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RESOURCE ORCHESTRATION IN FAMILY FIRMS: INVESTIGATING HOW ENTREPRENEURIAL ORIENTATION, GENERATIONAL INVOLVEMENT, AND PARTICIPATIVE STRATEGY AFFECT PERFORMANCE

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Drawing on the process of resource orchestration, we argue a co-alignment of multiple factors is needed for family firms to increase performance through entrepreneurship. Specifically, we posit that entrepreneurial orientation provides the mobilizing vision to use the heterogeneous yet complementary knowledge and experiences offered by increased generational involvement toward entrepreneurship. However, without a coordinating mechanism, generational involvement leads to conflict and negative outcomes. When, instead, it is also coordinated via a participative strategy, performance gains are achieved. In sum, results suggest that realizing the benefits from entrepreneurship in family firms is a complicated matter affected by the synchronization of entrepreneurial orientation, generational involvement, and participative strategy. Copyright © 2011 Strategic Management Society.

INTRODUCTION

Research on family firms has increased significantly over the past two decades (Chrisman *et al*., 2010), owing in part to the realization of family firms' massive economic impact: Estimates suggest these firms account for 85 percent of all companies worldwide (La Porta, Lopez-de-Silanes, and Shleifer, 1999); employ more than 80 percent of the U.S. workforce, producing more than half of its GNP (Neubauer and Lank, 1998); and account for significant levels of innovation (Miller and Le Breton-Miller, 2005). As such, unique elements of family firms, including multiple generational involvement, long-term strategic orientation, strong collective identity, extraordinary commitment to firm survival, and the valuing of both economic and socio-emotional outcomes are now better understood (Arregle *et al*., 2007; Gómez-Mejía *et al*., 2007; Miller, Le Breton-Miller, and Scholnick, 2008). Despite this increase in research, Lumpkin, Brigham, and Moss (2010: 245) lament that 'there has been a surprisingly small amount of research on entrepreneurship in family firms.' Indeed, earnest efforts to increase the study of entrepreneurship in family firms has gained momentum only recently through special issues, articles, and books on the topic (e.g., Nordqvist and Melin, 2010; Nordqvist and Zellweger, 2010; Stewart, Lumpkin, and Katz, 2010; Uhlaner *et al*., forthcoming). Thus,

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while our knowledge of family firms has rapidly increased, our understanding of entrepreneurship in family firms is just beginning to flourish.

Within the limited literature focused on entrepreneurship in family firms, two opposing perspectives have developed (Nordqvist and Zellweger, 2010; Short *et al*., 2009). Some scholars claim family firms—firms in which a family possesses a significant ownership stake and in whose operations multiple family members are involved (Sirmon *et al.,* 2008)—present a unique and favorable setting for entrepreneurship (Aldrich and Cliff, 2003; Chirico, Ireland, and Sirmon, 2011). This perspective asserts that family ownership and management acts like 'oxygen that feeds the fire of entrepreneurship' (Rogoff and Heck, 2003: 559). That is, 'the long-term nature of family firms' ownership allows them to dedicate the resources required for innovation and risk taking, thereby fostering entrepreneurship' (Zahra, Hayton, and Salvato, 2004: 363). Other scholars, however, are more pessimistic, arguing family involvement is a liability to a firm's entrepreneurial efforts. Specifically, this perspective suggests that the desire to protect family wealth and prospects for future generations leads family firms to avoid risk (Naldi *et al*., 2007), delay or prevent change (Chirico and Nordqvist, 2010; Salvato, Chirico, and Sharma, 2010), follow conservative strategies (Chirico *et al.,* forthcoming; Martin and Lumpkin, 2003; Miller, Steier, and Le Breton-Miller, 2003); and only weakly integrate competent external employees (Vinton, 1998). However, perhaps neither of these nascent perspectives is fully correct. Instead, it may be that family firms understand the need to be entrepreneurial to prosper in dynamic competitive landscapes (Bettis and Hitt, 1995), but that the complexities of effectively integrating family and business makes reaping rewards from being entrepreneurial extremely challenging.

In this research, we work to advance this debate by drawing on the literature of resource orchestration to understand how the co-alignment of multiple factors is required for performance gains via entrepreneurship in family firms. Specifically, resource orchestration (Helfat *et al*., 2007; Sirmon *et al*., 2011) suggests that in order for entrepreneurship to be successful in family firms, the unique resources of such firms—defined inclusively as the tangible and intangible assets controlled by an organization (Helfat and Peteraf, 2003)—must be effectively leveraged, which requires the synchronization of mobilization and coordination mechanisms. Mobilization 'provides a plan or vision for capabilities' (Sirmon *et al*., 2011: 1392), while coordination refers to mechanisms that 'keep co-specialized assets in value creating co-alignment' (Helfat *et al*., 2007: 28). In this study, we focus on a hallmark resource of family firms: generational involvement—the family's human capital spread across generations that provides complementary knowledge and experiences with the potential to support entrepreneurial initiatives (Kellermanns and Eddleston, 2006). Generational involvement is important because 'when multiple generations are involved in the family firm, the organization has greater input and a variety of individual perspectives—both valuable assets for entrepreneurial ideas' (Kellermanns *et al*., 2008: 5). This is also in line with previous research showing that generational involvement increases the chances that entrepreneurial opportunities will be recognized (Salvato, 2004) and fosters entrepreneurial behavior (Zahra, 2005; Zahra, Neubaum, and Larraneta, 2007).

We propose that entrepreneurial orientation (EO)—i.e., the tendency toward product innovation, proactiveness, and risk-taking behaviors (Miller, 1983)—provides the mobilizing vision to use the unique knowledge resources offered by generational involvement to pursue entrepreneurship. We also argue that a team-based participative strategy—i.e., a consensus-seeking strategic process (Covin, Green, and Slevin, 2006; Dess, Lumpkin, and Covin, 1997)—is needed as a coordinating mechanism not only to avoid conflict and poor information flows accompanying increased generational involvement (Chirico and Nordqvist, 2010; Eddleston and Kellermanns, 2007; Ling and Kellermanns, 2010; Mazzola, Marchisio, and Astrachan, 2008; Miller *et al*., 2003), but also to ensure employees' cooperation and commitment to the mobilizing vision (Hall, Melin, and Nordqvist, 2001; Jehn and Mannix, 2001; Schweiger, Sandberg, and Ragan, 1986). In short, our arguments suggest that realizing the benefits of entrepreneurship in family firms is a complicated matter, affected by the synchronization of EO, generational involvement, and participative strategy.

With supportive empirical results, our research offers several contributions to the literature. First, we extend the general notion that 'only the combination of resources and entrepreneurial orientation will carry the family firm and business families into a successful future' (Habbershon, Nordqvist, and Zellweger, 2010: 21) by showing that, in the case of generational involvement, another element—

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participative strategy—is needed for optimal results. Specifically, our results show that generational involvement plays the role of 'wild card' in realizing the benefits of entrepreneurship in the family firm, in that it can either support or detract from family firm performance. When generational involvement increases along with EO, performance suffers; yet when generational involvement is not only mobilized by EO but also coordinated via a participative strategy, performance greatly increases.

As such, this research contributes to the debate over whether the family firm context is conducive for entrepreneurship by more clearly showing why only some family firms are effective in their entrepreneurial pursuits. A complicated alignment of factors is needed to see performance gains. The risk is that when family firms fail to synchronize these factors, significant negative outcomes can be expected. Thus, while entrepreneurship can thrive in family firms, it is not likely to 'just happen,' but requires significant managerial attention and effort to lead to positive outcomes.

Second, our research sheds some light on previous works that showed mixed results regarding EO in the family context (e.g., Casillas and Moreno, 2010; Casillas, Moreno, and Barbero, 2010; Kellermanns *et al*., 2008; Naldi *et al*., 2007) by detailing some important factors that simultaneously influence EO's impact on family firm performance. Third, this research offers additional support for the process of resource orchestration; specifically, it is the first effort to explicitly apply resource orchestration to a family firm context. In fact, resource orchestration has only recently begun to receive empirical treatments (Sirmon and Hitt, 2009). Finally, our study advances the rigor in family firm research by relying on different data sources, including objective secondary data when available. Specifically, we use two respondents from each company to increase the reliability of our data.

Next, we review the literatures on family firms, EO, and resource orchestration to form the foundations of our work. Then, we develop two hypotheses, present our methods, and report our results. The paper concludes with a discussion of the study's contributions to theory and practice.

THEORETICAL FRAMEWORK

Family firms

We define *family firms* as firms in which a family possesses a significant ownership stake and in whose operations multiple family members are involved (Sirmon *et al.,* 2008). While definitions of family firms may vary among scholars (Uhlaner *et al*., forthcoming), these firms share a fundamental similarity. Specifically, 'the interaction of two social systems—the family and the business' creates the essence of the family firm (Chirico and Salvato, 2008: 173), which produces strong distinctive characteristics, such as long-term strategic orientation, strong collective identity, strong family values, unique social context, and extraordinary emotional attachment and commitment to firm survival (Arregle *et al*., 2007; Hall *et al*., 2001; Sirmon and Hitt, 2003; Zellweger and Sieger, forthcoming). Emotional attachment and judgment are, thus, inseparably intertwined, thereby significantly influencing decision-making processes and outcomes (Gómez-Mejía *et al*., 2007; Sharma and Irving, 2005).

However, while sharing several characteristics, family firms are not homogeneous in all aspects. Family firms vary significantly in the ways they pursue their objectives. For example, family firms differ in terms of their openness to change (Chirico and Nordqvist, 2010; Miller *et al*., 2003; Salvato *et al*., 2010), their degree of generational involvement (Kellermanns and Eddleston, 2006; Zahra, 2005), and the level of participation of each family member/employee in shaping the firm's strategy (Eddleston and Kellermanns, 2007; Eddleston, Otondo, and Kellermanns, 2008).

Entrepreneurial orientation

An entrepreneurial company is one that 'engages in product market innovation, undertakes somewhat risky ventures, and is first to come up with 'proactive' innovations, beating competitors to the punch' (Miller, 1983: 771). Based on this definition, EO has developed as a firm-level concept, and 'three dimensions of EO have been identified and used consistently in the literature' (Rauch *et al*., 2009: 763), thus reflecting the firm's tendency toward product innovation, proactiveness, and risk-taking behaviors (e.g., Covin and Slevin, 1991; Wiklund and Shepherd, 2003, 2005).

Product innovation reflects a firm's propensity to engage in and support creativity and experimentation, thereby leading to the creation of new products or the modification of existing ones (Zahra and Covin, 1995) to meet the demands of current or future markets (Lumpkin and Dess, 1996, 2001). *Proactiveness* is a forward-looking perspective

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characterized by the pursuit and anticipation of future wants and needs in the marketplace. By being proactive, firms capitalize on emerging opportunities and shape the evolving competitive environment. *Risk taking* characterizes entrepreneurial behavior in which both the cost of failure and the potential returns are high (Lumpkin and Dess, 1996, 2001). Although Lumpkin and Dess (1996) identified competitive aggressiveness and autonomy as additional components of the EO construct, in this paper we focus our attention on Miller's original conceptualization of EO, widely used in studies of both family firms (e.g., Casillas *et al*., 2010; Chirico and Nordqvist, 2010; Cruz and Nordqvist, forthcoming; Kellermanns and Eddleston, 2006) and nonfamily firms (e.g., Covin *et al*., 2006; De Clercq, Dimov, and Thongpapanl, 2010; Wiklund and Shepherd, 2003, 2005). This focus increases the comparability of this study with previous research.

Product innovation, proactiveness, and risk taking form the essence of EO. Accordingly, Lumpkin and Dess (1996: 146) argue that EO includes 'taking initiative(s) by anticipating and pursuing new (future) opportunities.' That is, EO provides a system of practices and managerial styles that offers direction for the use of resources. As such, we argue EO provides a mobilizing vision, as discussed in resource orchestration literature.

Resource orchestration

The resource-based view provides the theoretical underpinnings for understanding when resources support a firm's competitive advantage and, ultimately, its performance. Competitive advantage is supported by resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). However, possessing such resources alone does not guarantee superior performance; instead, managers need to orchestrate their resources to realize any potential advantage (Morrow *et al*., 2007; Sirmon, Gove, and Hitt, 2008).

Thus, resource orchestration 'is concerned with the actions leaders take to facilitate efforts to effectively manage the firm's resources' (Hitt *et al*., 2011: 64; Ndofor, Sirmon, and He, 2011). More specifically, managers influence firm performance by structuring the firm's resource portfolio, bundling resources, and leveraging those resources in the marketplace (Ireland, Hitt, and Sirmon, 2003; Sirmon, Hitt, and Ireland, 2007). Thus, it is through leveraging processes that performance effects are realized (Hitt *et al*., 2011: 65). Two critical elements of leveraging are mobilizing and coordinating. Helfat *et al*. (2007) argues a 'vision' or direction for the use of resources is needed for effective leveraging. Sirmon *et al*. (2011) refer to this generally as *mobilizing*. Next, coordinating the mobilized resources is necessary to maintain their effective integration (Sirmon *et al*., 2011). Specifically, Helfat *et al*. (2007: 28) argue that coordination 'keep(s) co-specialized assets in value-creating co-alignment.'

Mobilization and coordination are particularly useful when knowledge resources, or the specific expertise possessed by individuals in a given domain (Postrel, 2002), are in play. When valuable knowledge is bound within individuals, social complexities complicate its leveraging (Nonaka, 1994). As such, to effectively leverage knowledge resources requires that individuals understand their shared purpose as well as cooperate in pursuit of that purpose. Thus, in our empirical context, we argue that EO provides the mobilizing vision to use the knowledge and experiences of family members distributed across generations, while a participative strategy provides the coordination mechanism that helps maintain effective, cooperative relationships.

Next, we develop our arguments by drawing upon resource orchestration. We present hypotheses sequentially, building to a three-way interaction.

HYPOTHESES

The logic of resource orchestration provides guidance for building the theoretical and empirical model. First, resource orchestration suggests that resources need to be leveraged and of the leveraging mechanisms—mobilization (EO) and coordination (participative strategy)—mobilization should be the first to consider. This idea is also supported in the family firm literature. Habbershon *et al*. (2010: 21) argue that 'resources and entrepreneurial orientation taken on their own are necessary but not sufficient conditions for long-term success. Without resources, entrepreneurial orientation lacks the means to be realized. Thus without an entrepreneurial posture resources are unexploited, become slack, and lack rejuvenation.' Second, resource orchestration dissuades a focus on certain combinations of resources and the leveraging mechanisms. Specifically, there is no theoretical rationale for investigating the combinations of coordination and resources or mobilizing and coordination. The latter combination lacks

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any resources to affect, while the former is illogical because there is no initial vision for resource usage—that is, coordination is unnecessary without mobilization. As such, following the logic of resource orchestration, we first discuss the interaction of mobilizing (EO) and resources (generational involvement), after which we discuss the interaction of mobilizing (EO), resources (generational involvement), and coordination (participative strategy).

Entrepreneurial orientation, generational involvement, and family firm performance

As a construct, EO is meant to 'reflect how a firm operates' (Wiklund and Shepherd, 2005: 74). That is, EO provides directions for firm behavior. As such, EO offers a lens through which managers and employees see and respond to stimuli. When a firm's EO increases, that lens shades response behaviors toward efforts to be entrepreneurial (i.e., support product innovation, proactiveness, and risk taking). Thus, the use of the firm's resources is expected to be strongly affected by the firm's level of EO.

Within the process of resource orchestration, EO provides the mobilizing vision to use firm resources. By directing the use of resources, EO not only provides an objective, but also helps identify the resources necessary to support the objective. Within family firms, a crucial knowledge resource is represented by 'generational involvement'—the family's human capital spread across generations and reflected by the number of family generations simultaneously involved in the management of the firm (Kellermanns and Eddleston, 2006). Greater levels of generational involvement yield groups of family employees with heterogeneous knowledge and experiences because the knowledge and experiences tend to be more different across generations than within each generation. However, the knowledge and experiences in such a firm are also complementary because the individuals share some understanding of both the family and the firm (Chirico and Salvato, 2008; Lane and Lubatkin, 1998; Sirmon and Hitt, 2003). These heterogeneous yet complementary resources provide *potential* support for entrepreneurial initiatives (Smith and Di Gregorio, 2002; Teece, 1986). For instance, Zahra (2005) found that increased generational involvement enhances innovation, while Zahra *et al*. (2007: 1076) found that generational involvement facilitates new product development.

Specifically, this potential is based on how complementary knowledge supports differences in: (1) the awareness of cues for opportunities in the marketplace; (2) the interpretation of these cues; and (3) the response needed to exploit the opportunities (Casillas *et al*., 2010; Cruz and Nordqvist, forthcoming; Martin and Lumpkin, 2003). Generational involvement provides knowledge with the potential to increase the effective identification and assessments of opportunities, as well as creative approaches to exploit them. However, significant challenges exist for firms pursuing entrepreneurship with the complementary knowledge and experiences of generational employees—challenges that can inhibit their potential. Evidence suggests that increased generational involvement heightens conflict within family firms (Chirico and Nordqvist, 2010; Davis and Harveston, 1999; Ling and Kellermanns, 2010). Often differences in viewpoints among multigenerational family members are 'perceived as personal attacks' (Jehn, 1997: 532). Indeed, family firms have been identified as 'fertile fields for conflict' (Harvey and Evans, 1994: 331).

Relational conflict—'which typically includes tension, animosity, and annoyance among members within a group' (Jehn, 1995: 258)—is particularly detrimental to family employees because such conflict persists and surfaces in most aspects of their lives, including both family and business environments (Kellermanns and Eddleston, 2004). Thus, the negative emotions engendered by relational conflict are especially damaging in family firms because they are difficult to escape. In fact, Jehn (1995) recognizes that relational conflicts have greater negative effects in highly closed and interdependent communities, such as family firms, than in other groups.

Persistent conflict—and the negative emotions it engenders—affects entrepreneurial efforts. Previous research shows a negative association between relational conflict and entrepreneurial behavior and performance in groups (Evan, 1965; Gladstein, 1984; Pelled, 1996). Relational conflicts 'reduce employees' ability to recognize alternative approaches and can prevent them from integrating diverse sources of information into innovative products' (Jehn and Bendersky, 2003: 207), making it increasingly difficult to assess and accept others' ideas, and to incorporate them in successful innovative efforts. In fact, 'relationship conflicts interfere with task-related effort because members focus on reducing threats, increasing power, and attempting to build cohesion rather than working on the task' (Jehn, 1997: 531).

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Additionally, relational conflict prevents another type of conflict, which is actually beneficial: task conflicts, or the disagreements that refines the firms' goals and strategies by considering options more comprehensively (Kellermanns and Eddleston, 2004; Jehn, 1995). When emotionally charged, decision makers forego logical arguments in favor of more principled approaches (Koppius, Germans, and Vos, 2005), thereby limiting the range of actions considered.

To avoid conflict and strained relationships, a reasonable strategic alternative is to resist the mobilizing vision of EO and instead maintain the status quo, a course of action that does not require debate and provides familiarity for decision makers (Hackman, Brousseau, and Weiss, 1976). Path dependency, however, mires 'managers in a single way of seeing and doing things' (Miller, 1993: 122) and increases the risk of familiarity traps (Ahuja and Lampert, 2001), which further limits the search for new solutions. In fact, the relational conflict that can accompany generational involvement may stimulate 'revenge, retaliation, and further escalation of conflict' (Jehn and Bendersky, 2003: 207). This can lead some family members to disagree with others even if they recognize that the decision is reasonable (Kellermanns and Eddleston, 2004). Accordingly, Amason and Schweiger (1994) propose that relational conflicts cause group members to misinterpret constructive debate as personal criticism, which inhibits the implementation of decisions and demotivates employees (Gladstein, 1984).

As such, we argue that while mobilizing generational involvement with EO provides the potential for positive outcomes, the development of relational conflict (1) creates negative emotions, (2) reduces effective communication and prevents positive task conflict, and (3) inhibits the implementation of decisions, which promotes myopic, path-dependent strategies—all of which undermine this potential. Therefore, we posit that the interaction of EO and higher levels of generational involvement will negatively affect family firm performance. Formally:

Hypothesis 1: Increased generational involvement interacts with EO to negatively affect family firm performance.

The interaction of EO, generational involvement, and participative strategy

However, some family firms with high generational involvement successfully engage in entrepreneurial actions (Chirico *et al*., 2011; Upton, Teal, and Felan, 2001; Zahra *et al*., 2004). With care, these family firms are apparently able to mitigate relational conflict generated by increased generational involvement and unlock the positive potential that generational involvement offers to the firm's entrepreneurial efforts.

We argue that coordination is needed to unlock the potential of sufficiently mobilized generational involvement. Participative strategy, where 'strategic decisions are made through consensus seeking versus individualistic or autocratic processes by the formally responsible executive' (Covin *et al*., 2006: 59; Dess, Lumpkin, and Covin, 1997), provides that coordinating mechanism. In fact, participative strategy can be seen as 'an integrative device that allows individuals to better understand where their organization is headed and can reduce individual biases . . . thus motivating individuals to maximize firm performance' (Eddleston and Kellermanns, 2007: 552). Accordingly, research suggests that constructive, open group discussions, where participants share ideas, knowledge, and experiences (Burgelman and Hitt, 2007), help members see problems from different angles which, in turn, leads to more creative and innovative ideas (Jehn, 1995; Jehn and Bendersky, 2003) and their conversion into a performance advantage (De Clercq *et al*., 2010).

More specifically, participative strategy is crucial for family firms to ensure the value-creating coalignment of individuals across generations, whereby relational conflicts are mitigated while task conflicts are encouraged, knowledge is shared, and cooperation is supported. In short, participative strategy leads family firms to 'reduce rancorous conflict and isolation between organizational units; create mechanisms for exchange of information and new ideas across organizational boundaries; ensure multiple perspectives are taken into account in decisions, and provide coherence and direction to the whole organization' (Kanter, 1983: 28).

First, participative strategy helps reduce relational conflict in family firms by offering a context that encourages family members to voice their input, thereby reducing misunderstandings and other frustrations, while also fostering commitment (Ibrahim, Soufani, and Lam, 2001). With increased use of participative strategy, family members across generations are expected to voice their heterogeneous perspectives, enabling constructive interactions (cf. task conflict; Johannisson, 2002; Johannisson and Huse, 2000). Constructive interactions improve the

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co-alignment of individuals 'because the synthesis that emerges from the conflict is generally superior to the individual perspectives themselves' (Jehn and Mannix, 2001: 239). The benefits of participative strategy follow Folger's (1977) theory of 'voice,' which argues that encouraging individuals to voice their opinions mitigates conflict and enhances constructive interactions and knowledge sharing. Consequently, participative strategy reduces negative emotions and fosters commitment and better communication (De Clercq *et al*., 2010).

Second, when knowledge sharing increases and negative relational conflict is reduced through participation, path dependency is mitigated and the search for innovative and proactive products is unleashed. Indeed, Miller (1993) views participation as valuable to counteract path-dependent behaviors and foster entrepreneurship. However, not every new opportunity or idea is worth pursuing. While EO mobilizes family members to search for new opportunities, the coordination provided by a participative strategy ensures the most effective vetting of those opportunities. Voicing ideas openly allows others to interpret and value possible opportunities in the marketplace. With multiple generations sharing their pertinent knowledge about prior strategies, competitors' prior reactions, new technologies, and buyer/supplier tendencies, a participative strategy facilitates the cooperation of individuals so as to enable the selection of the best opportunities available. Supportively, Ling and Kellermanns (2010) found that family members' heterogeneity is positively related to firm performance when information exchange is high.

In total, we expect that participative strategy is vital to unlock the potential value that generational involvement possesses when mobilized by EO. As a coordinating mechanism, participative strategy not only mitigates relational conflict, but also maintains cooperative relationships that enhance the utilization of the heterogeneous yet complementary knowledge and experiences found in increased generational involvement. Thus, our arguments suggest that a three-way interaction among EO, generational involvement, and participative strategy will result in a positive effect on family firm performance. Formally:

Hypothesis 2: A three-way interaction among EO, generational involvement and participative strategy positively affects family firm performance.

METHODS

Data for this study were collected with a survey of 199 Swiss family firms. Surveying firms was necessary because secondary data for private family firms were not readily available, especially for factors of theoretical interest in this study. To select firms for the survey, we identified all the companies registered with the Chamber of Commerce in Canton Ticino, located in Switzerland's Italian-speaking region. This provided a sampling frame of 967 firms. Then, following Zahra (2005) and Miller *et al*. (2008), we determined whether the firms were family owned by multiple family members of the same family (the majority of equity owned by the family). A total of 592 firms were family firms. We sent the survey to these firms, and we received 199 usable responses, which resulted in a response rate of 33.61 percent.

We compared the responding companies' size, age, and industry with those of nonrespondents (whose data were provided by Swiss Firms) and found no statistically significant differences. Moreover, no statistically significant differences were found between early and late respondents.

The survey targeted the firms' two highest executives (the CEO and the next-highest senior employee). Collecting data from two respondents—which is strongly encouraged to overcome methodological weaknesses (Uhlaner *et al*., forthcoming)—allowed us to avoid issues associated with single-informant data. First, we addressed inter-respondent reliability by correlating the responses per firm. The result indicates significant inter-respondent reliability (Pearson correlation index = 0.797; $p < 0.001$; intraclass correlation coefficient = 0.789; $p < 0.001$). Regarding generational involvement, we found differences in only a few cases. When a mismatch occurred, we personally called the firm to obtain the accurate data.

Next, we addressed the issue of common methods bias in several ways. First, we used the second respondent's data for the dependent variable and the first respondent's data for the independent variables.[1] We also took two additional steps to mitigate any remaining concerns related to common methods bias. First, we used Harman's one-factor test on items included in our regression model. The results

[1] We also ran the regression analysis by using the first respondent's data for the dependent variable and the second respondent's data for the independent variables; results did not differ substantially from our reported analyses.

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showed six factors with eigenvalues higher than 1, accounting for 67.68 percent of the variance. The first factor explained 26.85 percent of the variance, and the remaining factors accounted for 40.83 percent. Because the analysis found multiple factors and the first factor did not account for the majority of variance, this analysis shows that the factors structure is not an artifact of the measurement process, thereby suggesting common methods bias is not a threat. Second, we used objective secondary data for the following control variables: size, age, and industry.

We developed the survey in a series of steps. The questionnaire was first developed in English and then, given that Canton Ticino is an Italian-speaking region, translated into Italian through a translation and back-translation procedure by two university academics fluent in both languages. Following this step, the questionnaire was pilot tested on six senior executives belonging to three family firms (two from each firm) and on five academics whose expertise focuses on research methodology and family firms. Their comments on the content of the survey instrument, item wording, terminology, and clarity were incorporated into a revised instrument. Next, the refined instrument was piloted again on a larger sample of 53 family firms (which are not part of our final sample), and final revisions were made. These revision efforts created an instrument that provides high reliability (Cronbach's α ranging from 0.80 to 0.87). The study's key constructs and items, which are measured on a five-point scale, are reported in Appendix 1.

Dependent and independent variables

Performance was assessed through four related financial items regarding net profit, sales growth, cash flow, and growth of net worth ($\alpha = 0.85$) (Naldi *et al*., 2007; Wiklund and Shepherd, 2003).

While several measures of *EO* exist, we relied on the widely used instrument developed by Miller (1983) (also see Kellermanns and Eddleston, 2006). The scale accounts for product innovation, proactiveness, and risk taking ($\alpha = 0.87$).

In order to measure *generational involvement*, we asked the respondents to report the number of generations (one, two, three, or more than three) simultaneously involved in the management of the firm (see Kellermanns and Eddleston, 2006; Zahra, 2005).

Participative strategy was measured with the five-item scale Eddleston and Kellermanns (2007) adapted for use in family firms based on the information-processing structure scale originally developed by Thomas and McDaniel (1990). The scale assesses the level of participation in an organization's strategy-making process ($\alpha = 0.87$).

Control variables

We also controlled for four variables—age, size, environmental dynamism, and industry—believed to influence the relation between our dependent and independent variables. First, because the age of a firm may affect both its entrepreneurial efforts and its performance (Leonard-Barton, 1992), we controlled for *age* by measuring the number of years the firm had been in existence. Second, because access to external resources is easier for larger firms and this access can affect entrepreneurship and performance (Zahra and Nielsen, 2002), we controlled for *size* by measuring the number of full-time employees. This value was logged to address issues with its raw distribution. Third, because firms that operate in dynamic environments are likely to be technology intensive and, thus, need to systematically explore entrepreneurial opportunities, we controlled for *dynamism* (Zahra and Bogner, 2000). This factor was measured with a three-item index taken from Jansen, van den Bosch, and Volberda (2005): 'environmental changes in our local market are intense,' 'customers regularly ask for complete new products and services,' and 'in our market, changes are taking place continuously' ($\alpha = 0.80$). Lastly, because industries may differentially encourage companies to develop new and innovative products, take risks, and be more proactive, we controlled for industry type. The agriculture industry is used as the comparison industry, with dummy variables differentiating the following industries: electronics, trade, construction, manufacturing, transportation/communication, finance, services, and others.

RESULTS

Regression analysis was utilized for hypothesis testing, and the descriptive statistics and correlations of the study's variables are presented in Table 1. However, we took several steps to ensure the data were appropriate for these analyses. First, before

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Table 1. Descriptive statistics and correlations

Variables	**Mean**	**SD**	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Performance	3.918	0.563														
2. Age	46.270 0	39.385	–0.038													
3. Size	92.331	738.393	–0.069	0.82												
4. Dynamism	3.266	0.722	0.075	–0.064	–0.166											
5. Electronics	0.040	0.196	–0.243	–0.102	–0.023	0.102										
6. Trade	0.246	0.431	–0.031	0.175	–0.052	0.080	–0.117									
7. Construction	0.140	0.348	0.046	0.117	–0.035	–0.002	–0.083	–0.231								
8. Manufacturing	0.196	0.397	–0.092	0.150	–0.028	–0.106	–0.101	–0.282	–0.200							
9. Transportation	0.030	0.171	0.065	0.033	–0.013	0.016	–0.036	–0.101	–0.071	–0.087						
10. Finance	0.015	0.122	0.201	–0.064	–0.014	–0.027	–0.025	–0.071	–0.050	–0.061	–0.022					
11. Services	0.211	0.409	0.064	–0.233	0.164	0.014	–0.106	–0.296	–0.209	–0.255	–0.091	–0.064				
12. Others	0.090	0.287	0.100	–0.128	–0.033	–0.003	–0.065	–0.180	–0.128	–0.156	–0.056	–0.039	–0.163			
13. EO	3.596	0.639	0.252	–0.083	0.009	0.329	0.078	–0.077	–0.110	0.083	0.059	0.088	–0.020	0.129		
14. Generational involvement	1.54	0.548	0.053	0.217	–0.043	–0.066	–0.155	0.057	0.078	0.001	0.095	–0.046	–0.058	–0.118	–0.103	
15. Participative strategy	3.839	0.596	0.616	0.053	–0.028	0.054	–0.013	0.013	–0.041	–0.033	0.067	0.061	0.007	0.068	0.205	–0.068

N = 199; correlations with values of 0.155 or greater are significant at $p < 0.05$; those with values of 0.200 or greater are significant at $p < 0.01$.

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Table 2. Results of regressing performance on EO, generational involvement, and participative strategy

Controls	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Age	–0.050	–0.088	–0.075	–0.076	–0.081	–0.095	–0.027
Size	0.087	0.043	0.036	0.038	0.033	–0.042	0.079
Dynamism	0.092	0.009	–0.019	–0.019	–0.017	–0.038	–0.051
Electronics	–0.159	–0.207*	–0.197*	–0.181*	–0.137+	–0.227+	–0.207
Trade	0.086	–0.027	0.020	0.056	0.148	0.034	0.103
Construction	0.119	0.056	0.097	0.124	0.199	0.148	0.043
Manufacturing	0.015	–0.089	–0.036	–0.004	0.059	0.096	–0.101
Transportation	0.096	0.000	0.024	0.035	0.064	0.134	–0.059
Finance	0.259**	0.171**	0.177**	0.185**	0.218***	0.289**	0.182
Services	0.167	0.043	0.091	0.126	0.197	0.165	0.082
Others	0.164	0.031	0.052	0.073	0.138	0.165	0.091
Variables							
EO		0.166**	0.227***	0.231***	0.236***	0.241*	0.423***
Generational involvement (GI)		0.087	0.069	0.066	0.043	0.147	0.016
Participative strategy (PS)		0.560***	0.559***	0.549***	0.593***		
EO × GI			–0.144*	–0.120+	–0.068	–0.245*	0.252**
EO × PS				0.052	–0.102		
GI × PS				–0.022	0.017		
EO × GI × PS					0.264**		
D R^2	0.140**	0.355***	0.016*	0.000	0.022**		
R^2	0.140	0.495	0.511	0.514	0.536	0.282	0.343
Adjusted R^2	0.090	0.457	0.471	0.468	0.490	0.162	0.235
F	2.772**	12.894***	12.761***	11.257***	11.565***	2.356**	3.175***

N = 199; + p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001.

creating the interaction terms, we centered the variables to minimize multicollinearity problems (Aiken and West, 1991). Inspection of the variance inflation factors (VIFs) showed that multicollinearity was not a concern. All VIF coefficients were lower than 5 (Hamilton, 2006). Next, to check for normality, we employed the skewness/kurtosis tests (sktest command). Performance appeared significantly nonnormal in skewness, kurtosis, and both statistics considered jointly. Based on the results of STATA's 'ladder' command, a square transformation was needed for performance to closely resemble a normal distribution ($\chi^2(2) = 3.64$; $P(\chi^2) = 0.162$)[2] (Hamilton, 2006). Third, to test for heteroscedasticity, we screened the data with the help of the Breusch-Pagan/Cook-Weisberg test and the White test (Cameron and Trivedi's decomposition of the IM-test). The former tests whether the estimated variance of the residuals from a regression is dependent on the values of the independent variables; the latter establishes whether the residual variance of a variable in a regression model is constant. Both the Breusch-Pagan/Cook-Weisberg test ($\chi^2(1) = 0.088$; prob > $\chi^2 = 0.3470$) and the White test ($\chi^2 = 95.35$; p = 0.9527) indicated that heteroscedasticity was not a concern in our study (Hamilton, 2006).

We tested the hypotheses in seven models, reported in Table 2. Model 1 offers a test of the control variables only. Model 2 includes the direct effect of EO, generational involvement, and participative strategy on performance. Results indicate that EO and participative strategy have a direct positive and statistically significant effect on performance, but generational involvement is not statistically significant.

[2]The results presented are those with the transformed performance variable because they are methodologically superior. However, we ran the same models with the nontransformed performance variable and found that these results did not differ substantively from those presented. This eases concerns about interpretation. Moreover, this comparison acts as a robustness check of our conclusions.

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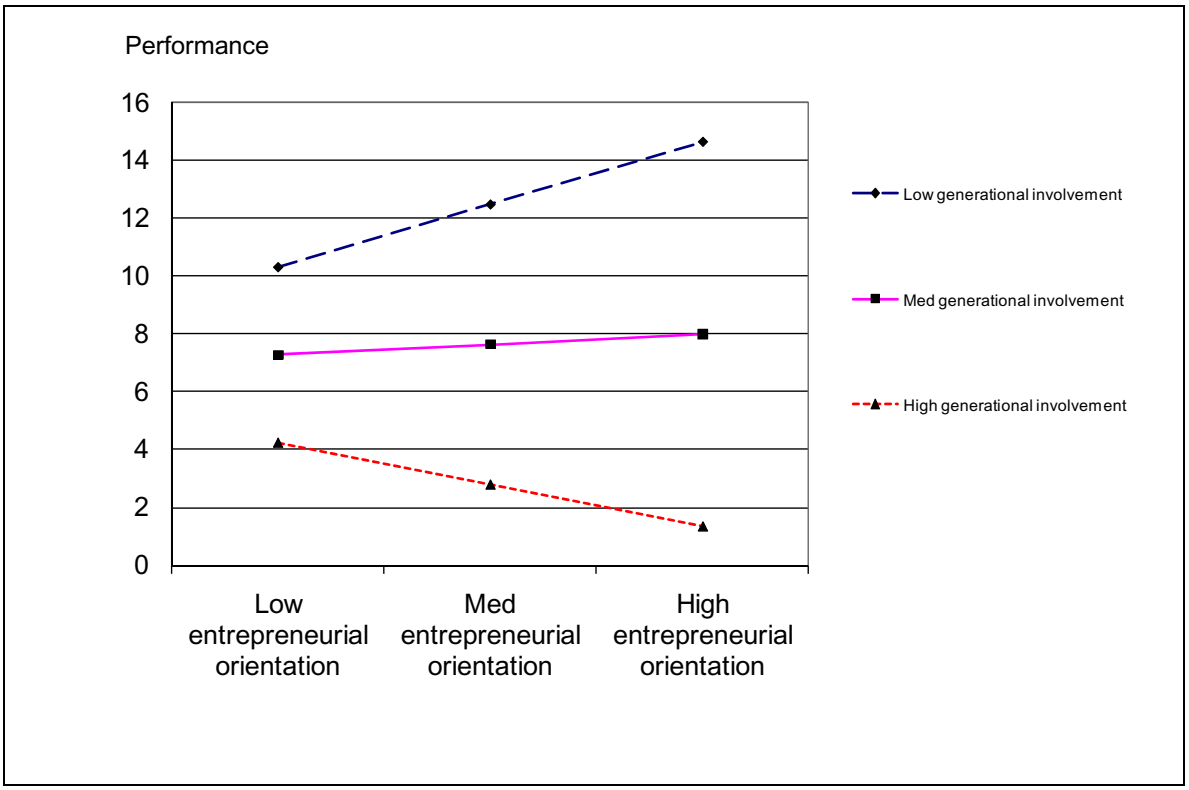


Figure 1. The effect of generational involvement on the EO/performance relationship

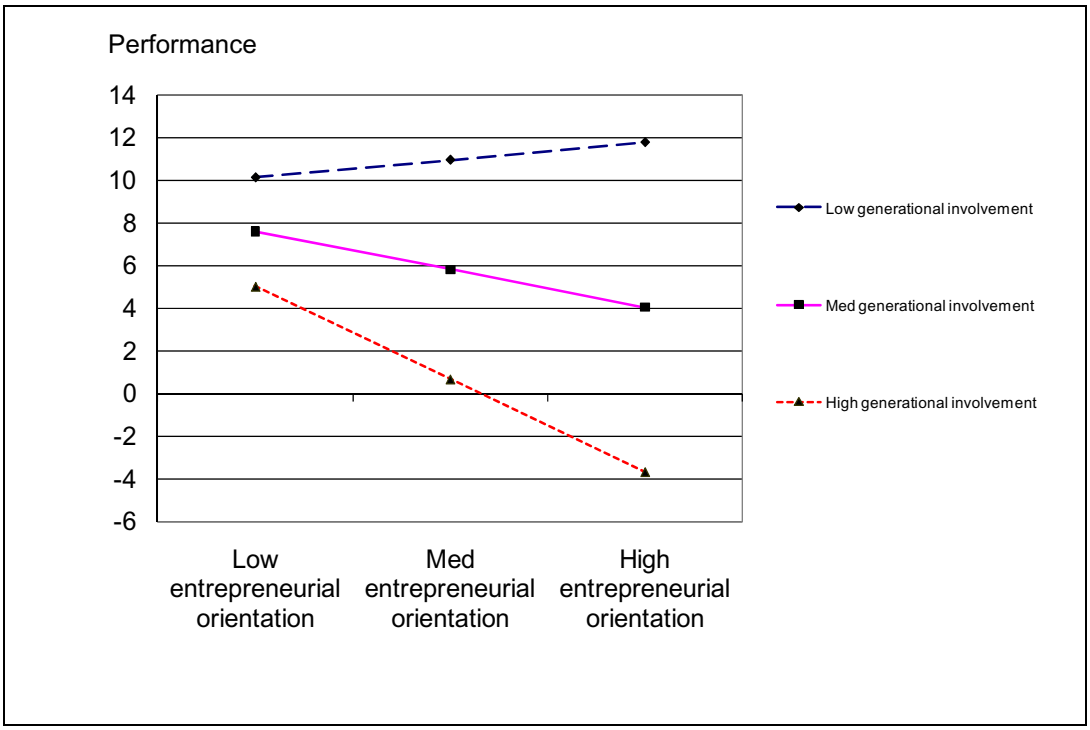
Hypothesis 1 argues that EO and generational involvement interact to negatively affect performance. As seen in Model 3, the interaction term (EO* generational involvement) was negative and statistically significant. Thus, Hypothesis 1 is supported. Moreover, the results offered in Model 4 corroborate this result. This model includes all two-way interaction needed before testing the three-interaction hypothesis. Even with these other interaction terms, the effect of EO by generational involvement remains negative and statistically significant (although marginally so). We also graphed the interactions of generational involvement and EO on firm performance in Figure 1. As expected, the plot reveals that performance suffers as EO and generational involvement increase.

Model 5 presents the test of Hypothesis 2, according to which a three-way interaction among EO, generational involvement, and participative strategy positively affects family firm performance. We tested Hypothesis 2 in two ways: once in the full sample and once with split samples. Both approaches support Hypothesis 2. Model 5 indicates that the three-way interaction is positive and statistically significant. Next, we further investigated the three-way interaction by splitting the sample using a median split of participative strategy (see Aiken and West, 1991; Hitt *et al.*, 2001). This allowed us to separately test the interaction in each subgroup (one group with high participative strategy and the other group with low participative strategy). We ran separate regression analyses with each subsample and, as expected, the interaction between EO and generational involvement is negative and statistically significant in the low participative strategy subsample, and the interaction between EO and generational involvement is positive and statistically significant in the high participative strategy subsample (see Models 6 and 7, respectively).

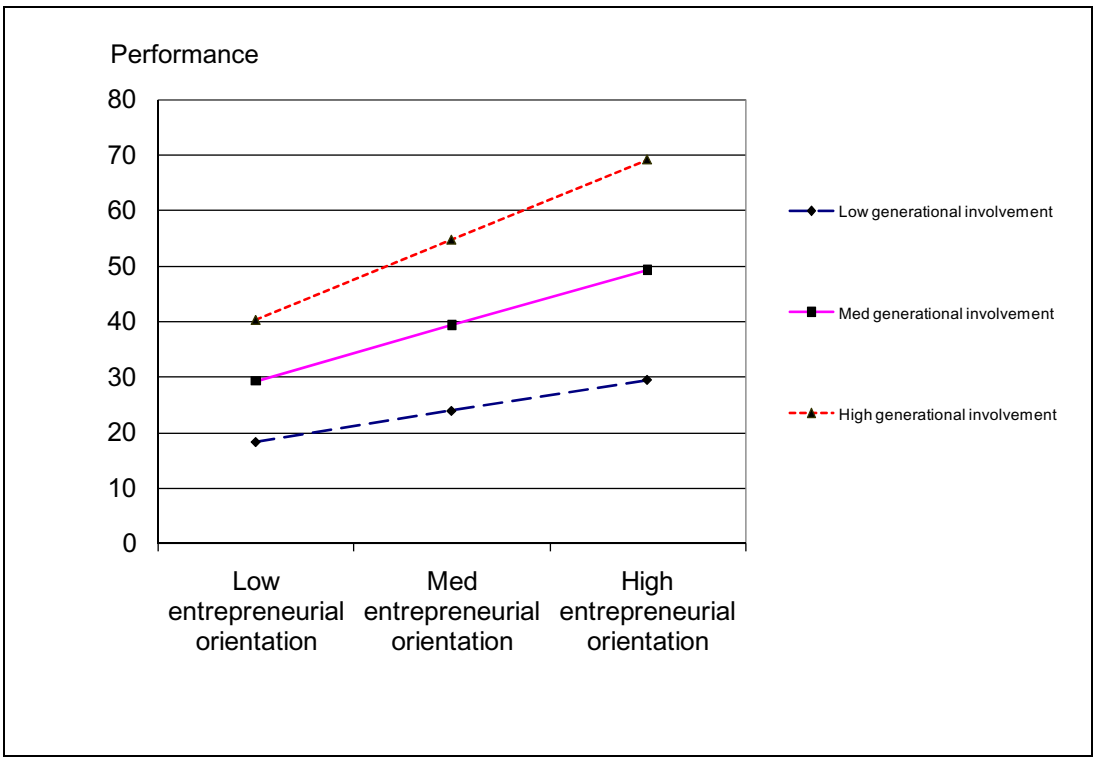
We used the results in Models 6 and 7 to graph the effects in Figures 2a and 2b. As shown in Figure 2a, in the low participative strategy group, the combination of high levels of EO and generational involvement negatively affect performance. Next, as seen in Figure 2b, the combination of high levels of EO, generational involvement, and participative strategy produce the greatest results.

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a) Low participative strategy



b) High participative strategy

Figure 2a, b. Interaction among EO, generational involvement, and participative strategy

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Lastly, because the components of EO are often tested separately, we ran *post hoc* analyses to assess the robustness of our results. Specifically, we separately tested: (1) the effect of generational involvement and each of the components of EO (i.e., product innovation, proactiveness, and risk taking); and (2) the three-way interaction among generational involvement, participative strategy, and each of the components of EO. All results were substantively similar, with the three-way interaction supported in each case (respectively, 0.221, $p < 0.05$; 0.269, $p < 0.01$; and 0.157, $p < 0.05$).

DISCUSSION

Family firms clearly possess unique characteristics that may be persuasively argued to either support or inhibit entrepreneurship. However, polarized debate over family firms being either a positive or negative context for entrepreneurship (Granata and Chirico, 2010) may obfuscate the complexity of realizing performance benefits from entrepreneurship in family firms. Drawing upon the process of resource orchestration, we work to advance this debate and our understanding of entrepreneurship in family firms. In total, we argue that a delicate combination of mobilization and coordination is needed for multiple generations to use their heterogeneous yet complementary knowledge resources for performance gains. More specifically, we focus on how EO provides the vision to mobilize generational involvement in support of entrepreneurial initiatives, while participative strategy provides the coordinating mechanism by which individuals maintain their effective co-alignment and cooperation to share knowledge. Only with all three factors present will the benefits from entrepreneurship be fully realized. And, importantly, misalignment among these factors can lead to very negative results.

We began with EO and generational involvement, because (1) EO provides the vision to mobilize the knowledge within the firm and (2) generational involvement, a unique characteristic of family firms, provides rich knowledge resources to support entrepreneurial endeavors. In support of our hypothesis, we found that, indeed, despite great potential, this combination negatively affects performance. Our arguments suggest that increased levels of relational conflict generated by the presence of multigenerational family members not only inhibit potential gains, but also lead to path-dependent behaviors.

We next argued that participative strategy acts as a coordinating mechanism to overcome those negative issues and unlock the potential of EO-mobilized generational involvement. Specifically, the results support our logic that participative strategy enables cooperation among employees, ensuring their effective co-alignment, which not only reduces relational conflict but allows constructive group interaction that helps utilize the heterogeneous yet complementary knowledge and experiences of multigenerational family members to support the mobilizing vision offered by EO. Support for this argument is robust.

Reviewing the graphs of Hypothesis 2 provides a clear understanding of the joint effects of EO, generational involvement, and participative strategy. As seen in Figure 2a, which focuses on firms with *low* participative strategy, performance suffers greatly when the firm's EO mobilizes increased levels of generational involvement. In fact, this effect grows worse as the number of generations involved increases. Also, the only context with a positive slope in the low participation group is that in which one generation is present. And this slope is very modest.

Next, Figure 2b focuses on the firms with *high* participative strategy. In all cases the slope is positive, but the highest level of performance is achieved when both EO and generational involvement are high. The coordination offered by participative strategy encourages cooperation among multigenerational family members offering heterogeneous yet complementary knowledge and allows the vision of EO to be pursued more effectively, thereby improving performance. Thus, it appears that generational involvement and participative strategy, when 'appropriately' synchronized together with EO, may lead to what Habbershon *et al*. (2010: 1) define as *transgenerational entrepreneurship*: that is, 'the process through which a family uses and develops entrepreneurial mindsets and family influenced capabilities to create new streams of entrepreneurial, financial, and social value across generations.'

These results offer several contributions to the family and nonfamily firm literatures. First, while most research considers family firms as a homogeneous group, calls to investigate behavioral differences among family firms are being issued with greater frequency (Chrisman, Chua, and Sharma, 2005; Sharma, 2004). In response, we demonstrate how EO, generational involvement, and participative strategy are crucial differentiators across family

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firms. As such, our work contributes to the ongoing debate over whether the family firm context is conducive to EO and positive results (Lumpkin *et al*., 2010; Nordqvist and Zellweger, 2010) and why not every family firm is able to effectively exploit entrepreneurial opportunities (Chirico and Nordqvist, 2010; Stewart *et al*., 2010). Specifically, our study shows that the highest-performance outcomes are achieved only by those family firms with an 'optimal synchronization' (high levels of EO, generational involvement, and participative strategy). The arguments and empirical results herein, thus, extend and clarify how the interaction of these three factors positively affects family firm performance.

Second, our study also sheds some light on previous work that offered mixed results regarding the effect of family involvement on the EO/performance relationship (Casillas and Moreno, 2010; Casillas *et al*., 2010). That is, we find increased generational involvement strengthens the EO/performance relationship only when the family firm operates in a participative-oriented manner.

Third, the present study is the first effort directed to explicitly applying the emerging research stream of resource orchestration to a family firm context. Our work extends the understanding of resource orchestration by theoretically and empirically addressing the role of family members' actions to effectively mobilize and coordinate knowledge resources across generations to achieve higher-level performance. Most importantly, it specifies *how* (i.e., the process) and *when* (i.e., in which circumstances) multigenerational family members are able to use their heterogeneous knowledge to turn entrepreneurial orientation into positive outcomes. Our study confirms that the synchronization of mobilization and coordination is necessary for optimal results (Sirmon *et al*., 2007; Sirmon *et al*., 2011). Even more, the failure to synchronize these processes can lead to negative outcomes. Thus, this work helps offer detailed accounting of the mechanisms through which knowledge resources can be leveraged to increase performance.

Fourth, we contribute to the literature on EO. While much of the prior EO research focused on identifying external nonmanagement-related factors (e.g., environmental conditions) (see Covin and Slevin, 1989; Lumpkin and Dess, 2001; Zahra and Covin, 1995) conducive to EO effectiveness, moderating factors within the firm have often been overlooked. As Wiklund and Shepherd (2003: 1308) underline, 'EO scholars have empirically explored the independent effect of EO on performance (e.g., Zahra and Covin, 1995) and its contingent relationship with the external environment (e.g., Covin and Slevin, 1989) but have largely ignored Lumpkin and Dess' (1996) call for research that also investigates how characteristics internal to the firm moderate and mediate the EO-performance relationship.' Accordingly, our model investigates the context or factors internal to a firm. In line with previous studies, our work shows that both resources (e.g., Wiklund and Shepherd, 2003) and utilization (e.g., De Clercq *et al*., 2010) are important to EO effectiveness. However, we extend previous EO research by suggesting that resources are necessary, but not sufficient, to pursue EO and higher performance when coordination is not promoted.

Following these arguments, another contribution emerges from this work: we challenge previous research based on nonfamily firm samples that depicts participative strategy as detrimental to resource-processing efficiency (Jansen *et al*., 2005) and EO effectiveness (Covin *et al*., 2006) because of the difficulty of gaining consensus among decision makers. Among family firms with multiple generations involved, we find that a participative strategy is very important. Participation allows the interplay among a variety of perspectives and leads to a rich internal network of heterogeneous knowledge that supports the effective use of resources (cf. Chirico, 2008; Chirico and Salvato, 2008; Chirico *et al.,* forthcoming). As Hall *et al*. (2001: 205) explain, '(t)he potential of being entrepreneurial does, indeed, exist in the social relations of the organization' where 'values and ideas are clearly expressed and experienced by the organizational members' in 'an atmosphere in which employees feel encouraged to express their ideas and criticism.'

In addition, from a methodological point of view, relying on two respondents from each company and using a combination of data for the regression analysis advance rigor in family firm studies that in survey research usually rely on a single informant (e.g., Casillas *et al*., 2010; Uhlaner *et al*., forthcoming) or include partial data of the second informant to run inter-respondent reliability (e.g., Zahra, 2005). Also, to the best of our knowledge, our work is pioneering in the use of a three-way interaction to better explain family firm performance.

Finally, the direct effects of EO and participative strategy on performance are worth highlighting (see Model 2). While noting that their interpretation requires caution because they are produced in a

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theoretically underspecific model, we see that EO and participative strategy positively affect performance in family firms. In line with previous family firm (e.g., Eddleston and Kellermanns, 2007; Kellermanns *et al*., 2008) and nonfamily firm studies (e.g. Jennings and Lumpkin, 1989; Rauch *et al*., 2009), EO and participation individually offer important elements for performance gains, but their most important effect is realized when coupled with resources.

Future research

The results outlined earlier and the following limitations suggest several issues that future research might explore. First, as a limitation, we do not directly measure relational conflict in the family firm, but instead argue that such conflict is the result of the uncoordinated generational involvement mobilized by EO. This leads to curiosity about the types of conflict that may emerge among people belonging to different branches of the family within the same generation, as well as among siblings and even between active and non-active family members. Future work clearly needs to be channeled toward these directions. Further, future studies may draw upon longitudinal data to explore how conflicts evolve across generations in the family firm. This might help explain why only some family firms survive across multiple generations. We would predict that family firms most adept at integrating new generations in entrepreneurial decision making are most likely to be successful.

Second, we depict participative strategy as a means through which multiple generations in the family firm are effectively engaged. However, it may be that there is an optimal level of participative strategy beyond which performance is negatively affected. Even though open discussion has positive effects, too much discussion may paralyze the firm. A future line of research may also explore the degree of overlap between the concepts of participative strategy and family meetings in a family firm context.

Additionally, family ownership concentration may affect these relationships. Thus, future work could add value by addressing how ownership dispersion across generations may affect these relationships. We expect that family firms with high generational ownership dispersion will have the highest relational conflict, making participative strategy all the more important. Future work should also investigate how other resources, besides the broad type of human capital offered by generational involvement, matter in our model. Similarly, our model could be extended by adding environmental variables that may interact with EO, resources, and strategic variables. In other words, future research may arrive at a configurational model (Meyer, Tsui, and Hinings, 1993; Wiklund and Shepherd, 2005) of family firm performance.

Lastly, we focused on an important resource, but future work could consider the leveraging of the firm's resource portfolio, which is likely to contain weaknesses (Sirmon *et al*., 2010). This effort would provide greater understanding of leveraging resources in family firms.

Implications for practice

Our results also inform organizational practices. Employees with different knowledge and experiences offer the potential to enable a positive EO-performance relationship. However, knowledge heterogeneity will likely have a negative effect unless those members can work together effectively. Indeed, '(a)lthough ideas are formed in the minds of individuals, interaction between individuals typically plays a critical role in developing these ideas. That is to say, 'communities of interaction' contribute to the amplification and development of new knowledge' (Nonaka, 1994: 15). Accordingly, encouraging 'participants in the dialogue . . . to express their own ideas freely and candidly' is important (Nonaka 1994: 25).

Thus, in family firms, older generations are invited to accept the knowledge of younger generations. At the same time, the younger generation must appreciate previous generations' knowledge and experiences within a participative environment (Chirico, 2008). Moreover, while we show herein that in the context of family firms, mobilization and coordination are needed to leverage knowledge resources, the logic may apply to other organizational forms that share similar complex social arrangements, such as not-for-profit and high-reliability organizations.

In conclusion, we hope this research informs, extends, and encourages future work on resource orchestration, EO, and family firms and helps these firms better understand how family involvement can be a source of advantage.

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APPENDIX 1

Key constructs and items

Construct	Items
Entrepreneurial orientation	$\alpha = 0.87$
	Our company has introduced many new products or services over the past three years.
	Our company has made many dramatic changes in the mix of its products and services over the past three years.
	Our company has emphasized making major innovations in its products and services over the past three years.
	Over the past three years, our company has shown a strong proclivity for high-risk projects (with chances of very high return).
	Our company has emphasized taking bold, wide-ranging action in positioning itself and its products or services over the past three years.
	Our company has shown a strong commitment to research and development, technological leadership, and innovation.
	Our company has followed strategies that allow it to exploit opportunities in its external environment.
Participative strategy	$\alpha = 0.87$
	Over the last three years: - Decision making in our company is participative. - The top decision makers in our company interact with all family members on an informal basis. - All family members in our company participate in strategic decision making on a regular basis. - Decision making in our company is interactive. - There is free and open exchange of ideas among family members about any strategic issue.
Performance	$\alpha = 0.85$
	How would you rate your company's performance as compared to your competitors? Past three years: - Net profit - Sales growth - Cash flow - Growth of net worth

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