

**KNOWLEDGE RESOURCES AND PERFORMANCE: THE MODERATING ROLE  
OF FAMILY INVOLVEMENT IN STRATEGY PROCESSES**

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**ABSTRACT**

According to the resource based view (RBV), knowledge resources can be sources of competitive advantage. Yet, performance also depends on how these resources are managed and leveraged in strategy processes. We investigate how the effect of knowledge resources on performance is moderated by the involvement of the firm's owner family in both business level and corporate level strategy. We find that family involvement in business strategy enhances the performance implications of knowledge resources, while family involvement in corporate strategy has negative performance implications for the usage of these resources. This study sheds new light on the potential benefits and drawbacks of family involvement in strategy processes and offers both theoretical and practical implications.

**Keywords:** resource based view, resource management, corporate strategy, business strategy, family involvement, family firms

## INTRODUCTION

The resource-based view (RBV) holds that firms build strategies and compete on the basis of their resources. It considers intangible resources, such as knowledge, as important sources of sustained competitive advantage and superior performance because they are difficult for a firm's competitors to imitate or copy (Barney *et al.*, 2001; Villalonga, 2004; Wiklund *et al.*, 2003). The relationship between knowledge resources and firm performance is especially important to disentangle in family firms because family firms are said to exhibit both advantages and disadvantages in the resource management processes of intangible resources (Eddleston *et al.*, 2008; Sirmon *et al.*, 2003; Zahra *et al.*, 2004). On the one hand, the integration of the family and the business can provide a context for the development of intangible resources, such as knowledge, which are difficult for rivals to imitate because of their embeddedness in the family relations and history (Arregle *et al.*, 2007; Carney, 2005; Habbershon *et al.*, 1999). On the other hand, however, family firms often face limited access to resources such as external knowledge (Miller *et al.*, 2010; Schulze *et al.*, 2001).

Recent developments within the RBV suggest that the value of resources largely depends upon their utilization and management (Helfat *et al.*, 2003; Holcomb *et al.*, 2009; Priem *et al.*, 2001a; Sirmon *et al.*, 2007). Specifically, the extent to which a firm's stock of intangible resources may contribute to its performance depends on effectively deploying these resources through distinct strategic management processes (Sirmon *et al.*, 2011). In family firms, strategic management processes are influenced by the priorities, goals and values of the controlling family (Arregle *et al.*, 2007; Chrisman *et al.*, 2009; Sirmon *et al.*, 2003). Thus, family involvement in strategic management processes can play an essential role in explaining how intangible resources are used to drive performance (Stewart *et al.*, 2010).

Despite repeated calls for research that considers family involvement in different strategic management processes (Chrisman *et al.*, 2005; Le Breton-Miller *et al.*, 2009;

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Sharma *et al.*, 1997) there is a substantial lack of empirical research. This is problematic not only given the relevance of family firms across the world but also because strategic management is distinct as a result of family involvement (Cruz *et al.*, 2010; Gomez-Mejia *et al.*, 2007; Miller *et al.*, 2010). In particular, scholars have paid little attention to the relationship between family involvement in strategic processes at different levels—corporate or business level—and the management of intangible resources.

The differentiation between corporate and business strategy is important in the family business context. Family business researchers maintain that family members are efficient managers of their present business activities (Carney, 2005; Hall *et al.*, 2006). However, much less is known about their role in reconfiguring their businesses and in evaluating investment and divestment options (Kellermanns, 2005; Miller *et al.*, 2010; Sharma *et al.*, 2005). More specifically, it has been argued that family involvement may bias decision making in the context of business portfolio reconfigurations given the prevalence of nonfinancial, i.e. socioemotional considerations (Gomez-Mejia *et al.*, 2010; Zellweger *et al.*, forthcoming). Moreover, strategy research has argued that the distinction between business and corporate level strategy processes is especially interesting to explore in small and medium-sized family firms because these firms often face particular constraints (Bowman *et al.*, 2001; Brauer, 2006; Chang *et al.*, 2000).

In this article, we address the aforementioned gaps in the literature and set out to investigate the moderating role family involvement in corporate and business strategy processes on the relationship between knowledge resources and performance in small to midsized private family firms. Thereby, our study makes the following contributions. *First*, we demonstrate the salience of recent developments in the RBV that focus on the contingent relationship between resources and their management (Kor *et al.*, 2004; Sirmon *et al.*, 2009; Sirmon *et al.*, 2007). In this vein we show how family involvement in strategic management

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processes moderates the effects that knowledge resources have on firm performance. *Second*, we heed the call by strategy scholars that it is important to differentiate between types of strategic management processes. By looking at family involvement in both corporate and business strategy processes, we add to the scarce literature on strategic management in private family firms (e.g., Brauer, 2006; Chrisman *et al.*, 2005; Eddleston *et al.*, 2008; Miller *et al.*, 2005). *Third*, we add to the debate on family firm performance (Anderson *et al.*, 2003; Miller *et al.*, 2007; Sciascia *et al.*, 2008; Villalonga *et al.*, 2006) by concentrating on how the impact of family involvement on performance may differ among private family firms depending on the family's actual involvement in strategic management processes.

Our article is structured as follows. We begin by describing the RBV as our theoretical lens and discuss the effects that knowledge resources have on family firm performance. We then introduce the role of family involvement in the corporate and business strategy processes and the moderating impact such involvement has on the main resource-performance relationship. We then present our empirical results, discuss their implications, and close with a discussion of limitations and suggestions for future research.

## **THEORETICAL BACKGROUND**

Knowledge resources can be seen as the way in which firms transform and combine tangible resources in efficient and competitive ways (Galunic *et al.*, 1998; Wiklund *et al.*, 2003). Knowledge resources consist of particular skills and contextual know-how — technical, creative, and collaborative (Miller *et al.*, 1996) — that are embedded in the firm's human capital. Especially knowledge resources that are based on firm-specific expertise can form the basis of competitive advantage and lead to strong performance because they are both unique and relatively hard to imitate (Kogut *et al.*, 1992; Wernerfelt, 1984). They are unique because they depend upon how people cooperate in organizations (Koch *et al.*, 1996) and

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they are hard for competitors to imitate or copy because of their technical and social complexities (Colbert, 2004; Eddleston et al., 2008)

In recent years, scholars have applied the RBV to the study of family firms, highlighting the role of intangible resources. For instance, Habbershon and Williams (1999) use RBV to argue that unique bundles of intangible resources in family firms can generate competitive advantage. However, other scholars acknowledge that family control can lead some family firms to experience resource constraints, such as the limited access to external resources (e.g. financial capital) (Carney, 2005; Sirmon *et al.*, 2003). Habbershon et al. (2003) refer to the negative family influence on resource-performance relationship as constrictive familiness.

We follow Levie and Lerner (2009) in arguing that family firms can compensate for their relative difficulty in attracting external resources (Lubatkin *et al.*, 2005), by managing and leveraging firm-specific, intangible resources—such as knowledge. For instance, prior research suggests that knowledge resources are particularly likely to be developed in family firms (Chirico, 2008; Sirmon *et al.*, 2003). Family firms often form their own valuable ways of doing things such as a specialized technology or particular marketing, manufacturing or distribution know-how. Thus, knowledge resources in family firms are often built up over a long period of time and across family generations in ways that make them rare, and difficult to imitate or substitute, and thereby a source of superior performance (Cabrera-Suarez *et al.*, 2001; Eddleston *et al.*, 2008). In sum, acknowledging that family firms have both potential resource advantages and disadvantages heightens the importance of empirically focusing on how family involvement in a firm's strategic business activities impacts the relationship between resources and performance.

## **Family involvement in strategic management processes**

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Building on the RBV and focusing on how key resources are managed and leveraged (Sirmon et al., 2011), we follow Zahra (2003) and define the degree of family involvement as the extent to which family members are involved in strategic management at both corporate and business levels.

We define the business strategy process as the identification of potential customers and the analysis of competitors' actions in relation to a particular company or business (Andrews, 1971; Zahra, 2003). In family firms, family members may be involved in these business strategy activities because of their position, knowledge, commitment or operative closeness to the firm's core business (Hall et al., 2006). It has been argued that such involvement leads to intimacy with the operative processes and nurtures a homogeneous understanding within the family and the firm about the abilities, challenges and the strategic direction of the firm (Sirmon *et al.*, 2003).

In contrast, corporate strategy process deals with the way in which an organization manages a set of businesses together in order to free or commit resources (Bowman *et al.*, 2001; Grant, 2002). At the core of this strategic management activity is the process of evaluating targets for business investments and business divestments (Brauer, 2006). Thus, we agree with Chang & Singh (2000: 745) that managing 'entry and exit is a critical element of corporate strategy.' Corporate strategy is critical irrespective of the size of the organization or business (Brauer, 2006; Chang *et al.*, 2000), given family firms' long-time horizon and the need to occasionally expand or re-focus the portfolio of activities within a changing environment (Miller *et al.*, 2005; Sharma *et al.*, 2005). Family involvement in corporate strategy is thus about the extent to which the owning family members are involved in evaluating changes in the composition of businesses that constitutes the family firm (Astrachan, 2010; Gomez-Mejia et al., 2010).

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In sum, firms possess two types of strategic management processes that facilitate the deployment of intangible resources into value-creating strategies (Holcomb et al., 2009; Peteraf, 1993; Sirmon et al., 2007). Next we develop specific hypotheses with regard to our central thesis that the impact of knowledge on firm performance will be moderated by these two types of family involvement in strategy processes.

## **HYPOTHESES**

### **The moderating role of family involvement in business strategy**

We hypothesize that family involvement in business strategy positively impacts the relationship between knowledge resources and performance. High levels of family involvement in the activities of business strategy, such as identifying potential customers and examining the actions of competitors, assures that tacit knowledge is efficiently utilized. In family firms, this knowledge is often transferred and developed across generations within the family in a way that makes it not only difficult to imitate by other firms, but also hard to utilize by managers who are non-family members (Cabrera-Suarez et al., 2001; Chirico, 2008). For instance, the family's insights about customers' needs and competitive dynamics in particular markets or industries are generated over time, passed on across generations and facilitated by early involvement of children (Sirmon *et al.*, 2003; Wang *et al.*, 2009). Family involvement in business strategy should thus assure access to the family's insights and experience about markets and competition and create unique capabilities that can lead to performance advantages.

Family involvement in business strategy can also increase the potential to better integrate and recombine knowledge resources with complementary resources so as to create performance advantages. For example, if the family is strongly involved in business level strategy the firm can draw from the tacit knowledge pool of family members and their

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familiarity with the usefulness of their knowledge resources and how these resources can be effectively deployed. As noted by Sirmon and Hitt (2003: 348), recombination is especially important for the management of knowledge resources 'since they are most valuable when bundled with complementary resources'. In practice, these advantages in resource recombination should encourage, for instance, product innovation strategies that leverage the firm's technology base in combination with family-specific resources, such as patient capital and social capital.

Moreover, common features of businesses with high family involvement in business strategy such as shared values, trust and close interaction among organizational members may contribute to identity building (Cruz *et al.*, 2010; Dyer *et al.*, 2006), which facilitates the sharing of critical business knowledge (Cabrera-Suarez *et al.*, 2001). When family members are involved in the business strategy process, formal mechanisms of knowledge sharing can be complemented by informal mechanisms, such as casual conversations in the workplace and/or family meetings after work. For example, Zahra, Neubaum and Larraneta (2007) found that the percentage of managers who are family members strengthens knowledge sharing through informal mechanisms. Thus, family involvement in business strategy facilitates the dissemination and use of information and knowledge, allowing the firms to focus on relevant issues (Mustakallio *et al.*, 2002) and quickly act upon new market information (Gedajlovic *et al.*, 2004).

Finally, family involvement in business strategy makes the imitation of valuable but non tradable resources, such as knowledge resources more difficult. Social complexity and causal ambiguity are likely to be more extensive when family members are highly involved in business strategy activities (Bjuggren *et al.*, 2002; Reed *et al.*, 1990), increasing the uncertainty around the exact links between the firm's knowledge base and its competitive advantage (Carney, 2005).

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Taken together, transferring knowledge resources into positive performance should be particularly supported if the family is involved in the operations and can put its knowledge at use. In contrast to the above, in family firms where there is a lack of family involvement in business strategy the efficient use of the firm's knowledge base may be limited because critical knowledge embedded in the family–firm interaction is underutilized. We thus hypothesize:

*H1: Family involvement in business strategy strengthens the relationship between knowledge resources and performance.*

### **The moderating role of family involvement in corporate strategy**

In addition to business strategy, strategic management involves timely adding to and shedding of businesses and units in order to ensure that performance is sustained over a reasonable period of time (Burgelman, 1996; Sirmon et al., 2007). At the corporate level, 'strategists must not only consider how to gain a competitive advantage in each line of business the firm has entered, but also which businesses they should be in at all' (De Wit et al., 1999: 129). A central activity in the corporate strategy process is to consider entry and exit, that is the acquisition or divestment of business or units (Brauer, 2006; Chang et al., 2000). Evaluating which units are to be acquired or divested is based upon the skills of the organizational actors involved (Makadok, 2001).

Successful corporate strategy making requires considerable experience, a primary source of tacit knowledge. Family firms may have an advantage in this regard, since they often involve family members in the management process much earlier than is possible in most nonfamily firms (Sirmon et al., 2003). However, given the dynamic competitive landscape that often requires adapting a business portfolio beyond its historical roots of the family's industrial activities, such experience may not be sufficient, more precisely, it may actually

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lead to the misuse of human capital. The cumulative experience of the family that has been passed along within the family most often means the usage of prototypes and schemata (Gaglio *et al.*, 2001), against which alternative business activities are matched and evaluated. While greater levels of experience may be useful when assessing known challenges and opportunities, path-dependent experience in the corporate strategy process may become a liability since it leads to biases, heuristics and may mean that one infers too much from limited information, becomes constrained by the familiar or overconfident and overestimates the value of existing knowledge (Baron, 1998; Kahneman *et al.*, 1979). As recent research suggests, in such circumstances, individuals often try to repeat previously successful recipes in new contexts (Ucbasaran *et al.*, 2009; Wright *et al.*, 1997). Family managers may then be inclined to consider that enough is known, independent of the activity under scrutiny.

Our argument about a liability of experience in the corporate strategy process is in line with arguments that leveraging resources across business activities may be hindered by too narrow experience, but supported by a variety of experience (Leidtke, 2001; Priem *et al.*, 2001b). If family firms rely too much on family involvement in assessing the activities to enter and exit, they may lack the needed variety of experience and the capabilities to think outside the existing paths and, in turn, fall prey to an excessively homogenous point of view governed by the family's dominant perspective.

In the context of acquisitions this narrow mindset may result in an inability to effectively exploit the potential of the company's knowledge base in new business activities. In the context of divestments, in turn, the family's point of view may be biased by legacy concerns and socioemotional attachment, inducing the family to persist with using knowledge resources in underperforming activities (Gomez-Mejia *et al.*, 2007; Zellweger *et al.*, forthcoming). Under such circumstances, family members may become core rigidities,

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leading to what has been called liability of familiness (Habbershon et al., 2003), which hinders efficient resource management. We thus hypothesize:

*H2: Family involvement in corporate strategy weakens the relationship between knowledge resources and performance.*

## **METHOD**

### **Sample**

We tested our hypotheses on a sample of 199 Swedish small and medium sized family firms. For screening purposes, a random sample of 2020 firms was interviewed over the telephone<sup>1</sup>. The target respondent was the CEO. Out of the 1633 firms that responded to the telephone interview, 583 answered yes to the following two questions: (a) ‘Are ownership and management control of the company dominated by one family’ and (b) ‘Do you consider your business to be a family business,’ thus meeting our criteria for defining a family business (c.f. Westhead *et al.*, 1998). We sent these 583 firms a mail questionnaire. To ensure the confidential treatment of the information, we agreed not to disclose the names of the CEOs or the company and asked the respondents to return the questionnaires directly to the research team. 199 firms returned usable questionnaires and with complete information on the variables of interest. The response rate of 34 percent compares favorably with other studies on family firms.

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<sup>1</sup> The original sample was framed and selected by Statistics Sweden (the official Swedish Bureau of Census), and comprised 2455 firms. It was designed to be representative of all privately owned small and medium-sized firms registered in Sweden as AB (incorporated firms) in four broad industry groups: manufacturing, retail, professional services and other services. Attempts were made to contact all the 2455 firms of the original sample, and 2020 of them were selected for the study. Reasons for non selection are the following: 104 firms could not be reached or contacted by any means and 166 refused to participate. These 270 firms were dropped from the sample along with 30 firms which had suspended their operations, 14 companies which were government-owned firms and 121 which were deselected for technical reason: they were already involved in other research projects.

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In addition, attempts were made to survey an additional respondent in the 199 responding firms. These family firms were contacted again by phone and a focused questionnaire was sent to a second manager in the firms which agreed to participate.<sup>2</sup> This process resulted in 50 responses after one reminder. We used this information to conduct analysis of interrater reliability, as we illustrate below. Further, the answers to the surveys' instruments were combined with data from a secondary source. The additional information was provided by Statistics Sweden (the official Swedish Bureau of Census) and included data on the firm's start-up year and week, firm industrial sector according to SNI 92, size class (small=9-49 employees; medium= 50-249 employees), profit margin, sales turnover and return on assets (ROA).

The following steps were taken to determine the absence of response bias. First, responding and non-responding companies to the screening phone interview were compared on known attributes. T-tests indicate that responding and non-responding firms did not differ significantly ( $p < 0.5$ ) in their age, sales turnover, profit margin and ROA. Second, responding and non-responding companies to the mail questionnaire were compared on known attributes. T-tests indicate that responding and non-responding firms did not differ significantly ( $p < 0.5$ ) in their age, sales turnover and profit margin, and ROA. In addition, only 12 % of the respondents said that they would not have wanted to be contacted again for a follow-up of the survey, which showed a general interest in the study. Finally, we formally checked for possible nonresponse bias by applying the sample selection technique developed by Heckman (1979).

As a first stage model of this procedure, we obtained a probit estimation of whether the sample is biased. The dependent variable assessed whether the family firm had participated to the mail survey or not. The explanatory variables were firm size (dummy coding whether the

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<sup>2</sup> When contacted by telephone, most firms agreed to participate and to identify another manager if s/he was sent a shorter version of the original questionnaire. Thus, only the scale for measuring the company's knowledge-based resources was included in the questionnaire sent to the second managers.

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firm is small or medium sized), firm age (in years of existence), industry sector (dummy coding the firm industry by their SIC classification into manufacturing, professional services, retailers, and other services), international activities (dummy coding whether the firm had foreign sales). Following the Heckman procedure, we also entered location in main metropolitan areas (i.e. the three largest cities in Sweden; Goteborg, Malmo and Stockholm) in the first stage, but not in the second stage. The predicted values of the probit model were used to calculate the inverse Mills ratio (IMR). The IMR is entered in the regression analyses—second stage models—as a control against possible nonresponse biases (Berk, 1983). As shown in the Results sections, the coefficient of the IMR is not statistically significant. In addition, our findings do not change after the inclusion of this variable in the analysis. This suggests that nonresponse bias does not influence our results.

## Measures

*Dependent variable.* Firm performance is measured as return on assets (ROA) based on objective data which we obtained from Statistics Sweden. ROA is widely used as measure of financial performance in studies on SMEs (Lu *et al.*, 2001; Zahra *et al.*, 2000) and in RBV research (Ray *et al.*, 2004), because it assesses the efficiency in the utilization of the firm's asset base. To establish the causal link of our model we gathered the information about ROA the two subsequent years after the survey. We used two-year average ROA to smooth possible anomalies associated with a single year's performance (Carpenter *et al.*, 2002).

*Independent variable.* Knowledge resources are measured by an index consisting of five items, measured on a five point scale (items of constructs are provided in Appendix). Respondents were asked to rate their companies' endowment of the following knowledge resources over the previous three years: 1) technology know-how, 2) manufacturing know-how, 3) marketing know-how, 4) distribution know-how and 5) human resources. The first

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four items were modeled after Gupta and Govindarajan (2000). We included the human resources item since knowledge resources are based in the firm's human capital (Miller *et al.*, 1996). These items were measured on a five-point scales ranging from 'significantly decreased' to 'increased significantly'. The scale's alpha value of 0.66 is above the recommended value of 0.60 (Nunnally *et al.*, 1994).

*Moderators.* To measure family involvement in strategy processes we used six multiple-item, five-point scales (items of constructs are reported in the Appendix). The first scale is based on Zahra (2003) and captures the degree of *family involvement in the business strategy process* in the following activities: 1) identifying potential customers; and 2) analyzing competition; and 3) selecting business strategy (alpha 0.89). All questions were asked with reference to a particular market or industry (Andrews, 1971; Johnson *et al.*, 2007). The second scale captures the degree of *family involvement in the corporate strategy process* for 1) evaluating targets for business acquisitions, 2) evaluating targets for business divestments, and 3) evaluating corporate strategic options (alpha 0.89). The importance of these items for corporate strategy is well established in the strategic management literature (Bowman *et al.*, 2001; Chang *et al.*, 2000; Johnson *et al.*, 2007) as well as in the family business literature (Chrisman *et al.*, 2005; Sharma *et al.*, 2005). The scale thus captures the type of corporate strategy activities carried out as previously noted in the literature (Brauer, 2006).

*Control variables.* The study also controls for firm size, firm age, industry sector, past performance and international involvement. These variables influence a firm's ability to obtain and use resources (Cockburn *et al.*, 2000). *Firm size* is measured by dummy coding whether the firm is small (9-49 employees) or medium sized (50-249 employees). *Firm age* is measured by the log of number of years the firm has been in business. To measure *industry sectors*, we dummy coded the firm industry by their SIC classification into manufacturing, professional services, retailers, and other services. *Past performance* is measured as the

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average ROA of the two years prior to the survey. *International involvement* is measure by dummy coding whether the firm had international sales or not. All data for measuring the control variables were obtained from Statistics Sweden, with the exception of international involvement which was gathered from the respondents through telephone interviews.

### **Scale validation**

We conducted confirmatory factor analyses (CFA) to assess the validity of our scales. First, we assessed a three-factor model of the independent and moderator variables. The model showed an excellent initial fit. The NFI, the TLI, the CFI and the RMSEA fit indices were: 0.94, 0.97, 0.98, and 0.03 respectively. Second, we used CFA to assess the discriminant validity of the measures. Specifically, we run chi-square difference tests for the constructs in pairs to assess whether the restricted model (correlation fixed as 1) was significantly worse than the freely estimated model (correlation not fixed). All three chi-square differences were highly significant. For example, in testing the family involvement in business strategy vs. family involvement in corporate strategy the difference in chi square test ( $\chi^2 = 13.58$  df = 1,  $p < 0.001$ ) supports that these are two distinct variables in our study. Along with the Cronbach's alpha values which range between 0.66 and 0.91, these results show that our measures possess adequate validity and reliability.

As an additional validation to the measure for knowledge resources, we used data on the number of patents the firm reported having filed over the previous three years. Following Yli-Renko, Autio & Sapienza (2001), we reasoned that, on average, the more knowledge-based are the firm's resources, the more patents it would have filed over the previous three years. We anticipated this relationship to be moderately positive because many small and medium-sized firms have technologies which are not suitable for patenting. The correlation between

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the number of patents the firm had filed over the previous three years and the knowledge resources was 0.21 ( $p < 0.05$ ), providing evidence for the validity of our measure.

Although in studies on small and medium-sized firms (Wiklund *et al.*, 2003) and family firms (Kellermanns *et al.*, 2006) the CEO is considered a reliable respondent, one might still question the reliability of a single key informant in providing information on intangible resources. Therefore, to address potential bias from relying on a single respondent—the CEO—for assessing the company's knowledge resources, we calculated the rwg(j) score for the knowledge-based resource variable for each family firm with multiple responses (James *et al.*, 1984). This coefficient measures the within-firm agreement or the extent to which responses from the CEO and the second manager in each firm are in agreement. The mean inter-rater agreement was 0.92, indicating agreement between CEOs and other managers in assessing the company's knowledge resources (LeBreton *et al.*, 2008).

## RESULTS

The means, standard deviations, and zero-order correlations are shown in Table 1. The variance inflation factors (VIF) of each independent and control variable show that multicollinearity is not a concern. The largest VIF of each independent variable and control is 2.49, which is below the rule-of-thumb cut-off of 10 (Hair *et al.*, 2006). Nevertheless, the family involvement in business strategy and family involvement in corporate strategy are moderately high correlated (0.7,  $p < 0.01$ ). This collinearity may be a problem. Therefore, as a robustness check, we orthogonalized the two variables using a modified Gram-Schmidt procedure following recent studies (Bradley *et al.*, forthcoming). This technique creates transformed variables which are uncorrelated with one another (see Sine *et al.*, 2005, for a more detailed description of this technique). The results of the analysis using these

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transformed variables were similar to those reported below, suggesting that collinearity was not a concern.

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Insert Table 1 about here  
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The hypotheses were tested using hierarchical regression analysis. Results are presented in Table 2. Model 1 contains the control variables. This model includes 3 of the 4 industry dummies, using ‘other services’ as reference group, and explains a significant percentage of the variance in firm performance.

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Insert Table 2 about here  
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In Model 2, we added the independent variable, in Model 3 we enter the moderator variables, and in Model 4 and Model 5 we include the interaction terms separately, to test our hypotheses. Prior to the creation of interaction terms, both independent and moderator variables were mean-centered to reduce the potential problem of multicollinearity. Model 6 is the full model estimation, including the IMR to correct for potential nonresponse biases. The results indicate that nonresponse bias was not a problem in the study. Both effect size and significance of our variables were not substantially affected by the addition of the IMR.

*Hypothesis 1*, which predicted family involvement in business strategy to positively moderate the relationship between knowledge resources and firm performance, is supported ( $\beta = 0.04$ ,  $p < .05$ ). To illustrate the interaction effect, we plotted the effect of knowledge resources on firm performance for values of family involvement in business strategy set at one standard deviation above and below the mean. The calculations are based on the formulas provided by

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Aiken and West (1991). Firm performance increases with knowledge resources when the level of family involvement in business strategy is high (1 sd above the mean) (Figure 1).

*Hypothesis 2* which predicted that family involvement in corporate strategy will negatively moderate the relationship between knowledge resources and firm performance, is also supported. The interaction term is significant and negative ( $\beta = -0.05$ ,  $p < .05$ ). Following the procedure described previously, we plotted this interaction effect (Figure 2). The relationship between knowledge resources and firm performance weakens when family involvement in the corporate strategy process is high (1 sd. above the mean).

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Insert Figure 1 and 2 about here  
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## DISCUSSION

According to the RBV, knowledge resources can serve as sources of sustainable competitive advantage because they are inherently difficult for a firm's competitors to imitate or substitute. We propose that performance is not solely based on the firm's endowment of knowledge resources, but also depends on how these resources are managed and leveraged in strategy processes (Mahoney, 1995; Sirmon et al., 2007). In this article, building on recent developments in the RBV literature (Holcomb *et al.*, 2009; Kor *et al.*, 2004; Sirmon *et al.*, 2008; Sirmon *et al.*, 2011), we empirically show how the effect of knowledge resources on performance in family firms is moderated by family involvement in business and corporate strategy processes. Our study sheds new light on the potential benefits and drawbacks that family involvement in strategic management processes can have for the effective management of knowledge resources in family firms.

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Our results indicate that family involvement in business strategy is a significant and positive moderator of the relationship between knowledge resources and firm performance. This finding that family involvement in business strategy activities enhances the leveraging of knowledge resources is consistent with the assumption that family members ensure the efficient use of tacit knowledge, such as insights of particular markets and industries, which, in family firms, are typically built up over time and are fostered through early business exposure of children (Chirico, 2008; Miller *et al.*, 2008; Sirmon *et al.*, 2003). In support of prior suggestions (Zahra *et al.*, 2007), our results also indicate that family involvement in business level strategy strengthens the usage of knowledge resources by better integration and recombination of knowledge resources with complementary resources so as to create performance advantages. Furthermore, family involvement in business strategy increases social complexity and causal ambiguity (Carney, 2005; Reed *et al.*, 1990), rendering the link between the company's knowledge base and its performance difficult for competitors to imitate.

Interestingly, Figure 1 also reveals a further path to high performance, namely if low levels of knowledge are coupled with little family involvement. This suggests that in case the firm is endowed with little knowledge resources it takes outsiders to bring in further insights in order to overcome the knowledge deficiencies. This explanation is consistent with prior research on parental altruism which indicates that non family managers are more likely than family members to look beyond the family to find the knowledge resources necessary for the business (Levie *et al.*, 2009; Lubatkin *et al.*, 2005). The results further corroborate this argument that family members might have negative human capital attributes, but that their competitive edge rests in the ability to leverage the firm's idiosyncratic resources, such knowledge resources, in business level strategies (Ireland *et al.*, 2003). Indeed, the regression results show that whilst family involvement in business level strategy alone has a negative

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effect on performance, it contributes positively to performance in combination with knowledge resources.

Our findings further show that family involvement in the corporate strategy process negatively moderates the relationship between knowledge resources and firm performance (Figure 2). In line with our prediction, family firms lose the positive performance implications of their knowledge resources when the family is highly involved in evaluating changes in their composition of businesses activities. Family involvement in corporate strategy may become a liability since the family's experience nurtures biases, predetermined preferences, and heuristics and may mean that firm development becomes constrained by the familiar, overconfident and overestimates the value of existing knowledge (Baron, 1998; Kahneman *et al.*, 1979). In the context of acquisitions this narrow mindset may result in an inability to effectively assess and exploit the potential of new business activities. When evaluating divestments, the family may for instance be biased by legacy concerns and socioemotional wealth considerations, inducing the family for example to persist with underperforming activities (Gomez-Mejia *et al.*, 2010; Zellweger *et al.*, 2008).

### **Implications for theory**

Our research informs the literature on strategic resource management and family business research in several ways. First, whereas past research has mainly focused on the performance implications of stocks of resources, our findings are consistent with the argument that it is how resources are strategically managed that is important in explaining performance (Peteraf, 1993). Building on the recent discussion about the various elements in resource management processes (Sirmon *et al.*, 2009; Sirmon *et al.*, 2007; Sirmon *et al.*, 2011), we contribute to a contingency perspective of resource investment (acquisition and development of resource stocks) and resource deployment (decision about the markets in which these resource stocks

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should be invested). For the case of knowledge resources we show that the efficiency of asset orchestration depends on whether the controlling coalition in a firm (in our case the family) deploys these resources in the context of existing or new activities. What heightens the relevance of a fit between resource investment and deployment is that our moderating effects point in opposite directions. Involvement of the controlling coalition in business level strategy makes the positive performance impact of knowledge even stronger.

However, if the same coalition is highly involved in corporate level strategy, they in fact not only weaken the positive effect of knowledge resources on performance, but even turn these resources into sources of inefficiencies. As such, and for the context of knowledge resources, our study complements Eddleston et al. (2008) by arguing that it is not so much resource endowment that determines competitive advantage in family firms but the type of family involvement in strategic management.

Second, previous research has tended to focus on one single dimension of family involvement and measured it through proxies such as the number of family members formally holding TMT positions, serving on the board and/or being owners (Sharma, 2004). We chose a more nuanced approach on actual family involvement and distinguish between family involvement in different levels of strategy processes—that is, business level and corporate level strategy. In line with general strategic management literature, our study suggests that the distinction of two levels of strategic management is relevant (e.g., Andrews, 1971; Bowman *et al.*, 2001; Chang *et al.*, 2000). Our results on the corporate strategy process directly speak to the recent research on diversification and acquisitions in family firms (e.g., Gomez-Mejia et al., 2010; Miller et al., 2010). More specifically, our study may further explain why family firms are less inclined to diversify. In contrast to the agency argument that family firm owners should be more inclined to diversify to reduce risk exposure to family wealth (Casson, 1999), Gomez-Mejia and colleagues (2010) just as Miller and

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colleagues (2010) find that family firms are less inclined to diversify and acquire, and suggest that such behavior can be explained by the loss of socioemotional wealth and family control in case of such activity. Our study adds a further rationale to their findings: controlling families may be well aware of the constraints their involvement in corporate strategy poses to the use of knowledge resources and may then be less inclined to meddle with business activities they do not fully understand. This perspective is in line with Chrisman et al. (2009) who recently suggested that resource usage may be unique in family firms because these organizations have different priorities based on other types of goals.

Our study also talks to the recent discussion on the nomological net of the familiness construct, that is, whether a family positively or negatively contributes to the resource base of a firm (Habbershon *et al.*, 2003; Pearson *et al.*, 2008; Sirmon *et al.*, 2003). We suggest that familiness scholars need to reach beyond the idea that family mainly influences the amount of resources available to the firm (e.g., limited availability of financial resources, heightened availability of tacit knowledge), or the resource flows between family and firm (Sharma, 2008). It seems at least as important to acknowledge the families' abilities in managing and deploying these resources in the organizational context. Therefore, we encourage family business scholars to draw on the recent developments in the RBV literature that concentrates on resource management and orchestration as a way to better understand the role of family involvement in strategic management and firm performance.

Finally, our research has implications for the general debate on family firm performance. During recent years a fairly sizable literature has emerged associated with the question as to whether family firms perform better or worse than non-family firms. Most studies have been conducted on publicly-listed companies (e.g., Anderson *et al.*, 2003; Miller *et al.*, 2007; Villalonga *et al.*, 2006), while there is still a lack of studies on performance of private family firms (Chrisman *et al.*, 2009; Sciascia *et al.*, 2008). Rather than comparing family and non-

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family firms, our study focuses on performance differences among family firms, thereby rendering the heterogeneous reality of family firms more realistically. In particular, our theoretical logic and empirical findings indicate that the family's impact on firm performance is not simply a question of whether the family is involved or not in the business. Rather, the impact depends *how* the family is involved, which in our study has been addressed by the specific type of strategic management processes the family is actually involved in.

### **Implications for Practice**

Our study also provides suggestions for family firm practitioners. Family members need to be aware of the fact that they possess the potential to improve performance when the family is involved in business level strategy. Then, the unique and valuable tacit knowledge of the family can be best deployed. At the same time, however, family firms need to be aware of the downside related to the strong involvement of the family in corporate strategy activities. In this case, a lack of variety in experience, resulting biases, preferences and path dependencies can prevent family members from efficiently deploying the company's knowledge base. If the intention is to build a business group, family owners and managers should be aware of the importance of involving non-family managers who can complement the knowledge base. All in all, finding the optimal level of family involvement in the business and corporate strategy processes is a major challenge for family firm manager and owners.

### **Limitations and future Research**

We would be remiss not to note the limitations of our study. First, our data were obtained from Sweden. Whether family involvement in strategy processes positively or negatively impacts firm performance may be a function of the culture of the family unit (Kellermanns,

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2005; Sharma *et al.*, 2005). Hence, we need to consider our findings in light of the cultural background of our respondents and the concept of family ingrained in the Swedish society. While we have no reason to believe that this factor has biased our results, it does suggest that more research is needed before we can be confident about the generalizability of our results across a wide range of countries and regions of the world.

A second limitation, partly inherent in the challenge of researching intangible resources, is the difficulty of measurement. Our measure of knowledge resources has an acceptable, yet moderate, alpha coefficient (0.66). In addition, our measure of knowledge resources might not sufficiently tap into the specificity of family firms. Even if we conducted a number of additional analyses to assess the validity of the measures, it would be useful if future research assesses knowledge resources with a measure better tailored to family firms.

Also, we need to reiterate that our sample consists of private small to mid-sized firms. Our results are applicable to this very setting, but may look different when investigated among large family firms and among publicly listed firms. For example, diversified families holding a large portfolio of businesses may have learned what it takes to evaluate and run businesses outside the family's core industry. Then, their experience base may be sufficiently diverse to overcome limitations in the knowledge base tied to the original industry.

Future scholars could investigate the role of family involvement in the strategy process for the efficient use of other resources than knowledge-based ones. Social capital, that is, people and their relationships, are often argued to be key resources for family firm competitiveness and, therefore, represent fertile areas for future research.

## CONCLUSION

Our study shows the potential benefits and drawbacks that family involvement in two types of strategic management processes can have for the effective use and management of

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knowledge resources in family firm. Family involvement in business strategy enhances the performance implications of knowledge resources, while family involvement in corporate strategy has negative performance implications for the usage of these resources. Strategic management and family firm scholars and practitioners need to take into account the differing effect that family involvement has in business and corporate strategy processes in order to better understand the link between intangible resources and firm performance. This is an important implication given the scarcity of previous research on business and corporate strategy in family businesses and the relevance of resource management for general strategy research.

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**Table 1: Means, standard deviations and correlations**

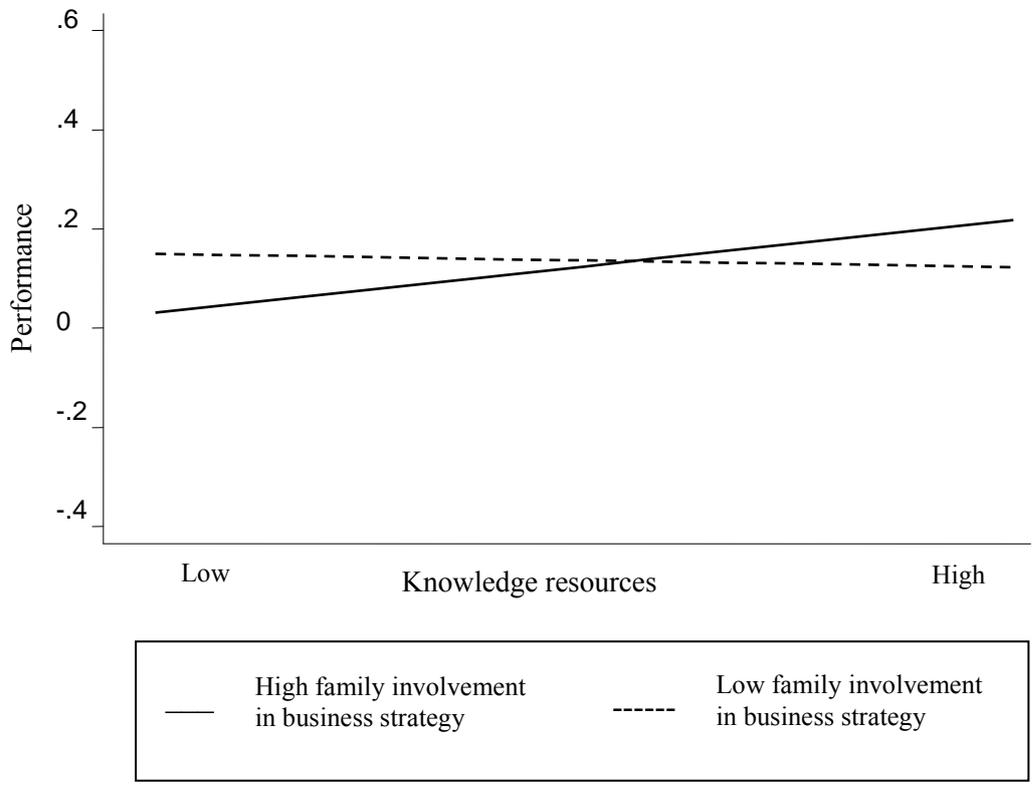
	Mean	Sd	1	2	3	4	5	6	7	8	9
1. Small firms	0.528	0.50	-								
2. Firm age (log)	2.965	0.73	-0.131	-							
3. Manufacturing	0.342	0.47	-0.061	0.209*	-						
4. Retail	0.126	0.33	0.146*	-0.326*	-0.273*	-					
5. Professional services	0.246	0.44	0.003	0.096	-0.412*	-0.217*	-				
6. Past performance	0.106	0.09	0.043	-0.136	-0.086	0.187*	0.072	-			
7. International involvement	0.45	0.50	-0.132	0.148*	0.564*	-0.199*	-0.109	-0.031	-		
8. Knowledge based resources	3.453	0.47	-0.170*	0.115	0.081	-0.135	-0.043	-0.021	0.162*	-	
9. Family involvement in business strategy	3.072	1.188	-0.166*	0.065	0.046	-0.113	0.139*	-0.119	0.125	0.061	-
10. Family involvement in corporate strategy	3.212	0.925	-0.125	0.049	0.020	-0.065	0.067	-0.153*	0.075	0.040	0.633*

Note: N=199, \*=p<0.05

**Table 2: Multivariate regression for firm performance (ROA)**

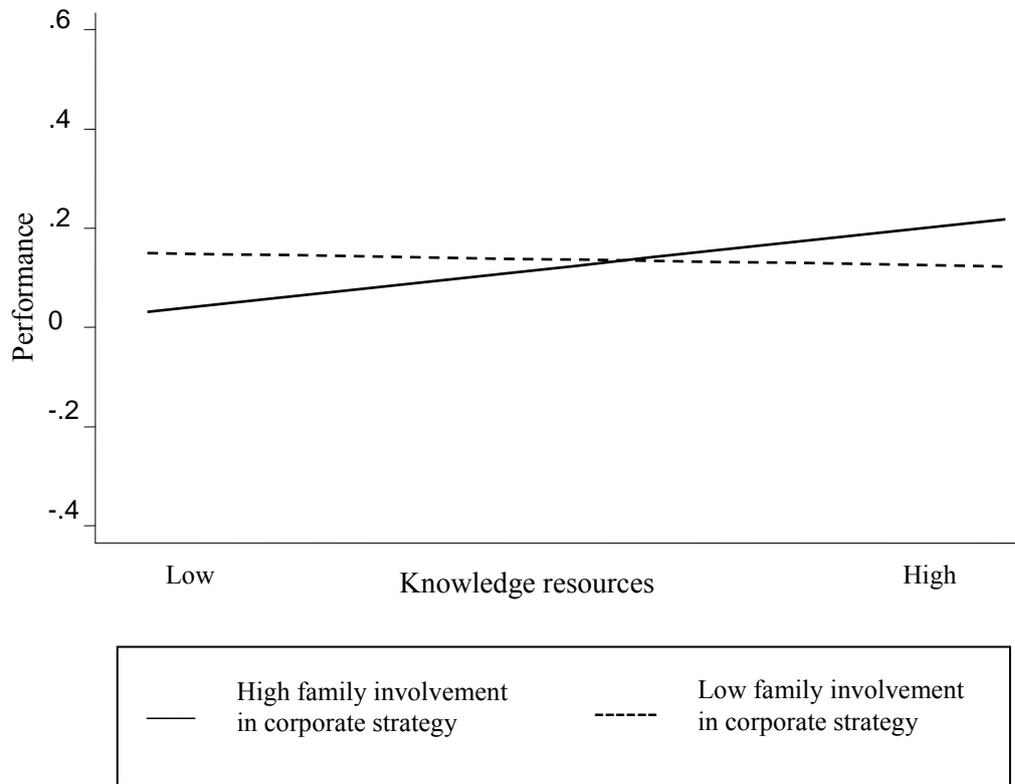
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Firm size (small)	-0.013 (0.015)	-0.009 (0.015)	-0.011 (0.015)	-0.017 (0.015)	-0.008 (0.015)	-0.000 (0.023)
Firm age (log)	-0.002 (0.011)	-0.003 (0.011)	-0.004 (0.011)	-0.005 (0.011)	0.000 (0.011)	0.002 (0.010)
Manufacturing	-0.007 (0.022)	-0.004 (0.022)	-0.002 (0.022)	-0.002 (0.021)	-0.007 (0.022)	-0.024 (0.024)
Professional services	-0.048 (0.025)	-0.043 (0.025)	-0.044 (0.025)	-0.040 (0.025)	-0.044 (0.025)	-0.058 (0.035)
Retail and wholesale	-0.005 (0.020)	-0.002 (0.020)	0.003 (0.020)	0.006 (0.020)	-0.004 (0.020)	-0.008 (0.019)
Past performance	0.455*** (0.083)	0.452*** (0.082)	0.455*** (0.083)	0.430*** (0.083)	0.488*** (0.083)	0.493*** (0.082)
International involvement	-0.003 (0.018)	-0.008 (0.018)	-0.006 (0.018)	0.001 (0.018)	-0.009 (0.018)	0.006 (0.017)
Knowledge resources		0.042* (0.021)	0.043* (0.021)	0.033 (0.021)	0.046* (0.021)	0.033 (0.020)
Family involvement in business strategy			-0.016* (0.008)	-0.016* (0.008)	-0.014 (0.008)	-0.014 (0.007)
Family involvement in corporate strategy			0.017 (0.010)	0.016 (0.010)	0.019 (0.010)	0.019* (0.010)
Knowledge resources* Family involvement in business strategy				0.038* (0.017)		0.085*** (0.021)
Knowledge resources* Family involvement in corporate strategy					-0.054* (0.025)	-0.130*** (0.030)
Inverse Mill's ration (sample selection correction)						-0.070 (0.075)
Constant	0.114** (0.037)	0.116** (0.036)	0.116** (0.036)	0.121*** (0.036)	0.105** (0.036)	0.169* (0.080)
F test	4.70***	4.69***	4.23***	4.36***	4.34***	5.62***
R-squared	0.146	0.165	0.184	0.204	0.203	0.283

Note: \*\*\* p<0.001, \*\* p<0.01, \* p<0.05; N=199, Standard errors in parentheses; Among the industry dummies, 'other service' is not included as it is used as reference category.



**Figure 1: Interaction between knowledge resources and family involvement in business strategy**

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**Figure 2: Interaction between knowledge resources and family involvement in corporate strategy**

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## **APPENDIX**

### **Survey items**

#### **Knowledge resources\***

Endowment of the respondent's company, over the previous three years, of the following resources

1. technology know-how,
2. manufacturing know-how,
3. marketing know-how,
4. distribution know-how
5. human resources

#### **Family involvement in the business strategy process\*\***

The degree of family involvement in the following activities:

1. Identifying potential customers;
2. Analyzing competition
3. Selecting business strategy

#### **Family involvement in the corporate strategy process\*\***

The degree of family involvement in the following activities:

1. Evaluating targets for business acquisitions
2. Evaluating targets for business divestments
3. Evaluation corporate strategic options

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Note:

\* The items of this construct were measured on a five-point scale, anchored by 1 = "significantly decreased" to 5 = "significantly increased" over the previous three years.

\*\* The items of this construct were measured on a five-point scale, anchored by 1 = "not at all" and 5 = "to a great deal".