequity when the ratios are unequal (Barnett & Kellermanns, 2006; Sieger, Bernhard, & Frey, 2011). These perceptions of justice (or injustice), in turn, have important effects on the relationship between managers and their firms and on managers' attitudes toward the firm (Folger & Cropanzano, 1998). It follows that family firms can economize on their human asset specificity by promoting perceptions of distributive justice, which will enhance the ability and willingness of non-family managers to support the achievement of family goals.

Applied to non-family managers, their awareness that they are part of the business system but not of the family system is likely to create a heightened sensitivity to equality issues (Barnett & Kellermanns, 2006). It follows that their perceptions of injustice can jeopardize their ability to appreciate the diversity of family firm goals and, thus, intensify bounded rationality problems. Moreover, perceptions of distributive justice can also help family firms economize on bounded reliability problems. Specifically, such perceptions facilitate non-family managers' ability to commit to actions – such as entrepreneurial behavior – that enhance the family firm's long-term performance because they increase their confidence that they will benefit from it. Moreover, stronger perceptions of distributive justice likely make non-family managers believe to be treated as insiders, which can help family firms remove faultlines between family and non-family members in the firm (Patel & Cooper, 2014), thereby ameliorating the risk of identity-based discordance. We thus state:

Hypothesis 4. *In family firms, non-family managers engage in greater entrepreneurial behavior when they perceive a higher level of distributive justice within the firm.*

Access to Top Management Positions. Scholars have long recognized that family owners are reluctant to delegate control to non-family managerial staff and technical specialists (e.g., Carney, 2005; Chrisman & Patel, 2012). This, in turn, can lead to a greater

bifurcation bias in family firms' human assets, implying limited opportunities for career progression for non-family managers (Chrisman et al., 2014; Verbeke & Kano, 2012). Thus, providing opportunities for non-family managers to access top management positions can be an effective way to economize on bounded rationality and bounded reliability issues.

First, it allows family firms to economize on bounded rationality issues because it provides non-family managers with easier access to crucial information for decision-making as well as greater confidence in seeking more information when required (e.g., Hambrick & Mason, 1984). Relatedly, managers' beliefs regarding coordination and control play a critical role in enabling corporate entrepreneurship in family firms (Zahra et al., 2004; Zellweger & Sieger, 2012). Therefore, we expect that non-family managers in top management positions will be less exposed to information processing problems emanating from bounded rationality and will be better positioned to pursue entrepreneurial initiatives. Second, non-family managers' access to top management positions can also help economize on bounded reliability issues and reduce the likelihood of benevolent preference reversals. Specifically, non-family top managers will be more likely to feel responsible for their actions and maintain their commitment over time. Moreover, they will be more likely to see their future career in the family firm; thus, they will act consistently in the family firm's best interest over time. For example, Poza et al. (1997) observe that "confidence in the future is important for these managers, yet it is not always easy" (p. 144). Conversely, if competent non-family managers are excluded from top managerial responsibilities, they may identify entrepreneurial opportunities that align more closely with their professional identity, triggering identity-based discordances that may lead them to start their own firm or to leverage the opportunity by obtaining a better position in the job market (e.g., Campbell et al., 2012). We thus state:

Hypothesis 5. *In family firms, non-family managers engage in greater entrepreneurial behavior when they occupy a top management position.*

Control perceptions. Control perceptions over the job and work environment refer to the degree to which managers perceive latitude and freedom of action to make decisions and delegate responsibilities to lower-level managers and workers, which does not necessarily reflect their formal job title (Hornsby et al., 2002). Business families' desire to maintain concentrated family control (Carney, 2005; Gómez-Mejía et al., 2007) may limit non-family managers' degree of control and work discretion that are required for entrepreneurial experimentation (Kuratko, Ireland, & Hornsby, 2001). Therefore, control perceptions are likely to be an important economizing mechanism for addressing bounded rationality and bounded reliability issues and to facilitate non-family manager's entrepreneurial behavior.

First, lack of control is a common motive limiting individuals' information-processing capabilities and leading to illusory pattern perceptions (e.g., Whitson & Galinsky, 2008). Greater control perceptions can thus foster non-family managers' ability to appreciate the family firm's diverse set of goals and preferences. Also, higher control perceptions should encourage non-family managers to scan the external and internal environments and detect work-related problems at an early stage, leading to a greater ability to identify entrepreneurial opportunities that align with the family firm's goals. Second, these perceptions can ameliorate bounded reliability issues by helping non-family managers identify appropriate and achievable goals within a clearly defined time frame. For example, control perceptions correlate positively with employees' well-being and ability to cope with stress (e.g., Logan & Ganster, 2005); this, in turn, should reduce non-family managers' likelihood of scaling back on previous commitments or experience identity-based discordances. In sum, we propose:

Hypothesis 6. *In family firms, non-family managers engage in greater entrepreneurial behavior when they perceive greater control over their job and working environment.*

METHOD

Sample and Data Collection

Our dataset has been created to investigate managers' attitudes and behaviors (Sieger et al., 2011; Sieger et al., 2013). In 2009, we acquired email addresses of managers from the two largest professional address data providers in Switzerland and Germany. Focusing on "*senior managers*" (heads or directors of different departments) allowed us to randomly retrieve 10,750 valid email addresses. Using an identification-based online survey and one reminder email, we achieved a response rate of 9.5%, similar to other studies on senior managers (e.g., Capron & Mitchell, 2009). Out of these 1024 respondents, we only selected those who indicated that a family was the majority shareholder and that they would describe their company as a "*family business*", obtaining a final sample of 296 complete responses.

Measures

If not mentioned otherwise, all Likert-type scales range from 1 = strongly disagree to 7 = strongly agree. To translate the measurement instruments from English into German, we followed a back-translation procedure with two independent bilingual experts.[1]

Dependent variable. To measure *entrepreneurial behavior*, we use the same six-item instrument as Sieger et al. (2013). It focuses on the core essence of individual-level entrepreneurial behavior which includes managers' actions to discover and exploit entrepreneurial opportunities (Smith & Di Gregorio, 2002) through identifying new means to create new businesses or reconfigure existing ones (Hornsby et al., 2009), scanning the environment for opportunities and threats (Kraut et al., 2005), recognizing, surfacing, and generating ideas by observing market and competition (Shepherd, McMullen, & Jennings, 2007), as well as helping others to act entrepreneurially (Kuratko et al., 2005). The six items proposed by Sieger et al. (2013) are all based on previous empirical studies (Eddleston &

[1] A detailed list with all items and respective factor loadings is available from the authors.

Kellermanns, 2007; Dyer et al., 2008; Pearce et al., 1997). The six items loaded on one factor only, with factor loadings of 0.631 or larger (Cronbach's Alpha = 0.83)[2].

Independent variables. *Non-family managers* were identified with the question *"Are you a member of the owning family?"* ("yes" = "0", "no" = "1"). *Founder involvement* was assessed with the question *"Is the founder of the company still working in the business?"* ("yes" = "1", "no" = "0"). *Monitoring* was assessed with four items from Chrisman et al. (2007). These items loaded unidimensional with factor loadings of at least 0.572. Cronbach's Alpha was 0.71. *Share ownership* was based on the question *"Are you a partner or owner of your company, or do you hold shares in your company?"* ("yes" = "1", "no" = "0"). *Performance-based pay* referred to the question *"Is a part of your compensation depending on performance (e.g., bonus, profit share)?"* It thus indicates whether a performance-based pay system is existing for the respondent or not. Also here, "yes" answers were coded "1", "no" answers with "0". To capture whether managers were occupying a *top management position*, the respondents were asked to self-report their managerial level (Hornsby et al., 2009) by responding to the question *"Please indicate which hierarchy level best describes your position"*. 78 percent indicated *"top management/member of the management board"* (coded "1"). 22 percent indicated management positions outside the management board, in line with the initial selection criterion described above (coded "0"). For *distributive justice*, we used a validated German version (Maier et al., 2007) of the established measurement instrument from Colquitt (2001). Our four items loaded unidimensional with factor loadings of at least 0.933; Cronbach's Alpha was 0.96. The *perceived job control* instrument is based

[2] Sieger et al. (2013), who use a larger sample of managers from both family and non-family firms, report a Cronbach's Alpha of 0.83 as well. The items loaded on one factor only with factor loadings of 0.64 or higher. In addition, Sieger et al. (2013) demonstrated discriminant validity with a measure of corporate entrepreneurship (Eddleston & Kellermanns, 2007) and convergent validity with the entrepreneurial behavior measure of Pearce et al. (1997) and the innovative behavior measure of Dyer et al. (2008). We replicated the same analyses in our sample and found almost identical results, confirming both discriminant and convergent validity.

on the scale of Pierce et al. (2004). The eight items loaded on one factor (factor loadings of at least 0.63; Cronbach's Alpha = 0.84).

Control variables. We controlled for *firm age* and *size* (full-time equivalent employees) as well as for *respondents' age, gender* ("0" for female and "1" for male), the number of *weekly working hours,* and *tenure* (see Hornsby et al., 2009; Sieger et al., 2013). Also, we controlled for managers' *psychological ownership* toward their firm (Pierce et al., 2004; Sieger et al., 2013). The seven items loaded on one factor with factor loadings of 0.605 or higher; Cronbach's Alpha was 0.87. In addition, we used dummy variables for the most prevalent *industry sectors* in our sample, as the competitive environment of a company may impact entrepreneurial activities (*manufacturing, construction, services, tourism,* and *other).* Finally, we added a measure for *environmental dynamism* using four items from Achrol & Stern (1988), with loadings of 0.597 or higher and a Cronbach's Alpha of 0.70.

Data quality tests

To test for non-response bias, we compared early and late respondents as well as respondents who completed the whole survey and those who dropped out before completion using ANOVA (Oppenheim, 1966), and found no significant differences. To address potential common method bias, we first conducted Harman's one-factor test (Podsakoff et al., 2003) which revealed that no factor explained more than 14.17 percent of the variance. A confirmatory factor analysis (Podsakoff et al., 2003) with all our independent, moderator, and dependent variables shows that the corresponding structure exhibits an acceptable fit ($\chi^2(293) = 541.338$, CFI = 0.917, RMSEA = 0.054).[3] These findings suggest that our measures are empirically distinguishable and that common method bias is unlikely to be a major concern. The Variance Inflation Factor does not exceed 1.689, which indicates that multicollinearity is

[3] A CFI value of 0.9 or higher indicates acceptable model fit (Hu & Bentler, 1999), and a RMSEA value of 0.06 or smaller indicates good fit (Browne & Cudeck, 1993). The results of a one-factor structure are significantly worse ($\chi^2(324) = 2322.186$, CFI = 0.329, RMSEA = 0.145; difference in $\chi^2 = 1780.848$, df = 31, $p < 0.001$).

not an issue (Hair et al., 2006). Social desirability concerns are mitigated because respondents were assured strict confidentiality and anonymity; also, the study variables were spread over the comprehensive survey to prevent respondents from anticipating potential research questions and adapting their answers accordingly (Podsakoff et al., 2003).

RESULTS

Means, standard deviations, and Pearson correlations appear in Table 1. With one exception (share ownership versus non-family manager status), the correlations of our independent, moderator, and dependent variables are clearly below or only very slightly above 0.3 in magnitude, which indicates no obvious shared variance concern (Hair et al., 2006).

Insert Table 1 around here

Our hypotheses are tested with OLS regressions in the whole sample (family and non-family managers, N = 296, Hypotheses 1a and 1b, Table 2) and in the subsample of non-family managers (N = 260, all other hypotheses, Table 3). Specifically, Hypothesis 1a is tested in Model 2 of Table 2. Non-family manager status is negatively and significantly related to entrepreneurial behavior ($\beta = -0.111$, $p < 0.05$), which offers support to Hypothesis 1a. The interaction between non-family manager status and founder involvement in Model 4 is significant and positive ($\beta = 0.144$, $p < 0.05$), which is in line with Hypothesis 1b (see also the interaction plot shown in Figure 1).

Insert Table 2 and Figure 1 around here

In Model 6 in Table 3, monitoring has a positive and significant relationship with non-family managers' entrepreneurial behavior ($\beta = 0.155$, $p < 0.05$), which offers support to Hypothesis 2. Hypotheses 3a and 3b, however, have to be rejected because neither share ownership ($\beta = 0.033$, $p > 0.05$) nor performance-based pay ($\beta = 0.028$, $p > 0.05$) are significant (Models 7 and 8, respectively). In Model 9, distributive justice is positively and significantly related to our dependent variable ($\beta = 0.170$, $p < 0.01$), which confirms

Hypothesis 4. Hypothesis 5 finds support as well because having a top management position is significantly and positively related to entrepreneurial behavior ($\beta = 0.209$, $p < 0.01$; Model 10). Hypothesis 6 can also be supported (Model 11) as the coefficient of perceived job control is positive (0.162) and significant ($p < 0.01$). This pattern of findings is confirmed in Model 12 where we added all our independent variables. Whenever a coefficient (or interaction term) is significant, the change in R^2 is significant as well (see Models 2 and 4 in Table 2 and Models 6, 9, 10, 11, and 12 in Table 3). Taken together, we are able to confirm Hypotheses 1a, 1b, 2, 4, 5, and 6, while we need to reject Hypotheses 3a and 3b.

Insert Table 3 around here

DISCUSSION

We use TCE to advance the agency-stewardship dialectic and provide a broader and more flexible understanding of family and non-family managers' entrepreneurial behavior. According to our theorizing about family firms' human assets, firm-specific investments, and ensuing bounded rationality and reliability issues, we found a gap in entrepreneurial behavior between family and non-family managers. This gap, in turn, is smaller in family firms with the family founder still involved and increases after the founder's departure. Further, we investigate the drivers of non-family managers' heterogeneity in entrepreneurial behavior by elucidating how specific safeguarding mechanisms (i.e., monitoring, incentives, perceptions of distributive justice, access to top-management positions, and job control perceptions) allow family firms to economize on bounded rationality and bounded reliability issues.

Our study makes two main contributions to the literature. First, building on TCE, we advance an understanding of corporate entrepreneurship in family firms that goes beyond the traditional agency-stewardship dialectic and enables developing more nuanced predictions of differences in entrepreneurial behavior between family and non-family managers. Shifting

focus from firm-level corporate entrepreneurship to the individual-level entrepreneurial behavior of managers in family firms allows shedding light on hidden but important dynamics. In particular, our study demonstrates the value of TCE in order to explain why, irrespective of agency versus stewardship assumptions regarding their opportunistic motivations (Corbetta & Salvato, 2004), non-family managers may have both lower ability and willingness to engage in entrepreneurial behavior compared to family managers due to bounded rationality and bounded reliability. Thus, we provide a richer understanding of the "microfoundations" of corporate entrepreneurship (Zahra & Wright, 2011) in family firms, suggesting that the specificity of family firms' human assets and the ensuing bounded rationality and bounded reliability issues (Chrisman et al., 2014; Gedajlovic & Carney, 2010; Neckebrouck et al., 2017) are critical to understanding bifurcation biases (e.g., Verbeke & Kano, 2012) and entrepreneurial gaps between family and non-family managers.

Relatedly, our study clarifies the boundary conditions of the TCE perspective on family firms' human assets. Specifically, it suggests that the bifurcation bias underlying the entrepreneurial gap between family and non-family managers is lower when the family founder is still involved in the firm. Both founders and later generation family leaders have a variety of economic and non-economic goals, but the former have a greater ability to resolve potential goal conflicts than the latter (e.g., Miller et al., 2011). Thus, non-family managers' lower entrepreneurial behavior compared to family managers is not driven by goal conflicts as much as by their difficulty to understand the goal diversity of family firms and commit to such a complex set of goals over time. These findings also complement the notion that family businesses tend to become less entrepreneurial across generations (see, for instance, De Massis et al., 2013; Naldi et al., 2007). Taken together, our theory and findings demonstrate the value of TCE as a complementary perspective through which scholars can obtain a more nuanced understanding of corporate entrepreneurship in family firms.

Second, by building on bounded rationality and bounded reliability as microfoundations of managerial behavior, our study explicates the heterogeneity among non-family managers in family firms. The emerging literature on that group (e.g., Chrisman et al., 2014; Fang et al., 2016) has used the TCE perspective to explain the unique challenges that family firms face in recruiting and retaining non-family managers. By shifting the level of analysis from the firm to the managers working for it, we extend this view to provide a template that can be used to understand how, once family firms hire non-family managers, they can create the conditions for them to work effectively (e.g., Neckebrouck et al., 2017) and engage in pro-organizational behaviors such as entrepreneurial behavior (e.g., Eddleston et al., 2012). On the one hand, our study shows mixed evidence concerning the effectiveness of agency control mechanisms. On the other hand, our study points to an extended set of mechanisms such as perceptions of distributive justice, access to top management positions, and perceived job control, that appear to consistently remove barriers to non-family managers' entrepreneurial behavior. These findings have important implications for theory and research on non-family managers in family firms, as discussed next.

Although we hypothesized that monitoring and incentives – two traditional agency control mechanisms typically associated with goal alignment – would help curb managerial opportunism as well as ameliorate bounded rationality and bounded reliability issues, our results supported this argument only with regard to monitoring. One explanation might be that share ownership and performance-based pay may effectively help curbing opportunism, but not the other facets of bounded rationality and bounded reliability discussed in our theoretical development. It follows that opportunism is indeed not the only or main reason for non-family managers' commitment failure in relation to entrepreneurial behavior. For example, performance-based pay may provide financial incentives to behave in ways that increase firm performance and firm value, but they do not ensure that non-family managers

fully understand the complexity of the diversity of family firm goals and maintain their commitment to such goals, which are often intangible in nature, difficult to assess, and continuously changing over time. Monitoring, on the opposite, appears to be more effective in addressing opportunism as well as bounded rationality and bounded reliability problems. Future research is needed to further disentangle the different effects of monitoring and incentives in relation to opportunism, bounded rationality, and bounded reliability issues.

By contrast, we provide consistent evidence about the importance of organizational justice (e.g., Colquitt, 2001), fair participation in decision-making and career opportunities (Chrisman et al., 2014; Verbeke & Kano, 2012), and delegation of responsibilities (e.g., Hornsby et al., 2002) as primary mechanisms to ameliorate non-family managers' bounded rationality and bounded reliability issues and boost their ability and willingness to engage in pro-organizational behaviors. Therefore, our study provides new insights about the drivers of heterogeneity in non-family managers' behavior and about the actual policies and practices through which family firms can economize on their human asset specificity to encourage pro-organizational behaviors. Future research can build on these insights to further refine our understanding of recruitment and retention of non-family managers in family firms (Chrisman et al., 2014; Fang et al., 2016). For example, the expanded set of economizing mechanisms we identified could help refine our current understanding of the conditions under which family firms are perceived as good or bad employers by non-family managers (e.g., Neckebrouck et al., 2017) as well as to explain heterogeneity among family firms in terms of relevant outcomes such employee absenteeism, turnover, and performance.

Limitations and Suggestions for Future Research

Our work is not free of certain limitations, which, in turn, open up promising avenues for future research. The cross-sectional survey data does not allow us to derive definite conclusions with regard to the direction of causality of our investigated relationships. Hence,

we call for studies that test the same relationships with longitudinal data. Also, our responses stem from managers in family firms located in Switzerland and Germany. Although the core assumptions of TCE - bounded rationality and bounded reliability - should be rather independent of the cultural and institutional context, studies in other countries and cultures would be welcome. They could address, for example, differences between collectivistic and individualistic cultures, which would allow to assess the extent to which non-family managers' behavior is driven by bounded rationality and bounded reliability as opposed to opportunism. Also, our subsample of family managers is rather small; using a larger sample and delving into within-family manager heterogeneity is thus certainly promising.

Next to the limitation-based possibilities for future research, our paper opens up numerous other promising paths. First, we strongly encourage future research to investigate additional drivers of differences in individual-level entrepreneurial behavior between family and non-family managers. For our purposes, the TCE literature on bounded rationality and bounded reliability issues (Verbeke & Kano, 2012) has been proven to be very helpful, but alternative theoretical perspectives may provide further insights concerning, for example, the role of organizational culture, the overlap of values, or social identities (e.g., Sieger et al., 2016). Second, we advocate further research on the drivers of non-family managers' entrepreneurial behavior as such. For instance, the effectiveness of the application of more stewardship-related mechanisms (e.g., James et al., 2017) or the combination of agency and stewardship mechanisms (Madison et al., 2017) may deserve further research attention, especially in relation to the microfoundations of different governance configurations and their consequences for individual-level behavior. Third, we believe that applying a TCE perspective to the family firm context bears huge potential in general (Gedajlovic & Carney, 2010; Verbeke & Kano, 2010). It could be used to investigate various interesting motives, behaviors, and outcomes within the family firm, in the entrepreneurship context and beyond.

CONCLUSION

Taking a TCE perspective and building on the concepts of bounded rationality and bounded reliability, we provide intriguing insights concerning the entrepreneurial gap in entrepreneurial behavior between family and non-family managers as well as about different factors accounting for heterogeneity in entrepreneurial behavior among non-family managers. We do hope that our work provides inspiration and guidance for future research to address the microfoundations of managerial behavior and corporate entrepreneurship in family firms.

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FIGURE 1
Interaction Plot: Non-Family Manager Status, Founder Involvement, and Entrepreneurial Behavior

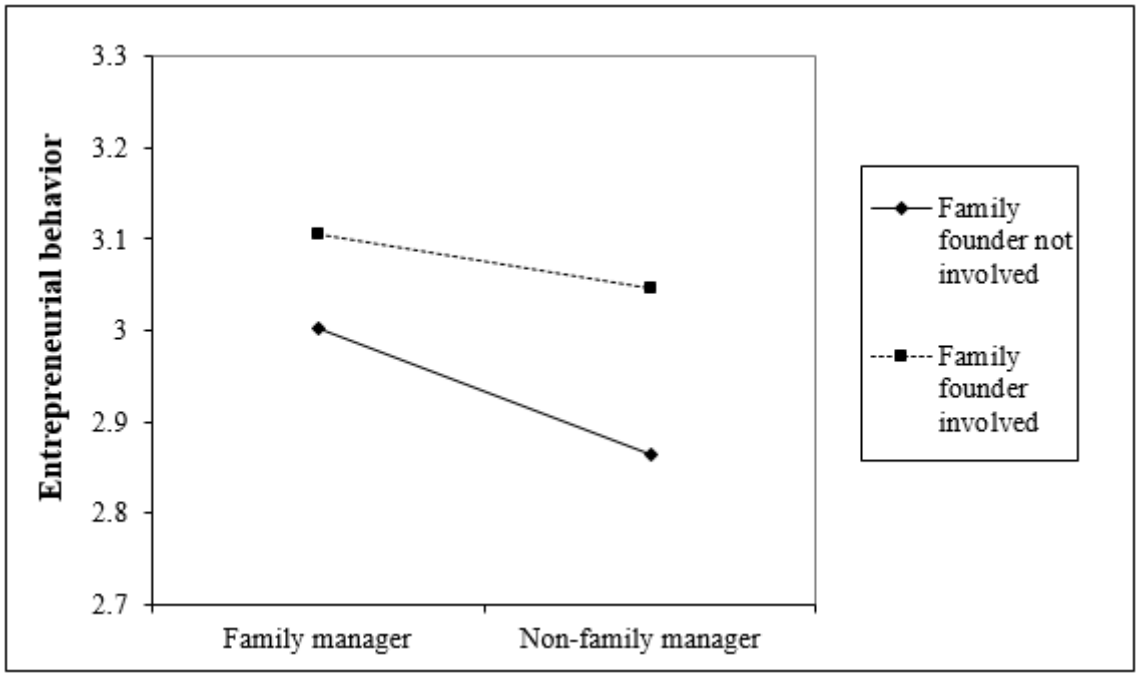

TABLE 1

Means, Standard Deviations, and Pearson Correlations

		Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Firm age	83.26	64.04	1																				
2	Firm size	1317	8126	.02	1																			
3	Age	45.78	8.58	.01	-.01*	1																		
4	Gender	0.23	0.42	.00	.12*	-.22**	1																	
5	Weekly working hours	49.47	13.46	-.02	-.00	-.04	-.26**	1																
6	Tenure	13.42	9.79	.05	-.07	.56**	-.10	-.01	1															
7	Psychological ownership	4.54	1.29	.03	-.04	.20**	-.15*	.06	.16**	1														
8	Manufacturing	0.61	0.49	.00	-.10	-.03	.02	-.12*	-.09	-.10	1													
9	Construction	0.10	0.30	.02	-.04	.06	-.07	-.00	.00	.08	-.41**	1												
10	Services	0.02	0.13	.14*	-.00	-.03	.05	-.01	-.06	.02	-.16**	-.04	1											
11	Tourism	0.02	0.13	-.06	-.01	.02	-.01	.12*	.04	-.01	-.16**	-.04	-.02	1										
12	Other industries	0.05	0.22	-.01	.23**	-.10	.06	.02	.01	.02	-.29**	-.08	-.03	-.03	1									
13	Environmental dynamism	4.37	1.07	-.08	.06	.02	.03	.01	.05	-.08	-.00	-.25**	.10	.00	-.05	1								
14	NFE status	0.88	0.33	-.11*	.05	.01	.10	-.02	-.12*	-.07	.04	-.05	.05	-.11	-.06	.05	1							
15	Founder involvement	0.21	0.41	-.38**	.08	-.08	.08	.06	-.11	-.05	-.03	-.03	.06	-.00	.00	.01	.11*	1						
16	Monitoring	4.12	1.10	.03	.03	.02	.02	.09	-.08	.02	.05	.02	.10	-.12*	-.06	.18**	-.01	-.02	1					
17	Share ownership	0.15	0.36	.11	-.01	-.05	-.03	.06	.11	.14*	-.08	-.05	-.06	.09	.07	-.01	-.56**	-.15*	0.03	1				
18	Performance-based pay	0.64	0.48	-.05	-.06	.10	-.29**	.19**	.01	.17**	-.05	-.09	-.07	.04	-.05	.10	-.06	-.11	0.07	0.09	1			
19	Distributive justice	4.93	1.32	.00	.05	.05	.09	-.03	.04	.23**	-.13*	.06	.03	-.02	-.02	-.01	-.05	-.10	.13*	.15*	.14*	1		
20	Top management	0.78	0.41	.01	-.14*	.19**	-.40**	.13*	.06	.25**	-.07	-.02	.01	.07	-.03	.02	-.12*	-.01	0.04	0.11	.30**	.13*	1	
21	Perceived job control	5.75	0.89	.04	-.22**	.17**	-.03	.08	.10	.15**	-.11	.13*	.07	.01	-.12*	.05	-.04	-.04	.13*	0.06	0.11	.17**	0.06	1
22	Entrepreneurial behavior	5.00	0.98	.04	.04	.18**	-.18**	.20**	.10	.25**	-.18**	.01	.10	-.02	-.04	.13*	-.11	-.00	.21**	.17**	.17**	.23**	.31**	.22**

N=296. S.D.=standard deviation. * and ** indicate significance at the 5% and 1% levels, respectively.

TABLE 2
Results of Regression Analysis (Full Sample)

	Model 1	Model 2	Model 3	Model 4
	β ***/ p***	***β*** ***/ p***	***β*** ***/ p***	***β*** ***/ p***
constant	***	***	***	***
Control variables				
Firm age	0.029	0.016	0.021	0.016
Firm size	0.063	0.068	0.067	0.065
Age	0.140 *	0.156 *	0.156 *	0.162 *
Gender	-0.088	-0.076	-0.077	-0.074
Weekly working hours	0.157 **	0.160 **	0.159 **	0.143 *
Tenure	-0.030	-0.048	-0.047	-0.054
Psychological ownership	0.203 ***	0.197 ***	0.198 ***	0.198 ***
Manufacturing	-0.198 **	-0.201 **	-0.200 **	-0.226 **
Construction	-0.075	-0.082	-0.082	-0.104
Services	0.047	0.052	0.050	0.044
Tourism	-0.073	-0.087	-0.086	-0.097 †
Other industries	-0.095	-0.103 †	-0.103 †	-0.119 *
Environmental dynamism	0.116 *	0.117 *	0.117 *	0.104 †
Independent variables				
Non-family manager status		-0.111 *	-0.111 *	-0.069
Founder involvement			0.012	0.016
Interaction term				
Non-family manager status X founder involvement				0.144 *
Model fit indices				
Adjusted R^2	0.146	0.155	0.152	0.167
Delta R^2		0.011*	0.011	0.018*
Model of comparison		Model 1	Model 1	Model 3
F statistics	4.869***	4.853***	4.516***	4.703***

N=296. Standardized beta coefficients reported. †, *, **, and *** indicate significance at the 10%, 5%, 1%, and 0.1% levels, respectively.

TABLE 3
Results of Regression Analysis (Non-family Manager Subsample)

	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
	β / p	***β / p***	***β / p***	***β / p***	***β / p***	***β / p***	***β / p***	***β / p***
constant	***	***	***	***	***	***	***	**
Control variables								
Firm age	-0.022	-0.024	-0.024	-0.022	-0.022	-0.022	-0.029	-0.032
Firm size	0.064	0.059	0.065	0.065	0.055	0.084	0.098	0.103 †
Age	0.134 †	0.121 †	0.138 †	0.133 †	0.125 †	0.107	0.109	0.075
Gender	-0.078	-0.088	-0.078	-0.071	-0.098	-0.009	-0.087	-0.050
Weekly working hours	0.146 *	0.125 *	0.145 *	0.143 *	0.152 *	0.144 *	0.131 *	0.122 *
Tenure	-0.058	-0.035	-0.058	-0.055	-0.052	-0.034	-0.050	-0.009
Psychological ownership	0.190 **	0.186 **	0.187 **	0.186 **	0.150 *	0.148 *	0.180 **	0.110 †
Manufacturing	-0.226 **	-0.238 **	-0.220 **	-0.223 **	-0.199 **	-0.208 **	-0.211 **	-0.184 *
Construction	-0.098	-0.111	-0.092	-0.094	-0.094	-0.071	-0.114 †	-0.093
Services	0.056	0.042	0.059	0.059	0.058	0.057	0.048	0.039
Tourism	-0.029	-0.022	-0.031	-0.028	-0.020	-0.041	-0.025	-0.029
Other industries	-0.087	-0.087	-0.087	-0.086	-0.075	-0.088	-0.077	-0.072
Environmental dynamism	0.117 †	0.083	0.116 †	0.114 †	0.118 †	0.110 †	0.107 †	0.079
Independent variables								
Monitoring		0.155 *						0.121 *
Share ownership			0.033					0.034
Performance-based pay				0.028				-0.040
Distributive justice					0.170 **			0.120 *
Top management						0.209 **		0.207 **
Perceived job control							0.162 **	0.144 *
Model fit indices								
Adjusted R2	0.14	0.159	0.137	0.137	0.164	0.172	0.16	0.214
Delta R2		0.022*	0.001	0.001	0.026**	0.034**	0.023**	0.089***
F statistics	4.235***	4.502***	3.943***	3.934***	4.629***	4.836***	4.535***	4.721***

N=260. Standardized beta coefficients reported. The model of comparison is always Model 5. †, *, **, and *** indicate significance at the 10%, 5%, 1%, and 0.1% levels, respectively.