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Department of Economics and Technology Management

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XXV Ciclo

**FAMILY-CENTERED NON-ECONOMIC GOALS AND
THE STRATEGIC BEHAVIOR OF FAMILY FIRMS**

Doctoral Dissertation

Josip Kotlar

Supervisor: Prof. Lucio Cassia

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For my family.

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PREFACE

Family firms dominated economic history through the first industrial revolution (Colli (Colli, 2002; Morck, 2005), and families continue playing a significant ownership and managerial role in many companies despite the rise of the modern corporation at the turn of the twentieth century. For example, research suggest that family firms represent at least 80 percent of all privately held firms in the U.S. (Daily & Dollinger, 1992; Shanker & Astrachan, 1996), and in Italy (e.g., Corbetta & Montemerlo, 1999), and La Porta et al. (1999) estimated that 30 percent of the publicly-traded firms worldwide are family-controlled.

Economic theory has long emphasized that competitive forces extinguish inefficient forms of business enterprise, leaving only those that are structurally most fit with respect to the market conditions. Also, organization theory suggest that the prevalence of an organizational form in a given sector can be explained by its fit with the environment. By these standards, the family enterprise must be a remarkably efficient and robust organizational form (Gedajlovic & Carney, 2010; Schulze & Gedajlovic, 2010).

Because of many reasons, including philosophical preconceptions (Schulze & Gedajlovic, 2010) and low accessibility to data (Miller & Le Breton-Miller, 2005), the consideration of family firms in the management literature has been limited for a long time. However, the past decade has been a period of renaissance for research on family firms (De Massis et al., 2012), as many prominent scholars from the fields of economics, management, and sociology have rediscovered the practical and theoretical significance of this long neglected organizational form.

As this research field grew, scholars have discovered that families exert considerable influence over several organizational outcomes like executive compensation (Berrone, Cruz, & Gomez-Mejia, 2012; Cruz, Gómez-Mejia, & Becerra, 2010; Gómez-Mejía, Larraza-Kintana, & Makri, 2003; Gómez-Mejía, Nunez-Nickel, & Gutierrez, 2001), diversification in new product markets (Gomez-Mejia, Makri, & Larraza-Kintana, 2010; Miller, Le Breton-Miller, & Lester, 2010), strategic risk (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010; Gómez-Mejía et al., 2007), innovation (Chrisman & Patel, 2012; De Massis, Frattini, & Lichtenthaler, 2013), and financial performance (Anderson & Reeb, 2003; Carney, 2005). In particular, research has emphasized that family firms have non-economic goals (Chrisman, Chua, Pearson, & Barnett, 2012; Zellweger, Kellermanns, Chrisman, & Chua,

2012) that derive from the controlling families' willingness to protect their accumulated endowment of socioemotional wealth (Gómez-Mejía et al., 2007; Gomez-Mejia et al., 2010). These non-economic utilities include the ability of the family to exercise unconstrained authority over business operations and strategy, to fulfill needs for belonging, affect, and intimacy, to cultivate family values through the firms, to discharge familial obligations, to act altruistically toward family members using firm resources, to preserve the family firm's social capital, and to renew family bonds through dynastic succession (for a review of dimensions of socioemotional wealth, see Berrone et al., 2012).

From a strategic perspective, goals differences are likely engender diverse behaviors and performance between family and non-family firms (Chrisman, Chua, & Sharma, 2005; Chua, Chrisman, & Sharma, 1999). Despite the field has gathered momentum in the last several years, knowledge regarding the strategic consequences of family goals is still limited, and much remains to be done toward the development of a theory of the family enterprise. This thesis aims at adding theory and evidence about *how family-centered non-economic goals affect strategic processes in family firms*. In particular, three studies are presented that address different but complementary aspects of strategic management in family firms.

The first study (Chapter One), entitled "The impact of family involvement on SMEs' performance: Theory and evidence" complements agency theory with behavioral assumptions to explore the effects of family involvement on SMEs' performance. The study, based on evidence about 787 small and medium enterprises (SMEs) in Italy, shows that family ownership and family involvement in management have significant impacts on the performance of an SME. The results of this study suggest that these relationships may be more complex than linear, such that family ownership is beneficial to an SME's performance up to a threshold level beyond which additional family ownership causes behavioral problems such as lack of self-control, risk-aversion, and improper use of firm resources. Also, balancing family and non-family members in the TMT is found to be beneficial to SMEs' performance, but the family ratio in the TMT becomes crucial only at high levels of family ownership. In sum, the study puts in light the complexity of the relationship between family involvement and firm performance, and it emphasizes the need of further investigating the intervening mechanisms and processes that determine the competitive advantages and disadvantages of family firms.

The second study (Chapter Two) focuses on family-centered non-economic goals, which are often mentioned as a key mediating variable between family involvement and firm performance, and are considered as a key element for explaining differences between family

and non-family firms (e.g., Chrisman et al., 2012; Chrisman & Patel, 2012; Zellweger et al., 2012). The study begins with the observation that theoretical and empirical work exploring how family-centered goals are formed is not nearly as refined as the work that has been done at the aggregate level. The study consists of a qualitative examination of goals and goal-setting processes of 19 family firms and it aims at explaining how family-centered goals are established, and how they influence decision making in the family firm. The study reveals the existence of multifaceted goals in family firms and offers an illustration of how individual goals reflect the individuals' membership to different systems, the generation of family control, and the stage of the intra-family succession. Grounded in this rich body of empirical evidence, the family firm emerges as a complex combination of individuals with divergent goals that are embedded in multiple organizational contexts, pointing to the persistence of organizational goal diversity in family firms. Furthermore, our evidence reveals that goal diversity can be managed, and family-centered goals can be stabilized through professional or familial social interactions. Finally, the study shows that goal diversity is expressed more strongly in the imminence of an intra-family succession, and that the reliance on different types of social interactions has important implications for the collective commitment to family-centered goals in family firms.

The third study (Chapter Three) focuses on the strategic consequences of family-centered non-economic goals for strategic decisions at the firm level. In particular, the study explores technology acquisition from external sources, which is widely acknowledged as a critical competence for sustained success in innovation. Extending traditional research, that has modeled the choice to acquire technology from outside a firm's boundaries using the transaction cost economics theory, this study incorporates the behavioral considerations that may potentially encourage or discourage managers from sourcing technology outside the firm's boundaries. The study builds new theory that relates performance risk, family management and the contingent effect of the degree of technology protection on external technology acquisition, and test the hypotheses with longitudinal data on 1,540 private Spanish manufacturing firms. The analysis shows that managers are more likely to acquire technology from external sources through R&D contracting when firm performance falls below managers' aspirations. However, we propose and find that family firms are more reluctant to acquire external technology, and the effect of negative aspiration performance gaps becomes less relevant as family management is higher, which we attribute to family firm managers' attempts to avoid losing control over the trajectory that technology follows over time. However, the study also uncovers some mechanisms (specifically, the filing of

patents on the firm proprietary technologies) that increase the managers' perceptions of control over the technology trajectory and thus lessen the family firms' reluctance to consider the adoption of an open approach to technology development. As such, this study makes a contribution to the understanding of the behavioral factors driving external technology acquisition, and it offers important insights regarding technology strategy in family firms.

In sum, the three studies presented in this thesis add important insight into how family firms differ from non-family firms and how these differences affect some key firm outcomes (in particular, financial performance, goal-setting processes, and technology strategy). It follows a generous agenda for future research aimed at further enriching and extending theoretical and practical understanding of strategic management in family firms.

REFERENCES

- Anderson, R.C., & Reeb, D.M. (2003). Founding-family ownership and firm performance: Evidence from the S&P 500. *Journal of Finance*, 58(3), 1301-1327.
- Berrone, P., Cruz, C., & Gomez-Mejia, L.R. (2012). Socioemotional wealth in family firms: Theoretical dimensions, assessment approaches, and agenda for future research. *Family Business Review*, 25(3), 258-279.
- Berrone, P., Cruz, C., Gomez-Mejia, L.R., & Larraza-Kintana, M. (2010). Socioemotional wealth and corporate responses to institutional pressures: Do family-controlled firms pollute less? *Administrative Science Quarterly*, 55(1), 82-113.
- Carney, M. (2005). Corporate governance and competitive advantage in family-controlled firms. *Entrepreneurship Theory and Practice*, 29(3), 249-265.
- Chrisman, J.J., Chua, J.H., Pearson, A.W., & Barnett, T. (2012). Family involvement, family influence, and family centered non economic goals in small firms. *Entrepreneurship Theory and Practice*, 36(2), 267-293.
- Chrisman, J.J., Chua, J.H., & Sharma, P. (2005). Trends and directions in the development of a strategic management theory of the family firm. *Entrepreneurship Theory and Practice*, 29(5), 555-576.
- Chrisman, J.J., & Patel, P.J. (2012). Variations in r&d investments of family and non-family firms: Behavioral agency and myopic loss aversion perspectives. *Academy of Management Journal*, 55(4), 976-997.
- Chua, J.H., Chrisman, J.J., & Sharma, P. (1999). Defining the family business by behavior. *Entrepreneurship Theory and Practice*, 23(4), 19-39.
- Colli, A. (2002). *The history of family business, 1850-2000*. Cambridge, U.K.: Cambridge University Press.
- Corbetta, G., & Montemerlo, D. (1999). Ownership, governance, and management issues in small and medium size family businesses: A comparison of Italy and the United States. *Family Business Review*, 12(4), 361-374.

- Cruz, C.C., Gómez-Mejía, L.R., & Becerra, M. (2010). Perceptions of benevolence and the design of agency contracts: Ceo-tmt relationships in family firms. *Academy of Management Journal*, 53(1), 69-89.
- Daily, C.M., & Dollinger, M.J. (1992). An empirical examination of ownership structure in family and professionally managed firms. *Family Business Review*, 5(2), 117.
- De Massis, A., Frattini, F., & Lichtenthaler, U. (2013). Research on technological innovation in family firms: Present debates and future directions. *Family Business Review*, forthcoming.
- De Massis, A., Sharma, P., Chua, J.H., Chrisman, J.J., & Kotlar, J. (2012). State-of-the-art of family business research. In A. De Massis, P. Sharma, J. H. Chua & J. J. Chrisman (Eds.), *Family business studies: An annotated bibliography*. Northhampton, MA: Edward Elgar.
- Gedajlovic, E., & Carney, M. (2010). Markets, hierarchies, and families: Toward a transaction cost theory of the family firm. *Entrepreneurship Theory and Practice*, 34(6), 1145-1172.
- Gómez-Mejía, L.R., Haynes, K.T., Núñez-Nickel, M., Jacobson, K.J.L., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from spanish olive oil mills. *Administrative Science Quarterly*, 52(1), 106-137.
- Gómez-Mejía, L.R., Larraza-Kintana, M., & Makri, M. (2003). The determinants of executive compensation in family-controlled public corporations. *The Academy of Management Journal*, 46(2), 226-237.
- Gomez-Mejia, L.R., Makri, M., & Larraza-Kintana, M. (2010). Diversification decisions in family-controlled firms. *Journal of Management Studies*, 47(2), 223-252.
- Gómez-Mejía, L.R., Nunez-Nickel, M., & Gutierrez, I. (2001). The role of family ties in agency contracts. *Academy of management Journal*, 44(1), 81-95.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1999). Corporate ownership around the world. *Journal of Finance*, 54(2), 471-517.
- Miller, D., & Le Breton-Miller, I. (2005). *Managing for the long run*. Boston, MA: Harvard Business School Press.
- Miller, D., Le Breton-Miller, I., & Lester, R.H. (2010). Family ownership and acquisition behavior in publicly-traded companies. *Strategic Management Journal*, 31(2), 201-223.
- Morck, R. (2005). *A history of corporate governance around the world: Family business groups to professional managers*. Chicago, IL: University of Chicago Press.
- Schulze, W.S., & Gedajlovic, E.R. (2010). Whither family business? *Journal of Management Studies*, 47(2), 191-204.
- Shanker, M.C., & Astrachan, J.H. (1996). Myths and realities: Family businesses' contribution to the us economy—a framework for assessing family business statistics. *Family Business Review*, 9(2), 107-123.
- Zellweger, T.M., Kellermanns, F.W., Chrisman, J.J., & Chua, J.H. (2012). Family control and family firm valuation by family ceos: The importance of intentions for transgenerational control. *Organization Science*, 23(3), 851-868.

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CHAPTER ONE

THE IMPACT OF FAMILY INVOLVEMENT ON SMES' PERFORMANCE: THEORY AND EVIDENCE

CHAPTER ONE ABSTRACT

By complementing agency theory with behavioral assumptions, we explore the effects of family involvement on SMEs' performance. We identify three separate dimensions of family involvement and hypothesize non-linear, direct and interaction effects on the performance of an SME. The evidence on 787 SMEs suggests that an inverted U-shaped relationship exists between family ownership and performance, and ownership dispersion among family members negatively affects performance. Balancing family and non-family members in the TMT is found to be beneficial to SMEs' performance, but the family ratio in the TMT becomes crucial only at high levels of family ownership.

INTRODUCTION

In the literature on economics, as well as that related to management and entrepreneurship, the incidence of studies of family firms has increased in recent years (De Massis et al. 2012; Debicki et al., 2009), and a number of recent empirical studies have demonstrated that, even though the definition of a "family business" remains a matter of some debate, the direct involvement of family members in the ownership and management of firms is very common (Astrachan & Shanker, 2003; La Porta et al., 1999).

Although fewer than 1 percent of the papers published in prominent academic business journals deal with this category of organization (Dyer 2003), the body of evidence on the topic reveals significant differences between family and nonfamily firms across several important dimensions like financial structure (e.g., Mishra & McConaughy, 1999), risk preferences (e.g., Gómez-Mejía et al., 2007), corporate governance (e.g., Bammens, Voordeckers, and Van Gils, 2011), and innovation (e.g., De Massis et al., 2013) among others. From the strategic management perspective, these differences should be manifest in performance differences between family and nonfamily firms (Chrisman, Chua, & Sharma, 2005; Chua, Chrisman, & Sharma, 1999).

However, the relationship between family involvement and firm performance is far from being clear (Gedajlovic et al., 2012; Mazzi, 2011; O'Boyle, Rutherford, & Pollack,

2010). From the theoretical point of view, scholars continue to be divided between those emphasizing the benefits of family involvement (Chrisman, Chua, & Litz, 2004; Dyer, 2006; Miller et al., 2007) and those pointing to its drawbacks (e.g., Schulze, Lubatkin, and Dino, 2002, 2003a, 2003b). In addition, empirical research continues to provide variegated findings (Dyer, 2006; Gedajlovic, et al. 2012; O'Boyle, Pollack, & Rutherford, 2011; Rutherford, Kuratko, & Holt, 2008), which also reflects a number of caveats in existing research. Indeed, the majority portion of previous research on this topic has investigated the differences in the performances of family and nonfamily firms dichotomously (e.g., Daily and Dalton, 1992; McConaughy, Matthews, & Fialko, 2001), but the findings of these studies reflect the difficulties associated with the unequivocal definition of “family firms” and with the effective operationalization of such definition (Astrachan, Klein, & Smyrnios, 2002; Chua, Chrisman, & Sharma, 1999; Westhead & Cowling, 1998). Moreover, empirical research on family firms’ performance has often measured a sole dimension of family involvement, that appears problematic because, for example, family ownership and family management may have separate, and even opposite effects on performance (Block, Jaskiewicz, & Miller, 2011). Finally, while most empirical evidence has been provided on the relationship between founding family involvement and performance in large firms (e.g., Anderson & Reeb, 2003; Lee, 2006; Minichilli, Corbetta, & MacMillan, 2010), research conducted on small and medium family firms is still rare (Heck et al., 2008), although they play a crucial role in the world economy (Storey, 1994) and have understandable differences, for example, in terms of chain of command from large, listed companies (Johannisson & Huse, 2000). Indeed, prior research suggests that the results found for large, publicly traded firms may not hold for smaller, private firms (Miller et al., 2007).

The present study addresses these issues and adds to previous research by investigating how family ownership and family involvement in the top management team (TMT) affect the performance of an SME. By complementing the partial and overly optimistic tenets of agency theory with behavioral assumptions we develop a conceptual analysis that emphasizes the distinct effects of family ownership and family involvement in the TMT on performance, thus providing a more fine-grained understanding of the consequences of family involvement. We formulate theoretical hypotheses that go beyond the dichotomy between family and non-family firms and explore non-linear relationships between family ownership and the family involvement in the TMT, and the performance of an SME. Specifically, we propose that family ownership reduces agency costs in SMEs through facilitating monitoring of managers and discouraging managerial opportunism, up to

the point to which the lack of external scrutiny engenders lack of self-control (Schulze et al., 2001) and favors myopic risk aversion and nepotism. In addition to the extent of family ownership, we also highlight the negative consequences of ownership dispersion among family members. With respect to family involvement in management, we posit that it is beneficial to an SME's performance due to the reduction of information asymmetries and the alignment between owners and managers (Jensen & Meckling, 1976), plus the potential benefits of kinship relationship among top managers. Nevertheless, these advantages are likely to be offset by the low availability of diverse perspectives and knowledge in decision-making processes when family involvement is excessive. As such, we argue that balancing family and external representation both in ownership and in the TMT is beneficial to the performance of an SME. Finally, we discuss the contingent nature of family involvement in the TMT, arguing that both the benefits and the drawbacks associated with family management are reduced when family ownership is lower. These arguments find overall support in our empirical analysis of the relationships between family involvement and performance of 787 SMEs, that relies on continuous measures to investigate the performance consequences of multiple dimensions of family involvement (namely, family ownership, family ownership dispersion, and family involvement in the TMT).

In sum, this study advances our understanding of the influence of family involvement on the performance of an SME by presenting an enhanced theoretical examination that allows to separate the benefits and drawbacks of family involvement based on its dimensions and extent, and offers a comprehensive picture of the configurations of family involvement in ownership and management that are most favorable or adverse to SMEs' performance. Thus, this study contributes to a deeper understanding of the direct and contingent effects of family involvement on the performance of SMEs (Chrisman et al., 2012; Mazzi, 2011; O'Boyle, Rutherford, & Pollack, 2010), which is found to be one of the most critical determinants of their long-term survival and sustainable competitive advantage (Dyer, 2006).

The remainder of the paper is organized as follows. In the next section, we expand these theoretical perspectives and develop the research hypotheses. In the third section, we describe the methodology of the research, including the sample and variables included in the analysis and the analytical techniques used. In the fourth section, we present the results. In the fifth section, we present robustness checks. In the sixth section, we discuss the results in the light of previous studies and theories, point out the limitations of the present study, and suggest directions for future research. Finally, we draw some conclusions and outline the implications of the present study.

THEORY AND DEVELOPMENT OF HYPOTHESES

Family Involvement and SME Performance: Agency and Behavioral Assumptions

Despite family involvement in ownership and management is very common, its effects on firm performance are still matter of debate (Gedajlovic et al., 2012; Mazzi, 2011; O'Boyle, Pollack, & Rutherford, 2011). Specifically, research has emphasized two alternative theories to explain the relationship between family involvement and performance. Agency theory, a leading paradigm in family business studies (Chrisman, Chua, & Sharma, 2005), assumes that owners have diversified shareholdings and are thus risk neutral in their preferences for individual firm actions, whereas managers are assumed to display aversion to risk, owing to the dependence of their personal wealth (for example, employment security and income) on the firm (Donaldson, 1961). This risk differential (Beatty & Zajac, 1994) is at the roots of conflicts of interests between owners and managers, and it is assumed to encourage opportunistic behaviors by the part of managers. Based on these assumptions, agency theory is primarily concerned about solving conflicts of interest between owners and agents (Eisenhardt, 1989). Specifically, alignment of managerial behavior to the shareholders' interests can be reached through control mechanisms that involve monitoring and bonding costs, that in turn detract from performance (Jensen & Meckling, 1976). According to the model proposed by Jensen and Meckling (1976), conflicts and concurrent agency costs in private SMEs are thus expected to decrease with family involvement as, on the one hand, property rights are restricted to family owners who have the authority and control to strictly monitor managers and, on the other hand, family owners' and managers' interests are naturally aligned (Fama & Jensen, 1983a). As a consequence, agency theory suggests that family owned and managed firms are very efficient forms of organizations (e.g., Daily & Dalton, 1992; Fama & Jensen, 1983b).

Even if valid, the view of the world presented by agency theory ignores a good bit of the complexity of organizations. Specifically, the pessimistic assumptions of agency theory about risk aversion and the self-serving nature of managers have been argued to constitute a simplistic view of human nature (Corbetta & Salvato, 2004; Daily, Dalton, & Cannella, 2003). Following the call for additional perspectives to complement the partiality of agency theory (Eisenhardt, 1989), Schulze, Lubatkin, and Dino (2002, 2003a, 2003b) have criticized the application of agency theory to family firms by arguing that it oversimplifies the complex and distinctive relationships among family members involved in decision making, and they have proposed an extension of agency theory based on behavioral theory.

The behavioral theory (Cyert & March, 1963) suggests that owners and managers do not have static and consistent preferences toward risk, and that they, in reality, may be less concerned with solving conflicts of interests and more concerned with managing the complexity and uncertainty associated with strategic decision making (Cyert & March, 1963; Finkelstein & Hambrick, 1996; Hambrick & Mason, 1984; Pettigrew, 1992). The main feature characterizing the behavior of owners and managers in a behavioral framework is in this respect the limited ability of organizational actors to effectively gather and process information, which requires the collection and coordination of dispersed knowledge (Argote & Greve, 2007; Cyert & March, 1963). The involvement of the family in ownership and management is thus primarily conceived in terms of its impact on the firm's ability to make the best decisions for the firm.

With respect to the consequences of family involvement, the behavioral theory complements the dominant agency perspective. In certain aspects, it adds to the positive portrait of family firms in agency theory by assuming, for example, that family members are altruistic toward future generations and that family ownership will thus benefit decision making by fostering long-term orientation and parsimony in caretaking the family's wealth (Schulze, Lubatkin, & Dino, 2003b). Also, family firms are supposed to benefit from the relational potential associated with the kin relationships existing among family managers (Ensley & Pearson, 2005). However, the behavioral theory also emphasizes negative consequences of family involvement such as the lack of self-control, that can lead family owners to become averse to risk and unconsciously favor decisions that harm the firm and the family (Schulze et al., 2001), and the limits in knowledge and perspectives available to the TMT that may be engendered when family members with very akin values and background occupy most of the managerial positions (Anderson & Reeb, 2004).

It emerges from this debate that agency theory and the behavioral theory have a different focus, and they also differ in their underlying assumptions. Both theories, taken alone, provide only a partial representation of the effects of family involvement on the performance of an SME. Complementing the two theoretical perspectives may thus provide further insights into the direct consequences of family ownership and management on the performance of an SME, as well as into the configurations between family ownership and family management that may be best for firm performance. Following prior work (e.g., Lubatkin, Ling, & Schulze, 2007), in the following sections we extend and combine arguments from agency and behavioral theory to conceptually examine the effects of family

ownership and family involvement in the TMT and predict their ultimate effects on the performance of an SME.

Family Involvement in Ownership

The agency literature suggests that family ownership may be beneficial to an SME's performance mainly because of concentrated ownership. In particular, as concentrated owners, family owners in private SMEs have substantial economic incentives, as well as the necessary access and authority to decision processes (Carney, 2005; De Massis et al., 2011), for the close monitoring of managers, suggesting that family involvement in ownership may reduce monitoring costs and thus be beneficial to an SME's performance (Fama & Jensen, 1983b). The behavioral theory, instead, assumes that firm owners (in our case, family owners) play an active role in decision making and thus influence firm choices. In this regard, research using behavioral perspectives have described family owners as long-term oriented shareholders (Le Breton-Miller & Miller, 2006; Lumpkin & Brigham, 2011), emphasizing their desire to pass a healthier and stronger business to future generations (James, 1999; Ward, 2004), and have associated family ownership to higher parsimony in caretaking the family's personal wealth (Carney, 2005).

Although family ownership may bring benefits to an SMEs' performance, the positive effects described above may be offset by behavioral dysfunctions at extreme degrees of family ownership in private SMEs. In particular, Schulze et al. (2001) noted that the lack of external constraints like those exercised by the capital market scrutiny may expose family owners to deficiency of self-control. Self-control is described in the behavioral economic theory as one's ability to control her/his impulses in ways that can maximize the long-term welfare (Thaler & Shefrin, 1981), and lack of self-control may cause family owners to unconsciously take actions which harm the family and the firm (Lubatkin, Ling, & Schulze, 2007). This problem can be particularly severe in private firms, where owners are not exposed to the market for corporate control (Schulze et al., 2001), and it can become more serious at extreme degrees of family ownership because in this scenario other equity holders, who can exercise some control on family owners, tend to lose influence. As a consequence, an excessive family ownership may expose private SMEs to costs that go beyond those described by the favorable agency relationships in family firms. First, because the financial portfolios of family owners are typically undiversified, meaning that a high share of their personal wealth is tied up in the family firm (Mishra & McConaughy, 1999), the absence of other sources of equity than those of the family leads to relax the assumption in agency

theory that shareholders are neutral to risk, and it leads to consider some counterproductive behaviors such as myopic risk aversion. Indeed, as illiquid investors, highly concentrated family owners are likely to assign lower values to uncertain cash flows (Shleifer & Vishny, 1986) and this can result, for example, in poor investment decisions, such as the avoidance of risky long-term investments in order to lower the costs of outputs (Fama & Jensen, 1983a), that is the adoption of a strategy geared towards consumption (Schulze, Lubatkin, & Dino, 2003a). Second, although altruism can foster a long-term perspective, lack of self-control associated with very high degrees of family ownership may expose family owners to the negative side of parental altruism (Lubatkin, Ling, & Schulze, 2007). These negative aspects derive from the observation that owners/managers link the welfare of one family member to the others (Jensen, 1994; Schulze, Lubatkin, & Dino, 2002), suggesting that parents are likely to provide their children with secure employment and other privileges, regardless of their skills or effort. Such a nepotistic approach is likely to be limited when external controls exist, but it may flourish and favor an inappropriate use of the resources of a firm in absence of external controls, leading for example to the emergence of the ‘Samaritan’s Dilemma’, with negative consequences for firm performance (Chrisman, Chua, & Litz, 2004).

In sum, complementing agency theory with behavioral assumptions leads us to predict that although the performance of a firm may be expected to improve with family involvement in ownership, an excessively high level of family ownership is likely to counterbalance these benefits in SMEs, where decisions are not subject to any other external scrutiny. Thus, we hypothesize:

Hypothesis 1: There is an inverted U-shaped relationship between the degree of family ownership and the performance of an SME, with a peak associated with moderate levels of family ownership.

In addition to the degree of family ownership, also the stage of the family involvement in ownership may affect an SME’s performance. Gersick (1997) noted that family ownership tends to become dispersed over time as the owner passes her or his shares onto her or his children and the firm moves from a “controlling owner” to a “sibling partnerships” stage.¹ This dispersion of ownership among sibling partners can generate new

¹ For our purposes here, family ownership dispersion is referred to as the number of controlling family members that hold equity in the firm. Low dispersion reflects that family ownership is concentrated in one or few family members, whereas high family ownership dispersion indicates that multiple family members hold ownership in the firm. It is important to note that this measure is similar to that used by Eddleston, Otondo, and Kellermanns (2008) and Le Breton-Miller, Miller, and Lester (2011) but, contrary to Schulze, Lubatkin, and Dino (2003a), we do not focus here on how the voting power is balanced among majority and minority family owners.

agency problems. The family members who have newly become shareholders in the firm may feel a growing sense that they have a legitimate claim to ownership of the firm, in the form of a future inheritance (Holtz-Eakin, Joulfaian, & Rosen, 1993; Stark & Falk, 1998). As a consequence, decision makers must respond to more heterogeneous claims (Mitchell et al., 2011). For example, family owners that are not directly involved in the business may have strong incentives to reduce risk in order to satisfy their needs for belonging and intimacy (Kepner, 1991), or due to a general desire to preserve their socio-emotional wealth (Gómez-Mejía et al., 2007). Other family members, instead, may be primarily concerned with growth and profits (Schulze, Lubatkin, & Dino, 2003a). Furthermore, when the leadership is transferred to a sibling partner, (s)he may lack the necessary authority and influence over the other family members to impose her or his decisions on them. The other siblings might also try to influence the controlling owner, leading to suboptimal decision-making and distorted investment preferences, as well as poor performance. In view of the foregoing, the degree of dispersion of ownership among family members is likely to affect performance. Thus, we propose:

Hypothesis 2: There is a negative relationship between the dispersion of ownership among family members and the performance of an SME.

Family Involvement in the TMT

The involvement of family members in the top management team is a distinct dimension of family involvement and it may also have distinct consequences for the performance of an SME (Block, Jaskiewicz, & Miller, 2011). Agency theory, emphasizing the importance of the conflicts of interest between owners and managers due to their divergent preferences and asymmetric information (Eisenhardt, 1989), suggests that family involvement in management may generally diminish the agency costs incurred to discipline the agents' behavior (Fama & Jensen, 1983b; Jensen & Meckling, 1976). This is expected to happen naturally because some family owners may be also actively involved in management, or indirectly, because family members, regardless of their involvement in ownership, are tied by kinship obligations that act as a binding normative moral order aligning the family agents' interests (Chrisman, Chua, & Litz, 2004; Stewart, 2003). In addition, the long-term incentives shared by family members act as a mechanism reducing information asymmetries between family owners and managers in terms of opportunities for growth and awareness of risk (Gómez-Mejía, Larraza-Kintana, & Makri, 2003). In sum, the moral hazard risks associated with the incentive of managers to behave opportunistically by taking non-pecuniary benefits

or misallocating resources at the expense of shareholders are expected to decrease with increasing degrees of family involvement in management.

As well as reducing agency costs, family involvement in management can be beneficial to an SME's performance also because kin relationships among managers may allow to economize on the relationship potential such as similarity, proximity, and prior acquaintance (Ancona & Caldwell, 1992; Gruenfeld et al., 1996), providing benefits in terms of positive affection, smooth interaction, and commitment (Jackson, 1992). Thus, the long-term nature of families can be considered as a cultural environment that promotes substantive discussion and reduces or helps to resolve disruptive relational issues better than in a nonfamily setting (Ensley & Pearson, 2005), leading to superior cohesion (Gruenfeld et al., 1996) and group value consensus (Jehn, 1994) among family managers.

In view of the forgoing, the performance of an SME may benefit from family involvement in management. However, research adopting the behavioral perspective also reveals some negative consequences arising from family involvement in management, that may be especially relevant when such involvement is very high. In particular, when considering the TMT as a problem-solving institution that must reduce uncertainty, the composition of top managers becomes a relevant predictor of the team's ability to generate cognitive conflict (Amason, 1996). In this regard, the mutuality among family members may manifest itself as a desire to accommodate other team members for the "good" of the team (Amason & Sapienza, 1997), and it may result, in absence or very little representation of non-family managers, in the avoidance of the thorough examination of alternative solutions (Janis, 1982). Also, the generation of alternative ideas may be compromised in TMTs with extreme degrees of family involvement because dissenters may be ostracized (Williams, 1997). As a consequence, excessive levels of family involvement in the TMT may turn into a limited availability of diverse knowledge and perspectives (Lau & Murnighan, 1998), that are regarded to be functional and necessary for decision quality (Amason, 1996; Jehn, 1995; Nemeth, 1986), and expose the TMT to the threat of groupthink (Janis, 1982).

These arguments may be of particular relevance to SMEs, that typically have limited availability of knowledge, skills, and perspectives, and that may thus especially benefit from the aid of outsiders (Robinson, 1982). For instance, anecdotal evidence suggests that when a small family firm is growing the number and complexity of required decisions increase, and the number of family members who are willing and able to make them is limited (Chua, Chrisman, & Bergiel, 2009). Complementing family managers with management professionals from outside the familial network may thus reduce any potential deficiencies in

a family firm's human capital (Block, Jaskiewicz, & Miller, 2011; Sciascia & Mazzola, 2008), providing the TMT with the diversity of perspectives and necessary skills that are needed for quality decision-making.

It follows that the family ratio in the TMT - defined as the ratio of family members to outsiders on the TMT (Minichilli, Corbetta, & MacMillan, 2010; Pieper, Klein, & Jaskiewicz, 2008) – can be considered as an important indicator of the TMT ability to generate quality decision-making in SMEs. The combination of agency and behavioral considerations suggests that the effectiveness of a TMT is best at moderate levels of family ratio in the TMT (that is, when family and non-family managers coexist in the TMT) because this group composition ensures some alignment between owners and managers and an adequate level of intra-group cohesion, as well as a sufficient degree of cognitive diversity in the TMT (Hoffman, 1959; Wanous & Youtz, 1986). Accordingly, we propose:

Hypothesis 3: There is an inverted U-shaped relationship between the family ratio in the TMT and the performance of an SME, with a peak occurring at moderate levels of family ratio in the TMT.

The Contingent Nature of Family Involvement in the TMT

The discussion provided in the previous section, that focused on the alignment between owners and managers and the behavioral aspects of decision-making in the TMT to explain why family involvement in the TMT affects the performance of an SME, also suggests that the relationship between the family ratio in the TMT and the performance of an SME is likely to be contingent on the degree of family ownership. Indeed, it is reasonable to expect both benefits and drawbacks of family involvement in the TMT to be amplified for high levels of family ownership, whereas low family ownership is likely to relax the effects of family involvement in the TMT on firm performance. Thus, we also explore conceptually the interactive effect of family involvement in ownership and management on performance.

First, the benefits of alignment between owners and managers deriving from family involvement in the TMT, that depend on the reduced information asymmetries among owners and managers and on the family managers' disincentives to free ride on the firm's resources, are likely to be more prominent when the family owns a significant amount of ownership. Similarly, the benefits of cohesion among family members are more prominent when family ownership is high, because family involvement in ownership creates a common set of beliefs and values among family members, that entail the pursuance of shared family-centered goals (Chrisman et al., 2012). In contrast, if family ownership is considerably lower family

managers grow an incentive to act opportunistically for the family and expropriate other non-family shareholders (Anderson and Reeb, 2004; La Porta et al., 1999), because altruism among family members is typically not extended outside the family circle (Stewart, 2003). For example, “principal-principal” agency problems have been observed in SMEs in the occurrence of transition from family to professional management (Daily & Dalton, 1992; Daily & Dollinger, 1992). As a consequence, in the case of lower family ownership the conflicts of interest between the family and outside shareholders are likely to reduce the family managers’ incentives to benefit the owners, and to engender a new set of agency costs including mutual monitoring and opportunity costs (Young et al., 2008) that offset the benefits of family involvement in the TMT.

Second, also the negative effects addressed at extreme levels of family involvement in the TMT are more relevant in the case of high degrees of family ownership, whereas they are less pronounced when family ownership is low. When family ownership is high the lack of self-control entails a great ambiguity for evaluating managers’ decisions and activities (Schulze, Lubatkin, & Dino, 2003a), causing adverse selection problems - the agency costs associated with lack of ability as opposed to lack of effort (Fama & Jensen, 1983a) - and managerial entrenchment, whereby managers can make themselves valuable to shareholders and costly to replace (Morck, Stangeland, & Yeung, 1998; Oswald, Muse, & Rutherford, 2009; Shleifer & Vishny, 1989). Also, the degree of family identification and personal investment in the firm by family managers depends on the level of family ownership, that determines the degree to which the family and organizational domains are isomorphic (Gersick et al., 1999; Kelly, Athanassiou, & Crittenden, 2000). On the contrary, when family ownership is lower, family managers are likely to embrace a wider variety of beliefs and values and display diverse perspectives since the owning family’s ability to impose a homogeneous family vision on the organization is inferior (Chrisman et al., 2012). In this situation, even a TMT entirely composed of family members may dispose of a sufficient degree of members’ diversity and ensure adequate quality to decision making.

In view of the foregoing, both the positive and negative effects of family involvement in the TMT are expected to be more manifest when family involvement in ownership is high, and we thus expect that the relationship between the family ratio in the TMT and the performance of an SME will be contingent on the degree of family ownership. Hence, we propose:

Hypothesis 4: The effect of the family ratio in the TMT on the performance of an SME is contingent on the degree of family ownership, such that the relationship will be stronger for higher levels of family ownership.

METHODOLOGY

Sample Selection

Our hypotheses were all tested using information on Italian SMEs. We adopted the European Commission's definition of SMEs; for our sample, we therefore selected firms of between 10 and 250 employees and with total annual revenues of between 2 and 50 million Euros. Italy is reported to be a heterogeneous country with respect to enterprise demographics, especially in the manufacturing industry. For example, previous studies found significant differences in the performances of Italian companies located in different geographical areas (Caselli & Di Giuli, 2010). Accordingly, we further restricted the selection of firms to a limited geographical area, namely the Northern Italian province of Bergamo, in order to obtain a homogeneous sample. By applying these selection criteria, we collected information about the performance, ownership, and composition of the TMT, together with other characteristics of 787 SMEs in Bergamo. The industry breakdown according to the first digit of the industry US SIC code of the firm is provided: 12.7 percent of the sample SMEs operate in the mining and construction industries, 19.6 percent in the food and chemicals industries, 44.1 percent in the manufacturing industry, 5.5 percent in the transportation industry, and 18.1 percent in the stores and retail industries.

All data were obtained from the Italian Digital Database of Companies (AIDA). In order to improve the accuracy of this dataset, and given that information on the ownership structures and composition of TMTs is typically less complete in private firms than it is in public ones (Wortman, 1994), we used the information reported in the balance sheets of the selected firms in order to double-check the accuracy of the data. These financial records are official documents that are registered at the Italian Chamber of Commerce and therefore have a high degree of accuracy and reliability. In addition, a telephone survey was conducted on a sub-sample of randomly selected firms (N=100) for robustness checks on those variables related to the family sphere. A detailed description of the variables and measures employed in the study is reported in the next section.

Variables and Measures

Our hypotheses were tested using regression analysis through the use of the variables described below.

Dependent Variable. Return on Assets (ROA) is used to assess performance, defined as the net operating income before extraordinary items, divided by total assets. The measurement of the performances of SMEs using ROA is widely supported in the literature, and has particularly been suggested for manufacturing firms (e.g., Carpenter, 2002), which are dominant in Northern Italy (Goodman & Bamford, 1989) and therefore form a sizable proportion of our sample population. In addition, the reviews by Dyer (2006) and Holt et al. (2012) show that ROA is the most widely used performance variable in the family business literature, and it is generally considered to be the key performance indicator of family businesses (Minichilli, Corbetta, & MacMillan, 2010) and of managers in general. Alternative measures of firm performance were used for robustness checks, that is Return on Equity (ROE), defined as the ratio between the net income and equity, and Return on Sales (ROS), defined as the net operating income before extraordinary items, divided by total sales. All dependent variables refer to the end of 2009, and additional robustness checks were also run with the performance observed in 2008. Moreover, all performance measures were adjusted for industry effects by subtracting the median industry level in the same year in order to account for differences in market opportunities that can influence managerial activities, as well as industry-specific constraints that can affect the performances of firms (Zahra, 1996).

Independent Variables. We used four independent variables for testing the hypotheses.

Family ownership was calculated as the percentage of the equity of the company held by members of either a single family or a small group of families at the end of 2008. We identified familial relations among shareholders from their family name(s) (e.g., Arosa, Iturralde, & Maseda, 2010; Gómez-Mejía, Nunez-Nickel, & Gutierrez, 2001; Rutherford, Kuratko, & Holt, 2008) and determined an owning family when at least two shareholders had the same family name. This approach thus used a narrow definition of “family” because it disregarded extended familial relationships between people with different surnames (Villalonga & Amit, 2006). Nevertheless, we attempted to extend our narrow definition and thereby improve the quality of our dataset by classifying up to three different families as a single one in cases where at least two shareholders had the same family name, consistently with previous definitions of family business accounting for the presence of a small number of families (Chua, Chrisman, & Sharma, 1999). When the equity in a firm was partially or totally owned by other companies, we calculated the percentage of the indirect ownership of each family member from the balance sheets of the owning companies, and added it to the

overall level of family-owned equity in order to measure the actual family ownership as a continuous variable. Moreover, a dummy variable (family-owned) was also created and took the value of one if family ownership was greater than 50 percent (e.g., Westhead & Cowling, 1997), and 0 otherwise. Alternative measures and additional controls for family ownership are presented in the Robustness Checks section.

Family ownership dispersion was calculated as the Herfindahl index, with the polarities reversed because the Herfindahl index is originally a measure of concentration rather than dispersion (see Miller, Le Breton Miller, & Lester, 2010), calculated as the sum of the squared ownership share of each family owner (relative to the total family ownership) at the end of the year 2008, that ranges by construction between zero and 100 percent. Low values indicate that family ownership is concentrated in few hands, whereas high values indicate the presence of many family owners.

Family ratio in the TMT was the proportion of family members serving as top managers divided by the total number of members of the TMT at the end of the year 2008. Although the identification of a measure to operationalize top management team is not univocal (Carpenter, Geletkanycz, & Sanders, 2004), we identified a TMT as the group of top managers in the firm, including the CEO, the CFO, and other top managers, consistently with a number of previous studies (e.g., Ferrier, 2001; Kor, 2003). TMTs in the sample firms were composed on average of 3.5 members. When a single person was found to hold more than one managerial position, we counted her or him only once (in both the numerator and the denominator). For each firm, a member of the top management team was considered as a family member if her/his family name corresponded to the name of one of the owning family(ies). This information was obtained from the AIDA database, that reports the names and positions assumed by each top manager within the firm. Additional tests are presented in the Robustness Checks section to assess the reliability of the measures of the family ratio in the TMT.

Multiplicative Terms. Testing Hypotheses 1 and 3 requires that we investigate the square term of the variables family ownership and family ratio in the TMT. Testing Hypothesis 4 requires that we investigate the interaction between the family owned and family ratio in the TMT variables. To avoid the problem of multicollinearity, we used standardized values of the independent variables (described above) to calculate all multiplicative terms (Aiken & West, 1991).

Control Variables. We also included a number of control variables, both at the firm- and TMT-level, in the regression models in order to rule out alternative determinants of the

performance of the sampled firms. All control variables were collected from the AIDA database and referred to the year 2008.

Firm size was measured as a logarithmic transformation of the sales of the firm in order to smooth the relatively high variability in the sizes of the SMEs. The number of employees and the logarithmic transformation of the total assets of the firm were included as alternative measures for robustness checks. Firm age was taken to be the number of years between the foundation of the firm and the date when the data were obtained (that is, 2008). TMT size was measured as a logarithmic transformation of the total number of top executives in the TMT. Gender diversity was included as a dimension of demographic heterogeneity of the TMT, which may affect firm performance (Dwyer, Richard, & Chadwick, 2003). The gender of each top manager was coded based on her or his name, and gender diversity was calculated in terms of Blau's (1977) heterogeneity index ($1 - \sum i^2$), where i is the proportion of the group in the i th (male and female) category. A high score on this index indicates variability in the gender among team members or gender diversity, while a low score represents greater gender homogeneity. Debt ratio was included to account for the ownership structure, that is extensively reported to affect performance (for example, Chu, 2009; Demsetz & Lehn, 1985). Liquidity index, defined as the ratio between current assets less inventories, and short-term liabilities, was introduced because SMEs with a shorter cash conversion cycle may be expected to perform better (e.g., García-Teruel & Martínez-Solano, 2007). Symmetrically to family ownership dispersion, non-family ownership dispersion was calculated as the Herfindahl index with the polarities reversed, calculated as the sum of the squared equity share of each non-family owner relative to the total non-family ownership at the end of the year 2008.

RESULTS

Table 1 shows the descriptive statistics and correlations between the variables used in this study. Sample companies earned average annual revenue of 9.5 million Euros and were on average 25 years old. We found statistically significant correlations between the variables of family ownership and family ratio in the TMT. Nevertheless, this is not a major concern since the hypotheses directly relating family ownership and family ratio in the TMT to performance were also tested separately, and the interaction effects were tested by adopting the dichotomous variable family owned, whose correlation with the family ratio in the TMT is lower than the cut-off limit of 0.7 that is allowed in regressions (Hair et al., 1998; Tabachnick, Fidell, & Osterlind, 2001).

Table 1. Descriptive Statistics and Correlations

Variable	Mean	S.D.	1	2	3	4	5
1. Firm Size (log)	9.17	0.84	1				
2. Age	25.23	11.73	0.01	1			
3. Debt Ratio	7.45	18.52	0.07	0.08*	1		
4. Liquidity Index	1.11	0.83	-0.05	0.03	-0.03	1	
5. Non-family Ownership Dispersion	0.21	0.28	0.17*	0.09*	-0.06	0.01	1
6. TMT Size	0.54	0.27	0.21**	0.16**	0.06	0.04	0.08*
7. Gender Diversity	0.56	0.83	0.15**	0.08*	-0.01	0.03	0.06
8. Family Ownership	0.5	0.41	-0.06	0.13**	0.03	0.02	-0.14*
9. Family Owned ^a	0.54	0.5	-0.07*	0.10**	0.02	0.02	-0.16*
10. Family Ownership Dispersion	2.12	2.15	0.05	0.23**	0.05	0.04	0.04
11. Family Ratio in the TMT	0.49	0.4	-0.05	0.12**	0.04	0.03	0.01
12. Industry-Adjusted ROA	0.15	7.57	0.08*	-0.04	-0.18**	0.36**	0.06
	6	7	8	9	10	11	12
6. TMT Size	1						
7. Gender Diversity	0.02	1					
8. Family Ownership	0.07*	-0.04	1				
9. Family Owned ^a	0.04	-0.01	0.81**	1			
10. Family Ownership Dispersion	0.14**	0.07*	0.65**	0.47**	1		
11. Family Ratio in the TMT	0.02	0.03	0.79**	0.52**	0.60**	1	
12. Industry-Adjusted ROA	-0.03	0.09*	0	0.02	-0.05	0.01	1

N = 787

^aThis variable is dichotomously coded.

*p < .05; **p < .01

We applied multiple cross-sectional OLS robust regression models to test the hypotheses. All regressions were run with the White's (1980) correction for heteroscedasticity. Table 2 shows the results of the regression models. Model A included only the control variables. Models B and C were used to test Hypotheses 1 and 2, respectively. Model D was used to test Hypotheses 3, and Model E was used to test Hypothesis 4. Finally, Model F was used as a robustness check (discussed below). The variance inflation factors (VIF) were calculated for all variables in the regression models. The average VIF values are very close to 1 for all models, and the maximum VIF value was 4.23 (Model F), suggesting that multicollinearity is not a problem. As regards the control variables, firm size had a positive and significant effect in all the models, whereas the effect of firm age was not significant; TMT size was not significant, whereas gender diversity had a positive, slightly significant, effect on ROA; the debt ratio and the liquidity index had both a significant impact. Model B supported the inverted U-shaped relationship between family ownership and performance proposed in Hypothesis 1. Model C supported Hypothesis 2,

which proposed a negative effect of family ownership dispersion on performance. Model D supported Hypothesis 3 consistent with the idea of an inverted U-shaped relationship between TMT family ratio and performance. Finally, results from Model E imply the existence of a significant moderating effect of family ownership on the relationship between the family ratio in the TMT and the performance of an SME such that the inverted U-shaped relationship was stronger for higher levels of family ownership, consistent with Hypothesis 4.

Table 2
Results of Multiple Regression Analysis of Hypothesized Relationships

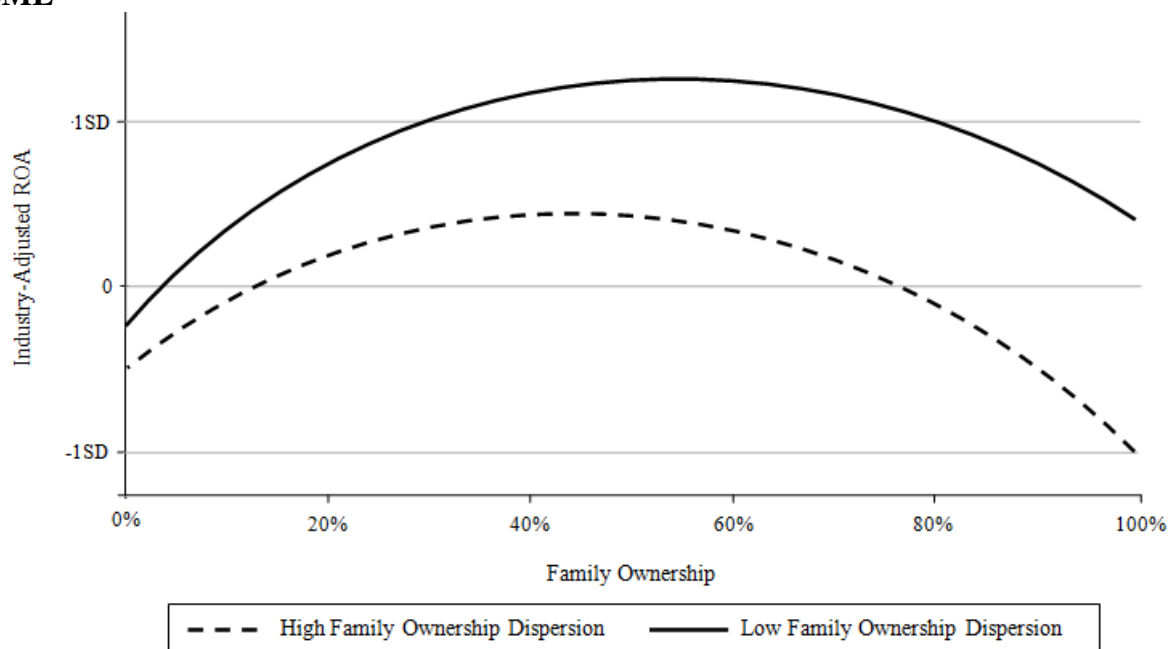
Variables	Model A	Model B (H1)	Model C (H2)	Model D (H3)	Model E (H4)	Model F
Firm size (log sales)	1.07*** (0.32)	1.06*** (0.31)	1.10*** (0.31)	1.05*** (0.30)	1.10*** (0.31)	1.06*** (0.29)
Age	-0.01 (0.02)	-0.02 (0.02)	-0.01 (0.02)	-0.02 (0.02)	-0.01 (0.02)	-0.01 (0.02)
TMT Size	1.42 (1.12)	1.52 (1.13)	1.71 (1.13)	1.43 (1.09)	1.25 (1.16)	1.68 (1.27)
Gender Diversity	3.46* (1.59)	3.71* (1.52)	3.73* (1.53)	3.25* (1.26)	3.71* (1.51)	3.28* (1.21)
Debt Ratio	-7.04*** (1.62)	-7.09*** (1.63)	-7.11*** (1.64)	-7.19*** (1.64)	-7.09*** (1.64)	-7.13*** (1.62)
Liquidity Index	2.51*** (0.30)	2.51*** (0.30)	2.50*** (0.30)	2.52*** (0.31)	2.52*** (0.30)	2.51*** (0.30)
Non-Family Ownership Dispersion	0.02 (0.03)	0.03 (0.04)	0.03 (0.02)	0.02 (0.04)	0.03 (0.04)	0.03 (0.02)
Family Ownership		4.61* (2.29)	7.88*** (2.03)			4.73** (2.13)
Family Ownership ²		-4.25** (1.67)	-6.47*** (1.93)			-4.19** (2.16)
Family Ownership Dispersion			-0.36** (0.10)			-0.42** (0.18)
Family Owned					-0.38 (0.36)	
Family Ratio in the TMT				5.23** (2.14)	0.05 (0.10)	4.82* (2.31)
Family Ratio in the TMT ²				-4.95* (2.22)		-4.14* (2.49)
Family Owned × Family Ratio in the TMT					5.82** (1.77)	
Family Owned × Family Ratio in the TMT ²					-4.73** (1.38)	
Constant	-6.85** (2.98)	-7.06** (3.00)	-7.84** (3.01)	-6.81** (2.99)	-7.02** (3.03)	-7.14** (2.96)
Observations	787	787	787	787	787	787
Max VIF	1.02	1.09	1.75	1.26	3.95	4.23
F	31.12***	25.94***	22.72***	24.41***	18.17***	15.94***
Adj-R ²	0.204	0.218	0.228	0.221	0.239	0.251

N = 787. Significance levels are based on two-tailed tests for all models and coefficients.

* p < .10; ** p < .05; *** p < .01

The effect of family ownership on performance was plotted using the STATA software for those firms where family ownership dispersion is low (that is, when a single family member owns more than 50 percent of ownership) and those firms where it is high (that is, when family ownership is shared among multiple family members and each of them owns 50 percent or less of ownership), with the percentage of family ownership on the horizontal axis and industry-adjusted ROA on the vertical axis (Figure 1). Although both curves followed a shape akin to that proposed by Morck and Yeung (2003), the curve was lower for firms where family ownership was dispersed, showing that family ownership dispersion negatively affects an SME’s performance regardless of the amount of family ownership.

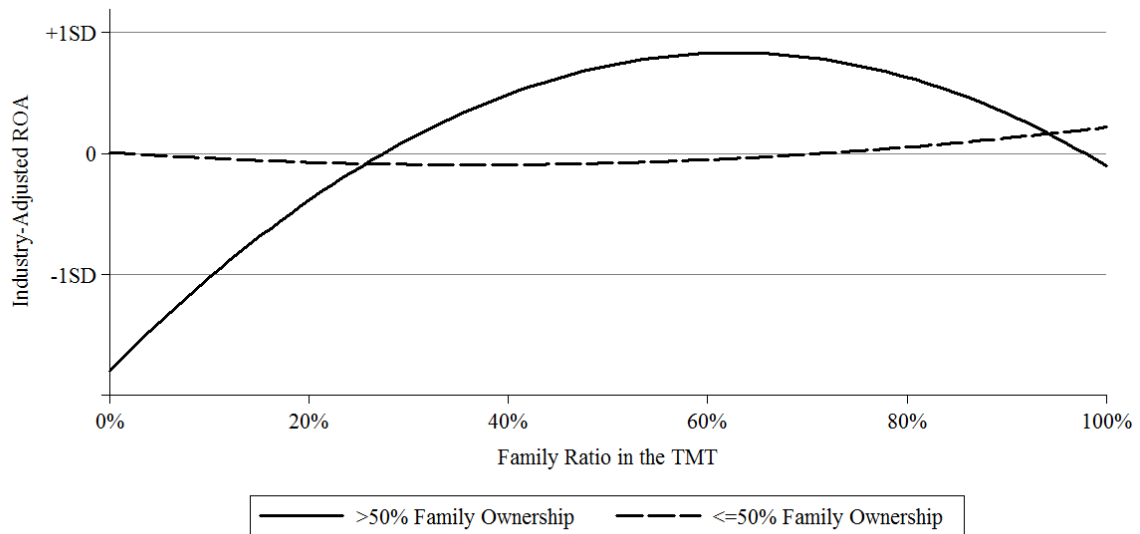
Figure 1
Effects of Family Ownership and Ownership Dispersion on the Performance of an SME^a



^a Family ownership dispersion is arbitrary coded as low when a single family member owns more than 50 percent of ownership and high when family ownership is shared among multiple family members and each of them owns 50 percent or less of ownership.

In a next step, we plotted the relationship between the family ratio in the TMT and the industry-adjusted ROA for those firms where family ownership is equal to or higher than 51 percent and those where family ownership is lower (Figure 2). The figure shows that an inverted U-shaped relationship exists between the family ratio in the TMT and the performance in firms with higher family ownership, while the family ratio in the TMT is less important for performance in firms with a lower degree of family ownership.

Figure 2
Effects of the Family Ratio in the TMT on the Performance of an SME



Robustness Checks

In order to check the robustness of the results presented in the previous section, we performed tests that address possible concerns of reliability of the findings, and we evaluated the robustness of results to various alternative specifications.

First, we estimated the post-hoc powers of the regression models. We found a very high post-hoc power for all models. They were close to 1 and, according to Cohen (1988), this implies that our results can be considered reliable. The adjusted R^2 ranged between 20.4 percent in Model A to 23.9 percent in Model E. These values are higher than those found in previous studies on the performance of private SMEs (for example, Chrisman, Chua, & Litz, 2004; Oswald, Muse, & Rutherford, 2009; Sciascia & Mazzola, 2008), but the relatively low change of R^2 in Models B through E, as compared to benchmark Model A (total $\Delta R^2 = 3.5$ percent) suggests that the performance effect of family involvement is relatively small. To further address possible concerns about low increase in R^2 , we ran all the regressions without including the control variables. The results, that are reported in Table 3, do not differ substantially from those reported in Table 2, and thus provided further support to the hypothesized relationships. The maximum VIF was found for Model F' (VIF value = 4.65). Model B' and Model D' were only slightly significant (adjusted $R^2 = 0.017$ and adjusted $R^2 = 0.020$; $p < 0.10$); Model C' explained 2.4 percent of total variance and was significant at $p < 0.05$; finally, Model E' and Model F' were significant at $p < 0.01$ and explained 3.8 percent and 4.3 percent of total variance, respectively. Moreover, the coefficients found in these

models were slightly more significant than those reported in Table 2, suggesting that studies that do not use control variables tend to overestimate the effects of family involvement.

Table 3
Results of Multiple Regression Analysis Run Without Control Variables

Variables	Model B' (H1)	Model C' (H2)	Model D' (H3)	Model E' (H4)	Model F'
Family Ownership	7.12** (1.80)	9.14*** (2.47)			7.74*** (1.93)
Family Ownership ²	-6.45** (1.72)	-7.91*** (2.38)			-7.01*** (1.68)
Family Ownership Dispersion		-4.61*** (0.97)			-3.29*** (0.62)
Family Owned				-2.63* (0.94)	
Family Ratio in the TMT			6.41*** (1.83)	0.17* (0.09)	6.21** (2.57)
Family Ratio in the TMT ²			-5.31*** (1.57)		-4.85** (1.72)
Family Owned × Family Ratio in the TMT				4.28*** (0.76)	
Family Owned × Family Ratio in the TMT ²				-3.96*** (0.98)	
Constant	-1.96*** (-0.58)	-2.36*** (0.71)	-1.02** (0.40)	-2.61*** (0.74)	-2.49*** (0.83)
Observations	787	787	787	787	787
Max VIF	1.11	1.90	1.58	4.38	4.65
F	2.08*	3.45**	2.93*	4.61***	5.03***
Adj-R ²	0.017	0.024	0.020	0.038	0.043

N = 787. Significance levels are based on two-tailed tests for all models and coefficients.

* p < .10; ** p < .05; *** p < .01

Second, we performed a sensitivity analysis by using alternative measures of performance, namely the industry-adjusted return on equity (ROE) and the industry-adjusted return on sales (ROS). The results were similar although less significant than those obtained using the industry-adjusted ROA. In particular, Hypothesis 1 was confirmed using both ROE and ROS as dependent variable in Model B and in Model C (p<0.10); Hypothesis 2 in Model C was confirmed although the coefficient for family ownership dispersion was less significant using ROE and ROS (p<0.05 in both cases); Hypothesis 3 in Model D was confirmed, but the coefficient for family ratio in the TMT was less significant (p<0.10) when using ROS as dependent variable; finally, Hypothesis 4 was confirmed with the same

significance level using ROE as dependent variable, but the significance level of both the interaction terms was lower ($p < 0.10$) using ROS.

Moreover, all results were robust to the use of both 2008 and 2009 performance data.

Third, we ran Model F (see Table 2) in which we included the variables relative to family ownership and family ratio in the TMT together, as their high correlation may affect the results. Overall, our results were confirmed, although the inverted U-shaped relationship was slightly less significant than in Model C ($p < 0.10$).

Fourth, the interaction term was regressed by adopting alternative measures of the variable Family owned (the threshold level was set to 30, 40 and 60 percent of family ownership), consistent with recent calls for comparing different construction methodologies for defining family firms (Mazzi, 2011). In the cases of 40 and 60 percent our previous findings were still significant, while the interaction was not significant in the case of 30 percent family ownership.

Fifth, we checked for the sensitivity of the findings to the use of alternative measures for firm size. We adopted both the logarithmic transformation of firm assets and the number of employees, and our conclusions regarding the hypotheses did not change, although in the first case the coefficient for firm size was less significant ($p < 0.10$) than using the logarithmic transformation of firm revenues, and in the second case the coefficient was not significant.

Sixth, although the identification of family relations on the basis of people's family name is common (e.g., Arosa, Iturralde, & Maseda, 2010; Gómez-Mejía, Nunez-Nickel, & Gutierrez, 2001; Mazzi, 2011; Rutherford, Kuratko, & Holt, 2008), it entails the risk of disregarding extended familial relationships between people with different surnames (Villalonga & Amit, 2006). We thus collected additional information about family ownership, family ownership dispersion, and family ratio in the TMT in order to ensure that our proxies adequately captured the appropriate attributes. In particular, a survey was conducted in September 2011 with the support of the CYFE – Center for Young and Family Enterprise – of the University of Bergamo as a telephone poll on one hundred firms that were randomly selected from our original sample. Given that all the required information refers to objective data, we judged it appropriate to have one respondent as a key informant in the TMT for each firm involved in the survey. In order to obtain the highest possible response, the request for participation first emphasized the importance of our research and engaged the respondent's interest in the topic. Respondents were informed about our definitions of family firm and TMT, and they were asked to confirm or to correct our information about family involvement in ownership and in the TMT. The phone calls lasted 5 to 15 minutes and we received

responses from 61 firms, that is well above the typical results obtained by surveys on top managers (Pettigrew, 1992). Then, results were compared with the data obtained from our secondary sources through a Kruskal–Wallis test. The results showed no significant differences between the data obtained from secondary sources and those provided by respondents ($p = .993$), thus confirming the reliability of the information used in our analyses.

Finally, we ran again all the regressions in order to check for the sensitivity of the results to the use of alternative measures for the independent and control variables. First, family ownership was alternatively measured as the sum of shares owned by the members of (i) the only family with the majority of shares, (ii) up to two families, and (iii) up to four families. All analyses confirmed our results since the coefficients' signs did not change and their significance was almost unaffected, although the coefficients were slightly different. Second, family ownership dispersion was alternatively measured as the number of family members that held equity in the firm at the end of 2008. The adoption of this measure resulted in similarly significant coefficients, thus confirming our main analysis.

DISCUSSION

The purpose of this study was to examine the consequences of family involvement on the performance of an SME. Theoretically, we complemented the partial view offered by agency theory with assumptions of the behavioral theory in order to formulate hypotheses relating family ownership and family involvement in the TMT to the performance of an SME. As such, our study responds to the call for applying multiple and combined perspectives to the investigation of the relationship between family involvement and firm performance (Chrisman, Chua, & Sharma, 2005; Mazzi, 2011), and it benefits from this approach in offering a more nuanced understanding of the relationships of interest. Consistent with the hypothesized relationships, the analyses of 787 private SMEs supported the existence of non-linear performance effects of family ownership and family involvement in the TMT. These results not only replicate prior findings (e.g., Anderson & Reeb, 2003) in the context of SMEs, but also extend previous research (e.g., Miller et al., 2007) that found inconsistent effects of family ownership between large and smaller firms. Overall, our results suggest that a curvilinear relationship is apt to capture the benefits and drawbacks of family ownership in small and medium private firms better than a linear relationship or the dichotomous analysis of the differences between family and non-family firms. As a consequence, this study helps solving the inconsistencies in previous research suggesting that rather than focusing on whether family involvement has a uniformly positive or negative

effect on firm performance, scholars and managers should instead attempt to identify the amount of family involvement that is optimal in an organization. In other words, our conceptual analysis advises that being a family firm can be both beneficial and destructive to an organization's performance, depending on the degree of family involvement. In addition to pointing to the existence of a curvilinear relationship between family ownership and SMEs' performance, the study indicated that not only the degree, but also the structure of family ownership (that is, how family ownership is distributed among family members) can be relevant to firm performance, and that the effect of family involvement in the TMT is likely to be contingent on the degree of family ownership. Thus, our study makes a contribution to refine our understanding of the complexity characterizing the effects of family involvement on firm performance, especially in the case of SMEs (Chrisman et al., 2012; Mazzi, 2011; Rutherford, Kuratko, & Holt, 2008)

Our study also enriches the theoretical lens through which researchers can examine the effects of family involvement on firm performance in a number of ways. First, consistent with the classical arguments of agency theory, our findings suggest that family ownership may decrease overall agency problems (Fama & Jensen, 1983b; Jensen & Meckling, 1976), but they also refine the agency perspective by bringing support to the idea that behavioral dysfunctions can arise for very high levels of family ownership. Second, our findings suggest that the agency costs encountered in the decision-making process of a small family firm increase with the degree of dispersion of ownership among family members. This result supports the idea that family ownership is beneficial to the firm until an excessive number of family members with presumably more heterogeneous interests gets involved in ownership, as it happens for example when a small family firm ages and grows to a medium-sized company (Oswald, Muse, & Rutherford, 2009).

Also the existence of an inverted U-shaped relationship between the family ratio in the TMT and performance has important implications for theory. This finding is intriguing because this is one of the very few studies that have empirically explored family involvement in management as a continuous variable. To our best knowledge, past research has largely considered only the linear relationship between family involvement in management and performance, and it has frequently overweighed the benefits, while neglecting the drawbacks, of such involvement (Kowalewski, Talavera, & Stetsyuk, 2010; Lee, 2006). For example, some studies have adopted the family status of the CEO as a proxy of family involvement in management (e.g., Miller & Le Breton Miller, 2006; Sraer & Thesmar, 2007), thus simplifying the analysis and overlooking the fact that organizations implement teams to do

much of the work traditionally accomplished by individuals (Gruenfeld et al., 1996). What is more, the inverted U-shape relationship found between family involvement in the TMT and the performance of an SME evidently contrasts with the other few studies that considered nonlinear effects of family involvement in management (i.e., Minichilli, Corbetta, & MacMillan, 2010; Sciascia & Mazzola, 2008).

A possible reason for such divergence is probably due to differences in firm size. Our study focuses on SMEs, defined as companies with 10 to 250 employees and with revenues ranging between 2 and 50 million Euros. Sciascia and Mazzola (2008), who included quite more heterogeneous firms in their study (the average firm size being about 87 employees, but with standard deviation being 242), found a relationship that, although curvilinear, is monotonic negative, which puts into light the important contribution of non-family managers to family firms. Minichilli, Corbetta, and MacMillan (2010) studied large firms (with average revenues of 771 million Euros) and found a positive U-shaped relationship that the authors motivated by emphasizing the negative effects associated with relational conflicts between family and non-family managers. One possible explanation for this pattern of results is that in smaller firms the benefits associated with family involvement in management, namely the alignment between family managers and owners and cohesion among family managers, are more pronounced than in larger firms where both the family and the business systems are typically more complex (Chrisman et al., 2012). Also, private and business motives are more intertwined in SMEs than in larger firms (Carland et al., 1984), which once more implies that alignment and cohesion arguments have larger applicability in SMEs. Another possible explanation stems for the fact that firm specific knowledge and the compatibility of managers with the organization's set of values are of greater importance to SMEs, whereas the benefits of family involvement in the TMT become weaker in larger firms where access to external networks and industry specific knowledge are more critical (e.g., Anderson & Reeb, 2004; Freel, 2000). Indeed, consistent with Chua, Chrisman, and Bergiel (2009) and Sciascia and Mazzola (2008), small family firms suffer from their limited availability of diverse knowledge, skills, and perspectives, so that complementing the managerial team with management professionals from outside the familial network may be indispensable. Thus, after a certain point of family involvement in the TMT the performance of an SME becomes lower. On the other hand, as the firm grows to a large corporation, perhaps family members become more heterogeneous, have higher access to professional education and external experiences, so that the drawbacks of family management are to decrease. In sum, our results suggest that size can be an important moderator of the relationship between family

involvement and firm performance, but this relationship requires further investigation (O'Boyle, Pollack, & Rutherford, 2011; Oswald, Muse, & Rutherford, 2009). Specifically, future research may further develop our tentative inferences and design appropriate empirical tests to contextualize the performance consequences of family involvement according to firm size.

In addition, this is the first study to provide theory and evidence that the effect of family involvement in the TMT is contingent on the degree of family ownership, which is also relevant for theory. As reported in our robustness analyses, we found that the family ratio in the TMT is relevant to an SME's performance only when family ownership is higher than 40 percent. In our view, this provides further support to the idea that the benefits of family management derive primarily from the alignment of interests between owners and managers, plus the positive effects of kinship relationships within the group of managers, and that the drawbacks are associated to excessively redundant human capital of family members. Indeed, both positive and negative arguments become weaker in the case of low degrees of family ownership. However, alternative explanations may exist, that may be related to factors not considered in our analysis. For example, future research can further investigate the impact of family involvement by trying to disentangle pure family effects from other effects (e.g., ownership concentration, owner-manager alignment) that are not confined to family firms. To this end, future research needs to use creative approaches and innovative experimental designs such as, for example, Bayesian methods (Block, Jaskiewicz, & Miller, 2011), that may help in disentangling these distinct, but related, effects. Also, future research may consider the existence and composition of a board of directors, that may be an important organizational body for aligning interests of owners and managers as well as providing advice and external perspectives to decision making (Bammens, Voordeckers, & Van Gils, 2011; Westhead, Cowling, & Howorth, 2001). Prior work suggests that, even if present, the boards of directors of SMEs tend to be significantly smaller (Pieper, Klein, & Jaskiewicz, 2008) and almost entirely composed of family members (Corbetta & Montemerlo, 1999; Voordeckers, Van Gils, & Van den Heuvel, 2007). This is probably the reason why the board of directors is not found to mitigate the agency problems associated to family involvement (Chrisman, Chua, & Litz, 2004). However, future research is needed to explore the multiple ways, for example, the appointment of independent directors or the formalization of strategic planning activities, through which SMEs can achieve alignment among agents while also including diverse perspectives into the decision making processes.

In sum, our study makes a step further in understanding the effects of family involvement on firm performance by focusing on continuous rather than dichotomous measures of family involvement, by separately examining the consequences of various dimensions of family involvement, and by contextualizing the effect of family involvement in the TMT. What is more, our special focus on SMEs also contributes to revealing the differences that may exist between large and small firms regarding the consequences of family involvement (O'Boyle, Pollack, & Rutherford, 2011), suggesting that the potential benefits of family involvement in the TMT are more likely to be manifest in small firms.

Our results, while revealing, may have been at least partially a consequence of the characteristics of our sample and measurement techniques.

The data were collected from a population of small and medium firms based in a relatively small geographical area, and may thus not be representative of family and non-family firms in general. The problem is partially ameliorated by the fact that the population used is quite large, homogeneous and identifiable. Also, these data add international evidence to the relationship between family involvement and firm performance, that was mostly investigated in the U.S. (Dyer, 2006). However, future studies should endeavor to test the performance consequences of family involvement using other samples that are perhaps more representative of the population of small firms in international settings.

We mainly relied on data gathered from secondary sources, that limited the quality of our measures of family involvement. Additional criteria for identifying family members could be considered, such as the residence at the same address or the residence at the company's registration address. Unfortunately such information was not available for this study. Even though we partially overcame this limitation by corroborating the empirical evidence with information reported in the balance sheets of firms and further testing the reliability of our data through a survey on a sub-sample of randomly selected firms, an extensive survey on the whole sample of firms would be desirable. Furthermore, such an extensive survey would also allow to directly collect a broad array of information that could be used to develop and test further hypotheses regarding moderating and mediating factors of the proposed relationships. For example, assessing directly the risk preferences and the altruistic intentions of owners and managers, or obtaining data about the managers' education, experience, and professional skills, and intermediate performance outcomes (for example, the performance of the TMT itself) would allow us to corroborate the underlying assumptions of our theoretical analysis and to develop and test more fine-grained hypotheses on the consequences of family involvement in ownership and in the TMT. These limitations

represent as well hopeful directions for future research, that in addition may consider non-financial measures of performance, that have been said to be particularly important for family firms (Chrisman et al., 2012; Mahto et al., 2010).

Although the exclusion of the board of directors from our analysis can be justified in the light of the widespread evidence that the role of the board of directors is typically replaced by informal controls in SMEs (Pieper, Klein, & Jaskiewicz, 2008; Salvato, 1999), and that board of directors are rare among small Italian firms (Corbetta & Tomaselli, 1996), the inclusion of this intermediate level between ownership and management would help to improve the understanding of the relationship between family involvement and firm performance.

Finally, the present analysis is cross-sectional, thus causal relationships can be questionable. In future research it would be interesting to investigate the composition of TMTs and the performance of SMEs over time in a longitudinal study in order to provide additional insights into the ways in which the evolution of the levels of family ownership and the family ratio in the TMT affect SMEs' performance.

In light of the results of our study and the abovementioned limits that are still to be addressed, further investigation of the ways in which family involvement affects an SME's performance is an area ripe for future research.

CONCLUSION

In summary, the results of this study indicate that complementing the traditional agency theory with behavioral assumptions may benefit our understanding of the advantages and drawbacks of family involvement. Consistent with this combined perspective, our findings indicate the existence of curvilinear relationships between family ownership and family involvement in the TMT, and the performance of an SME. What is more, our study reveals the negative effect of ownership dispersion among family members and the contingent nature of family involvement in the TMT.

Our observations add to previous literature on family firms and small businesses by showing that family involvement consists of multiple interrelated dimensions that concur in affecting firm performance. Nonetheless, they provide a number of insights that may be helpful to business families to understand the performance consequences of family involvement in the firm and improve their firms' performance.

REFERENCES

- Aiken, L. S., and S. G. West (1991) *Multiple Regression: Testing and Interpreting Interactions*. Sage Publications, Newbury Park, CA.
- Amason, A. C. (1996). "Distinguishing the Effects of Functional and Dysfunctional Conflict on Strategic Decision Making: Resolving a Paradox for Top Management Teams," *Academy of Management Journal* 39(1), 123-148.
- Amason, A. C., and H. J. Sapienza (1997). "The Effects of Top Management Team Size and Interaction Norms on Cognitive and Affective Conflict," *Journal of Management* 23(4), 495-516.
- Ancona, D. G., and D. F. Caldwell (1992). "Bridging the Boundary: External Activity and Performance in Organizational Teams," *Administrative Science Quarterly* 37(4), 634-665.
- Anderson, R. C., and D. M. Reeb (2003). "Founding-Family Ownership and Firm Performance: Evidence from the S&P 500," *Journal of Finance* 58(3), 1301-1327.
- Anderson, R. C., and D. M. Reeb (2004). "Board Composition: Balancing Family Influence in S&P 500 Firms," *Administrative Science Quarterly* 49(2), 209-237.
- Argote, L., and H. R. Greve (2007). "A Behavioral Theory of the Firm—40 Years and Counting: Introduction and Impact," *Organization Science* 18(3), 337-349.
- Arosa, B., T. Iturralde, and A. Maseda (2010). "Ownership Structure and Firm Performance in Non-Listed Firms: Evidence from Spain," *Journal of Family Business Strategy* 1(2), 88-96.
- Astrachan, J. H., S. B. Klein, and K. X. Smyrnios (2002). "The F-PEC Scale of Family Influence: A Proposal for Solving the Family Business Definition Problem," *Family Business Review* 15(1), 45-58.
- Astrachan, J. H., and M. C. Shanker (2003). "Family Businesses' Contribution to the US Economy: A Closer Look," *Family Business Review* 16(3), 211-219.
- Bammens, Y., W. Voordeckers, and A. Van Gils (2011). "Boards of Directors in Family Businesses: A Literature Review and Research Agenda," *International Journal of Management Reviews* 13(2), 134-152.
- Beatty, R. P., and E. J. Zajac (1994). "Managerial Incentives, Monitoring, and Risk Bearing: A Study of Executive Compensation, Ownership, and Board Structure in Initial Public Offerings," *Administrative Science Quarterly* 39(2), 313-335.
- Blau, P. M. (1977). *Inequality and Heterogeneity: A Primitive Theory of Social Structure*. New York: Free Press.
- Block, J. H., P. Jaskiewicz, and D. Miller (2011). "Ownership Versus Management Effects on Performance in Family and Founder Companies: A Bayesian Reconciliation," *Journal of Family Business Strategy* 2(4), 232-245.
- Carland, J. W., F. Hoy, W. R. Boulton, and J. A. C. Carland (1984). "Differentiating Entrepreneurs from Small Business Owners: A Conceptualization," *Academy of Management Review* 9(2), 354-359.
- Carney, M. (2005). "Corporate Governance and Competitive Advantage in Family-Controlled Firms," *Entrepreneurship Theory and Practice* 29(3), 249-265.

- Carpenter, M. A. (2002). "The Implications of Strategy and Social Context for the Relationship between Top Management Team Heterogeneity and Firm Performance," *Strategic Management Journal* 23(3), 275-284.
- Carpenter, M. A., M. A. Geletkanycz, and W. Sanders (2004). "Upper Echelons Research Revisited: Antecedents, Elements, and Consequences of Top Management Team Composition," *Journal of Management* 30(6), 749-778.
- Caselli, S., and A. Di Giuli (2010). "Does the CFO Matter in Family Firms? Evidence from Italy," *European Journal of Finance* 16(5), 381-411.
- Chrisman, J. J., J. H. Chua, and R. A. Litz (2004). "Comparing the Agency Costs of Family and Non Family Firms: Conceptual Issues and Exploratory Evidence," *Entrepreneurship Theory and Practice* 28(4), 335-354.
- Chrisman, J. J., J. H. Chua, A. W. Pearson, and T. Barnett (2012). "Family Involvement, Family Influence, and Family Centered Non Economic Goals in Small Firms," *Entrepreneurship Theory and Practice* 36(2), 267-293.
- Chrisman, J. J., J. H. Chua, and P. Sharma (2005). "Trends and Directions in the Development of a Strategic Management Theory of the Family Firm," *Entrepreneurship Theory and Practice* 29(5), 555-576.
- Chu, W. (2009). "The Influence of Family Ownership on Sme Performance: Evidence from Public Firms in Taiwan," *Small Business Economics* 33(3), 353-373.
- Chua, J. H., J. J. Chrisman, and E. B. Bergiel (2009). "An Agency Theoretic Analysis of the Professionalized Family Firm," *Entrepreneurship Theory and Practice* 33(2), 355-372.
- Chua, J. H., J. J. Chrisman, and P. Sharma (1999). "Defining the Family Business by Behavior," *Entrepreneurship Theory and Practice* 23(4), 19-39.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. Hillsdale, NJ: Lawrence Erlbaum.
- Corbetta, G., and D. Montemerlo (1999). "Ownership, Governance, and Management Issues in Small and Medium Size Family Businesses: A Comparison of Italy and the United States," *Family Business Review* 12(4), 361-374.
- Corbetta, G., and C. Salvato (2004). "Self Serving or Self Actualizing? Models of Man and Agency Costs in Different Types of Family Firms: A Commentary on "Comparing the Agency Costs of Family and Non Family Firms: Conceptual Issues and Exploratory Evidence"," *Entrepreneurship Theory and Practice* 28(4), 355-362.
- Corbetta, G., and S. Tomaselli (1996). "Boards of Directors in Italian Family Businesses," *Family Business Review* 9(4), 403-421.
- Cyert, R. M., and J. G. March (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.
- Daily, C. M., and D. R. Dalton (1992). "Financial Performance of Founder-Managed Versus Professionally Managed Small Corporations," *Journal of Small Business Management* 30(2), 25-34.
- Daily, C. M., D. R. Dalton, and A. A. Cannella (2003). "Corporate Governance: Decades of Dialogue and Data," *Academy of Management Review* 28(3), 371-382.

- Daily, C. M., and M. J. Dollinger (1992). "An Empirical Examination of Ownership Structure in Family and Professionally Managed Firms," *Family Business Review* 5(2), 117.
- Debicki, B. J., C. F. Matherne, F. W. Kellermanns, and J. J. Chrisman (2009). "Family Business Research in the New Millennium," *Family Business Review* 22(2), 151-166.
- De Massis, A., F. Frattini, E. Pizzurno, and L. Cassia (2013). "Product Innovation in Family vs. Non-Family Firms: An Exploratory Analysis," *Journal of Small Business Management*, forthcoming.
- De Massis, A., J. Kotlar, J. H. Chua, J. J. Chrisman, and P. Sharma (2011). "Ability and Willingness in Family Business Research: Implications for Theory and Empirical Studies," paper presented at the IFERA 11th Annual World Family Business Research Conference. Palermo, Italy.
- De Massis, A., P. Sharma, J. H. Chua, J. J. Chrisman, and J. Kotlar (2012). "State-of-the-Art of Family Business Research," in *Family Business Studies: An Annotated Bibliography*. Eds. A. De Massis, P. Sharma, J.H. Chua and J.J. Chrisman. Northampton, MA: Edward Elgar.
- Demsetz, H., and K. Lehn (1985). "The Structure of Corporate Ownership: Causes and Consequences," *The Journal of Political Economy* 93(6), 1155-1177.
- Donaldson, G. (1961). *Corporate Debt Capacity: A Study of Corporate Debt Policy and the Determinants of Corporate Debt Capacity*. Boston, MA: Harvard University Press.
- Dwyer, S., O. C. Richard, and K. Chadwick (2003). "Gender Diversity in Management and Firm Performance: The Influence of Growth Orientation and Organizational Culture," *Journal of Business Research* 56(12), 1009-1019.
- Dyer, W. G. (2003). "The Family: The Missing Variable in Organizational Research," *Entrepreneurship Theory and Practice* 27(4), 401-416.
- Dyer, W. G. (2006). "Examining the Family Effect on Firm Performance," *Family Business Review* 19(4), 253-273.
- Eddleston, K. A., R. F. Otondo, and F. W. Kellermanns (2008). "Conflict, Participative Decision Making, and Generational Ownership Dispersion: A Multilevel Analysis," *Journal of Small Business Management* 46(3), 456-484.
- Eisenhardt, K. M. (1989). "Agency Theory: An Assessment and Review," *Academy of Management Review* 14(1), 57-74.
- Ensley, M. D., and A. W. Pearson (2005). "An Exploratory Comparison of the Behavioral Dynamics of Top Management Teams in Family and Nonfamily New Ventures: Cohesion, Conflict, Potency, and Consensus," *Entrepreneurship Theory and Practice* 29(3), 267-284.
- Fama, E. F., and M. C. Jensen (1983a). "Agency Problems and Residual Claims," *Journal of Law and Economics* 26, 327-349.
- Fama, E. F., and M. C. Jensen (1983b). "Separation of Ownership and Control," *Journal of Law and Economics* 26, 301-325.
- Ferrier, W. J. (2001). "Navigating the Competitive Landscape: The Drivers and Consequences of Competitive Aggressiveness," *Academy of Management Journal*, 858-877.

- Finkelstein, S., and D. C. Hambrick (1996). *Strategic Leadership: Top Executives and Their Effects on Organizations*. St. Paul, MN: West Publishing Company.
- Freel, M. S. (2000). "Barriers to Product Innovation in Small Manufacturing Firms," *International Small Business Journal* 18(2), 60-80.
- García-Teruel, P. J., and P. Martínez-Solano (2007). "Effects of Working Capital Management on Sme Profitability," *International Journal of Managerial Finance* 3(2), 164-177.
- Gedajlovic, E., M. Carney, J. J. Chrisman, and F. W. Kellermans (2012). "The Adolescence of Family Firm Research: Taking Stock and Planning for the Future," *Journal of Management* 38(4), 1010-1037.
- Gersick, K. E. (1997). *Generation to Generation: Life Cycles of the Family Business*. Boston, MA: Harvard Business Press.
- Gersick, K. E., I. Lansberg, M. Desjardins, and B. Dunn (1999). "Stages and Transitions: Managing Change in the Family Business," *Family Business Review* 12(4), 287-297.
- Gómez-Mejía, L. R., K. T. Haynes, M. Núñez-Nickel, K. J. L. Jacobson, and J. Moyano-Fuentes (2007). "Socioemotional Wealth and Business Risks in Family-Controlled Firms: Evidence from Spanish Olive Oil Mills," *Administrative Science Quarterly* 52(1), 106-137.
- Gómez-Mejía, L. R., M. Larraza-Kintana, and M. Makri (2003). "The Determinants of Executive Compensation in Family-Controlled Public Corporations," *Academy of Management Journal* 46(2), 226-237.
- Gómez-Mejía, L. R., M. Nunez-Nickel, and I. Gutierrez (2001). "The Role of Family Ties in Agency Contracts," *Academy of Management Journal* 44(1), 81-95.
- Goodman, E. J., and J. Bamford (1989). *Small Firms and Industrial Districts in Italy*. New York: Routledge
- Gruenfeld, D. H., E. A. Mannix, K. Y. Williams, and M. A. Neale (1996). "Group Composition and Decision Making: How Member Familiarity and Information Distribution Affect Process and Performance," *Organizational Behavior and Human Decision Processes* 67(1), 1-15.
- Hair, J. F., W. C. Black, B. J. Babin, R. E. Anderson, and R. L. Tatham. (1998). *Multivariate Data Analysis*. Englewood Cliffs, NJ: Prentice Hall.
- Hambrick, D. C., and P. A. Mason (1984). "Upper Echelons: The Organization as a Reflection of Its Top Managers," *Academy of Management Review* 9(2), 193-206.
- Heck, R. K. Z., F. Hoy, P. Z. Poutziouris, and L. P. Steier (2008). "Emerging Paths of Family Entrepreneurship Research," *Journal of Small Business Management* 46(3), 317-330.
- Hoffman, L. R. (1959). "Homogeneity of Member Personality and Its Effect on Group Problem-Solving," *The Journal of Abnormal and Social Psychology* 58(1), 27-32.
- Holt, D. T., A. W. Pearson, M. J. Carr, and T. Barnett (2012). "Measuring Performance in Family Businesses: The State of the Art and Roadmap for Advancing Family Business Research and Practice," paper presented at the *8th Family Enterprise Research Conference*, Montreal, Canada, May.
- Holtz-Eakin, D., D. Joulfaian, and H. S. Rosen (1993). "The Carnegie Conjecture: Some Empirical Evidence," *The Quarterly Journal of Economics* 108(2), 413-435.

- Jackson, S. (1992). "Consequences of Group Composition for the Interpersonal Dynamics of Strategic Issue Processing," in *Advances in Strategic Management*. Eds. P. Shrivastava, A. Huff, and J. Dutton, Greenwich, CT: JAI Press, 345–382.
- James, H. S. (1999). "Owner as Manager, Extended Horizons and the Family Firm," *International Journal of the Economics of Business* 6(1), 41-55.
- Janis, I. L. (1982). *Groupthink: Psychological Studies of Policy Decisions and Fiascoes*. Boston, MA: Houghton Mifflin.
- Jehn, K. A. (1994). "Enhancing Effectiveness: An Investigation of Advantages and Disadvantages of Value-Based Intragroup Conflict," *International Journal of Conflict Management* 5(3), 223-238.
- Jehn, K. A. (1995). "A Multimethod Examination of the Benefits and Detriments of Intragroup Conflict," *Administrative Science Quarterly* 40(2), 256-282.
- Jensen, M. C. (1994). "Self-Interest, Altruism, Incentives, and Agency Theory," *Journal of Applied Corporate Finance* 7(2), 40-45.
- Jensen, M. C., and W. H. Meckling (1976). "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure," *Journal of Financial Economics* 3(4), 305-360.
- Johannisson, B., and M. Huse (2000). "Recruiting Outside Board Members in the Small Family Business: An Ideological Challenge," *Entrepreneurship and Regional Development* 12(4), 353-378.
- Kelly, L. M., N. Athanassiou, and W. F. Crittenden (2000). "Founder Centrality and Strategic Behavior in the Family-Owned Firm," *Entrepreneurship Theory and Practice* 25(2), 27-42.
- Kepner, E. (1991). "The Family and the Firm: A Coevolutionary Perspective," *Family Business Review* 4(4), 445-461.
- Kor, Y. Y. (2003). "Experience-Based Top Management Team Competence and Sustained Growth," *Organization Science* 14(6), 707-719.
- Kowalewski, O., O. Talavera, and I. Stetsyuk (2010). "Influence of Family Involvement in Management and Ownership on Firm Performance: Evidence from Poland," *Family Business Review* 23(1), 45-59.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny (1999). "Corporate Ownership around the World," *The Journal of Finance* 54(2), 471-517.
- Lau, D. C., and J. K. Murnighan (1998). "Demographic Diversity and Faultlines: The Compositional Dynamics of Organizational Groups," *Academy of Management Review* 23(2), 325-340.
- Le Breton-Miller, I., D. Miller, and R. H. Lester (2011). "Stewardship or Agency? A Social Embeddedness Reconciliation of Conduct and Performance in Public Family Businesses," *Organization Science* 22(3), 704-721.
- Le Breton-Miller, I. L., and D. Miller (2006). "Why Do Some Family Businesses out Compete? Governance, Long Term Orientations, and Sustainable Capability," *Entrepreneurship Theory and Practice* 30(6), 731-746.
- Lee, J. (2006). "Family Firm Performance: Further Evidence," *Family Business Review* 19(2), 103-114.

- Lubatkin, M. H., Y. Ling, and W. S. Schulze (2007). "An Organizational Justice-Based View of Self-Control and Agency Costs in Family Firms," *Journal of Management Studies* 44(6), 955-971.
- Lumpkin, G. T., and K. H. Brigham (2011). "Long-Term Orientation and Intertemporal Choice in Family Firms," *Entrepreneurship Theory and Practice* 35(6), 1149-1169.
- Mahto, R. V., P. S. Davis, J. A. Pearce II, and R. B. Robinson Jr (2010). "Satisfaction with Firm Performance in Family Businesses," *Entrepreneurship Theory and Practice* 34(5), 985-1001.
- Mazzi, C. (2011). "Family Business and Financial Performance: Current State of Knowledge and Future Research Challenges," *Journal of Family Business Strategy* 2(3), 166-181.
- McConaughy, D. L., C. H. Matthews, and A. S. Fialko (2001). "Founding Family Controlled Firms: Performance, Risk, and Value," *Journal of Small Business Management* 39(1), 31-49.
- Miller, D., I. Le Breton-Miller, R. H. Lester, and A. A. Cannella Jr (2007). "Are Family Firms Really Superior Performers?," *Journal of Corporate Finance* 13(5), 829-858.
- Miller, D., and I. Le Breton Miller (2006). "Family Governance and Firm Performance: Agency, Stewardship, and Capabilities," *Family Business Review* 19(1), 73-87.
- Miller, D., I. Le Breton Miller, and R. H. Lester (2010). "Family Ownership and Acquisition Behavior in Publicly Traded Companies," *Strategic Management Journal* 31(2), 201-223.
- Minichilli, A., G. Corbetta, and I. C. MacMillan (2010). "Top Management Teams in Family-Controlled Companies: 'Faminess', 'Faultlines', and Their Impact on Financial Performance," *Journal of Management Studies* 47(2), 205-222.
- Mishra, C. S., and D. L. McConaughy (1999). "Founding Family Control and Capital Structure: The Risk of Loss of Control and the Aversion to Debt," *Entrepreneurship Theory and Practice* 23(4), 53-64.
- Mitchell, R. K., B. R. Agle, J. J. Chrisman, and L. J. Spence (2011). "Toward a Theory of Stakeholder Salience in Family Firms," *Business Ethics Quarterly* 21(2), 235-255.
- Morck, R., D. A. Stangeland, and B. Yeung. (1998). "Inherited Wealth, Corporate Control and Economic Growth: The Canadian Disease," in *Concentrated Corporate Ownership*. Eds. R. Morck. Chicago: University of Chicago Press, 319-369.
- Morck, R., and B. Yeung (2003). "Agency Problems in Large Family Business Groups," *Entrepreneurship Theory and Practice* 27(4), 367-382.
- Nemeth, C. J. (1986). "Differential Contributions of Majority and Minority Influence," *Psychological Review* 93(1), 23.
- O'Boyle, E. H., J. M. Pollack, and M. W. Rutherford (2011). "Exploring the Relation between Family Involvement and Firms' Financial Performance: A Meta-Analysis of Main and Moderator Effects," *Journal of Business Venturing* 27(1), 1-18.
- O'Boyle, E. H., M. W. Rutherford, and J. M. Pollack (2010). "Examining the Relation between Ethical Focus and Financial Performance in Family Firms: An Exploratory Study," *Family Business Review* 23(4), 310-326.

- Oswald, S. L., L. A. Muse, and M. W. Rutherford (2009). "The Influence of Large Stake Family Control on Performance: Is It Agency or Entrenchment?," *Journal of Small Business Management* 47(1), 116-135.
- Pettigrew, A. M. (1992). "On Studying Managerial Elites," *Strategic Management Journal* 13(2), 163-182.
- Pieper, T. M., S. B. Klein, and P. Jaskiewicz (2008). "The Impact of Goal Alignment on Board Existence and Top Management Team Composition: Evidence from Family Influenced Businesses," *Journal of Small Business Management* 46(3), 372-394.
- Robinson, R. B. (1982). "The Importance of 'Outsiders' in Small Firm Strategic Planning," *Academy of management Journal* 25(1), 80-93.
- Rutherford, M. W., D. F. Kuratko, and D. T. Holt (2008). "Examining the Link between 'Familianness' and Performance: Can the F-PEC Untangle the Family Business Theory Jungle?," *Entrepreneurship Theory and Practice* 32(6), 1089-1109.
- Salvato, C. A. (1999). "Boards of Directors in Family Firms: Mimicry or Resource Dependence Reduction?," in *Innovation and Economic Development: The Role of Entrepreneurship and SMEs*. Eds. G. Capaldo, and M. Raffa. Naples, IT: Edizioni Scientifiche Italiane.
- Schulze, W. S., M. H. Lubatkin, and R. N. Dino (2002). "Altruism, Agency, and the Competitiveness of Family Firms," *Managerial and Decision Economics* 23(4-5), 247-259.
- Schulze, W. S., M. H. Lubatkin, and R. N. Dino (2003a). "Exploring the Agency Consequences of Ownership Dispersion among the Directors of Private Family Firms," *Academy of Management Journal* 46(2), 179-194.
- Schulze, W. S., M. H. Lubatkin, and R. N. Dino (2003b). "Toward a Theory of Agency and Altruism in Family Firms," *Journal of Business Venturing* 18(4), 473-490.
- Schulze, W. S., M. H. Lubatkin, R. N. Dino, and A. K. Buchholtz (2001). "Agency Relationships in Family Firms: Theory and Evidence," *Organization Science* 12(2), 99-116.
- Sciascia, S., and P. Mazzola (2008). "Family Involvement in Ownership and Management: Exploring Nonlinear Effects on Performance," *Family Business Review* 21(4), 331-345.
- Shleifer, A., and R. W. Vishny (1986). "Large Shareholders and Corporate Control," *The Journal of Political Economy* 94(3), 461-488.
- Shleifer, A., and R. W. Vishny (1989). "Management Entrenchment: The Case of Manager-Specific Investments," *Journal of Financial Economics* 25(1), 123-139.
- Sraer, D., and D. Thesmar (2007). "Performance and Behavior of Family Firms: Evidence from the French Stock Market," *Journal of the European Economic Association* 5(4), 709-751.
- Stark, O., and I. Falk (1998). "Transfers, Empathy Formation, and Reverse Transfers," *American Economic Review* 88(2), 271-276.
- Stewart, A. (2003). "Help One Another, Use One Another: Toward an Anthropology of Family Business," *Entrepreneurship Theory and Practice* 27(4), 383-397.

- Storey, D. J. (1994). *Understanding the Small Business Sector*. London, UK: Thomson Learning Emea.
- Tabachnick, B. G., and Fidell, L. S. (2001). *Using Multivariate Statistics* (4th ed.), New York: HarperCollins
- Thaler, R. H., and H. M. Shefrin (1981). "An Economic Theory of Self-Control," *The Journal of Political Economy* 89(2), 392-406.
- Villalonga, B., and R. Amit (2006). "How Do Family Ownership, Control and Management Affect Firm Value?," *Journal of Financial Economics* 80(2), 385-417.
- Voordeckers, W., A. Van Gils, and J. Van den Heuvel (2007). "Board Composition in Small and Medium Sized Family Firms," *Journal of Small Business Management* 45(1), 137-156.
- Wanous, J. P., and M. A. Youtz (1986). "Solution Diversity and the Quality of Group Decisions," *Academy of Management Journal* 29(1), 149-159.
- Ward, J. L. (2004). *Perpetuating the Family Business*. New York: Palgrave Macmillan.
- Westhead, P., and M. Cowling (1997). "Performance Contrasts between Family and Non-Family Unquoted Companies in the UK," *International Journal of Entrepreneurial Behaviour & Research* 3(1), 30-52.
- Westhead, P., and M. Cowling (1998). "Family Firm Research: The Need for a Methodological Rethink," *Entrepreneurship Theory and Practice* 23(1), 31-33.
- Westhead, P., M. Cowling, and C. Howorth (2001). "The Development of Family Companies: Management and Ownership Imperatives," *Family Business Review* 14(4), 369-385.
- White, H. (1980). "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity," *Econometrica: Journal of the Econometric Society* 48(4), 817-838.
- Williams, K. D. (1997). "Social Ostracism," in *Aversive Interpersonal Behaviors. The Plenum Series in Social/Clinical Psychology*. Eds. R. M. Kowalski. New York: Plenum Press, 133-170.
- Wortman, M. S. (1994). "Theoretical Foundations for Family-Owned Business: A Conceptual and Research-Based Paradigm," *Family Business Review* 7(1), 3-27.
- Young, M. N., M. W. Peng, D. Ahlstrom, G. D. Bruton, and Y. Jiang (2008). "Corporate Governance in Emerging Economies: A Review of the Principal-Principal Perspective," *Journal of Management Studies* 45(1), 196-220.
- Zahra, S. A. (1996). "Governance, Ownership, and Corporate Entrepreneurship: The Moderating Impact of Industry Technological Opportunities," *Academy of Management Journal* 39(6), 1713-1735.

CHAPTER TWO
GOAL SETTING IN FAMILY FIRMS:
GOAL DIVERSITY, SOCIAL INTERACTIONS, AND
COLLECTIVE COMMITMENT TO FAMILY-CENTERED GOALS

CHAPTER TWO ABSTRACT

Differences between family and non-family firms are often attributed to the unique particularistic goals pursued by the controlling families. However, the theoretical and empirical work exploring how family-centered goals are formed is not nearly as refined as the work that has been done at the aggregate level. We present a qualitative study of 76 organizational members across 19 family firms that extends our understanding of the relationship between family involvement and the adoption of family-centered goals by revealing the sources of goal diversity in family firms and describing the social interactions that drive the formation of collective commitment to family-centered goals. Theoretical and practical implications of our findings are discussed.

INTRODUCTION

The involvement of family members in the ownership and management of firms is very common (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999; Villalonga & Amit, 2009). Such involvement is acknowledged to cause distinctive behaviors because the controlling families imprint a particularistic vision to the business (Carney, 2005; Chua, Chrisman, & Sharma, 1999) that entails the adoption of family-centered goals (Chrisman, Chua, & Sharma, 2005; Chrisman, Chua, Pearson, & Barnett, 2012; Habbershon, Williams, & MacMillan, 2003). Thus, exploring the theoretical and practical implications of family-centered goals for organizational processes and outcomes has been central to the family business field (Chrisman et al., 2005; Gedajlovic, Carney, Chrisman, & Kellermanns, 2012), and it is surprising that very little theoretical and empirical work has been done with regard to goals and goal formulation processes in the family business literature (De Massis, Sharma, Chua, Chrisman, & Kotlar, 2012; Debicki, Matherne, Kellermanns, & Chrisman, 2009; Sharma, Chrisman, & Chua, 1996).

Prior research has provided anecdotal evidence pointing to the coexistence of family and non-family centered goals in family firms (e.g., Andersson, Carlsen, & Getz, 2002;

Churchill & Hatten, 1997; Olson et al., 2003). It has shown that family firms embrace additional rationalities to business beyond profit (e.g., the preservation of “socioemotional” wealth, Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007), and it has as well proposed theoretical clarifications for why some noneconomic goals may be considered important in family firms (Zellweger, Nason, Nordqvist, & Brush, 2012). Recently, Chrisman et al. (2012) empirically proved with a large sample of U.S. firms that the relationship between family involvement and the adoption of family-centered goals is more complex than previously assumed.

Presumably, such complexity lays into the unique mechanisms and outcomes emerging from the interactions between family and business (Chrisman et al., 2005), as well as the unique dynamics that characterize the family (Habbershon et al., 2003). As the field of family business matures, the reliance on a single level of analysis (i.e., the firm) may limit our understanding of organizational phenomena such as organizational goals, because they are the results of multilevel phenomena involving individuals, groups, and firms (Cyert & March, 1963). As a result, how family-centered goals are established and how they influence decision making in the family firm is still far than clear. Thus, new approaches are needed, and given the ambiguities inherent in multilevel research, the use of qualitative methodologies has the potential to generate a richer understanding of goal setting in family firms (Hitt, Beamish, Jackson, & Mathieu, 2007).

In this study we attempt to broaden and refine existing theory in the area of organizational goals and goal formulation processes in family firms by answering the following research question: *How do the multiple identities, interests, and individual goals of organizational members settle on the particularistic goals pursued by family firms?*

Qualitative ethnographic data collected from 76 informants across 19 small and medium family firms are used to uncover unexplored dynamics regarding goals pursued by organizational members and goal setting in family firms. Our study reveals the existence of multifaceted goals in family firms and offers an illustration of how individual goals reflect the individuals’ membership to different systems, the generation of family control, and the stage of the intra-family succession. Grounded in this rich body of empirical evidence, the family firm emerges as a complex combination of individuals with divergent goals that are embedded in multiple organizational contexts, pointing to the persistence of organizational goal diversity in family firms. Furthermore, our evidence reveals that goal diversity can be managed, and family-centered goals can be stabilized through professional or familial social interactions. Finally, we show how goal diversity is expressed more strongly in the

imminence of an intra-family succession, and that the reliance on different types of social interactions has important implications for the collective commitment to family-centered goals in family firms.

Before presenting the study and discussing our findings, in the next section we briefly summarize the contributions of past studies on family-centered goals and some aspects of traditional mainstream views that set the foundations for our study and highlight the contribution of our approach.

FAMILY FIRMS AND FAMILY-CENTERED GOALS

Family involvement in business has important implications for organizational outcomes because it entails the coexistence of different sets of economic and non-economic goals (Chua et al., 1999; Gedajlovic et al., 2012). For example, Gómez-Mejía et al. (2007) showed that family firms can be willing to face higher business risks than required in order to maintain the family control over the business; Zellweger, Kellermanns, Chrisman, and Chua (2012) demonstrated that family owners add an intangible value to the price at which they are willing to sell their firms to nonfamily buyers that reflects their goals for an intra-family succession; Chrisman and Patel (2012) proposed that family firms display higher variations in R&D investments than non-family firms because of the interferences between family goals and the economic goals of the firm.

That family firms pursue family-centered goals is not only an axiom, as the relationship between family involvement and family-centered goals received both theoretical explanation and empirical confirmation in prior research. In particular, Chrisman et al. (2012) developed arguments from the behavioral (Cyert & March, 1963) and the stakeholder (Mitchell, Agle, & Wood, 1997) theories to propose that family involvement in ownership and management gives the controlling family the discretion to influence organizational goals, but the authority over goal formulation may not result into the actual implementation of family-centered goals if such goals are not important or urgent to the family. As a consequence, in their empirical analysis of a broad sample of U.S. family firms Chrisman et al. (2012) found a general positive relationship between family involvement and the adoption of family-centered goals, but they also suggested that the relationship is more complex due to the presence of a number of mediating and moderating factors, bringing support to the idea that the adoption of family-centered goals may vary among family firms (Westhead & Howorth, 2007).

Due to their complexity, organizational goals have been indeed the object of high interest in the mainstream management literature, where there has been considerable discussion about the concept of organizational goals (e.g., Simon, 1964), their formulation (e.g., Cyert & March, 1963), their relevance for explaining organizational behavior (e.g., England, 1967), and their relationship with performance (e.g., O'Leary-Kelly, Martocchio, & Frink, 1994). In general, the goal literature is primarily divided between studies investigating goals at the individual level (e.g., Locke & Latham, 1990) and research examining group goals (e.g., Zander, 1980), pointing to the fact that the formation of organizational goals is a multilevel phenomenon. In fact, the theories of goals and of the dominant coalition (Argote & Greve, 2007; Cyert & March, 1963) emphasize that organizations have not goals, but that it is possible to build “*something analogous – at the organizational level – to individual goals at the individual level*” (Cyert & March, 1963, p. 30) to explain how a firm can have definite goals despite the different interests of its participants.

According to this perspective, family-centered goals cannot be considered as static or given but, in a specific, rather short, period of time, the adoption of family-centered goals is likely to reflect some arrangements between coalitions of organizational members, whose composition is made complex by the extent of overlaps between the family, the ownership, and the business systems, that also may presumably change over time. Although family-centered goals are a key determinant for explaining the family firms' distinctive behavior and the complexity of the underlying phenomena, prior research – besides being confined to few studies – has investigated family firms' goals at the firm level, thus running the risk of downplaying, or oversimplifying, the fleeting and multilevel nature of goal setting processes in family firms.

As a consequence, understanding and predicting the adoption of family-centered goals by family firms remains an important challenge for the development of theories of the family firm, and in particular there is need for new perspectives and innovative research approaches to uncover the complexity of goal setting entailed by family involvement in the business, and to build more fitting theory about the adoption of family-centered goals in family firms.

METHODS

Our aim is to build theory in the area of family business organizational goals and to broaden existing theory by extending and refining categories and relationships that have been left out from literature (Lee, Mitchell, & Sablinski, 1999; Locke, 2001). For this purpose, we

use a grounded theory approach to better understand unexplored dynamics regarding goal setting in family firms.

Sample and Context

We adopt an ethnography method for data collection. We first identified a set of firms that could be potentially included in the study through preliminary interviews with some professionals belonging to the Research Center XXX of the University XXX², who provided a list of small and medium family firms³ based on their professional networks in which three conditions are met: (i) the majority of ownership was held by members belonging to one family, (2) two or more family members were actively involved in the business, and (3) the CEO perceived the firm to be a family firm (Westhead, Cowling, & Howorth, 2001).

In order to build and elaborate theory, we searched for a purposeful sample of family business' organizational members that are distributed over membership and role categories. In particular, we searched for a context that could serve as an "extreme case" (Eisenhardt, 1989), which could facilitate theory building because the dynamics being examined should be more visible than they might be in other contexts. In particular, we chose to explore organizational goals differences among different groups of organizational members within a general context, that is the family firm and, consistently with the overlapping circles model that pictures a static degree of interaction (overlap) between the family and business (Habbershon et al., 2003), we chose to study members of family firms within the family, ownership, and business entity systems.

We represent the segmentation of family firms and of the family firm's organizational members by examining the CEO, the professional (non-family) top executives, the young generation family members, the family CEO's spouse, and the old generation family members across family businesses that are different in terms of generation of family control and succession stage. At the firm level, the segmentation according to the generation of family control is important since it was shown to affect many management processes and the firm's financial performances (Anderson & Reeb, 2003; Schulze, Lubatkin, & Dino, 2003; Steier & Miller, 2010). In addition, we included in our sample firms whose CEO is expecting

² The names of these institutions are omitted from this version of the manuscript in order to ensure the anonymity of the authors in the review process.

³ Consistently with previous studies (Chrisman et al., 2012), we focused on small firms because the influence of the controlling family on the firm is likely to be more important in influencing behaviors in small firms than in larger firms where institutional constraints and independent boards of directors may weaken the relationships of interest. Although this sampling criterion implies trading external validity against opportunities to gain valuable insights, we believe that our results could hold for a great number of firms, since small firms constitute the vast majority of businesses in the economy.

an intra-family succession to occur in the next five years and firms that experienced an intra-family succession in the last five years prior to the analysis. Indeed, the stage of the succession process is considered important since, by definition, a succession is a process that implies significant organizational changes (Le Breton-Miller, Miller, & Steier, 2004), and may also affect organizational goals (De Massis, Chua, & Chrisman, 2008). On the other hand, at the individual level, the choice of the organizational members maximized differences along four dimensions that are thought to be particularly relevant to our study. First, we selected individuals that own equity shares of the firm and others that do not, since ownership is likely to affect the incentives and priorities of organizational members (Jensen & Meckling, 1976). Second, we selected family members as well as non-family members because this could result into significant differences in the individuals' model of men. For example, non-family members may be expected to follow a self-serving attitude, consistent with economic rationality, whereas family-members can be more oriented toward the family firms' collectivistic goals (Corbetta & Salvato, 2004). Third, we selected family members that are actively involved in the business and those that are not, because they may differ in terms of their power in the organization and in how they perceive the family and the business priorities (Le Breton-Miller, Miller, & Lester, 2011). Fourth, we selected family members that belong to the firm CEO's generation, to the younger generation, and to the older generation, since research has pointed relevant differences between incumbents and descendants (De Vries, 1993).

Given these differences among the types of family firms and organizational members, we felt that examining this combination would give us enough distinct windows through which to view the organizational members' individual goals. Taken together, this sample and context provided an excellent opportunity to examine goal setting in family firms.

Using the purposeful sample of family business' organizational members distributed over types of role and involvement, we collected data until "theoretical saturation". Although guidelines for determining nonprobabilistic sample sizes are virtually nonexistent (Guest, Bunce, & Johnson, 2006), we ended when no new information or themes were observed in the data, and this resulted into a sample of 76 informants across 19 family firms.

Demographically, our sample was approximately 18 percent female, with women being quite uniformly distributed among members involved and not in the business (6 of 14 were involved in the business), family and non-family members (8 of 14 were family members), and family generation (4 of 8 belonged to the family generation currently leading

the company, 3 to the young generation, and 1 to the old generation). The interviewees' age ranged between 25 and 68 years, the average respondent being 39 years old.

General information of the sampled interviewees is presented in Table 1. Firms in the sample are quite equally distributed across industrial (54%) and business-to-consumer industries (46%). Approximately 33 percent of the sample came from founder-led family firms, 36 percent from second generation, 10 percent from third generation, 13 percent from fourth generation, 4 percent from fifth generation, and 4 percent from sixth generation family firms. With regard to the succession process, 75 percent of participants came from firms where the CEO was expecting an intra-family succession to occur within the next 5 years, and 25 percent came from firms that had experienced a succession in the last five years.

TABLE 1
General Information of Sampled 76 Interviewees across 19 Family Firms^a

Firm Level Information	n (%)	Individual Level Information	n (%)
<i>Industry^b</i>		<i>Type of organizational member^b</i>	
Industrial	41 (54%)	CEOs	21 (27%)
Business to consumer	35 (46%)	CEO's spouses	5 (7%)
<i>Generation of Family Control^b</i>		Professional managers	20 (26%)
1	25 (33%)	Younger generation family members	25 (33%)
2	27 (36%)	Older generation family members	5 (7%)
3	8 (10%)	<i>Active involvement in the business^b</i>	
4	10 (13%)	Actively Involved	64 (84%)
5	3 (4%)	Not Actively Involved	12 (16%)
6	3 (4%)	<i>Family membership^b</i>	
<i>Succession stage^b</i>		Family Member	56 (74%)
Expected intra-family succession	57 (75%)	Non-Family Member	20 (26%)
After intra-family succession	19 (25%)	<i>Family members' generation^c</i>	
		Young generation	25 (45%)
		Current Generation	26 (46%)
		Older Generation	5 (9%)

^a Names of the sampled family firms, internal stakeholders, and other identifying information presented here have been omitted to protect the anonymity of our informants.

^b Whole population of organizational members, N = 76

^c Family members, N = 56

Data

The primary method of data collection involved semistructured interviews with the above described respondents. Initially, we obtained preliminary information by asking questions about the family firm (background information of the firm, including

demographical information such as age, size, and industry, historical information about the firm, information about the family generation leading the company and the succession stage, and information on family involvement) and the interviewee (parental relations with the controlling family, family generation membership, ownership of shares, and role in the company). This common set of questions allowed us to see changes in interviewees' responses across different organizational members of the family firm.

In order to better address and specify the objectives of our analysis, and to consistently develop the interview questions, we followed a pyramidal algorithm of interview questions development (Wengraf, 2001). The central research question was therefore articulated into the following theory questions: *What are the goals pursued by family firms' organizational members? How do such goals relate to the individual characteristics of the respondents? How do these relationships change across family firms? How do the individual family business members' goals affect the decision making processes in family firms?* From each of these theory questions, we developed the questions to be included in the interview protocol (see Appendix for the abbreviated interview protocol).

Interviews lasted between 30 minutes and two hours, and all were conducted on site (the family firm headquarter or family house) after we had received informed consent from the participant. The authors recorded the interviews as well as took notes, and interviews were transcribed verbatim.

The utility and reliability of interviews as a form of data collection is object of scholarly debate, with some scholars emphasizing the fertility and underutilization of self-reports and firsthand narratives for understanding subjective work experiences (Folkman & Moskowitz, 2000), and others stressing the weaknesses of such approaches due to the respondents' tendency to adjust their responses in order to maintain positive self-images and create favorable impressions (Paulhus, 1984). Therefore, we used interviews as our primary source of data, but we also tried to offset the limitations of this method by using additional methods where possible.

In particular, we repeatedly followed respondents during family and business meetings (e.g., meetings of the board of directors, casual meetings, family meetings), formulating general observations of how goals enter the everyday family and business life. Our access was relatively consistent across cases, with at least three meetings observations in each firm, and a total number of 114 meetings observation. These were made to confirm respondents' descriptions of their organizational roles, to assess the general family business environment, and to look as close as possible into the processes through which organizational

goals are set. In addition, we gathered in all firms archival documents from various sources, including contracts, historical books about the organization and the family, corporate websites, news articles about the firm and the family, and firm pamphlets. Taken together, these secondary sources of data provided a richer context for understanding goal setting in family firms.

Data Analysis

In order to understand the goal formulation processes in family firms, we independently read interviews, observations, and archival data applying open in vivo coding with the qualitative data analysis program NVIVO (QSR International, version 9), which also enabled us to exchange memos to capture themes and broad observations. More specifically, we analyzed the qualitative data in an iterative fashion by moving back and forth between the data and an emerging structure of theoretical arguments, following three major steps (Locke, 2001; Miles & Huberman, 1999).

The first step consisted in creating provisional categories and first-order codes. We began by identifying statements regarding our informants' views of the world via open coding (Locke, 2001) and then drew on common statements, comparable episodes, and equivalent contents in archival data to form provisional categories and first-order codes. Following Miles and Huberman (1999), we used a contact summary form to record the provisional categories revealed in each data source at each point in time. Sometimes the revisited data did not fit well into a category, which led either to abandonment or revision of a category.⁴

The second step consisted in integrating first-order codes and creating second-order themes. Codes were consolidated for each group. That is, we summarized the contact forms compiled from all the data collected from CEOs, professional managers, young generation family members, CEOs' spouses, and old generation family members into different sets of themes, from firms in different generations of family involvement, and at different stages of the succession process. This stage of analysis allowed us to compare across roles and roles differences within and across different types of family firm and to detect changes in our variables of interest (e.g., individual goals, goal formulation processes). As we consolidated

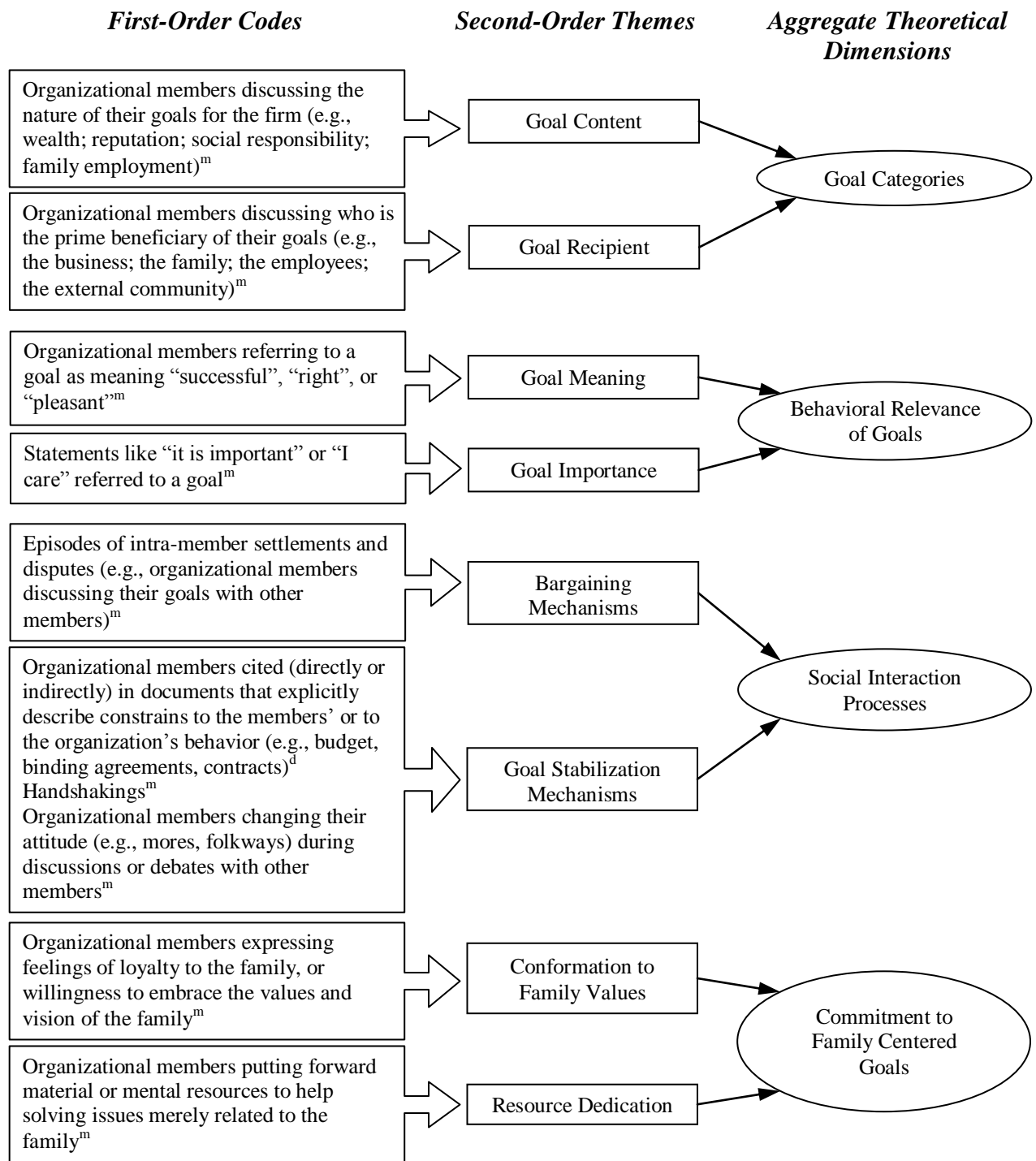
⁴ Each coder began by reading all transcripts. A specific discipline was assigned to a specific coder and contact summary sheets were generated. Once contact summary sheets were completed, the coders met numerous times to create theoretical categories. As theoretical categories were created, coders went back and recoded data to see if the codes fitted the emerging abstractions. Where they did not, coders reviewed the "discrepant data" and revised categories accordingly. This process was continued until all coders agreed. A similar process was used to delimit theory. This process continued over the 12 months of data collection.

categories, they became more theoretical and more abstract. That is, we moved from open to axial coding (Locke, 2001). To illustrate, coding statements that differentiated between right and wrong goals for the family firm led us to see that organizational members attribute different connotations to the same goal. We used the theme “goal meaning” to capture these elements.

The third step was delimiting theory by aggregating theoretical dimensions. Once second-order themes had been generated, we looked for aggregate dimensions underlying these themes in an attempt to understand how different themes fitted together into a coherent picture. We brainstormed alternative conceptual frameworks or models that described how these themes related to one another and to available organizational theories. Once we had identified a possible framework, we reexamined the data’s fit/misfit with our emergent theoretical understanding (Locke, 2001). Figure 1 summarizes the process that we followed, which shows our first-order codes, second-order themes, and aggregate theoretical dimensions.

Specifically, the aggregate theoretical dimensions shown were the ones that best explained the goals pursued by family firm organizational members and the processes through which organizational goals were formulated.

FIGURE 1
Overview of Data Structure^a



^a All data were derived from semistructured interviews; “m” indicates “supplemented with meetings observations”; and “d” indicates “supplemented with archival data”.

FINDINGS

Organizational Members' Goals and the Emergence of Organizational Goal Diversity

The first result of our analysis is a taxonomy of organizational members' individual goals in four categories based on goal content and goal recipient, as emerged from the iterative comparison of the empirical evidence and previous works in the literature. The taxonomy and illustrative examples of each category of goals are reported in Table 2, that encompasses: family centered economic goals (FC-E), including the continuation of family control over the company and the generation of various forms of wealth for the family; family centered non-economic goals (FC-NE), comprising the preservation of harmony within the family system, the promotion of family social status and reputation, and the maintenance of a linkage between the family and the business identities; non-family centered economic goals (NFC-EC), including disparate indicators of economic performance, such as growth, survival, and profits; and non-family centered non-economic goals (NFC-NE), embracing the improvement and conservation of good relationships with internal and external stakeholders, such as employees and the external community.

TABLE 2
Organizational Members' Goals in the Family Firm by Goal Content and Goal Recipient

Goal Categories	Instances	Illustrations ^a
<i>Family Centered Economic Goals</i>		
Family Control Over the Company	Maintaining firm's financial and control independence	"I made the company what it is now, and I want to see our family to continue running the business with his own arts." (Old generation family member)
	Transfer the company to new generations	"Tacitly, I hope that my son will take over the business one day." (CEO)
Family Wealth	Providing a job and growth opportunities to family members	"All I have always desired about this firm is to give an opportunity to my offspring." (Old generation family members)
	Ensure and improve family's lifestyle	"I come from a modest family, my first goal was to improve our life." (CEO)
	Accumulate wealth for the family	"It is important to create wealth for the future of the family" (Young generation family member)
	Ensure economic security to new generations	"One may say, what we do is to ensure a future to our children" (CEO's spouse)
<i>Family Centered Non Economic Goals</i>		
Family Harmony	Maintaining harmony and trustful relations	"I feel that keeping a good atmosphere in the family is one of the most important drivers of the behavior of our company." (CEO)
	Family cohesiveness, supportiveness, and loyalty	"Although many problems may occur, it is primary to keep the family together when we do business." (CEO's spouse)
	Making decisions shared among family members	"I want that all of us feel included in the major decisions" (CEO)
Family Social Status	Increase or maintain the family social status, name recognition and respect	"We want to be recognized as an engine of our territory's economic development." (Professional manager)
	Nourish family pride	"Ultimately, our efforts must be directed to keep high the name of the family" (Old generation family member)
Family Identity Linkage	Continue the family tradition	"I look back to our history and I want the company not to forget how we got here." (Young generation family member)
	Meet family expectations	"It is very important to give members of our family the possibility to achieve their dreams and ambitions." (CEO)
	Ensure integration of family values in the firm	"The long lasting values of our family must be a guiding reference for our future actions." (CEO)

Table 2 (cont.)

<i>Non-Family Centered Economic Goals</i>		
Firm's growth	Ensure firm's growth	"In the current economic landscape, growing existing market-shares must necessarily be the purpose for the future of the business." (CEO)
	Increase firm's market value	"To increase the value of our assets, as well as the expectations of value-creation in the future, are to be considered imperatives." (Professional manager)
	Risk diversification through new businesses	"I think that inventing new businesses and making them profitable is one of the major ambitions for us." (Professional manager)
Firm's Survival	Maintaining actual market positions	"Ultimately, it is important to set up action aimed to preserve the market position that we have achieved up to now." (CEO)
	Ensure survival	"First of all, we must aspire to keep the business alive." (Old generation family member)
Firm's Economic Performances	Ensure good financial returns	"For any future business initiative, we must always keep in mind the main financial indicators." (Professional manager)
	Achieve a high turnover	"Sales are the main element that guides the actions of our organization." (Professional manager)
	Generate profits	"At the end, one must look at the profits, they are the main condition to be satisfied." (CEO)
<i>Non-Family Centered Non Economic Goals</i>		
Firm's Internal Serenity	Offer a positive and safe workplace to the workers	"I feel a strong responsibility toward our employees and their families." (CEO)
	Give to non-family employees chances to growth	"It is important to offer a workplace where one can improve himself and feel repaid for his efforts." (Younger generation family member)
External Relations	Positively contribute to the society in which the company is	"We should keep in mind that we are part of a community that gives a lot to us...We want to reciprocate with our activities." (CEO)
	Develop innovative and quality products to meet customer needs	"First of all, our actions are aimed to bring the right product at the right price on the market." (Professional manager)
	Ensure an ethical behavior towards market and society	"I think that actions of our company must satisfy ethical requirements, without cheats or shortcuts." (Young generation family member)
	Establish a solid corporate reputation	"We aspire to be recognized as an important player in the market." (Professional manager)
	Create relationships based on trust with customers and suppliers	"The consider very important to build a supply chain network based on reciprocal trust among counterparts." (Young generation family member)

^a Quotes reported in the table have been translated to English.

The second result of our analysis regards the behavioral relevance of each category of organizational members' goals, summarized in Table 3. The analysis reveals a number of notable insights about how the relative relevance of the different goal categories relates to the individuals' membership to the family, ownership, and business systems and to the characteristics of the family firm. First, the great majority of family members were found to pursue family-centered goals, while most of non-family members indicated NFC-E goals as the most relevant to them, pointing to a sound distinction between the two groups. However, our analysis also revealed significant differences among family members. In particular, Table 3 shows that family members that are also shareholders tended to give more relevance to economic goals than non-economic goals, especially when they were not actively involved in the business. In addition, family members actively involved in the business emerged as the most heterogeneous group, since some of them indicated even NFC-E and NFC-NE goals as the most relevant. When considering the generation of family membership, further differences emerge, as young generation family members were mostly found to regard FC-E goals as the most relevant, while most of the current and older generation family members considered FC-NE goals as the most relevant. Among all, the current generation family members were the most heterogeneous group.

Second, important differences emerged across the goal categories found to be relevant to family firm organizational members depending on the generation of family control and the stage of intra-family succession. These are reported in the second part of Table 3 by interacting organizational membership categories with firms' characteristics. Family members emerge as the group of organizational members whose goals are more stable across different generations of family control, but Table 3 also reveals that the majority of family members pursue FC-NE goals in firms where an intra-family succession is expected, and FC-E goals in firms where an intra-family succession recently occurred. Among shareholders, the individuals' general tendency to pursue NFC-E goals in first generation family firms tended to be replaced by a higher likelihood to embrace FC-E goals in later generations. Moreover, shareholders emerged to give more emphasis to FC-NE goals in periods preceding an intra-family succession and to FC-E goals after the succession occurred. Organizational members actively involved mostly pursued NFC-E goals in first generation family firms, but gave great emphasis to FC-NE goals in later generation family firms. Finally, organizational members actively involved emerged as very heterogeneous in firms expecting an intra-family succession, whereas the relevance of FC-NE goals was prominent after an intra-family succession occurred.

TABLE 3
Behavioral Relevance of Goal Categories by Organizational Membership of Respondents and Interactions with Firm Characteristics^a

Organizational and Firm Characteristics	Membership n	Organizational Members' Goal Categories			
		FC-E Goals ^b	FC-NE Goals ^b	NFC-E Goals ^b	NFC-NE Goals ^b
Organizational Members					
<i>Family Members</i>	56	19	26	8	3
Shareholder Actively Involved	24	10	8	5	1
Shareholder Not Actively Involved	6	5	1	0	0
Not Shareholder Actively Involved	20	3	13	3	1
Not Shareholder Not Actively Involved	6	1	4	0	1
Young Generation	25	16	7	2	0
Current Generation	26	2	16	6	2
Older Generation	5	1	3	0	1
<i>Non-Family Members</i>	20	5	2	12	1
Shareholder Actively Involved	13	4	1	8	0
Not Shareholder Actively Involved	7	1	1	4	1
Interactions with Firm Characteristics					
<i>Generation of Family Control</i>					
1 st gen. × Family Members	18	6	8	3	1
2 nd gen. × Family Members	20	7	9	3	1
Subsequent gen. × Family Members	18	6	9	2	1
1 st gen. × Shareholders	17	5	2	9	1
2 nd gen. × Shareholders	11	4	4	3	0
Subsequent gen. × Shareholders	15	10	4	1	0
1 st gen. × Actively Involved	20	4	3	11	2
2 nd gen. × Actively Involved	23	9	6	8	0
Subsequent gen. × Actively Involved	21	5	14	1	1
<i>Succession stage</i>					
Expected Succession × Family Member	45	14	24	5	2
After Succession × Family Member	11	5	2	3	1
Expected Succession × Shareholder	34	18	5	10	1
After Succession × Shareholder	9	1	5	3	0
Expected Succession × Actively Involved	51	17	16	16	2
After Succession × Actively Involved	13	1	7	4	1

^a Whole population N = 76; Family members, N = 56.

^b Numbers refer to the number of total organizational members for which each goal category is considered the most relevant (FC-E: family-centered economic goals; FC-NE: family-centered non-economic goals; NFC-E: non-family centered economic goals; NFC-NE: non-family centered non-economic goals)

To make sense of this body of evidence, we summarize our findings regarding the determinants of organizational members' individual goals into three general observations. These observations not only serve to introduce the individual-level antecedents of goal setting in family firms for the purposes of our analysis, but they also contextualize and reinforce the

existing understanding of family firms as the result of unique systemic conditions engendered by the interaction of the family unit, the business entity, and individual family members (Chrisman, Chua, & Zahra, 2003; Habbershon et al., 2003), that implicitly incorporates the idea that the systemic interactions in family firms can lead to the coexistence of manifold individual goals:

Observation 1: Organizational members' goals in the family firm reflect their membership in the family, ownership, and business systems.

Observation 2: The relationship between individual goals and organizational membership varies across the generation of family control.

Observation 3: The relationship between individual goals and organizational membership varies across the stage of intra-family succession.

Overall, our initial observations about organizational members' individual goals call into question the implicit assumptions in family business research that the controlling families share common aspirations and values (e.g., Sirmon & Hitt, 2003) and that family involvement can thus be considered as a homogeneous dimension that consistently predicts the extent to which the dominant coalition in the firm is likely to pursue family-centered goals (e.g., Chrisman et al., 2012; Chrisman et al., 2005). Although family involvement is an essential attribute of family firms, and our findings confirm a general tendency of family members to give emphasis to family-centered goals, the more nuanced picture emerged from our empirical evidence suggests that family members embrace a much wider spectrum of individual goals than previously assumed. Our evidence further points to the variegated nature of family involvement across firms (Birley, 2002), it suggests that family-centered goals can also be embraced by non-family members, and specifically identifies significant differences between organizational members' goals in family firms characterized by different generation of family control and stage of intra-family succession. In sum, on the basis of this rich body of empirical evidence we argue that the interactions between the family, ownership, and business systems in the family firm generate *organizational goal diversity*, that we define as the width of the range of goals pursued by organizational members. Thus, we suggest:

Proposition 1: The higher the number and membership assortment of organizational members in the family firm, the higher the organizational goal diversity.

To summarize, the findings presented so far revealed how the factors determining organizational members' individual goals concur in generating organizational goal diversity.

Proposition 1, that connects the observations regarding individual organizational member goals to the concept of goal diversity, offers a novel conceptualization of complexity in family firms that allows to appreciate the multiplicity of the goals pursued by organizational members belonging to different systems or system interactions, thus contextualizing the formulation of organizational goals in contemporary organization theory (e.g., Cyert & March, 1963, chap. 3; Simon, 1964) to the distinctive case of family firms. In the next section, we uncover the implications of goal diversity for goal formation processes in family firms.

Professional and Familial Social Interaction processes

To understand goal setting in family firms, it was crucial to explore the determinants of organizational members' individual goals. From our analysis, we observed the individual- and firm-level factors that determine organizational members' goals, and we developed the concept of organizational goal diversity that encapsulates the complex set of inputs to goal formulation processes in family firms. But this was only a first step. What is more important, our analysis revealed the means through which organizational members' goals are processed during the everyday organizational and family life, that were found to be essential for understanding the distinctive features of goal setting in family firms. Family firms are expected to display particularistic behaviors as they place great emphasis on family-centered goals (Chrisman & Patel, 2012; Gómez-Mejía et al., 2007), but how do family firms deal with the organizational goal diversity arising from family involvement in ownership and management?

Our data reveal that goal diversity triggers the occurrence of goal-centered social interaction processes among organizational members, during which the individuals actively make voice (i.e., behaviors that challenge the status quo and attempt to promote change in the organization) and explicitly counter family versus non-family centered goals. In particular, the evidence puts into light two major stages that characterize the practical patterns through which organizational members interacted (see Figure 1): the manners of bargaining (i.e., what they do), and the stabilization of their goals (i.e., how they formulate organizational goals). Bargaining was observed when organizational members conveyed interpersonal interactions in the form of negotiations of goals among two or more organizational members with symmetrical influences (i.e., settlements), or through disputes in which typically a more influential party (either individual or sub-coalition) imposed its goals to a weaker party during a verbal fight. In some episodes, but not always, bargaining was followed by a

stabilization mechanism observed in the form of formal contracts, agreements, and other means through which the goals resulting from a bargaining process were formalized and turned into a consistent course of actions to be applied by involved members. Based on this evidence, we thus propose:

Proposition 2: The higher the organizational goal diversity, the higher the occurrence of goal-centered social interaction processes.

Beyond identifying goal-centered social interactions as the processes through which family-centered goals are bargained and stabilized, what was most striking in our evidence was the emergence of two distinct types of social interactions: *professional and familial social interaction processes*. Strong differences between them were clearly evident in terms of settings, norms, and means. As illustrated in Table 4, professional social interactions occurred exclusively in the business setting, were normally programmed, and organizational members taking part to these interactions held well-defined roles during the interactions. On the contrary, familial social interactions took place in both the business and the family contexts, were rarely programmed, and occurred among organizational members with undefined, and often ambiguous roles.

Moreover, professional and familial social interactions contrasted administrative with affective bargaining, and formal with social stabilization. In professional social interactions bargaining occurred through instances of reward promises and threats of sanction, and stabilization followed the drafting of formal accords and binding agreements. In contrast, in familial social interactions bargaining occurred through value abstraction and expressions of affect, and stabilization took place in the form of mores (i.e., moral codes of conduct among individuals such as those between father and children or those referring to other family relationships) and folkways (i.e., socially accepted forms of behavior like the observance of rituals or methods of acknowledgment).

TABLE 4
Differences between Professional and Familial Social Interaction Processes

Professional Social Interactions		Familial Social Interactions	
Observation	Interviews ^a	Observation	Interviews ^a
Setting			
<u>Business environment only</u>		<u>Business and family environment</u>	
Goals are discussed only in the business environment, such as board meetings, management meetings, inter-departmental meetings, and formal bilateral meetings.	“They must respect my time ...Even if the issue was urgent, I told him [a young generation family member] we could meet another day, I was busy”. (Professional manager)	Goals are discussed in both family and non-family settings, such as family councils, private meetings in family members’ offices, home visits, and Sunday’s lunches and dinners.	“Sometimes it is even frustrating, I talk about business at home even more than at the workplace”. (Young generation family member)
Norms			
<u>Schedules and defined roles</u>		<u>Irregularity and ambiguous roles</u>	
Individuals often wait weekly, monthly, or quarterly meetings to discuss their concerns. Dressing clearly indicates their organizational role. Word follows hierarchical structures. Rare interruptions, questions at the end.	“I didn’t want to disturb him, so I waited until next Friday for our usual weekly assessment” (Professional manager) “I waited the next board meeting to express my concerns” (Professional manager)	Individuals talk about their goals in disparate moments, like in the corridor in the firm, during a soccer game, or in the middle of a dinner. Individuals take the word randomly. Interruptions and distractions are common.	“When I have something in mind I just go in his [the CEO’s] office and sit down” (Young-generation family member) “After dinner. ... I don’t remember how we started discussing about his daughter’s career into the firm” (CEO)
Means of Bargaining			
<u>Reward promises and threats of sanction</u>		<u>Value abstraction and expressions of affect</u>	
When individual goals diverge, the discussion centers around reciprocal benefits and losses of each member. Negotiation follows top-down flows that involve repeated attempts to persuade the individuals at the lower levels of organizational hierarchy. Economic offers are made.	“I was discussing with him [a non-family manager, also shareholder] about creating a financial instrument to support younger family members. ...I was really sick to see such closure, after all I am the majority owner, I would have preferred to make a joint decision. ...I came to threaten to revise his stake”. (CEO)	When individual goals diverge, more general topics enter the discussion. Private communication is used to convince the others (e.g., invoking principles, past episodes in the family, and citation of other family members’ experiences). Individuals calm down tensions with statements that emphasize their affect or their parental empathy.	“I pretended to have more autonomy in a project, as it was important for me personally, and it was for my family too. ...People was chatting about my low reliability, but my father intervened in my favor supporting my claims ...He said that everyone of us must have an opportunity”. (Younger generation family member)
Means of Stabilization			
<u>Formal agreement</u>		<u>Social control mechanisms</u>	
Formal documents (e.g., budgets, contracts) Binding agreements (e.g., handshakes)	“I had ensured yearly growing investments in marketing for the future, but in exchange I obtained him to be involved in training and mentoring two young family members in his department.” (CEO about professional manager)	During a dinner, a young generation family manager went into fight with a professional manager. At a point, he was stopped by the father (the CEO) who told him: “Go back to your place”. The young manager immediately silenced.	“After he [his brother, the CEO] told me what his priorities are, I just accepted them. ...As long as he is in charge, I have to trust him, otherwise it will be the end for our firm” (Current generation family member)

^a Quotes reported in the table have been translated to English.

Altogether, our evidence reveals that goal diversity among organizational members is resolved in family firms through two distinct types of interaction processes, namely professional and familial social interactions. Thus, our analysis provides further insights into the idiosyncrasies of goal setting processes in family firms:

Proposition 3: Professional social interactions involve administrative bargaining, whereas familial social interactions involve affective bargaining.

Proposition 4: In professional social interactions stabilization is reached through formal controls, whereas in familial social interactions stabilization follows social control mechanisms.

Both professional and familial social interactions occurred through the two subsequent stages of bargaining and stabilization. However, stabilization was not always accomplished. In particular, a cursory look at Table 5 reveals that that the stabilization of family-centered goals was less likely to occur in professional social interactions than in familial social interactions.

TABLE 5
Stabilizations and Acts of Commitment to Family-Centered Goals by Organizational Membership of Respondents

	Professional Social Interactions ^a	Familial Social Interactions ^b	Illustrations ^c
<i>Conformation to family values</i>			
Family Members	18%	66%	“I needed this confrontation to see the bigger picture and to share his [the CEO’s] view” (Young generation family members) “When one speaks clearly and sincerely the relationship will benefit both parties. ...I will reconsider his [the brother’s] position as that of a part of the family” (CEO)
Shareholders	27%	50%	
Actively Involved	21%	48%	
<i>Resource Dedication</i>			
Family Members	26%	78%	“Once I heard the motivations, I understood their importance. ...I will give my total contribution” (Professional manager) “A promise is a promise. ...Now I know the direction to put my efforts in” (Professional manager)
Shareholders	22%	53%	
Actively Involved	29%	58%	
Total	32%	74%	

^a Percentages refer to the percentage of professional interactions concluded by stabilization; 92 total episodes.

^b Percentages refer to the percentage of familial interactions concluded by stabilization; 73 total episodes.

^c Quotes reported in the table have been translated to English.

Professional and familial social interactions emerge therefore as two parallel, but distinct processes characterizing goal setting in family firms that have different degrees of

effectiveness in generating stabilization mechanisms around family-centered goals. In professional interactions, the family-centered goals are bargained but they are rarely stabilized, and goal diversity was thus not resolved. On the other hand, in familial social interactions the rate of stabilization is much higher, suggesting superior effectiveness in resolving goal diversity. Thus, we propose:

Proposition 5: Stabilization of family-centered goals is more likely to occur through familial than professional social interactions.

To sum up, the evidence presented so far explains how family-centered goals enter the agenda of organizational members in family firms, pointing to two distinct social interaction processes through which family-centered goals are bargained and stabilized, and goal diversity is thus turned into a consistent course of actions to be applied by individual members. In the next section we further explore the consequences of these social interaction processes for organizational outcomes.

Collective Commitment to Family-Centered Goals

The differences between professional and familial social interaction processes have important implications for organizational outcomes. Since the actual implementation of family-centered goals requires that organizational members act on a common set of strategic priorities (Floyd & Wooldridge, 1992), and the pursuance of family-centered goals lays at the basis of family firms' distinctive behavior (Chrisman et al., 2012; Gómez-Mejía et al., 2007), understanding how family-centered goals are adopted by family firms in spite of the organizational members' goal diversity represents the ultimate purpose of our study.

Our data show that when bargaining was not followed by stabilization, the original goal divergences among organizational members continued to subsist. On the contrary, after a stabilization process was observed the individuals typically communicated their satisfaction, expressed feelings of appreciation and loyalty to the family values, or stated their willingness to invest mental and physical energy toward the family goals. In general, the occurrence of stabilization mechanisms in both professional and familial social interactions resulted into stronger commitment to family-centered goals by the part of the members involved, as observed in terms of either conformation to family values and resource dedication (see Figure 1).

As reported in Table 5, instances of stabilization and the consequent acts of commitment to family-centered goals were observed in both professional and familial social

interactions, the range across organizational membership categories of individuals involved being fairly regular for both acts of conformation to family values and resource dedication. What is more, only 32 percent of professional interactions flew into an act of commitment to family-centered goals, whereas in familial social interactions the acts of commitment to family-centered goals were observed in 74 percent of the episodes.

These empirical observations formed the premises to develop a collective construct (Morgeson & Hofmann, 1999) to describe the extent to which the individual actions of the organizational members converge toward the accomplishment of family-centered goals. We call this construct *collective commitment to family-centered goals*:

Definition: The collective commitment to family-centered goals is a common mindset and a joint psychological state among the family firm's organizational members regarding their feelings of loyalty to the family and a desire to invest mental and physical energy in helping to achieve family-centered goals.

Not only the evidence presented so far led us to ground the concept of collective commitment to family-centered goals, but it also unearthed some important details on how such commitment develops throughout the organization. Specifically, it showed that organizational members in family firms confronted their goals through professional and familial social interaction processes.

In professional interactions, the family-centered goals are bargained but they are rarely stabilized, and goal diversity was not resolved as individuals remained anchored to their own goals and refused to put their efforts toward the accomplishment of family-centered goals. As a consequence, we propose:

Proposition 6: The higher the reliance on professional social interactions, the lower the collective commitment to family-centered goals.

On the contrary, familial interactions were often followed by stabilization mechanisms in the form of social control mechanisms, that guided individuals to adjust their individual goals, to change their psychological state, and to express commitment to family-centered goals. This led us to draw the interpretation that the formation of family-centered goals in family firms is favored by the occurrence of familial social interactions during which family members create norms of behavior that are consistent with the family vision, increasing the organizational members' commitment to family-centered goals. As a consequence, commitment to family-centered goals becomes more homogeneous with

recurring familial social interactions among organizational members that are repeated over time. Thus, we argue:

Proposition 7: The higher the reliance on familial social interactions, the higher the collective commitment to family-centered goals.

Based on our evidence, we described the determinants of organizational members' goals in the family firm and their effects on organizational goal diversity. Also, we illustrated the differential attributes of the professional and familial interaction processes through which collective commitment to family-centered goals can be formed. These findings lead us to finally reconsider the initial observations regarding the relationships between organizational membership and individual goals in a wider perspective.

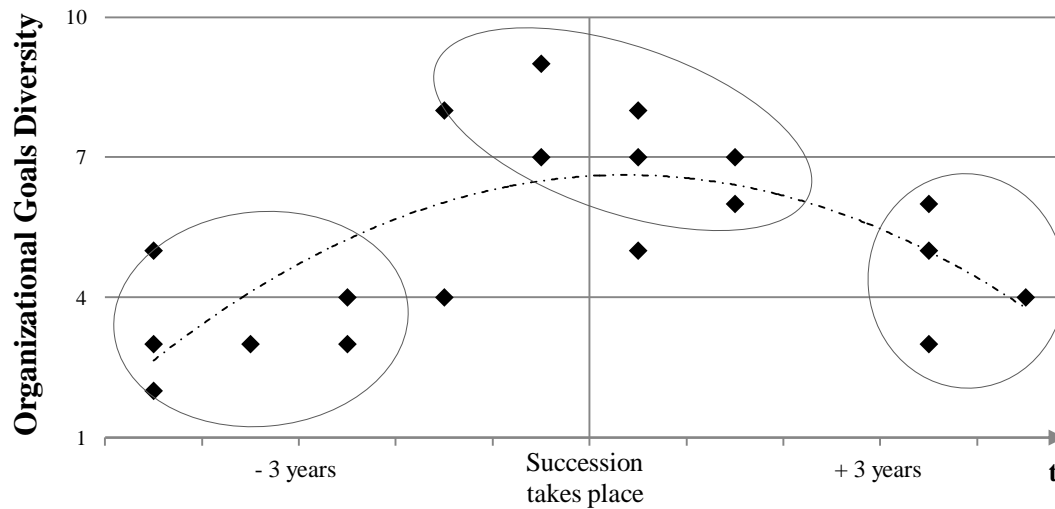
The fact that the stage of intra-family succession influences the individual goals suggests that it may also indirectly affect organizational goal diversity and thus increase the occurrence of bargaining and stabilization processes. The analysis at the firm level presented in Figure 2 extends this suspicion. After having proxied organizational goal diversity by the number of different goals that emerged from our interviews in each firm, we plotted it on a timeline reporting the time when intra-family succession took place (or was expected to take place, as stated by the respondents). What emerges from this additional analysis is that the observed organizational goal diversity is higher in family firms that are temporally closer to the occurrence of an intra-family succession.

In sum, the imminence of an intra-family succession comes into view as a moment of disruption for organizational goal diversity, which becomes more perceptible in proximity of generational transitions. Thus, we propose:

Proposition 8: Goal diversity is expressed more strongly when an intra-family succession is imminent.

Based on this body of evidence and the propositions developed so far, in the next section we synthesize our findings in order to provide a comprehensive portrait of goal setting in family firms.

FIGURE 2
Organizational Goal Diversity in the Studies Firms by Stage of Intra-Family Succession^a



^a Organizational goal diversity is proxied by the number of different goals emerged from interviews at the firm level.

Toward a Process View of Goal Setting in Family Firms

To help make sense on the various concepts and their relationships in our data, we built Figure 3, which both summarizes and generalizes our main findings, presenting graphically the observations and propositions emerged from our empirical analysis.

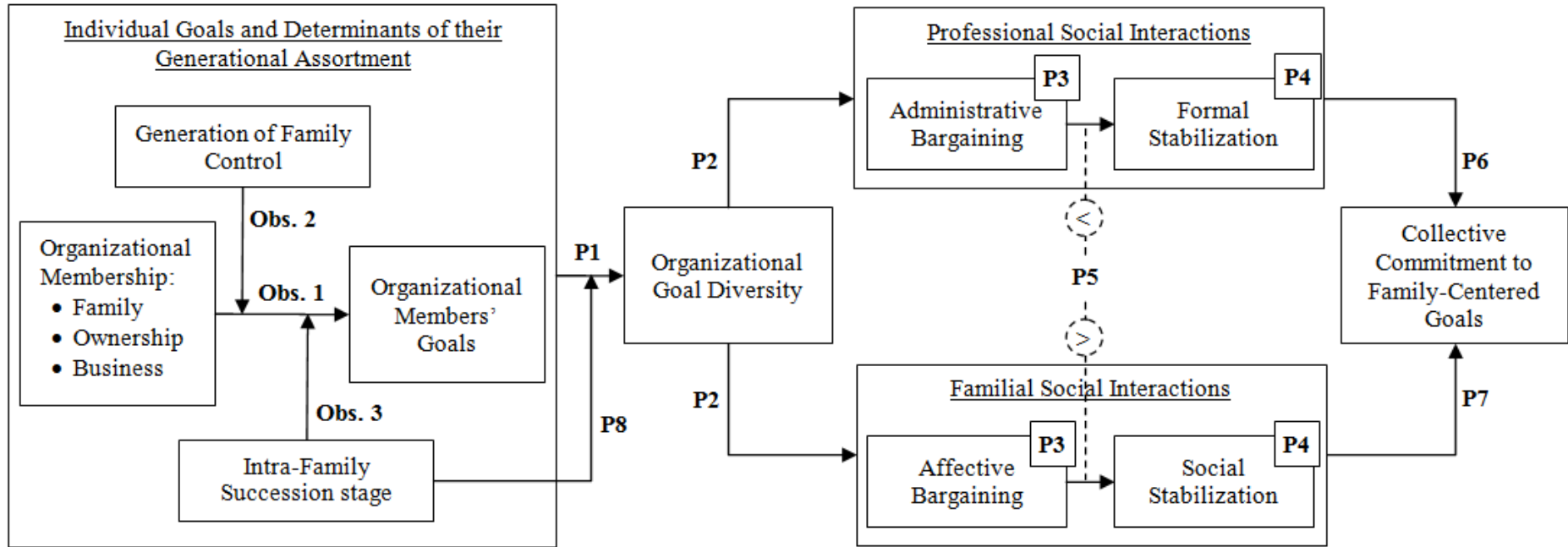
Mirroring the behavioral assumptions of organizational goal setting (Cyert & March, 1963), our three initial observations describe the family firm as a collective, intended as an interdependent and goal-directed combination of individuals that are embedded in multiple organizational contexts. The overlap of the family system with ownership and management thus not only leads to the adoption of family-centered goals (Chrisman et al., 2012), but it also entails organizational goal diversity, working as a latent force in family firms that may generate resistances to the family coalition. Family firms may resolve goal diversity and promote the adoption of family-centered goals through social interaction processes, but professional social interactions usually leave intact, and may even exacerbate goal divergences, thus negatively affecting the organizational members’ commitment to family-centered goals. On the contrary, family-centered goals can be better stabilized through familial social interactions, that promote the resolution of goal divergences between organizational members in favor of the family’s interests, and lead to the reinforcement of

collective commitment to family-centered goals. Finally, the model in Figure 3 emphasizes the role of intra-family succession as a catalyst of change. When an intra-family succession is imminent the goals previously stabilized are unfreezed because leadership and structure are likely to be reconsidered (De Massis et al., 2008; Le Breton-Miller et al., 2004). Thus, organizational members express more strongly their goals and activate social interactions that will lead to new stabilizations, and thus new status quo, similarly to the classical description of disruptive change as freezing-transition-unfreezing by Lewin's (1951). In sum, our analysis elucidated how the adoption of family-centered goals in family firms results from a continuous, composite, and cyclic process of goal setting among multiple and diverse organizational members.

DISCUSSION

The adoption of family-centered goals is a distinctive trait of family firms, and a central axiom in the family business literature (e.g., Chrisman et al., 2005). Prior research has theorized and empirically tested the link between family involvement and the adoption of family-centered goals (Chrisman et al., 2012; Chua et al., 1999). However, there is an increasing consensus that goals vary among family firms (Chrisman et al., 2005; Westhead & Howorth, 2007). This calls for more careful attention to untangle the complexity of management processes that results from the systemic interactions between the family, the ownership, and the business systems (Habbershon et al., 2003; Steier, Chua, & Chrisman, 2009) in order to understand the processes underlying the adoption of family-centered goals and thus improve the predictive power of theories of the family firm.

FIGURE 3
A Process View of Goal Setting in Family Firms



In response, we conducted a qualitative study that provides new insight into how family-centered goals enter the operational agenda of family firms. Our findings unearth the multilevel dimensions of complexity that characterize family firms, adding factual evidence and new notions to our understanding of how multiple and divergent entities generate goal diversity in family firms and how such diversity is managed in order to create collective commitment to family-centered goals. Specifically, our propositions diverted the focus of prior research toward a novel viewpoint that captures the complexity of goal setting in family firms with the concept of organizational goal diversity. This original angle highlights the critical importance for family firms to handle goal diversity engendered by the unique systemic interactions between the family, the ownership, and the business systems. In this vein, the framework derived from our findings outlines two distinct social interaction processes through which goal diversity can be managed in order to build collective commitment to family-centered goals. While prior research has primarily been focused on family members as those who shove family-centered goals in the family firm, our propositions suggest that for family-centered goals to be taken into consideration and affect the firm's strategic actions these goals have to be shared and embraced by a broader set of organizational members including, for example, professional managers as well as non-family shareholders. Finally, our propositions call attention to intra-family succession as a catalyst of change for organizational goals in family firms, thus offering an original portrait of goal setting that incorporates the multidimensional, dynamic, and cyclic aspects of goal setting processes in family firms.

Our findings have theoretical and empirical implications. While family involvement in ownership and management remains a general predictor of the ability by the part of a controlling family to influence policy and decisions of a firm (Chrisman et al., 2012), the active participation of family members in the business is also showed to entail higher goal diversity among organizational members. Such diversity may involve conflict among family and non-family managers (Ensley & Pearson, 2005), family and non-family shareholders (Vilaseca, 2002), as well as contrasts among family members in different generations (Davis & Harveston, 1999) or with different degrees of involvement (Greenhaus & Beutell, 1985). Organizational goal diversity is an accurate and fitting representation of the variegated relations between the family, ownership, and business systems and it points to the existence of new mediating mechanisms between family involvement and the adoption of family-centered goals. On the one hand, we showed that familial social interactions act as a consistent (positive) mediator of the relationship between organizational goal diversity and

collective commitment to family-centered goals; on the other hand, professional social interactions act as an inconsistent (negative) mediator of the same relationship.

A more careful account of goal diversity in the family firm and the internal processes of their social interactions will benefit the development of theories on the distinctive behaviors of family firms, because considering the causes and consequences of goal diversity within the family firm as a whole, or within specific decisional groups (e.g., the dominant coalition, the top management team) will allow to better predict the conditions under which family involvement in ownership and management leads to the adoption of family-centered goals in decision making (Chrisman et al., 2012). Furthermore, the consideration of organizational goal diversity and of professional and familial social interactions will benefit the accuracy of empirical research. Indeed, while the inclusion of a consistent mediator in a statistical model will reduce the main effect, the inclusion of an inconsistent mediator is acknowledged to increase its predictive validity (MacKinnon, 2008).

Our study also adds to our knowledge about intra-family succession processes, and indicates the decisive effects of intra-family succession for family-centered goals. Intra-family succession is one of the most important topics in the family business literature (De Massis et al., 2008), as this event poses unique challenges for family firms. Our study adds to previous work in this area by showing that the imminence of a generational transfer increases the expression of goal diversity in the organization and thus triggers unfreezing processes in relation to the previously stabilized goals and restabilization of new organizational goals, thus disentangling the dynamic and iterative nature of intra-family succession (Le Breton-Miller et al., 2004).

In addition, our study has practical implications for families who desire to sustain the creation of wealth across generations of family control, as they will find in our model practical advice about the importance of establishing and managing goal setting processes during the phases of intra-family succession. More broadly, managers and professionals working with family firms may use our findings to build practical solutions for business families that wish to spread the family values and build collective commitment to family-centered goals in their firms without incurring in relational and identity conflicts with other organizational members. A more extensive use of familial social interactions can indeed represent a viable pathway for building legitimacy for the controlling family and obtaining positive outcomes for both the business and the family. On the contrary, the discussion of family-centered goals exclusively through professional social interactions may be an ineffective, and probably counterproductive way to advance the values and vision of the

family in the firm. Finally, our findings also call the attention of family firm advisors for a more careful implementation of conflict-resolution strategies in family firms, as their effectiveness must be revised and contextualized to the different types of social interactions emerged from our study.

Limitations

Our study makes a first step to uncover the “black box” of goal setting in family firms, but as any other grounded theory study it suffers from a number of limitations that lay the foundations for future research. One area that deserves particular attention is the external validity of our findings, as they must be tested and refined with statistical considerations. Though, our experience suggests that collecting data about goal setting processes in the family firm may be difficult because of timing and accessibility constraints. Creative approaches and innovative experimental designs may be therefore needed. An aspiration for future research should be to capture and connect the multiple notions proposed in this study with quantitative work in real practical settings of how organizational goals are determined. In this vein, it will be important for the advancement of our knowledge about goal setting in family firms the development of ad-hoc scales for reliably measuring goal diversity and collective commitment to family-centered goals. Similarly, future research will further advance our understanding of internal dynamics in family firms if it will factually model the relative influences among individual organizational members. Indeed, we recognize that organizational members of family firms may have different degrees of organizational discretion to influence the process of goal setting. The theory of stakeholder salience (Mitchell et al., 1997), for example, could serve as a starting point to address such issues. Finally, we purposefully restricted our analysis to small and medium family firms. Even though our focus allowed us to investigate goal formulation processes in an ideal situation where the influence of the controlling family is potentially more important than in other firms, we might have overlooked those family firms where greater organizational complexity may potentially lead to even higher organizational goal diversity among organizational members. For similar reasons, while we focused only on the organizational members in family firms within the ownership, business, and family domains, future research is encouraged to extend our line of thinking to other, external, stakeholders (e.g., strategic partners, institutions) that may presumably influence the goals pursued by these organizations.

Future research directions

In addition to extending the external validity and generalizability of our findings, and relying on the notions introduced in this study to build new measurable constructs, future research can draw from the insights provided in this study to address interesting and unexplored questions that are relevant for the development of knowledge about family firms. In particular, we identify two areas where our conclusions may stimulate promising research questions: organizational behavior and stakeholder management in family firms.

Organizational Behavior. Our study is among the first to disaggregate the constituents of family involvement and to explore the family firm's interpersonal dynamics in goal setting. Our observation that family involvement entails superior goal diversity in the organization introduces a new perspective to the study of family firms and it stimulates further research in the area of organizational behavior in family firms. For example, Carsrud (2006) emphasized the importance of conflicts engendered by goal incompatibilities for the perceived injustice for family and non-family members, which suggests that goal diversity in the family firm may have important implications for several organizational outcomes such as organizational citizenship, person-organization fit, or cognitive uncertainty (Robbins & Judge, 2007). To our knowledge, work about organizational behavior in family firms is very limited, but the existence of unique sources of complexity in the family firms' organizational environment suggests that research in this area could provide benefits both to the understanding of organizational behavior in family firms and to the refinement of organizational behavior theories. For example, how family and non-family members choose among professional and familial interactions, or how these two social interaction processes are used through time, was outside the scope of our research. These may represent promising research questions for future studies, as family business scholars may be interested in understanding how behaviors such as voice, whistle blowing, championing, or issue selling occur in family firms.

Stakeholder Management. According to the stakeholder perspective on strategic management (Mitchell et al., 1997), top managers constantly balance the claims of stakeholders against those of other prime beneficiaries of the firm (e.g., the shareholders) based on their attributes of power, legitimacy, and urgency. Mitchell, Agle, Chrisman, and Spence (2011) contended that the coexistence of multiple systems creates a unique stakeholder salience setting in family firms, and that understanding the processes of stakeholder prioritization in family firms has both theoretical and practical meaning, since the

bases of stakeholder's power, legitimacy, and urgency are altered in this context. In light of this, our study may inspire new research questions for the advancement of stakeholder management theory in family firms, as our findings pose questions about how the family firm's dominant coalition interprets the salience of stakeholders within the family firm, especially in consideration that they have multiple and diverse goals, that cannot be reduced to the single interests of a prime beneficiary.

CONCLUSION

Although family firms must focus their efforts to reach economic performances as any other business organization, the unique systemic conditions arising in family firms due to the interaction of the family unit, the business entity, and individual family members increase the complexity of strategy processes and firm performance outcomes. As a result, we have sought to illuminate the overlooked topic of organizational goals and goal setting in family firms. Understanding how multiple and competing goals enter the decision processes of family firms is critical for management scholars as well as practitioners. By uncovering the complexities and challenges of goal setting in family firms, and by generating a grounded framework that describes goal setting as a complex set of multiple processes, we hope to have brought research and practice closer to understanding the unique constituencies of family firms and to managing effectively their goal setting processes.

APPENDIX

Abbreviated Interview Protocol

1. Background information about the family firm.
2. What are your parental relations with the firm's controlling family?
3. Your ownership of firm shares.
4. Your role in the company.
5. Please indicate what are your personal goals in relation to the family firm (def. what you are consciously trying to do in the family firm) or the goals the family firm should pursue in your opinion. Please discuss why these goals are important to you and when and how the firm may accomplish such goals.
6. Are your claims important to other organization members? Why? Please give examples.
7. Please discuss and give examples of when, why, and how you discuss your goals with other organizational members.
8. Please describe your influence on the goal formulation processes. Please give examples.

REFERENCES

- Anderson, R.C., & Reeb, D.M. (2003). Founding-family ownership and firm performance: Evidence from the S&P 500. *Journal of Finance*, 58(3), 1301-1327.
- Andersson, T., Carlsen, J., & Getz, D. (2002). Family business goals in the tourism and hospitality sector: Case studies and cross case analysis from Australia, Canada, and Sweden. *Family Business Review*, 15(2), 89-106.
- Argote, L., & Greve, H.R. (2007). A behavioral theory of the firm—40 years and counting: Introduction and impact. *Organization Science*, 18(3), 337-349.
- Birley, S. (2002). Attitudes of owner-managers' children towards family and business issues. *Entrepreneurship Theory and Practice*, 26(3), 5-19.
- Carney, M. (2005). Corporate governance and competitive advantage in family-controlled firms. *Entrepreneurship Theory and Practice*, 29(3), 249-265.
- Carsrud, A.L. (2006). Commentary: "are we family and are we treated as family? Nonfamily employees' perceptions of justice in the family firm": It all depends on perceptions of family, fairness, equity, and justice. *Entrepreneurship Theory and Practice*, 30(6), 855-860.
- Chrisman, J.J., Chua, J.H., Pearson, A.W., & Barnett, T. (2012). Family involvement, family influence, and family centered non economic goals in small firms. *Entrepreneurship Theory and Practice*, 36(2), 267-293.
- Chrisman, J.J., Chua, J.H., & Sharma, P. (2005). Trends and directions in the development of a strategic management theory of the family firm. *Entrepreneurship Theory and Practice*, 29(5), 555-576.
- Chrisman, J.J., Chua, J.H., & Zahra, S.A. (2003). Creating wealth in family firms through managing resources: Comments and extensions. *Entrepreneurship Theory and Practice*, 27(4), 359-365.
- Chrisman, J.J., & Patel, P.J. (2012). Variations in R&D Investments of family and non-family firms: Behavioral agency and myopic loss aversion perspectives. *Academy of Management Journal*, 55(4), 976-997.
- Chua, J.H., Chrisman, J.J., & Sharma, P. (1999). Defining the family business by behavior. *Entrepreneurship Theory and Practice*, 23(4), 19-39.
- Churchill, N.C., & Hatten, K.J. (1997). Non-market-based transfers of wealth and power: A research framework for family business. *Family Business Review*, 10(1), 53-67.
- Corbetta, G., & Salvato, C. (2004). Self serving or self actualizing? Models of man and agency costs in different types of family firms: A commentary on "Comparing the agency costs of family and non family firms: Conceptual issues and exploratory evidence". *Entrepreneurship Theory and Practice*, 28(4), 355-362.
- Cyert, R.M., & March, J.G. (1963). *A Behavioral Theory Of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.
- Davis, P.S., & Harveston, P.D. (1999). In the founder's shadow: Conflict in the family firm. *Family Business Review*, 12(4), 311-323.
- De Massis, A., Chua, J.H., & Chrisman, J.J. (2008). Factors preventing intra family succession. *Family Business Review*, 21(2), 183-199.

- De Massis, A., Sharma, P., Chua, J.H., Chrisman, J.J., & Kotlar, J. (2012). State-of-the-art of family business research. In A. De Massis, P. Sharma, J.H. Chua & J.J. Chrisman (Eds.), *Family business studies: An annotated bibliography*. Northampton, MA: Edward Elgar.
- De Vries, M. (1993). The dynamics of family controlled firms: The good and the bad news. *Organizational Dynamics*, 21(3), 59-71.
- Debicki, B.J., Matherne, C.F., Kellermanns, F.W., & Chrisman, J.J. (2009). Family business research in the new millennium. *Family Business Review*, 22(2), 151-166.
- Eisenhardt, K.M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532-550.
- England, G.W. (1967). Organizational goals and expected behavior of american managers. *Academy of Management Journal*, 10(2), 107-117.
- Ensley, M.D., & Pearson, A.W. (2005). An exploratory comparison of the behavioral dynamics of top management teams in family and nonfamily new ventures: Cohesion, conflict, potency, and consensus. *Entrepreneurship Theory and Practice*, 29(3), 267-284.
- Floyd, S.W., & Wooldridge, B. (1992). Managing strategic consensus: The foundation of effective implementation. *Academy of Management Executive*, 6(4), 27-39.
- Folkman, S., & Moskowitz, J.T. (2000). Positive affect and the other side of coping. *American Psychologist*, 55(6), 647-654.
- Gedajlovic, E., Carney, M., Chrisman, J.J., & Kellermanns, F.W. (2012). The adolescence of family firm research: taking stock and planning for the future. *Journal of Management*, 38.
- Gómez-Mejía, L.R., Haynes, K.T., Núñez-Nickel, M., Jacobson, K.J.L., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from spanish olive oil mills. *Administrative Science Quarterly*, 52(1), 106-137.
- Greenhaus, J.H., & Beutell, N.J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10(1), 76-88.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? *Field Methods*, 18(1), 59-82.
- Habbershon, T.G., Williams, M., & MacMillan, I.C. (2003). A unified systems perspective of family firm performance. *Journal of Business Venturing*, 18(4), 451-465.
- Hitt, M.A., Beamish, P.W., Jackson, S.E., & Mathieu, J.E. (2007). Building theoretical and empirical bridges across levels: multilevel research in management. *Academy of Management Journal*, 50(6), 1385-1399.
- Jensen, M.C., & Meckling, W.H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1999). Corporate ownership around the world. *Journal of Finance*, 54(2), 471-517.
- Le Breton-Miller, I., Miller, D., & Lester, R.H. (2011). Stewardship or agency? A social embeddedness reconciliation of conduct and performance in public family businesses. *Organization Science*, 22(3), 704-721.

- Le Breton-Miller, I.L., Miller, D., & Steier, L.P. (2004). Toward an integrative model of effective FOB succession. *Entrepreneurship Theory and Practice*, 28(4), 305-328.
- Lee, T.W., Mitchell, T.R., & Sablinski, C.J. (1999). Qualitative research in organizational and vocational behavior. *Journal of Vocational Behavior*, 55(2), 161-187.
- Lewin, K. (1951). *Field theory in social science*. New York: Harper.
- Locke, E.A., & Latham, G.P. (1990). *A theory of goal setting & task performance*. Englewood Cliffs, NJ: Prentice-Hall.
- Locke, K. (2001). *Grounded theory in management research*. London, U.K.: Sage.
- MacKinnon, D.P. (2008). *Introduction to statistical mediation analysis*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Miles, M.B., & Huberman, A.M. (1999). *Qualitative data analysis*. Beverly Hills, CA: Sage.
- Mitchell, R.K., Agle, B.R., Chrisman, J.J., & Spence, L.J. (2011). Toward a theory of stakeholder salience in family firms. *Business Ethics Quarterly*, 21(2), 235-255.
- Mitchell, R.K., Agle, B.R., & Wood, D.J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*, 22(4), 853-886.
- Morgeson, F.P., & Hofmann, D.A. (1999). The structure and function of collective constructs: Implications for multilevel research and theory development. *Academy of Management Review*, 24(2), 249-265.
- O'Leary-Kelly, A.M., Martocchio, J.J., & Frink, D.D. (1994). A review of the influence of group goals on group performance. *Academy of Management Journal*, 37(5), 1285-1301.
- Olson, P.D., Zuiker, V.S., Danes, S.M., Stafford, K., Heck, R.K.Z., & Duncan, K.A. (2003). The impact of the family and the business on family business sustainability. *Journal of Business Venturing*, 18(5), 639-666.
- Paulhus, D.L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology*, 46(3), 598-609.
- Robbins, S.P., & Judge, T. (2007). *Organizational behavior*, 11th ed. Upper Saddle River, NJ: Prentice-Hall.
- Schulze, W.S., Lubatkin, M.H., & Dino, R.N. (2003). Exploring the agency consequences of ownership dispersion among the directors of private family firms. *Academy of Management Journal*, 46(2), 179-194.
- Sharma, P., Chrisman, J.J., & Chua, J.H. (1996). *A review and annotated bibliography of family business studies*. Assinippi Park, MA: Kluwer Academic Publishers.
- Simon, H.A. (1964). On the concept of organizational goal. *Administrative Science Quarterly*, 9(1), 1-22.
- Sirmon, D.G., & Hitt, M.A. (2003). Managing resources: Linking unique resources, management, and wealth creation in family firms. *Entrepreneurship Theory and Practice*, 27(4), 339-358.
- Steier, L.P., Chua, J.H., & Chrisman, J.J. (2009). Embeddedness Perspectives of economic action within family firms. *Entrepreneurship Theory and Practice*, 33(6), 1157-1167.

- Steier, L.P., & Miller, D. (2010). Pre-and post-succession governance philosophies in entrepreneurial family firms. *Journal of Family Business Strategy*, 1(3), 145-154.
- Vilaseca, A. (2002). The shareholder role in the family business: Conflict of interests and objectives between nonemployed shareholders and top management team. *Family Business Review*, 15(4), 299-320.
- Villalonga, B., & Amit, R. (2009). How are us family firms controlled? *Review of Financial Studies*, 22(8), 3047-3091.
- Wengraf, T. (2001). *Qualitative research interviewing: Biographic narrative and semi-structured methods*. Thousand Oaks, CA: Sage.
- Westhead, P., Cowling, M., & Howorth, C. (2001). The development of family companies: management and ownership imperatives. *Family Business Review*, 14(4), 369-385.
- Westhead, P., & Howorth, C. (2007). 'Types' of Private Family Firms: An exploratory conceptual and empirical analysis. *Entrepreneurship & Regional Development*, 19(5), 405-431.
- Zander, A. (1980). The origins and consequences of group goals. In L. Festinger (Ed.), *Retrospections on social psychology* (pp. 205-235). New York: Oxford University Press.
- Zellweger, T., Kellermanns, F.W., Chrisman, J.J., & Chua, J.H. (2012). Family control and family firm valuation by family CEOs: The importance of intentions for transgenerational control. *Organization Science*, 23.
- Zellweger, T., Nason, R.S., Nordqvist, M., & Brush, C. (2012). Why do family firms strive for nonfinancial goals? An organizational identity perspective. *Entrepreneurship Theory and Practice* (forthcoming).

CHAPTER THREE
TECHNOLOGY ACQUISITION IN FAMILY AND NON-FAMILY FIRMS: A
LONGITUDINAL ANALYSIS OF SPANISH MANUFACTURING FIRMS

CHAPTER THREE ABSTRACT

Technology acquisition from external sources has been identified as a critical competence for sustained success in innovation and research has paid a good deal of attention to studying its advantages, drawbacks, determinants and outcomes. Traditionally, research has modeled the choice to acquire technology from outside a firm's boundaries using a transaction cost theory perspective. Accordingly, this strategic decision is the result of a trade-off between the benefits of external acquisition, e.g., higher return on investment, lower costs, increased flexibility, access to specialized skill sets and creativity, and its drawbacks, e.g., opening the market to new entrants, risk of imitation of core competencies and reduced value appropriability. Yet, this view does not capture the behavioral considerations that may potentially encourage or discourage managers from sourcing technology outside the firm's boundaries. This behavioral aspect is especially important if one wants to understand the conduct in external technology acquisition of family firms, which are defined as those firms whose decision making is driven by the family vision for how the firm will benefit the family across generations. Indeed family firms have been found to favor strategic actions that preserve the controlling families' control and authority over business even at the cost of giving up potential economic benefits, suggesting that external technology acquisitions are likely to be interpreted differently in family and non-family firms. Despite its importance, how the involvement of a controlling family affects decisions in technology and innovation management and, specifically, external technology acquisition, is an overlooked topic in extant research and requires further theoretical and empirical analyses. This study attempts to fill these gaps by extending the tenets of the behavioral agency model (BAM) and prior research pointing to particularistic decision making in family firms to uncover the behavioral drivers of external technology acquisition in family and non-family firms.

We formulate theory that relates performance risk, family management and the contingent effect of the degree of technology protection on external technology acquisition, and test the hypotheses with longitudinal data on 1,540 private Spanish manufacturing firms.

Our analysis shows that managers are more likely to acquire technology from external sources through R&D contracting when firm performance falls below managers' aspirations. We also find that family firms are more reluctant to acquire external technology, and the effect of negative aspiration performance gaps becomes less relevant as family management is higher, which we attribute to family firm managers' attempts to avoid losing control over the trajectory that technology follows over time. However, family firms become more favorable to consider the adoption of an open approach to technology development when some protection mechanisms (specifically, the filing of patents on the firm proprietary technologies) increase the managers' perceptions of control over the technology trajectory.

As such, our study makes a contribution to the understanding of the behavioral factors driving external technology acquisition, and it offers important insights regarding technology strategy in family firms.

INTRODUCTION

Technology acquisition from external sources has been identified as a critical competence for sustained success in product and process innovation (Sherwood & Covin, 2008). As a result of the growth of technology complexity, the shortening of product life cycles and the escalation of technology development costs (Bannert & Tschirky, 2004), firms have increasingly sourced technology from outside their boundaries in the attempt to reduce development time and costs, share risks and uncertainties and access expertise not available in house (Howells, Gagliardi, & Malik, 2008; Calantone & Stanko, 2007). Although external technology acquisition has been a critical component of firm's technology strategy since the second half of the 1980s (Chatterji, 1996), the recent debate around open and collaborative innovation paradigms indicates that it still ranks very high on the agenda of Chief Technology Officers (CTOs) and R&D managers (Pullen et al., 2012; Dahlander & Gann, 2010).

As a consequence of this continued practical interest towards external technology acquisition, innovation scholars have devoted considerable resources to studying its advantages, determinants and outcomes (Tidd & Trewhella, 1997; Calantone & Stanko, 2007; Swan & Allred, 2003). However, the risks and drawbacks of external technology acquisition have received comparatively minor attention (Lichtenthaler, 2011) and this still leads some scholars to consider it as a controversial decision in technology strategy (Zahra, Sisodia, & Das, 1994; Almirall & Casadesus-Masanell, 2010; Boudreau, 2010). Prior research has shown that the uncertainty, information asymmetries and agency relationships engendered by

technology acquisition from external parties require appropriability regimes that allow the firms to capture the economic benefits of their innovation efforts (Pisano, 1990; West, 2003). Most recent research has emphasized that openness to external technology sources also raises concerns regarding the firms' ability to control the development trajectories that technology follows over time (Zirpoli & Becker, 2011; Almirall & Casadesus-Masanell, 2010). Thus, sourcing external technology emerges as a decision that, on the one hand, allows to potentially improve innovation performance (yet at the expense of higher uncertainty regarding the distribution of potential results) and, on the other, leads managers to operate in domains where they have less control than they have within their organizations. However, there is a gap regarding how managers assess positive and negative factors in choosing whether to acquire external technology or not, in spite of raising calls for research on those internal processes, including behavioral aspects, that may be relevant for understanding potential barriers to technology acquisition from external sources (Lichtenthaler, 2011).

The behavioral perspective is especially important to be considered if one wants to understand the conduct in external technology acquisition of family firms, which are defined as those firms whose decision making is driven by the family vision for how the firm will benefit the family across generations (Chua, Chrisman, & Sharma, 1999). Indeed, the family is an additional group of stakeholders in organizations that has the power and authority to impose on the firm the pursuit of family goals in addition to its economic goals (Carney, 2005; Chrisman, Chua, Pearson, & Barnett, 2012; Mitchell, Agle, Chrisman, & Spence, 2011). These goals derive from the controlling families' willingness to protect their accumulated endowment of socioemotional wealth, and are reported to entail different cognitive logics for decisions affecting risk and control (Gomez-Mejía, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007; Gomez-Mejia, Makri, & Larraza-Kintana, 2010).

How the involvement of a controlling family affects decisions in technology and innovation management and, specifically, external technology acquisition, is an overlooked topic in extant research (Cassia, De Massis, & Pizzurno, 2012; De Massis, Frattini, & Lichtenthaler, forthcoming; De Massis, Frattini, Pizzurno, & Cassia, forthcoming). This is an important gap to be filled first because family firms are very common in all world economies and provide a significant contribution to the economic growth and employment (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999). For example, family firms are reported to generate 64% of GDP and employ 62% of the total workforce in U.S. (Astrachan & Shanker, 2003), suggesting that innovation issues in family firms can be of great interest to policy in

order to foster economic development. Second, the cumulating evidence that strategic decisions in family firms reflect a broader array of economic and noneconomic considerations than in non-family firms (Chrisman & Patel, 2012; Gomez-Mejia et al., 2007) suggests that family involvement may significantly affect the characteristics of the technological innovation process in family firms. Finally, external technology acquisition is likely to be especially useful for family firms to achieve success in product and process innovation. Studies applying the behavioral agency model (BAM) showed that the goal of preserving socioemotional wealth for the family inevitably leads to the adoption of a more conservative attitude that entails aversion to risk, implying inferior and greatly volatile R&D investments to develop innovations (Morck & Yeung, 2003; Gómez-Mejía et al., 2007; Chen & Hsu, 2009; Muñoz-Bullón & Sanchez-Bueno, 2011; Chrisman & Patel, 2012). But family firms need technological know-how as well as non-family firms to provide new products to the marketplace, because profits and competitiveness come as a by-product of these activities (Christensen, Anthony, & Roth, 2004). Complementing their internal knowledge base with technology acquired from external sources seems thus an excellent compromise for family firms that typically underplay internal R&D investments, in order to improve their ability to innovate.

This article attempts to fill these gaps by developing and testing behavioral agency hypotheses for external technology acquisitions of family and non-family firms. The greater uncertainty due to the simultaneous presence of positive and negative effects, and the possibility for dissimilar managers' cognitive frameworks to influence the decision to source technology from outside, make the behavioral agency model (BAM) an appropriate framework to understand the factors driving firms' decision to acquire external technology. From the BAM perspective, the decision to undertake risky activities such as to initiate searches for alternative routines, opportunities or technologies or – we propose – to open the boundaries of technology search by acquiring technology from external sources is more likely to occur when a firm is unsatisfied with the status quo, namely when its performance falls below the target or aspiration level (Bromiley, 1991; Wiseman & Gomez-Mejia, 1998). But the reference point varies consistently with the managers' cognition. Some managers' decisions are strictly guided by economic performance and risk evaluations, while others may also be driven by consideration of other, socioemotional, outcomes.

The managers' cognitive assessment of uncertain decisions is a fundamental issue in BAM (Wiseman & Bromiley, 1996; Wiseman & Gomez-Mejia, 1998), and its consideration

has already contributed to extend the understanding of disparate management processes, among which the extent of in-house innovation efforts (Chrisman & Patel, 2012). Recently, Gomez-Mejia et al. (2010) suggested that family firm managers' desire to retain control may affect technology strategy, favoring choices that maintain them adjacent to their existing technology platforms as opposed to venturing into new technology trajectories. However, no endeavor has been made so far to extend BAM to other aspects of a firm's innovation and technology strategy, and whether managers' cognition also influences a firm's conduct in technology sourcing is a question that remains unanswered.

The empirical analysis is conducted using a longitudinal dataset comprising 4,903 time-series cross-sectional observations, consisting of 1,540 Spanish companies operating in twenty different manufacturing industries over the period 2000-2006. The case of manufacturing firms is particularly interesting because products become rapidly obsolete and require innovation (Tushman & Anderson, 1986), and external technology acquisitions are particularly suitable in contexts where products may embrace elements or subsystems developed by other players (Almirall & Casadesus-Masanell, 2010). It thus provides an opportunity to examine how performance risk, family involvement in top management, and other factors such as technology protection mechanisms may affect the way firms adjust their technology boundaries in the wake of internal and external disruptions.

The remainder of the article is organized as follows. The second and third sections give the theoretical underpinnings of our study and develop hypotheses. The fourth section describes the methodology and the fifth section reports the findings of the regression model. Discussion of these findings and their implications, identification of avenues for future research and conclusions follow.

BEHAVIORAL FOUNDATIONS OF EXTERNAL TECHNOLOGY ACQUISITION

Acquisition of technology from external sources (e.g., clients, suppliers, competitors, universities, public or private research centers) can take several forms, ranging from mergers, acquisitions and joint ventures, to non-equity alliances, in-licensing and R&D contracting (Tidd & Trewhella, 1997; Van de Vrande, Lemmens, & Vanhaverbecke, 2006). Whereas modes for external technology acquisition like mergers, acquisitions and joint ventures are characterized by a strong commitment from the parties involved, a low degree of reversibility, and a strong control over the outcome of the technology acquisition process, non-equity alliances such as in-licensing and R&D contracting require less commitment and are reversible, but ensure lower control to the parties involved on the development and

outcome of the acquisition process (Chiesa & Manzini, 1998). In this article we focus on R&D contracting, that entails externalizing R&D activities to a third party on the basis of a detailed contractual agreement and acquiring the technological knowledge resulting from the external organization's R&D effort (Howells, 2006). We decided to focus on R&D contracting for two reasons. First, acquiring technology through R&D contracts represents an externally directed strategic action that strongly reduces the focal firm's control over technology development and does not ensure sharing of risk among parties. This makes it especially appropriate for exploring the impact of family goals on technology strategy in that preserving the family's control and authority is a primary source of noneconomic benefits to family agents, causing idiosyncratic preferences of family firms toward risk (Gomez-Mejia et al., 2007). Second, R&D contracting is very common in practice (Howells et al., 2008) but, despite this, it has received limited attention from innovation management research as a contractual form for the acquisition of external knowledge (Van de Vrande et al., 2009) compared, e.g., with in-licensing.

To understand the decision to acquire technology from outside a firm's boundaries, research has mainly adopted a perspective based on transaction cost theory so far (Williamson, 1998; Tidd & Trewhella, 1997). The tactical view proposed by the transaction cost perspective underlines the relative costs of developing internally vs. buying a technology. The decision to source a technology from outside is therefore the result of a trade-off between the benefits of external acquisition, e.g., higher return on investment, lower costs, increased flexibility, access to specialized skill sets and creativity, and its drawbacks, e.g., opening the market to new entrants, risk of imitation of core competencies and reduced value appropriability (Calantone & Stanko, 2007; West, 2003).

What is neglected by this perspective is the role of performance feedbacks and managerial cognition, that may considerably affect the way the decision to acquire technology is framed. Research adopting a transaction cost perspective assumes that whenever rivals are precluded the opportunity to appropriate the firm's know-how and make profits out of it, e.g., because of the presence of a strong appropriability regime, managers will frame the choice of acquiring external technology as positive, emphasizing the benefits of such decision. However, recent research (Zirpoli & Becker, 2011; Almirall & Casadesus-Masanell, 2010) points that leaving other firms develop parts of the final product involves ceding to the partners the autonomy to make choices that will affect the characteristics of future products. As technological innovations progress following path-dependent trajectories (Dosi, 1982), contracting the development of new technology outside the firm's boundaries is

likely to reduce in the long term the focal firm's control over the technological trajectory of new products, meaning that the firm may be forced in the future to operate under constraints to organizational actions that could have been avoided in case of internal technology development (Almirall & Casadesus-Masanell, 2010; Pfeffer & Salanik, 1978). As family managers are reported to seek noneconomic utilities from being able to influence the type of goods produced by the firm (Demsetz & Lehn, 1985), and to consequently frame strategic decisions differently from managers of non-family firms, limiting the analysis of external technology acquisitions to economic considerations may result into inaccurate theory predictions. On the contrary, behavioral aspects such as performance feedbacks and managerial cognition have the potential to refine our understanding of the antecedents of external technology acquisitions and to provide important insights about how managers actually evaluate benefits and drawbacks relative to technology outsourcing.

Behavioral considerations may be especially crucial in family firms, where managers may be firmly reluctant to allow new actors from outside the family circle acquire the capacity to exert some influence and control over the strategic direction of the firm, as they can see this as a loss of socioemotional wealth (Gomez-Mejia et al., 2010). To understand the potential differences between family and non-family firms, we need to thoroughly consider the distinctive managerial cognitions in family firms and their effect on the decision to acquire external technology.

Managerial Decisions in Family Firms

There is cumulating evidence that family involvement in businesses leads to distinctive objectives and sets of assumptions for managers about the way organizations should work, and these cognitive frameworks influence the family firm managers' behavioral processes. Past research indicates that family firms follow particularistic goals such as keeping authority and control in the hands of the family, behaving altruistically with other family members, fulfilling the family members' sense of belonging, affection, and intimacy, and growing the prestige and reputation of the family (Schulze, Lubatkin, & Dino, 2003; Gómez-Mejía et al., 2007; Berrone et al., 2010; Chrisman et al., 2012). These non-economic, family-centered goals (Chrisman et al., 2012) create utilities that are important to family firm managers because they create socioemotional wealth for the family (Gómez-Mejía et al., 2007).

The idea that family firms' managers have different cognitions drives research on this ubiquitous form of business organization. The perspective adopted by family business

research is the one of the dominant coalition in the firm influencing the firm's internal processes (Cyert & March, 1963; Argote & Greve, 2007), which lays the foundations for asserting that administrative decision-making reflects the managers' background, experience, knowledge, and values (Hambrick & Mason, 1984). These ideas are wholly incorporated into BAM, that is a model of organizational behavior and risk taking that extends the traditional normative models of rational choice (Wiseman & Gomez-Mejia, 1998). According to BAM, a decision maker's risk preferences change with the framing of problems. Problems are framed as either positive or negative using a reference point to compare anticipated outcomes from available options, and the manner a choice is perceived by managers may thus affect their decisions (Wiseman & Gomez-Mejia, 1998).

Extending these tenets, recent studies have emphasized the importance of non-economic, family-centered goals (Chrisman et al., 2012) that influence managerial cognition and concur to explain the decisions of managers in family firms (Gómez-Mejía et al., 2007). If managers in family firms are driven by a desire to preserve socioemotional wealth, this is likely to be reflected in their firms' behaviors in the form of a preference toward organizational structures and actions that reduce risk and facilitate managerial control. For example, BAM has been used to show that family involvement causes a higher executive entrenchment and lower compensation risk (Gómez-Mejía, Nunez-Nickel, & Gutierrez, 2001; Gómez-Mejía, Larraza-Kintana, & Makri, 2003), the choice to embrace higher business risk in order to avoid losing control through the adherence to a producers' cooperative association (Gómez-Mejía et al., 2007), environmental actions that go beyond those demanded by institutional rules (Berrone et al., 2010), and a reluctance toward diversification when this means diluting family control (Gomez-Mejia et al., 2010).

Most recently, Chrisman and Patel (2012) applied the BAM perspective to explore the differences between family and non-family firms in terms of R&D investments. Their findings confirm and provide a firm theoretical rationale to prior empirical evidence of lower investments in R&D by family firms (Block, 2012; Chen & Hsu, 2009; Munari, Oriani, & Sobrero, 2010; Muñoz-Bullón & Sanchez-Bueno, 2011). The idea that loss-averse family firms are reluctant to internalize risky innovative activities in order to avoid threats to their socioemotional wealth is interesting because this implies that finding alternative technology strategies such as acquiring technological knowledge through R&D contracting may be a promising way for these firms to provide new products to the marketplace. However, very little is known about the impact of the unique behavioral traits of family firms on decisions concerning external technology acquisition.

In the next sections we extend past research on external technology acquisition by applying the BAM perspective. Drawing upon this theory we develop a set of hypotheses that explore the possible effects of performance risk, family involvement in top management, and technology protection mechanisms on the managerial processes underlying the acquisition of external technology.

THEORETICAL DEVELOPMENT AND HYPOTHESES

Performance Risk and External Technology Acquisitions

The behavioral agency model (BAM) is a model of organizational behavior and risk taking that goes beyond the traditional normative models of rational choice (Wiseman & Gomez-Mejia, 1998). According to BAM, a manager's risk preferences change with the framing of problems on the basis of a reference point used to compare anticipated outcomes from available options. Managers may choose among potential gains or among potential losses, the latter being outweighed since, according to BAM, managers' main concern is to prevent losses to their accumulated endowment (Wiseman & Gomez-Mejia, 1998). For this reason, managers are expected to avoid decisions that they associate to threats to their wealth even if this choice entails higher business risk.

It follows that when managers observe deviations of performance outcomes below the aspiration level, the target for comparison being either the firm's past performance or the performance of other firms (Lant, 1992), managers perceive a threat in the form of a potential loss to their accumulated endowment and react by undertaking risky activities, such as searching for alternative routines, opportunities or technologies (Bromiley, 1991; Wiseman & Gomez-Mejia, 1998). While past research has considered several types of risky activities, we focus here on the decision to acquire technology from outside the firm's boundaries. We argue that external technology acquisition entails a degree of hazard because it has the potential to raise organizational performance but it also entails high levels of risk and uncertainty associated with the outcome of R&D contracting, it exposes the focal firm to moral hazard problems, and it leads managers to operate in domains where they have less control than they have within their firms (Howells et al., 2008). Taken together, the application of BAM to external technology acquisitions suggests that:

Hypothesis 1a: External technology acquisitions are positively related to the gap between aspirations and performance in terms of discrepancy from a historical performance target so that the former increases as organizational performance negatively diverges from the aspiration level.

Hypothesis 1b: External technology acquisitions are positively related to the gap between aspirations and performance in terms of discrepancy from performance of referent firms so that the former increases as organizational performance negatively diverges from the aspiration level.

Family Management and External Technology Acquisitions

Past research has shown that controlling families are primarily concerned about the possibility to lose their socioemotional wealth, and they are thus reluctant toward the dilution of their discretionary power over the firms' strategic decisions (Gómez-Mejía et al., 2007). In other words, owners and managers in family firms hold different cognition of what is a crucial loss than those in non-family firms since preserving discretionary power is more salient to them than meeting a performance target. Since BAM proposes that decision makers are loss-averse, meaning that they are more sensitive to losing wealth than to increasing wealth (Wiseman & Gomez-Mejia, 1998), these differences in managerial cognition between family and non-family firms are expected by BAM to produce distinctive behaviors. In particular, rather than considering accumulated endowments like salary, promotions, titles and professional prestige, managers in family firms are likely to frame relinquishing their socioemotional wealth as a crucial loss and are thereby likely to accept threats to the firm's financial wellbeing (e.g., lower innovativeness, declining performance) in order to prevent that loss.

As discussed, the external acquisition of technology leads firms to cede discretionary power over innovation activities to external parties and lose some control over the trajectory of future product developments. In the eyes of family managers this can be seen as a barrier to the accomplishment of non-economic, family-centered goals and thus corrode the foundations of socioemotional wealth the family derives from being in control (Berrone et al., 2010). Specifically, external technology acquisition is likely to entail greater complexity in product innovation (Grimpe & Kaiser, 2010) and would thus force family firms – that typically suffer disadvantages in terms of specialized human resources (e.g., Schulze et al., 2003) - to hire external managers, ceding to non-family managers some control over decision-making processes. What is more, by contracting out the development of new technology to be implemented in the firm's products, the firm devolves substantial resources without any guarantee of returns, and the firm may need in the future some know-how from the technology partner and may not be able to gain this know-how elsewhere, allowing the external actor to gain some control over the focal firm's resources and diminishing the focal firm's power (Almirall & Casadesus-Masanell, 2010; Pfeffer & Salanik, 1978). For these

reasons, losing control over the new products development trajectory may be seen by family managers as a loss of the family's ability to exercise unconstrained authority, influence, and power over all aspects of the business (Schulze, Lubatkin, & Dino, 2003) and a threat to the authority foundation of socioemotional wealth (Gomez-Mejia et al., 2010). Besides authority, acquiring external knowledge also affects the identity foundation of socioemotional wealth for the controlling family. Indeed, family firms tend to internally define their products and prefer remaining within the firm boundaries because the family closely identifies with those products (Donnelley, 1964). Such association of the family name with the firm products reflects the willingness of the family to have its name recognized and respected within the community (Dunn, 1996; Zellweger Nason, Nordqvist, & Brush, forthcoming), and can be lost when allowing other parties to take control over new product development.

In view of the foregoing, managers in family firms are expected to hold different cognitions regarding the decision to acquire external technology from those held by managers in non-family firms. In spite of the benefits potentially attainable through external technology acquisition, family firm managers are likely to avoid such decision in order to preserve the authority and identity foundations of socioemotional wealth for the family. Thus, we propose:

Hypothesis 2: There is a negative relationship between external technology acquisitions and family management.

Organizations are likely to become more inclined to search for alternative opportunities and routines when faced with deviations of performance outcomes below the aspiration level (Bromiley, 1991; Wiseman & Gomez-Mejia, 1998). According to BAM, the reference point for such organizational actions is typically based on economic returns - as previously hypothesised - either in terms of the firm's past performance or the average performance of other firms in the same industry (Lant, 1992).

However, in family firms family goals and the economic goals of the firm interact in setting the organizational strategic actions (Chrisman & Patel, 2012; Gómez-Mejía et al., 2007). As discussed above, engaging in technology sourcing may represent a threat to the authority and identity foundations of socioemotional wealth for the controlling family. As a consequence, whereas non-family managers may perceive below-aspiration level performance as a potential loss to their wealth, and respond by sourcing external know-how in order to recover innovativeness and competitive advantage, managers in family firms are likely to set the loss of socioemotional wealth as their primary concern, and avoid external technology acquisitions even in face of negative performance feedbacks. In other words,

consistent with the idea that family firms are more willing to tolerate below-target performance as a condition of retaining control of the firm (Gomez-Mejia et al., 2007), avoiding actions that threaten the preservation of socioemotional wealth for the controlling family can be expected to be more salient to family firm managers than meeting a performance target. For these reasons, we propose that:

Hypothesis 3a: Family management moderates the relationship between external technology acquisitions and the gap between aspirations and performance in terms of discrepancy from a historical performance target so that the relationship is weaker among family than non-family firms.

Hypothesis 3b: Family management moderates the relationship between external technology acquisitions and the gap between aspirations and performance in terms of discrepancy from performance of referent firms so that the relationship is weaker among family than non-family firms.

Control Beliefs: The Contingent Role of Technology Protection

So far, our model has assumed that family firms generally avoid external technology acquisition because it entails loss of socioemotional wealth for the controlling family. However, contingency theories of strategic decisions (Hofer, 1975; Baird & Thomas, 1985; Hambrick & Lei, 1985) posit that managerial evaluation of different strategies is also affected by the competitive settings of the business. Incorporating into the model contingency factors will help isolate the effects of family firm managers' cognitive differences regarding the decision to acquire external technology and will provide higher external validity to our arguments, moving from universalistic predictions toward a contingency view of strategic decisions in family firms. In addition, this contributes to relax the assumptions that family-centered goals are always divergent from the firms' economic goals, and to explore the conditions under which family firms can undertake risky competitive actions without obstructing the controlling families' socioemotional utilities (Zellweger & Nason, 2008). We discuss below how a specific factor regarding the competitive setting in which the decision to acquire external technology is made, namely the degree of protection of the focal firm's proprietary technologies ensured by intellectual property rights (IPRs), affects family firms' negative propensity to acquire technology from external sources.

The existence of effective mechanisms to protect proprietary technology is an important contingency when analyzing technology acquisition, because such mechanisms increase the managers' perceptions about their ability to appropriate the rents resulting from technology development and preserve control over the trajectory that technology follows over

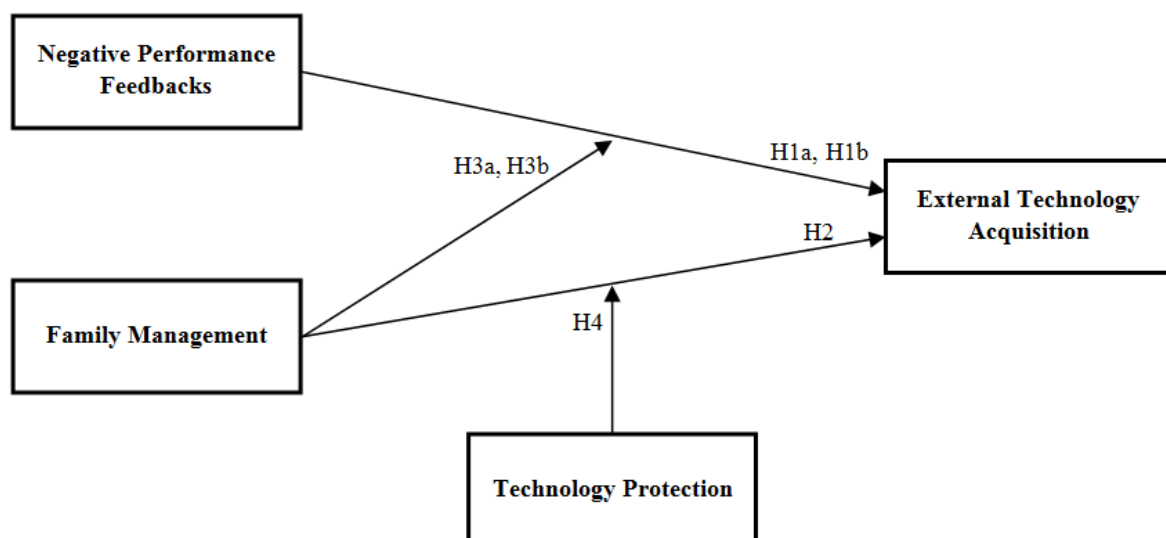
time (Cohen, Nelson, & Walsh, 2000; Gambardella, Giuri, & Luzzi, 2007). Research on deliberate decision making suggests that beliefs about the presence of factors that may facilitate or impede performance of a behavior and the perceived power of these factors constitute the control beliefs of a decision maker (Ajzen, 2002). Similarly, research in strategy has posited that top executives who believe they can control the outcomes of their decisions tend to pursue more aggressive strategies (Miller, De Vries, & Toulouse, 1982).

Following this line of reasoning, if lower external technology acquisition in family firms is to be attributed to different cognition of managers, meaning that the crucial loss for family firms managers is represented by the loss of control over the trajectory of future products development rather than poor performance, it is reasonable to expect that family firms' reluctance toward the adoption of an open approach to innovation is likely to deaden when some protection mechanisms are put in place that preserve such control. These mechanisms may be seen as a defense against the uncertainty associated to loss of control over technology, increasing managers' perception about the family firm's power in the relationship with external actors, and reducing the family firm managers' cognition of risks associated to loss of socioemotional wealth. In view of the foregoing, we propose:

Hypothesis 4: Technology protection moderates the relationship between external technology acquisitions and family management so that the relationship is weaker when family firms' technology is protected by intellectual property rights.

To synthesize our theoretical arguments, Figure 1 provides a representation of the conceptual framework developed in this section.

FIGURE 1
Conceptual framework and hypotheses



METHODS

Sample

To test our hypotheses, we obtained data on a representative sample of Spanish firms from the database Encuesta Sobre Estrategias Empresariales (Survey on Business Strategies, ESEE), produced by a public institution financed by the Spanish Ministry of Industry⁵. As we are interested in modeling external technology acquisitions, the focus on manufacturing industries is considered appropriate because in such industries firms' products typically embrace elements or subsystems developed by other players (Almirall & Casadesus-Masanell, 2010). Moreover, the unbalanced feature of this dataset implies that the firms can enter and exit from the survey in the same way the companies appear and disappear in the economy. For this reason, this sample is considered appropriate to observe sufficient degrees of performance and business risk. Restricting the sample of companies to observations in the same time period would affect the randomness of the sample, and there would be a much lower probability of firms facing declining performance to be included. Furthermore, the typically high degree of obsolescence of manufacturing firms' products makes, that reflects relatively short life-cycle of products, suggests that these firms are particularly inclined to rely on innovation (Tushman & Anderson, 1986). Indeed, this database has already been used in previous innovation studies (e.g., Merino & Rodríguez, 1997; Alonso-Borrego & Forcadell, 2010). In total, our sample has 4,903 time-series cross-sectional observations, consisting of 1,540 companies operating in twenty different manufacturing industries over the period 2000-2006.

Dependent Variable

External technology acquisitions. The variable external technology acquisitions captures the extent to which a firm acquires technology from external sources. Although there are different forms through which firms can acquire external technology, for the reasons discussed in the theoretical background section we focus in this study on R&D contracting, that captures the total expenses made by a firm to buy R&D services from other organizations such as competitors, suppliers, universities, public research organizations or commercial engineers (Veugelers & Cassiman, 1999; Cassiman & Veugelers, 2006; Van de Vrande et al.,

⁵ The ESEE was designed with the aim of ensuring the representativeness of Spanish manufacturing firms. For this purpose, all companies with more than 200 employees were surveyed (and approximately 70% completed the survey), and smaller companies with more than 10 employees were selected on the basis of a stratified sampling.

2009). We operationalized this variable as the ratio of external expenses for R&D to sales in year t .

Independent Variables

Negative performance feedbacks. We assessed performance using ROA, defined as the net operating income divided by total assets. The measurement of performance using ROA is widely supported in the literature, and has particularly been suggested for manufacturing firms (e.g., Finkelstein & D'Aveni, 1994; Carpenter, 2002). Moreover, ROA is a performance indicator very susceptible to the influence of managers, and has been used in previous studies applying BAM to innovation decisions (Chrisman & Patel, 2012). We followed prior research (Chen, 2008) in constructing a continuous censored variable to measure each of the two types of gaps between aspirations and performance, namely discrepancy from a historical performance and from performance of referent firms, reflecting the assumption that, as negative discrepancies between the firm's performance and either its historical performance or the performance of competitors widen, decision makers are more likely to perceive gaps between current performance and aspirations (Iyer & Miller, 2008). The first gap measure, *historical performance gap*, refers to the magnitude of performance shortfalls between periods and was measured by comparing a firm's performance in time $t-1$ and its performance in time $t-2$. A score of zero means that the target was achieved. The second measure of gap between aspirations and performance, *referent-target performance gap*, consists of a comparison of the focal firm's performance in time $t-1$ with the performance of other firms in the sector in time $t-2$, based on the average ROA of firms in the relevant two-digit NACE industry. Both variables were measured by their absolute value, meaning that the resulting magnitude of positive scores indicates the extent to which the firm falls below the performance target of either past performance or referent firms' performance in a particular year.

Family management. We defined family firms as firms with a particularistic vision of business and goals resulting from the presence of a controlling family (Chua et al., 1999; Carney, 2005). However, a direct measure of family vision and goals was not available, so our analysis cannot directly test some of our theoretical contentions. This is a common problem to which prior research has typically obviated by assuming that family vision and goals are highly correlated to the extent of family involvement in the firm (e.g., Westhead & Cowling, 1997; Berrone et al., 2010; Gomez-Mejia et al., 2010). This assumption has also received empirical validation (e.g., Chrisman et al., 2012; Chrisman & Patel, 2012), so we

adopt an objective measure of family influence in our study. For all those firms that are family owned our database reports the number of the owners and owner's relatives that occupy top managerial positions. Based on this information, we built the continuous variable family management measuring the number of family members in top managerial positions in time t (e.g., Cruz, Gómez-Mejía, & Becerra, 2010).

Technology protection. Patents are key legal mechanisms to protect proprietary technology and to exclude rivals from using company's own inventions (Teece, 1986; Levin et al., 1987; Harabi, 1995). Strong and dependable patents increase the innovator's ability to appropriate economic rents from its technology by, e.g., reducing the danger of a patent being infringed on (Kotabe, 1996), facilitating the proof of patent infringements (Lanjouw, 1998), making it harder for other companies to invent around the patent (Gambardella et al., 2007) and by raising the defenses against the competitive aspects of external relationships (Katila, Rosenberger, & Eisenhardt, 2008). Managers increasingly rate patents as an effective means of protecting some parts of the firm's product invention against other corporations' divergent interests, which is supported by the strong growth in international patenting since the late 1980s (Athreye & Cantwell, 2007). The ESEE database reports the number of international patents a company registers in each year, but no information is available regarding the total stock – and quality – of patents held by each firm. Consistently with prior research (e.g., Rothaermel & Deeds, 2004; Stuart, 2000), we consider a raw count of patents as a reasonable proxy of the quality of protection mechanisms put in place by a firm, and we thus measured technology protection as the difference between the number of patents registered in time $t-1$ and those registered in time $t-2$. This variable takes positive values if a firm has increased the protection of its internal know-how and has presumably amplified the control beliefs held by managers.

Control Variables

In order to rule out possible alternative explanations to those formally hypothesized, we included a number of control variables lagged at $t-1$ that could potentially affect the dependent variable. We controlled for firm *age*, measured as the number of years between the foundation of the firm and the observation year, and firm *size*, measured as logged annual sales. Because sourcing decisions may be influenced by the firm's ability to absorb new capabilities, we included *internal R&D intensity*, measured as the ratio of a firm's internal R&D expenditures to sales, as a proxy of absorptive capacity (Cohen & Levinthal, 1990). *Return on assets* accounts for the overall firm efficiency. The capital structure was also

considered. *Debt* is measured as the total liabilities provided by third parties adjusted by sales. *Equity* represents the resources contributed by the owners of the company, or generated by raising earnings and it is measured as the sum of equity capital, reserves and results pending application, less the interim dividend paid during the year, adjusted by sales.

Data Analysis

The descriptive statistics and correlations for the variables are reported in Table 1. As the assumption for normal distribution could not be met in the ordinary least squares (OLS) regression model, the panel-EGLS (estimated generalized least squares) estimator was used. The independent variables were centered around the mean before calculating the interaction terms in order to avoid problems of multicollinearity (i.e., high correlations) among the variables in the regression equation (Cohen, 2003). We calculated the variance inflation factor after each regression to see whether results were subject to the threat of multicollinearity. Values were within acceptable limits, indicating that estimations were free of any significant multicollinearity bias. The Hausman test suggests that fixed effect GLS panel model is more appropriate than random effect (Chi-Square=30.761, $p<0.01$). In addition, redundant fixed effect test indicates that the fixed effect of periodic dimension needs to be controlled (F-Statistic=2.141, $p<0.001$). As such, we use two-way fixed effect GLS panel regression as the tool of our primary analysis. White's (1980) cross sectional correction of covariance is used to control for heteroscedasticity and serial correlation.

TABLE 1.
Descriptive Statistics and Correlations (N = 4,903)*

Variable	Mean	S.D.	1	2	3	4	5	6
1. External technology acquisitions (%)	0.15	0.80	1.00					
2. Historical performance gap	2.26	10.68	-0.02	1.00				
3. Referent-target performance gap	10.17	85.90	-0.01	0.02	1.00			
4. Family management	0.59	0.91	-0.05	0.03	0.04	1.00		
5. Technology protection mechanisms	-0.04	3.15	0.00	0.00	0.00	0.01	1.00	
6. Age	26.91	21.10	0.07	-0.04	-0.04	-0.08	-0.02	1.00
7. Size (log total asset)	13.86	2.53	0.15	-0.19	0.03	-0.24	-0.01	0.37
8. Internal R&D intensity (%)	0.17	0.87	0.25	-0.02	-0.02	-0.03	-0.02	0.08
9. Return on assets	3.26	15.32	-0.02	-0.14	-0.04	0.04	0.00	-0.01
10. Liabilities	1.18	2.88	-0.01	0.20	0.05	0.02	0.00	-0.09
11. Equity	0.75	0.88	-0.01	0.19	-0.02	0.03	0.00	0.01
Variable	7	8	9	10	11			
7. Size (log total asset)	1.00							
8. Internal R&D intensity (%)	0.17	1.00						
9. Return on assets	-0.15	-0.03	1.00					
10. Liabilities	-0.22	-0.01	0.11	1.00				
11. Equity	-0.23	-0.01	0.24	0.40	1.00			

* Correlations $\geq |.05|$ are significant at $p < .001$.

RESULTS

Table 2 reports the results of the regression model used to test our hypotheses. Estimated coefficients are standardized. Hypotheses 1a and 1b propose that firms use external technology acquisition when their performance falls below the aspiration level. The effect of historical performance gap was not significant, so that hypothesis 1a is not supported, but external technology acquisition was significantly higher at $p < .001$ when performance fell below the referents firms' performance, strongly supporting hypothesis 1b. The results also show a significant negative effect at $p < .01$ of family management on external technology acquisitions. Thus, hypothesis 2 is supported.

TABLE 2.
Effects of Performance Risk, Family Management, and Technology Protection on External Technology Acquisitions

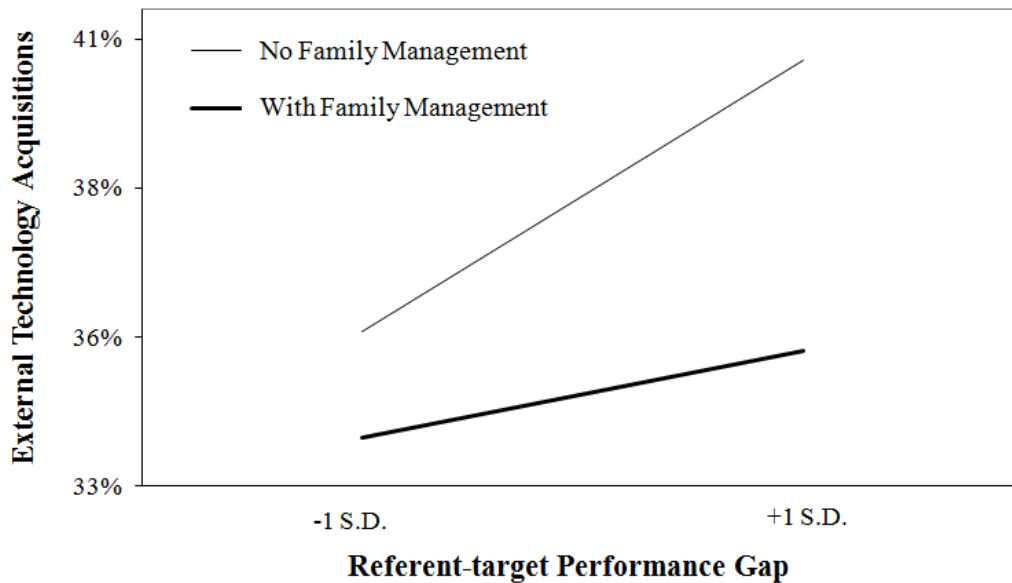
Variable	External Technology Acquisitions
1. Referent-target performance gap	0.009*** (0.000)
2. Historical performance gap	-0.003 (0.000)
3. Family management	-0.025** (0.008)
4. Technology protection mechanisms	-0.001 (0.004)
8. Internal R&D intensity	0.136** (0.037)
9. Age	-0.044*** (0.000)
10. Size (log asset)	-0.009 (0.068)
11. Return on assets	0.001 (0.000)
12. Liabilities	0.022 (0.003)
13. Equity	-0.027 [†] (0.028)
5. Family management × Referent-target performance gap	-0.016** (0.000)
6. Family management × Historical performance gap	0.001 (0.000)
7. Family management × Technology protection mechanisms	0.009** (0.003)
Observations	4,903
Adjusted R ²	0.266
F-Statistics	2.141***

[†] p < .10; * p < .05; ** p < .01; *** p < .001. Standardized coefficients are reported.

The moderation effects predicted in hypotheses 3a, 3b, and 4 were tested including the corresponding interaction terms in our regression model. Hypotheses 3a and 3b propose that family management moderates the negative relationship between external technology acquisitions and negative performance feedbacks. The results show that the moderating effect of family management on the relationship of external technology acquisitions is not significant for historical performance gap, so hypothesis 3a is not supported. However, the relationship is significant at p < .01 for referent-target performance gaps. As hypothesized, the coefficient of the interaction term is negative, suggesting that family management reduces the

strength of the relationships, thus confirming hypothesis 3b. To facilitate interpretation, we plotted the relationship between external technology acquisitions and referent-target performance gap for firms with and without family management in Figure 2. This figure clearly shows much lower elasticity of external technology acquisitions to below-target performance for family versus non-family firms, which is consistent with the predicted effect.

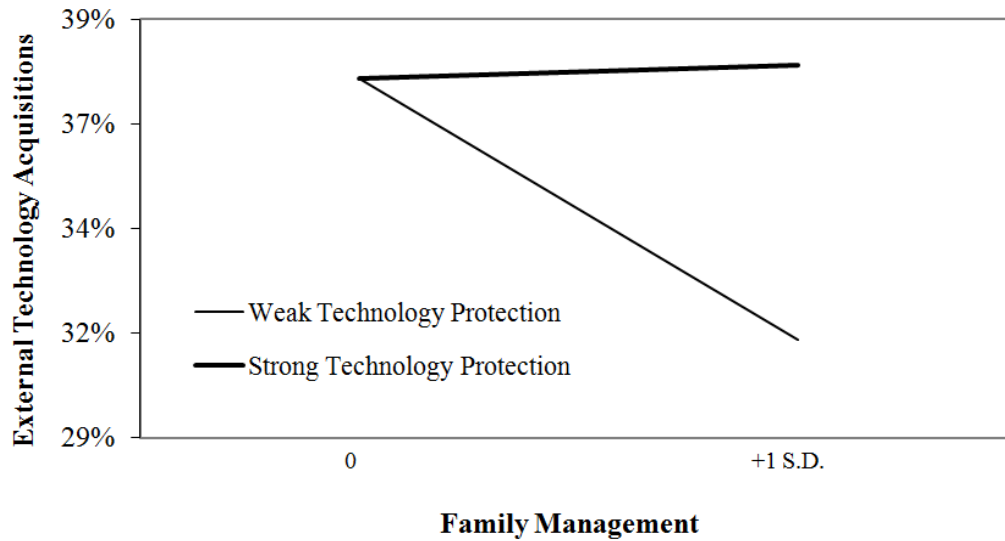
FIGURE 2
Effects of Performance Risk on External Technology Acquisitions



Note: Family management is controlled by 0 family members in top management and +1 standard deviation from the mean. The vertical scale is based on mean and unstandardized estimated coefficients of all other variables in fixed effect panel regression; insignificant coefficients are controlled as zero.

Hypothesis 4 proposes that the negative relationship between external technology acquisition and family management is moderated by technology protection, so that the relationship is weaker when the firms’ proprietary technologies are protected through patents. Results in Table 2 show that technology protection does not affect directly external technology acquisitions, but it affects at significance level of $p < .01$ the relationship between external technology acquisition and family management. This brings support to hypothesis 4. We draw these relationships in Figure 3 to facilitate interpretation. As represented in Figure 3, the negative line plotted for the family management variable in the case of no technology protection mechanisms becomes flat when such mechanisms are put in place. As a post hoc test, given α error probability equals to 0.01, our analysis is found to have enough power (power: $1 - \beta$ error probability = 1.000) to capture the variance of external R&D acquisition (Faul et al., 2007).

FIGURE 3
Effects of Family Management on External Technology Acquisitions by Technology Protection



Note: Without Technology Protection is controlled as 0. Strong Technology Protection is controlled by +1 standard deviation from the mean. The vertical scale is based on mean and unstandardized estimated coefficients of all other variables in fixed effect panel regression; insignificant coefficients are controlled as zero.

Additional Analyses

Although our sample includes only manufacturing firms, and family firms are reported to be quite distributed among all industrial sectors (Anderson & Reeb, 2003), we conducted additional analyses in order to assess the possibility of artifactual results in Table 2 due to aggregating these firms across different manufacturing industry sectors. Table 3 shows the sample distribution of companies by two-digit industry and by family business status (based on the presence of at least two family members in top management). Our analysis reveals that family involvement is a common feature of firms belonging to a broad array of industries in our sample, the average being 36.8% of all firms. However, the ratio of family firms ranges between a minimum of 14.8% in the motor vehicles industry and 60.92% in the furniture industry, indicating that controlling for industry affiliation may be important for our empirical analysis.

TABLE 3
Distribution of Firms by Industry and Family Status

Industry	All firms	Family firms	Non-family firms	Family firms ratio
Agricultural and industrial machinery	391	131	260	33.5%
Beverage	67	13	54	19.4%
chemicals	328	52	276	15.9%
Electrical machinery and apparatus	308	92	216	29.9%
Ferrous and nonferrous	173	34	139	19.7%
Food and snuff	462	165	297	35.7%
Furniture industry	238	145	93	60.9%
Leather and footwear	134	70	64	52.2%
Meat	123	59	64	48.0%
metal products	495	215	280	43.4%
Motor vehicles	240	33	207	13.8%
Non-metallic mineral products	337	118	219	35.0%
Office machines, data processing, and	66	29	37	43.9%
Other manufacturing	113	49	64	43.4%
Other transport	108	16	92	14.8%
Paper	170	42	128	24.7%
Publishing and printing	241	98	143	40.7%
Rubber and plastic	294	116	178	39.5%
Textiles and clothing	474	253	221	53.4%
Timber	141	75	66	53.2%
Total	4903	1805	3098	36.8%

Note: Observation refer to firms' yearly attributes; family firms are defined as those firms where two or more members of a controlling family are actively involved in the top management.

To ensure the robustness of the results, we thus ran again the full regression adjusting external technology acquisitions by industry level. Specifically, we controlled industry influences by subtracting to each firm's external expenses in R&D to sales in year t the median industry level of external R&D intensity in the same year. The results reported in Table 4 were consistent with our primary analysis, although some coefficients' significance was slightly altered: the coefficient for family management in Table 2 changed from -0.025 to -0.023, significant at $p \leq 0.05$; internal R&D intensity became more significant at $p \leq 0.01$; the coefficients for liabilities and equity ratios changed into significant at $p \leq 0.05$ and insignificant, respectively; finally, the interaction between family management and technology protection in Table 2 changed from 0.009 to 0.007, now significant at $p \leq 0.05$. Taken as a whole, the R^2 of our model changed from 26.6% to 23.3%, all results of post-hoc analyses being confirmed. In sum, the adoption of this alternative measure of technology acquisition that takes into account potential influences of firms' industry affiliations yielded the same pattern of results.

TABLE 4
Effects of Performance Risk, Family Management, and Technology Protection on Industry-Adjusted External Technology Acquisitions

Variable	Industry-Adjusted External Technology Acquisitions
1. Referent-target performance gap	0.030*** (0.000)
2. Historical performance gap	-0.002 (0.000)
3. Family management	-0.023* (0.010)
4. Technology protection mechanisms	0.000 (0.004)
8. Internal R&D intensity	0.136*** (0.027)
9. Age	-0.037*** (0.000)
10. Size (log asset)	-0.022 (0.071)
11. Return on assets	0.002 (0.001)
12. Liabilities	0.025* (0.003)
13. Equity	-0.028 (0.027)
5. Family management × Referent-target performance gap	-0.017** (0.000)
6. Family management × Historical performance gap	-0.003 (0.000)
7. Family management × Technology protection mechanisms	0.007* (0.003)
Observations	4,903
Adjusted R ²	0.233
F-Statistics	1.957***

† p < .10; * p < .05; ** p < .01; *** p < .001. Standardized coefficients are reported.

DISCUSSION

Prior research has approached the decision to acquire external technology based on a transaction cost perspective and therefore as a purely economic matter, modeling it as a trade-off between the benefits of technology sourcing and concerns regarding value appropriability. We extend these tenets by adopting a BAM perspective to investigate how behavioral

considerations of performance risk and different managerial cognition frameworks affect external technology acquisition.

We find that managers are more likely to acquire technology from external parties through R&D contracting when firm performance falls below the aspiration level. We also find that family firms are more reluctant to acquire external technology on average, and the effect of negative aspiration performance gaps becomes less relevant as family management is higher, which we attribute to family firm managers' attempts to avoid losing control over the trajectory that technology follows over time. However, an important factor appears to mitigate this general tendency. Specifically, family firms become more favorable to consider the adoption of an open approach to innovation when some protection mechanisms (specifically, the filing of patents on the firm proprietary technologies) increase the managers' perceptions of control over the technology trajectory. As such, our study makes a contribution to our understanding of the factors driving external technology acquisition as well as to the understanding of managerial decisions in family firms.

First, our theoretical and empirical analyses suggest a new way for approaching decisions regarding external technology acquisition. The application of BAM shows that managers' willingness to acquire technology from outside the firm's boundaries changes with the framing of problems on the basis of the available options to prevent losses to accumulated endowment (Wiseman & Gomez-Mejia, 1998). When managers observe deviations of performance outcomes below the aspiration level they become more likely to explore external technology in order to speed up innovativeness and identify new business opportunities. Further, our findings reveal that referent-target aspirations matter most when considering the choice to acquire external technology, whereas historical target-performance gaps are found to be not significant. In developing our hypotheses, we followed prior work (e.g., Chrisman & Patel, 2012; Gomez-Mejia et al., 2007) when we assumed that internal and external reference targets are likewise incorporated by managers in their consideration of risky decisions. However, our unexpected results suggest that this may not be the case. In the first instance, our findings may be a signal that self-reflection is not a relevant reference dimension for externally oriented organizational actions such as the acquisition of external technology. Rather, the evidence provided here can be interpreted as a preliminary indication that a loss of competitive advantage relative to the industry is the primary reference when it comes to externally oriented actions: managers who see a decline in their assets' profitability react proactively in order to recover their competitive positioning by, for example, sourcing new technological assets from outside the firm boundaries. In sum, our study contributes to

research regarding the decision to embrace inbound open innovation by shedding light on the behavioral processes that are relevant for understanding the decision to acquire external technology (Lichtenthaler, 2011), and it calls as well for further research aimed at better understanding the differential effect of internal and external reference dimensions on different types of organizational actions. In this regard, for example, future studies are warranted in innovation management as well as in strategy to explore which reference dimensions matter most, and the contingency factors that may alter such hierarchies among targets, when considering internally- versus externally-oriented organizational actions (Chattopadhyay, Glick, & Huber, 2001).

Second, by considering the different assumptions for managers in family and non-family firms and focusing on the effects of the family firms' propensity to preserve socioemotional wealth for the family (Gómez-Mejía et al., 2007), we uncover some barriers to open innovation that were not considered in prior research (Lichtenthaler, 2011). Although acquiring technological know-how from outside the firm boundaries may be seen as a way to quickly develop new products, the reluctance to cede control over the technological trajectory of new products to external actors drives family firms' aversion to external technology acquisition. Prior research has focused on the technical and economic implications of sharing control over the innovation trajectory with external parties (Dosi, 1982; Almirall & Casadesus-Masanell, 2010), but we demonstrate that family firms may prefer to adopt a strategy that preserves the firm's discretion over technology decisions in the long term, because ceding such control represents a threat to both the authority and identity foundations of socioemotional wealth (Gomez-Mejia, Makri, & Larraza-Kintana, 2010). This interpretation of the decision making process in external technology acquisition enforces those seminal studies that introduced the concept of not-invented-here (NIH) syndrome (Katz and Allen, 1982), which represent the only attempts to embrace behavioral considerations in inbound open innovation, although in a preliminary and scattered way.

More broadly, we provide a complementary perspective to the prevailing view that transaction costs drive managers' decision to embrace external technology acquisitions. In addition to economic considerations, managers use external technology acquisition as a response to declining performance, but when the preservation of socioemotional wealth becomes a priority, as it happens in the case of family firms, the firm is less likely to acquire external technology even if this means accepting below target performance. From a practical point of view, this encourages Chief Technology Officers and R&D managers to make the reasons underlying their decisions to acquire a technology or develop it internally explicit,

although they do not entirely respond to an economic logic. This will help them verify the correctness of their perceptions regarding benefits and drawbacks of acquiring a specific technology, to reduce potential biases engendered by performance feedbacks, and therefore improve their decision making process.

In addition to extending the behavioral perspective to the field of technology strategy, our study has theoretical and practical implications for strategic management in family firms. Our emphasis on the family as a controlling interest and its influences on technology strategy has empirical relevance because family control is the predominant form of governance around the world (La Porta et al., 1999; Villalonga & Amit, 2009) and family firms are widespread across all industrial sectors (Anderson & Reeb, 2003). Not only our findings extend our understanding of the risk taking behaviors of family firms (Gómez-Mejía et al., 2007; Chrisman & Patel, 2012) to the arena of technology strategy, but we also introduce the idea that the pursuance of socioemotional wealth by the part of controlling families is contingent on the internal conditions of the firm.

In particular, we show that managers can pursue family goals and undertake risky activities at the same time when some protection mechanisms are in place that increase the firm's ability to preserve socioemotional wealth. If the firm owns proprietary rights over its technologies, managers' perceptions about the family firm's power in the relationship with external actors increases and they become more favorable to consider the acquisition of external technology. This finding has strong implications for both theory and practice, because it challenges the idea that the willingness to preserve socioemotional wealth is an uncontrollable force and introduces the possibility that family firm managers actively take actions to secure their particularistic interest, thus becoming able to undertake risky activities while continuing to preserve socioemotional wealth for the family. As such, our findings bring support to the idea that family-centered goals and the firm's economic goals are not necessarily divergent (Chrisman & Patel, 2012; Zellweger & Nason, 2008) and add to previous research by identifying technology protection as a practical mechanisms that makes these goals compatible rather than conflicting as it regards the decision to open the firm's technology boundaries. Thus, our study opens even more questions than it answers, as future research is needed to discover further mechanisms and contingency factors aside technology protection that allow family firms to keep their particularistic goals safe without damaging their ability to conduct aggressive and risky competitive strategies.

Limitations and Future Research Directions

Aside from its contributions, our study has several limitations, which not only represent the boundaries of its insights but also provide opportunities for future research. First, we used a representative sample of Spanish manufacturing firms to test our hypotheses, that allowed us to focus on an ideal situation where innovation is important to the firm's ability to bring products to the marketplace, and external technology acquisition is a feasible way to improve internal innovation by including new functions and/or subsystems. However, research using other sampling frames is needed to extend the validity of our findings to publicly traded firms, firms in other industrial sectors, and firms outside Spain. In particular, by considering only Spanish firms we obtained a representative sample, but we were not able to observe the effect of different appropriability regimes across different countries on the extent of external technology acquisitions. For example, taking a cross-country perspective in future studies will allow to assess the relative importance of low appropriability and loss of control on the technology trajectory as barriers to inbound open innovation.

Second, this study relies on secondary data sources and, similarly to recent studies (Berrone et al., 2010; Gomez-Mejia et al., 2010; Chrisman & Patel, 2012), we proxied the pursuit of family goals to obtain socioemotional wealth by family ownership and management. Based on prior research, we assumed that family goals and socioemotional wealth go hand in hand with family involvement (Chrisman et al., 2012). But we have also shown that despite similar configurations of family involvement, family firms may differ in the level of family goals they pursue and the importance they attach to the preservation and growth of socioemotional wealth. Thus, research is needed to measure family goals and further extend our understanding of the link between family involvement and family goals, consistently with a more heterogeneous view of family firms (Chrisman & Patel, 2012; De Massis, Kotlar, Chua, & Chrisman, 2012), as well as to develop more reliable direct measures of socioemotional wealth.

Third, our analysis shows that family firms' reluctance towards external technology acquisition is lower when technology protection mechanisms are put in place. These results, while providing novel insights into the conditions under which family-centered goals can be pursued jointly with the economic goals of the firm (Chrisman & Patel, 2012; Zellweger & Nason, 2008), only catch one of the possible factors that might affect the interplay between family and economic goals, and thus cannot be considered as comprehensive. On the contrary, further research is warranted to uncover all those factors, either internal or external to the focal firm, that may potentially determine the compatibility or hierarchy among these two classes of goals that coexist in family firms. For example, family firms can bear below-

average performance if this is what it takes to protect their socioemotional wealth (Gomez-Mejia et al., 2007), but certain threats to firm survival may put higher urgency on the firm's ability to create new products because failure can be considered as "the worst case scenario" (Shapira, 1992: 135), as organizational failure inevitably entails also the loss of socioemotional wealth for the controlling family. Thus, extending the BAM to consider further contingency factors such as the product life-cycle, competition, or institutional pressures, has the potential to significantly improve our understanding about the interplay between family and economic goals in family firms, and consequently to enhance the predictive power of empirical models.

Finally, we operationalized external technology acquisition as the ratio of external R&D expenditures on sales, thus focusing only on one of the several forms through which external technology can be acquired. Although this decision reflects our focus on organizational actions that involve limited risk sharing among parties and entail very limited control over the technology trajectory, future research is needed to extend our findings to other governance forms of technology acquisition, such as in-licensing or mergers and acquisition.

CONCLUSION

This study provides a novel perspective, based on the behavioral agency model, to explain firms' decisions to acquire external technology. The results show that behavioral factors overlooked in prior research are important in explaining family and non-family firms' decisions regarding the boundaries of technology development activities. While our study brings new perspectives to research on technology and innovation management and extends prior knowledge about the distinctiveness of family firms, more research is needed to better understand the behavioral processes driving strategic decisions in technological innovation among family firms and in comparison with non-family firms.

REFERENCES

- Ajzen, I. (2002). Perceived behavioral control, self efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32 (4), 665-683.
- Almirall, E., & R. Casadesus-Masanell. (2010). Open versus closed innovation: A model of discovery and divergence. *Academy of Management Review*, 35 (1), 27-47.
- Alonso-Borrego, C., & F. J. Forcadell. (2010). Related diversification and R&D intensity dynamics. *Research Policy*, 39 (4), 537-548.

- Anderson, R.C., & Reeb, D.M. (2003). Founding-family ownership and firm performance: Evidence from the S&P 500. *Journal of Finance*, 58(3), 1301-1327.
- Argote, L., & Greve, H.R. (2007). A behavioral theory of the firm—40 years and counting: Introduction and impact. *Organization Science*, 18(3), 337-349.
- Astrachan, J.H., & Shanker, M.C. (2003). Family businesses' contribution to the US economy: A closer look. *Family Business Review*, 16(3), 211-219.
- Athreye, S., & Cantwell, J. (2007). Creating competition?: Globalisation and the emergence of new technology producers. *Research Policy*, 36(2): 209-226.
- Baird, I.S., & Thomas, H. (1985). Toward a contingency model of strategic risk taking. *Academy of Management Review*, 10(2), 230-243.
- Bannert, V., & Tschirky, H. (2004). Integration planning for technology intensive acquisitions. *R&D Management* 34 (5): 481-494.
- Berrone, P., Cruz, C., Gomez-Mejia, L.R., & Larraza-Kintana, M. (2010). Socioemotional wealth and corporate responses to institutional pressures: Do family-controlled firms pollute less? *Administrative Science Quarterly*, 55(1), 82-113.
- Block, J.H. (2012). R&D investments in family and founder firms: An agency perspective. *Journal of Business Venturing*, 27(2), 248–265.
- Boudreau, K. (2010). Open platform strategies and innovation: Granting access versus devolving control. *Management Science*, 56(10), 1849-1872.
- Bromiley, P. (1991). Testing a causal model of corporate risk taking and performance. *Academy of Management Journal*, 34(1), 37-59.
- Calantone, R.J., & Stanko, M.A. (2007). Drivers of outsourced innovation: An exploratory study. *Journal of Product Innovation Management*, 24(3), 230-241.
- Carney, M. (2005). Corporate governance and competitive advantage in family-controlled firms. *Entrepreneurship Theory and Practice*, 29(3), 249-265.
- Carpenter, M.A. (2002). The implications of strategy and social context for the relationship between top management team heterogeneity and firm performance. *Strategic Management Journal* 23 (3): 275-284.
- Cassia L., De Massis, A. & Pizzurno, E. (2012). Strategic Innovation and New Product Development in Family Firms: an Empirically Grounded Theoretical Framework. *International Journal of Entrepreneurial Behaviour & Research*, 18(2), 198-232.
- Cassiman, B., & Veugelers, R. (2006). In search of complementarity in innovation strategy: Internal R&D and external knowledge acquisition. *Management Science*, 52(1), 68-82.
- Chatterji, D. (1996). Accessing external sources of technology. *Research Technology Management*, 39(2), 48-56.
- Chattopadhyay, P., Glick, W.H., & Huber, G.P. (2001). Organizational actions in response to threats and opportunities. *Academy of Management Journal*, 44(5), 937-955.
- Chen, H.L., & Hsu, W.T. (2009). Family ownership, board independence, and R&D investment. *Family Business Review*, 22(4), 347.
- Chen, W.R. (2008). Determinants of firms' backward-and forward-looking R&D search behavior. *Organization Science*, 19(4), 609-622.

- Chiesa, V., & Manzini, R. (1998). Organizing for technological collaborations: A managerial perspective. *R&D Management*, 28(3), 199-212.
- Chrisman, J.J., Chua, J.H., Pearson, A.W., & Barnett, T. (2012). Family involvement, family influence, and family centered non economic goals in small firms. *Entrepreneurship Theory and Practice*, 36(2), 267-293.
- Chrisman, J.J., & Patel, P.J. (2012). Variations in r&d investments of family and non-family firms: Behavioral agency and myopic loss aversion perspectives. *Academy of Management Journal*, 55(4), 976-997.
- Christensen, C. M., Anthony, S.D., & Roth, E.A. (2004). *Seeing what's next: Using the theories of innovation to predict industry change*. Boston, MA: Harvard Business Press.
- Chua, J.H., Chrisman, J.J., & Sharma, P. (1999). Defining the family business by behavior. *Entrepreneurship Theory and Practice*, 23(4), 19-39.
- Cohen, J. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Cohen, W.M., & Levinthal, D.A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128-152.
- Cohen, W.M., Nelson, R.R., & Walsh, J.P. (2000). Protecting their intellectual assets: Appropriability conditions and why us manufacturing firms patent (or not). *National Bureau of Economic Research*, Working paper 7552.
- Cruz, C.C., Gómez-Mejía, L.R., & Becerra, M. (2010). Perceptions of benevolence and the design of agency contracts: CEO-TMT relationships in family firms. *Academy of Management Journal*, 53(1), 69-89.
- Cyert, R.M., & March, J.G. (1963). *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice-Hall.
- Dahlander, L., & Gann, D.M. (2010). How open is innovation? *Research Policy*, 39(6), 699-709.
- De Massis, A., Frattini, F., & Lichtenthaler, U. (Forthcoming). Research on technological innovation in family firms: Present debates and future directions. *Family Business Review*.
- De Massis A., Frattini, F., Pizzurno, E., & Cassia, L. (Forthcoming). Product Innovation in Family vs. Non-Family Firms: an Exploratory Analysis. *Journal of Small Business Management*.
- De Massis A., Kotlar, J., Chua, J.H., & Chrisman, J.J. (2012). Ability and Willingness as Sufficiency Conditions for Family-Oriented Particularistic Behavior: Implications for Theory and Empirical Studies. *Journal of Small Business Management*, forthcoming.
- Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. *The Journal of Political Economy*, 93(6), 1155-1177.
- Donnelley, R.G. (1964). The family business. *Harvard Business Review*, 42, 93-105.
- Dosi, G. (1982). Technological paradigms and technological trajectories: A suggested interpretation of the determinants and directions of technical change. *Research Policy*, 11(3), 147-162.

- Dunn, B. (1996). Family enterprises in the UK: A special sector? *Family Business Review*, 9(2), 139-155.
- Faul, F., Erdfelder, E., Lang, A.G., & Buchner, A. (2007). G* power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175-191.
- Finkelstein, S., & D'Aveni, R.A. (1994). Ceo duality as a double-edged sword: How boards of directors balance entrenchment avoidance and unity of command. *Academy of Management Journal*, 37(5), 1079-1108.
- Gambardella, A., Giuri, P., & Luzzi, A. (2007). The market for patents in Europe. *Research Policy*, 36(8), 1163-1183.
- Gómez-Mejía, L.R., Haynes, K.T., Núñez-Nickel, M., Jacobson, K.J.L., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. *Administrative Science Quarterly*, 52(1), 106-137.
- Gómez-Mejía, L.R., Larraza-Kintana, M., & Makri, M. (2003). The determinants of executive compensation in family-controlled public corporations. *Academy of Management Journal*, 46(2), 226-237.
- Gomez-Mejia, L.R., Makri, M., & Larraza-Kintana, M. (2010). Diversification decisions in family-controlled firms. *Journal of Management Studies*, 47(2), 223-252.
- Gómez-Mejía, L.R., Nunez-Nickel, M. & Gutierrez, I. (2001). The role of family ties in agency contracts. *Academy of Management Journal*, 44(1), 81-95.
- Grimpe, C., & Kaiser, U. (2010). Balancing internal and external knowledge acquisition: The gains and pains from R&D outsourcing. *Journal of Management Studies*, 47(8), 1483-1509.
- Hambrick, D.C., & Lei, D. (1985). Toward an empirical prioritization of contingency variables for business strategy. *Academy of Management Journal*, 28(4), 763-788.
- Hambrick, D.C., & Mason, P.A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193-206.
- Harabi, N. (1995). Appropriability of technical innovations an empirical analysis. *Research Policy*, 24(6), 981-992.
- Hofer, C.W. (1975). Toward a contingency theory of business strategy. *Academy of Management Journal*, 18(4), 784-810.
- Howells, J. (2006). Outsourcing for innovation: Systems of innovation and the role of knowledge intermediaries. In *Knowledge intensive business services: Organizational forms and national institutions*, eds. M. Miozzo and D. Grimshaw, 61-81. Cheltenham, UK: Edward Elgar.
- Howells, J., Gagliardi, D., & Malik, K. (2008). The growth and management of R&D outsourcing: Evidence from UK pharmaceuticals. *R&D Management* 38 (2): 205-219.
- Iyer, D.N., & Miller, K.D. (2008). Performance feedback, slack, and the timing of acquisitions. *Academy of Management Journal*, 51(4), 808-822.
- Katila, R., Rosenberger, J.D., & Eisenhardt, K.M. (2008). Swimming with sharks: Technology ventures, defense mechanisms and corporate relationships. *Administrative Science Quarterly*, 53(2), 295-311.

- Katz, R., & Allen, T.J. (1982). Investigating the not invented here (NIH) syndrome: A look at the performance, tenure, and communication patterns of 50 R&D project groups. *R&D Management*, 12(1), 7-20.
- Kotabe, M., Sahay, A., & Aulakh, P.S. (1996). Emerging role of technology licensing in the development of global product strategy: Conceptual framework and research propositions. *The Journal of Marketing*, 60(1), 73-88.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1999). Corporate ownership around the world. *The Journal of Finance*, 54(2), 471-517.
- Lanjouw, J.O. (1998). Patent protection in the shadow of infringement: Simulation estimations of patent value. *Review of Economic studies*, 65(4), 671-710.
- Lant, T.K. (1992). Aspiration level adaptation: An empirical exploration. *Management science*, 38(5), 623-644.
- Levin, R.C., Klevorick, A.K., Nelson, R.R., Winter, S.G., Gilbert, R., & Griliches, Z. (1987). Appropriating the returns from industrial research and development. *Brookings Papers on Economic Activity*, 1987(3), 783-831.
- Lichtenthaler, U. (2011). Open innovation: Past research, current debates, and future directions. *Academy of Management Perspectives*, 25(1): 75-93.
- Merino, F., & D. R. Rodríguez. (1997). A consistent analysis of diversification decisions with non-observable firm effects. *Strategic Management Journal* 18 (9): 733-743.
- Miller, D., M. F. R. K. De Vries, & J. M. Toulouse. (1982). Top executive locus of control and its relationship to strategy-making, structure, and environment. *Academy of Management Journal*: 237-253.
- Mitchell, R. K., B. R. Agle, J. J. Chrisman, & L. J. Spence. (2011). Toward a theory of stakeholder salience in family firms. *Business Ethics Quarterly* 21 (2): 235-255.
- Morck, R., & B. Yeung. (2003). Agency problems in large family business groups. *Entrepreneurship Theory and Practice* 27 (4): 367-382.
- Munari, F., R. Oriani, & M. Sobrero. (2010). The effects of owner identity and external governance systems on r&d investments: A study of western european firms. *Research Policy* 39 (8): 1093-1104.
- Muñoz-Bullón, F., & M. J. Sanchez-Bueno. (2011). The impact of family involvement on the R&D intensity of publicly traded firms. *Family Business Review* 24 (1): 62-70.
- Pfeffer, J., & G. Salancik. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper & Row.
- Pisano, G. P. (1990). The R&D boundaries of the firm: An empirical analysis. *Administrative Science Quarterly*, 35(1), 153-176.
- Rothaermel, F.T., & Deeds, D.L.. (2004). Exploration and exploitation alliances in biotechnology: A system of new product development. *Strategic Management Journal*, 25(3), 201-221.
- Schulze, W.S., Lubatkin, M.H., & Dino, R.N. (2003). Toward a theory of agency and altruism in family firms. *Journal of Business Venturing*, 18(4), 473-490.
- Shapira, Z. (1992). *Risk taking: A managerial perspective*. New York: Russell Sage Foundation.

- Sherwood, A.L., & Covin, J.G. (2008). Knowledge acquisition in university–industry alliances: An empirical investigation from a learning theory perspective. *Journal of Product Innovation Management*, 25(2), 162-179.
- Stuart, T.E. (2000). Interorganizational alliances and the performance of firms: A study of growth and innovation rates in a high-technology industry. *Strategic Management Journal*, 21(8), 791-811.
- Swan, K.S., & Allred, B.B. (2003). A product and process model of the technology-sourcing decision. *Journal of Product Innovation Management*, 20(6), 485-496.
- Teece, D. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research Policy*, 15(6), 285-305.
- Tidd, J., & Trehwella, M.J. (1997). Organizational and technological antecedents for knowledge acquisition and learning. *R&D Management*, 27(4), 359-375.
- Tushman, M.L., and Anderson, P. (1986). Technological discontinuities and organizational environments. *Administrative Science Quarterly*, 35(4), 439-465.
- Van de Vrande, V., De Jong, J.P.J., Vanhaverbeke, W., & De Rochemont, M. (2009). Open innovation in SMEs: Trends, motives and management challenges. *Technovation*, 29(6-7), 423-437.
- Van De Vrande, V., Lemmens, C., & Vanhaverbeke, W. (2006). Choosing governance modes for external technology sourcing. *R&D Management*, 36(3), 347-363.
- Veugelers, R., & Cassiman, B. (1999). Make and buy in innovation strategies: Evidence from belgian manufacturing firms. *Research Policy*, 28(1), 63-80.
- Villalonga, B., & Amit, R. (2009). How are US family firms controlled? *Review of Financial Studies*, 22(8), 3047-3091.
- West, J. (2003). How open is open enough? Melding proprietary and open source platform strategies. *Research Policy*, 32(7), 1259-1285.
- Westhead, P., & Cowling, M. (1997). Performance contrasts between family and non-family unquoted companies in the uk. *International Journal of Entrepreneurial Behaviour & Research*, 3(1), 30-52.
- Williamson, O.E. (1998). Transaction cost economics: How it works; where it is headed. *Economist*, 146(1), 23-58.
- Wiseman, R.M., & Bromiley, P. (1996). Toward a model of risk in declining organizations: An empirical examination of risk, performance and decline. *Organization Science*, 7(5), 524-543.
- Wiseman, R.M., & Gomez-Mejia, L.R., (1998). A behavioral agency model of managerial risk taking. *The Academy of Management Review* 23 (1): 133-153.
- Zahra, S.A., Sisodia, R.S., & Das, S.R. (1994). Technological choices within competitive strategy types: A conceptual integration. *International Journal of Technology Management*, 9(2), 172-195.
- Zellweger, T., & Nason, R.S. (2008). A stakeholder perspective on family firm performance. *Family Business Review*, 21(3), 203-216.
- Zellweger, T., Nason, R.S., Nordqvist, M., & Brush, C. (2012). Why do family firms strive for nonfinancial goals? An organizational identity perspective. *Entrepreneurship Theory and Practice* (forthcoming).

Zirpoli, F., & Becker, M.C. (2011). The limits of design and engineering outsourcing: Performance integration and the unfulfilled promises of modularity. *R&D Management*, 41(1), 21-43.

