Family Firm Commitment and Performance: A Moderated Mediation Analysis

Pankaj C. Patel
College of Business
Ball State University
Muncie, IN 47306
Tel: (765) 285-3194
Fax: 765-285-5117
E-mail: pcpatel@bsu.edu

Franz W. Kellermanns
College of Business and Industry
Mississippi State University
Box 9581
Mississippi State, MS 39762
Tel: (662) 325-2613
Fax: (662) 325-8651
E-mail: Fkellermanns@cobilan.msstate.edu

and
INTES Center for Family Enterprises
WHU (Otto Beisheim School of Management)

Kimberly A. Eddleston
College of Business Administration
Northeastern University
319 Hayden Hall
Boston, MA 02115-5000
Tel: (617) 373-4014
Fax: (617) 373-8628
E-mail: K.eddleston@neu.edu

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Abstract

Utilizing moderated mediation analysis (Edwards and Lambert, 2007), we investigate how the relationship between family firm commitment and performance is mediated by formalized governance mechanisms in family firms, while considering family firm identification as a moderator on direct and mediating relationships. Synthesizing agency- and stewardship-based predictions and utilizing a sample of 663 family firms, our findings show that the relationship between family firm commitment and performance is partially mediated by formalized governance mechanisms. We furthermore show that family firm identification is an important moderator in the aforementioned relationships. Implications and future research are discussed.

Key Words: family firms, family identification, family commitment, stewardship theory, agency theory

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1. Executive Summary

Research on family firms often seeks to understand if the family contributes to firm success and how the firm should be managed to improve its chances for survival. While agency theorists focus on minimizing costs associated with family ownership and control, stewardship theorists seek to harness the benefits of family involvement. Although it was once believed that family firms are immune to agency threats due to the overlap of family ownership and control recent studies reveal that family firms can suffer unique agency costs arising from family involvement such as free riding of family members, nepotism, entrenchment of ineffective managers, and adverse selection (Chrisman, Chua, Chang and Kellermanns, 2007; Schulze, Lubatkin, Dino and Buchholtz, 2001). Because these agency costs can threaten the firm's performance and survival, proponents of agency theory argue that family firms should employ formalized governance mechanisms like strategic planning, human resource management, pay incentives, and the participation of advisors in decision-making (Chrisman, Chua and Kellermanns, 2004a; Lansberg, 1983; Schulze et al., 2001). These formalized governance mechanisms are expected to minimize agency costs associated with family involvement thereby fostering family firm success.

In contrast, stewardship theory paints a very different picture of family involvement, focusing on how family commitment to the business and positive family relationships contribute to family firm success (e.g., Zahra, Hayton, Neubaum, Dibrell and Craig, 2008). Stewardship theory highlights the psychological ownership and shared identity a family feels toward their firm that motivate family members to put aside personal interests for the sake of the firm. As such, research in this tradition sees the family as a key resource to the family firm.

Rather than compare the superiority of agency theory and stewardship theory, in this study we attempt to synthesize agency- and stewardship-based predictions in the belief that both may have credence. We examine whether the formalized governance mechanisms stressed in the agency theory literature contribute to family firm success. Additionally, we investigate the direct and indirect effects of family involvement by considering two factors associated with stewardship theory – family firm commitment and identification. Study results indicate that family firm commitment is positively associated with firm performance and family firm identification further enhances this positive relationship. Formalized governance mechanisms were found to be positively related to family firm performance whey family firm identification is high. Our findings provide support for both views of family firms and suggest that the recommendations associated with agency and stewardship theories may be somewhat complementary.

From a practical standpoint our study, demonstrates the complexity of family firms and the need to take the family into account when offering advice. While agency theorists call for family firms to employ formalized governance mechanisms, our study shows that these mechanisms are only beneficial when there is high family firm identification. When the family and business, and family members have different values (low family firm identification), formalized governance mechanisms significantly hamper firm performance. Furthermore, our results regarding the combined benefits of family firm commitment and identification suggest that families that espouse the tenets of stewardship theory may be best positioned to succeed, relying less on formalized governance mechanisms and more on family support as they manage their businesses.

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2. Introduction

Family business research has recently been referred to as a "jungle" with competing theories on the influence of the family leading to confusion in the field (Rutherford, Kuratko and Holt, 2008). Research rooted in agency theory acknowledges the agency costs associated with family involvement (Chrisman et al., 2007; Chrisman, Chua and Litz, 2004b; Schulze, Lubatkin and Dino, 2003b; Schulze et al., 2001). Due to the unique overlap of the family and business systems, owners of family firms have difficulties in monitoring and disciplining the conduct of fellow family members, particularly their adult children working in the firm. As a consequence, agency costs like nepotism, free-riding, adverse selection and the consumption of unearned perks can be a serious threat to family firm performance and survival (Chrisman et al., 2004b; Schulze et al., 2003b; Schulze et al., 2001). Agency theory research therefore stresses the importance of formalized governance mechanisms like strategic planning, human resource management, pay incentives and the participation of advisors in decision-making (Chrisman et al., 2004b; Lansberg, 1983; Schulze et al., 2001). By governing the firm in a formalized way, the agency costs associated with family involvement are expected to be minimized and thus, financial performance improved.

However, stewardship theory paints a very different picture of family involvement. Research in this tradition demonstrates that family commitment to the business (Zahra et al., 2008) and positive family relationships (Eddleston and Kellermanns, 2007; Eddleston, Kellermanns and Sarathy, 2008a) contribute to family firm success. A study by Miller, Le Breton-Miller and Scholnick (2008) suggests that attitudes associated with stewardship may make family firms especially vibrant, leading them to outperform and "outsurvive" their non-

family firm counterparts. By involving family members in the business, an intensely dedicated and committed workforce may be created (Lee and Rogoff, 1996). For example, many family members believe they have a common responsibility to see the business prosper (Cabrera-Suárez, Saá-Pérez and García-Almeida, 2001); their shared identity motivates them to pursue firm goals (Sundaramurthy and Kreiner, 2008) and to protect the reputation of the family firm (Dyer and Whetten, 2006).

Rather than try to prove or disprove each of these views of family involvement, in this paper we attempt to synthesize agency- and stewardship-based predictions in the belief that both may have credence. We first argue that formalized governance mechanisms influence family firm performance. Since agency controls have been argued to be entwined and related (Schulze et al., 2001), we simultaneously consider the following formalized governance mechanisms that appear common in the literature: strategic planning, human resource management, family member compensation, and shareholder participation (i.e., Chrisman et al., 2004b; Lansberg, 1983; Schulze et al., 2001). In accordance with family firm research rooted in stewardship theory, we then consider family firm commitment and identification. Given that recent research investigating the potential benefits of the family has suggested that the relationship between family involvement and a family firm's financial performance may be largely indirect (Rutherford et al., 2008), we propose a model that depicts the indirect support a family can provide to a firm. Therefore, in this study we examine the link between agency theory and stewardship theory to see if family firms that heed the advice of agency theory and harness the stewardship of the family enjoy superior performance.

Our study contributes to the family firm literature in three ways. First, rather than compare the superiority of agency theory and stewardship theory in explaining family firm

performance, we attempt to synthesize the recommendations made from each of these approaches to demonstrate that the two perspectives may be complementary. While previous research has employed the tenets of agency theory (i.e., Schulze et al., 2003b; Schulze et al., 2001) or stewardship theory (i.e., Eddleston and Kellermanns, 2007; Eddleston et al., 2008a; Miller et al., 2008; Zahra et al., 2008), or has compared the performance benefits of each theory (Tosi, Brownlee, Silva and Katz, 2003), this is the first known study to examine whether the tenets of agency theory and stewardship theory may act together to effect firm performance. Second, this study aims to answer a call for research to investigate the indirect effects of positive family relationships (Chrisman, Steier and Chua, 2008). Research has not been consistent in showing the benefits of family involvement and therefore it has been suggested that the key to understanding the advantages of the family may lie in comprehending how the family impacts the management of the firm, thus indirectly influencing the firm's performance (Chrisman et al., 2008; Rutherford et al., 2008). Third, we introduce and apply the mathematical model by Edwards and Lambert (2007) thereby adding to the sophistication of methodological approaches in family firm research (e.g., Sharma, 2004). This methodological approach allows us to more completely discern the indirect effect family relationships have on family firm performance. Our model, which depicts the main, moderation and meditation effects, is portrayed in Figure 1.

Insert Figure 1 about here
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3. Literature Review and Hypothesis Development

3.1 Agency Theory: Governance Mechanisms to Control Family Influence

While researchers once believed that family firms did not suffer from agency threats because of the overlap in family ownership and control (i.e., Daily and Dollinger, 1992; Fama and Jensen, 1983; Jensen and Meckling, 1976), it is now understood that family firms must

grapple with unique agency costs due to family involvement (i.e., Chrisman et al., 2004b; Schulze et al., 2003b; Schulze et al., 2001). Agency costs stemming from family involvement include nepotism, adverse selection, free riding, and the consumption of unearned perks by family members (i.e., Chrisman et al., 2004b; Schulze et al., 2003b; Schulze et al., 2001). These costs reflect the self-serving, economically-rational model of man portrayed by agency theory (Corbetta and Salvato, 2004). It is argued that due to parental altruism, family members often receive employment, perquisites, and privileges in the family firm regardless of their contributions (Schulze et al., 2003b). Parental altruism also hampers family firm leaders' ability to control and discipline family members since the leaders may be biased or may fear ramifications to family relationships (Lubatkin, Ling and Schulze, 2007; Schulze et al., 2003b). Researchers have argued that due to self-control problems and parental altruism, family firms suffer from agency costs that may be mitigated through the use of formalized governance mechanisms (Schulze et al., 2001).

Formalized governance mechanisms may be able to curb the dysfunctional aspects of family involvement by providing monitoring and incentives toward efficiency that thwart opportunism. Formalized governance mechanisms ensure that routines are in place to monitor decision-making to prevent family members from pursuing selfish interests. In particular, four facets are commonly believed to curb agency costs in family firms by providing monitoring or incentives that align family members' interests with those of the firm (e.g., Chrisman et al., 2007). These are human resource management practices, pay incentives (e.g., Chrisman et al., 2007; Chua, Chrisman and Bergiel, 2009b; Schulze et al., 2003b; Schulze et al., 2001), shareholder participation (Schulze et al., 2001; Van den Berghe & Carchon, 2003) and strategic planning (Eddleston et al., 2008a; Schulze et al., 2001; Sirmon & Hitt, 2003). Since family firms

often suffer from deficits in expertise due to the preferential treatment of family members (Chrisman et al., 2004), formalized human resource practices (Barnett & Kellermanns, 2006) and pay incentives (Lansberg, 1983; Chua et al., 2009) are believed to aid in the evaluation of family members and ensure their effectiveness. Additionally, because family firms are "vulnerable to a form of inertia that can paralyze decision-making and threaten firm survival" (Schulze et al., 2001: 3), strategic planning and shareholder participation may be effective formal control mechanisms that can correct problems and curb opportunism (Chrisman et al., 2004). More specifically, strategic planning provides "a basis for control because it formalizes sale projections, cost estimates, and performance goals" (Chrisman et al., 2004: 348). Greater shareholder participation can improve decision-making because it often forces family firm leaders to justify their decisions and to consider the interests of multiple shareholders (Gedajlovic, Lubatkin, and Schulze, 2004; Gersick et al., 1997). Below we discuss how each of these formalized governance mechanisms is believed to influence family firm performance. However, because family firms are highly heterogeneous (Westhead and Howorth, 2007) and specific formalized governance mechanisms need to fit a firm and its environment (Gedajlovic, Lubatkin and Schulze, 2004), in investigating their influence on firm performance it is important to understand that governance mechanisms may complement one another, and one governance mechanism may substitute for another (Chrisman et al., 2007; Schulze et al., 2001).

According to agency theory research, the employment of family members is a root cause of agency costs in family firms (i.e. Chrisman et al., 2004; Le Breton-Miller & Miller, 2009; Schulze et al., 2001). "Family firms appear particularly vulnerable to honest incompetence and deficits of expertise because they often have a self-imposed personnel selection criterion that gives preferential treatment or, in the extreme, exclusive consideration to family stakeholders"

(Chrisman et al., 2004b: 338). Family business leaders face difficult choices regarding how to bring children into the firm, define their roles and eventually prepare them for succession. As such, family firms are often criticized for their unilateral and arbitrary human resource practices (Barnett and Kellermanns, 2006). By creating jobs for relatives these family firms often have employees who do not possess the necessary skills or education to successfully perform their jobs (Fiegener, Brown, Prince and File, 1996). In turn, family firms often have problems with performance appraisal, staffing and compensation issues (Barnett and Kellermanns, 2006). However, a human resource manager may be able to minimize family members' sense of entitlement toward jobs and opportunities, and provide guidance regarding job performance. Therefore, family firms that have a formalized human resource manager may be best positioned to curb agency threats associated with nepotism, adverse selection and favoritism, thus contributing to family firm performance.

Another common agency threat of family firms relates to the compensation of family members. Family firm leaders tend to be uncomfortable discussing terms of compensation with relatives and as a result, family member compensation is often based on ambiguous principles derived from a hybrid of family and business criteria, generating all sorts of dysfunctional processes in the firm (Lansberg, 1983: 42). This situation can lead to one of two harmful outcomes. Parent-leaders may be overly generous toward family members essentially turning the family firm into a welfare institution (Kets de Vries, 1993; Leenders and Waarts, 2003; Schulze et al., 2003b; Schulze et al., 2001). Or, the family firm may *under* compensate family members either because they believe family members have an obligation to see the business prosper or in an effort to thwart accusations of favoritism by non-family employees. In turn, this can cause competent family members to seek employment elsewhere (Lansberg, 1983). Accordingly, as

originally suggested by Lansberg (1983), family firms that pay family members market rates may be able to limit agency threats associated with compensation and reward practices (see also Chrisman et al., 2007; Chua, Chrisman and Bergiel, 2009a; Schulze et al., 2003b).

Regarding strategic planning, many family firms refuse to plan for the future, relying instead on previously successful strategies that make them susceptible to groupthink and strategic simplicity (Ling and Kellermans, 2010; Sirmon, Arregle, Hitt and Webb, 2008). Other family firms view strategic planning as time-consuming and unnecessary, instead preferring to focus on the day-to-day operation of the business (Ward, 1988). Family firms may also avoid strategic planning if the leaders feel it will limit their discretion or it will force them to deal with sensitive subjects like succession (Schulze et al., 2001). Yet, strategic planning may be a valuable tool for achieving good agency since it "promotes the alignment of attitudes toward growth opportunities and risk by forcing agents to define the firm's mission and values, promotes consensus by requiring that agents from different levels in the hierarchy agree on goals and strategies, and imposes discipline by insisting that these objectives guide day-to-day activities" (Schulze et al., 2001: 103-104). By setting formalized sales projections and performance goals, strategic planning provides a basis for control that aids the viability of the family firm (Chrisman et al., 2004). Therefore, strategic planning has been argued to be an effective governance mechanism that helps curb agency costs in family firms thereby contributing to their performance (Schulze et al., 2001).

Lastly, another common agency problem in family firms reflects ownership control issues and specifically, entrenched management and hold up (Schulze et al., 2001). Since CEOs of family firms can remain in their post for three to five times as long as CEOs of non-family firms, complacency and stagnation are common (Le Breton-Miller and Miller, 2006). Leaders of family

firms who monopolize control often define success in terms of their own personal utility and outcomes that go beyond financial benefits such as the ability to exercise complete authority, dictate strategy and choose the developmental path of the company (Schulze, Lubatkin and Dino, 2003a). In turn, these family firms may be more likely to suffer from problems associated with consumption, poor investments and bad decision-making. Accordingly, it is advised that family firms encourage participation in decision-making (Eddleston and Kellermanns, 2007). When shareholders routinely meet to discuss the management and direction of the family firm (Gersick, Davis, Hampton and Lansberg, 1997; Lansberg, 1988), decision-making is improved and problems are likely to be identified before they become crises (see also Kellermanns and Eddleston, 2004; Westphal and Dednar, 2005). Shareholder participation encourages the exchange of information (Gersick et al., 1997) and serves to monitor family members' behaviors, ensuring that multiple perspectives are considered. Therefore, shareholder participation helps in monitoring family firm leaders, thus contributing to firm performance.

Thus, since formalized governance mechanisms are believed to have positive performance benefits in family firms (e.g., Chrisman et al., 2007; Schulze et al., 2003b), we offer the following hypothesis:

Hypothesis 1: Formalized governance mechanisms are positively related to family firm performance.

3.2 Stewardship Theory: A Culture that Harnesses Family Influence

Recent research examining whether the family helps or hinders the family firm has stressed the need to not only investigate a family's *potential* influence in a firm, but *how* the family influences the firm (Rutherford et al., 2008). Based on this research, Chrisman and colleagues (2008) advised researchers to focus on the indirect effect family influence has on a family firm because families influence their firms in different ways and to various degrees. In

particular, research that explores how families may be a positive influence for the family firm often stresses the stewardship perspective (i.e. Eddleston et al., 2008; Miller et al., 2008).

Highlighting the psychological ownership of the family towards the firm and the shared sense of responsibility the family feels toward the firm (Corbetta and Salvato, 2004; Zahra, 2003), stewardship theory research focuses on how the family contributes to family firm performance. Stewardship theory views positive family relationships as a unique resource to family firms since they engender loyalty and commitment toward the success of the firm (Corbetta and Salvato, 2004; Eddleston and Kellermanns, 2007; Eddleston et al., 2008a). As opposed to agency theory, the model of man underlying stewardship theory stresses pro-organizational, collectivistic attitudes and self-actualizing behaviors (Corbetta and Salvato, 2004). Therefore, based on stewardship theory, family members are viewed as stewards of the business, willing to put aside personal interests for the sake of the firm (Corbetta and Salvato, 2004; Eddleston and Kellermanns, 2007). Given their psychological attachment to the family firm, stewards are believed to be highly committed to the success of the firm and to strongly identify with the firm (Corbetta & Salvato, 2004; Miller et al., 2008; Zahra et al., 2008). Below, we focus on two factors derived from the stewardship perspective of family firms: family firm commitment and family firm identification.

Family firm commitment centers on the emotional attachment and support family members have toward their business. In the family firm literature ‘commitment’ often reflects affective commitment, focusing on family members’ support and contribution to the family business (Sharma & Irving, 2005). However, it is unique to the family firm context since it also considers the influence family members have on the firm and their support for family business decisions. This affective type of commitment appears to be the most critical to the conduct of

family members since it has the strongest link to discretionary behaviors (in comparison to normative and continuance commitment) (Sharma & Irvings, 2005).

More specifically, family firm commitment may enhance family members' sense of responsibility for the business, leading them to instill processes that will protect the firm and benefit the organization. For example, since family firms often face complex problems regarding the employment, compensation and performance evaluation of family members, family firm commitment may lead to the support of formalized governance mechanisms (Chua et al., 2009). Indeed, strong commitment and personal bonds are expected to reduce threats posed by adverse selection and moral hazard (McAfee and McMillan, 1987).When family members display kinship obligation toward their business, feelings of personal and social fulfillment arise that cause them to guard the well-being of the business (Arregle, Hitt, Sirmon & Very, 2007). Furthermore, although research suggests that non-family firms view formalized governance mechanisms as a reflection of a low trust environment and necessary when the organization lacks employee loyalty (Meyer & Allen, 1991; Riketta, 2002), some family firms may view formalized governance mechanisms as a way to protect family relationships and to maintain the trust of various stakeholders as the business grows in size and generations (Steier, 2001). Family members committed to the business may see formalized governance mechanisms as a way to ensure that the business is managed in a professional manner (e.g., Chua et al., 2009b; Gedajlovic et al., 2004), demonstrating that family members are committed to its success. Therefore, the establishment of formalized governance mechanisms may be seen as an act of stewardship over the business by families with strong family firm commitment.

Hypothesis 2: Family firm commitment is positively related to formalized governance mechanisms.

In addition, given that stewardship theory research posits that family firm commitment benefits family firms (Zahra et al., 2008), we argue that family firm commitment may affect family firm performance. Research suggests that family firm commitment is associated with satisfaction, direction and duration of work effort and extra-role behaviors that thereby contribute to the realization of a family firm's mission and goals (Zahra et al., 2008). Strong family firm commitment may be a unique resource of family firms that motivates family members to accomplish firm goals (Sirmon and Hitt, 2003). It can also lead to "survivability capital" such as equity investments, monetary loans and free labor that help to grow and sustain the business during poor economic times (Sirmon & Hitt, 2003). Indeed, research has found that families who display pro-organizational behaviors are more likely to report strong financial performance (Eddleston and Kellermanns, 2007; Eddleston et al., 2008a). Since family firm commitment has been found to positively influence a firm's strategic flexibility, that is – its ability to pursue new opportunities and respond to environmental threats (Zahra et al., 2008) – family firm commitment may also enhance family firm performance.

Hypothesis 3: Family firm member's commitment is positively related to firm performance.

3.4 The Moderating Effect of Family Firm Identification

Organizational identity is an important component that explains stewardship behavior in organizations. When individuals identify with their organizations, they are more likely to cooperate with other firm stakeholders and to partake in citizenship behaviors (Davis, Schoorman and Donaldson, 1997). From a stewardship perspective, organizational identity reflects the belief in and acceptance of firm goals and values (Davis et al., 1997). As a sense-making tool (Weick, 1995), organizational identity affects important processes within the organization (Ravasi and Schultz, 2006) since individuals who identify with their firm perceive

an overlap between organizational attributes and their own attributes (Dutton, Dukerich and Harquail, 1994). Organizational identity intensifies when individuals feel that the organization contributes to their self-esteem, self-consistency and self-distinctiveness (Dutton et al., 1994) and when the individual has visibility and influence within the firm (Ashforth and Mael, 1989; Dutton et al., 1994).

In the context of family firms, family firm identification reflects family members shared and aligned values with the firm (Zahra et al., 2008). It occurs when family members define themselves in terms of their membership in the family firm, accepting the firm's mission and values as their own. This view of family firm identification is in line with organizational identity theory and the stewardship perspective of family firms that focus on the overlap between firm values and family values. Identification of the family with the firm is particularly important to family firm research since family members are important contributors of labor during growth stages of the organization (Chang, Memili, Chrisman, Kellermanns and Chua, 2009; Fock, 1998) and identification ensures that the values and goals of the family firm are pursued (Cabrera-Suárez et al., 2001; Sundaramurthy and Kreiner, 2008).

A family firm identity is seen as a key component of familiness (Zellweger, Eddleston and Kellermanns, 2010), which allows family firms to benefit from the unique capabilities derived from family involvement and interactions (Habbershon and Williams, 1999; Habbershon, Williams and MacMillan, 2003). Through identification, the family firm becomes an extension of family members' psychological structure whereby they see their fate and that of the firm's as mutually dependent. In contrast, when family members externalize attributions for their firm's shortcomings, avoid accepting responsibility, or refuse to rectify problems, their family firm identification is weak and their membership within the family firm can be seen as

self-serving and individualistic (e.g. ,Scott and Lane, 2000). Accordingly, family firm identification may explain why the family is a source of strength in some family firms and a hindrance in others (Zellweger et al., 2010). We therefore argue that family firm identification acts as a moderator of the proposed relationships, intensifying the beneficial aspects of family involvement in the firm.

Stewardship theory proposes that because stewards believe their interests are aligned with those of the firm, they will work toward the pursuit of organizational goals (Davis et al., 1997). Kinship, a shared family name, common history, and familiarity can promote a strong shared identity in family firms, encouraging family members to uphold organizational values and pursue organizational goals (Sundaramurthy and Kreiner, 2008). Similarly, family firm identification should channel family members' energy toward the accomplishment of firm objectives, which they see as their own. Indeed, "managers who identify with their organizations and are highly committed to organizational values are more likely to serve organizational ends" (Davis et al., 1997: 43). Family firm identification provides a consistent framework rooted in shared values that provide direction to family members. When these family members are highly committed to the family firm, family firm identification may thereby guide family members' efforts toward the realization of the collective goals of the firm. Therefore, we expect family firm identification to enhance the positive relationship between family firm commitment and performance.

***Hypothesis* 4:** *Family firm identification moderates the relationship between family firm commitment and family firm performance. Specifically, higher levels of identification strengthen the relationship between commitment and performance.*

Family firm identification may also affect the relationship between family firm commitment and formalized governance mechanisms. When the values between the family and the firm are not congruent, the ability to manage the family firm effectively erodes (Lansberg,

1983). Leaders are torn between following the norms and values of the family versus those of the firm. In such a scenario, family firm commitment may have little impact on formalized governance mechanisms since the incongruent identities create confusion for firm leaders as they struggle to decide whether the business exists for the family, or the family exists for the business (Lansberg, 1983). Thus, even when a family firm has strong commitment, weak family firm identification may prohibit family leaders from establishing formalized governance mechanisms.

In contrast, strong family firm identification may augment the positive effect of family firm commitment by leading family members to concentrate on the needs of the business. Once identified with a firm, individuals reaffirm positive aspects of the firm in the interest of their own needs for self-consistency and self-esteem (Scott and Lane, 2000). In an effort to be consistent, managers construct their organizations to enhance the legitimacy of their leadership role and to help attain organizational goals. Firms with strong family firm commitment and family firm identification may therefore be more likely to have a high level of formalized governance mechanisms because such practices help to legitimize the important role of family members in the firm and demonstrate family members' dedication to managing the firm as a business.

***Hypothesis* 5:** *Family firm identification moderates the relationship between family firm commitment and formalized governance mechanisms. Specifically, higher levels of identification strengthen the relationship between family firm commitment and formalized governance mechanisms.*

Lastly, family firm identification is expected to moderate the relationship between formalized governance mechanisms and performance. According to stewardship theory, identification allows managers to take credit for firm successes and to experience frustration for firm failures (Davis et al., 1997). In turn, family firm identification may encourage family members to behave in ways that are consistent with organizational policies and practices. Identification also allows firm leaders to mold organizational policies and practices in a way that

upholds their shared values. As such, family firm identification may ensure that the formalized governance mechanisms reflect the idiosyncrasies of the family firm. When family members derive their identity from their organization, they are more likely to act as stewards of its resources and support organizational policies, rather than engage in opportunism (Zahra et al., 2008). In this way, the values that underlie family firm identification provide a common rallying ground for family members, encouraging them to support management initiatives. For example, family firm identification should ensure that strategies and tactics are implemented and followed, and that the decisions of the firm's human resource manager are supported. In turn, higher firm performance is expected to result.

Hypothesis 6: *Family firm identification moderates the relationship between formalized governance mechanisms and family firm performance. Specifically, higher levels of identification strengthen the relationship between formalized governance mechanisms and family firm performance.*

4. Method Section

4.1 Sample

The data consisted of companies who responded to the 2002 Mass Mutual Financial Group/Raymond Institute American Family Business Survey and was supported by the Loyola University of Chicago Family Business Center, the Cox Family Enterprise Center at Kennesaw State University, and Babson College. The survey consisted of a cross-section of family businesses dispersed throughout the country. Since obtaining reliable third-party information on family firms is virtually impossible due to a lack of government enforced disclosure (e.g., Schulze et al., 2003a), family firm research mostly relies on self-reported data (Daily and Dollinger, 1992, 1993; Eddleston et al., 2008a; Schulze et al., 2003a). Furthermore, the Mass Mutual data set relies on single responses, as is customary in family firm research. Indeed, many

prior studies have utilized the data sets collected by Mass Mutual (e.g., Rutherford et al., 2008; Schulze et al., 2003a; Schulze et al., 2001).

The sample database was created by contacting family businesses at least 10 years old with sales volume in excess of $1 million who had at least two officers or directors with the same last name. A 20-page questionnaire that contained more than 359 items was mailed to more than 38,000 family businesses. 1,143 surveys were returned within a period of six-months. While unfortunate, substantial missing data in family firm research has been reported as a common problem in studies that rely on primary sources (Chrisman et al., 2004b; Schulze et al., 2001).

In accordance with earlier research (Schulze et al., 2001), we deleted partnerships and proprietorships due to the different laws and tax policies regarding share transfer and compensation practices (N=25). We also took a conservative approach and deleted 41 additional cases due to missing data pertaining to one of our variables. Lastly, we deleted 201 data points that represented firms that had $5 million or less in sales in order to exclude "lifestyle firms" (Allen and Panian, 1982), and firms that might not have growth as a strategic objective (Carland, Hoy, Boulton and Carland, 1984; Rubenson and Gupta, 1996). Therefore after deletions, our final sample consisted of 663 firms with an average age of 50.52 years and average annual sales of $52 million and 272 employees.

4.2 Variables

For the exact measurement of the constructs and additional information about construct validity and dimensionality, please refer to Appendix A. Considering the nature of our constructs (i.e, the mixed question format of *formalization*), they exhibited satisfactory reliabilities. To assess the reliability of our mixed dichotomous Likert-type scale indictors for *formalization*, we utilized Mplus 4.1 (Muthén and Muthén, 2006). For the continuous indicators in *Family Firm*

Identification and *Family Firm Commitment* SPSS 16.0 was utilized. We provide extensive tests for construct validity in Appendix A, where we also list the utilized items.

Dependent variable(Y) – Family Firm Performance. Prior research (e.g., Kellermanns, Eddleston, Barnett and Pearson, 2008; Schulze et al., 2001) and arguments rooted in agency theory (Jensen and Meckling, 1976) suggest that a firm's growth rate is a reliable, if not superior, performance measure in family firms. When compared to other performance indicators, family firms have no incentive to manipulate sales growth, however, as privately held firms; they might be tempted to underreport income-based performance indicators (Daily and Dollinger, 1992; Dess and Robinson, 1984; Schulze et al., 2001). Consistent with prior research the Mass Mutual survey utilized a six-point, nominal scale for growth that included the following options regarding sales: Decreased, no change, increased 1–5%, increased 6–10%, increased 11–20%, and increased 21% or more (Cavusgil and Zou, 1994; Schulze et al., 2001). Prior research has found this measure to be reliable. Specifically, such measures of performance have been shown to be reliable, especially when reported anonymously (e.g., Tan and Litschert, 1994).

Independent Variables (X) – Family Commitment and Moderator (Z) – Family firm identification. Our *family firm commitment* and *family firm identification* items were adapted from Klein et al. (2005). While prior research combined elements of multiple scales to create a culture scale (e.g., Klein et al., 2005), we split the scale into two separate subscales of family commitment ($\alpha = .87$) and family firm identification ($\alpha = .69$), to provide a more fine-grained assessment of the constructs and to ensure validity. Indeed, our analysis reported in Appendix A shows a clean separation of the constructs and supports this separation.

Mediators (M) – Formalized Governance Mechanisms. *Formalized governance mechanisms* refers to the degree to which formal management and control processes are used by the family

firm (Gedajlovic et al., 2004). Based on the literature (Chua et al., 2009a; Gedajlovic et al., 2004), we utilized items that are believed to curtail nepotism, and enhance governance and planning. Sample items include: "Family members are compensated at market rates" "Does the firm have a strategic plan." Because these items were measured utilizing different scales, the final construct is based on a polyserial matrix output that generates standardized relationships among the variables. The Mplus 4.1 calculated alpha of .66 was acceptable considering the nature of the construct.

Control Variables. Five control variables were utilized in our study. First, we controlled for firm size by utilizing a log transformation of total firm sales to correct for skewedness. Larger family firms may have more organizational resources at their disposal to facilitate entrepreneurial behavior and subsequent growth (Kellermanns et al., 2008). In addition, we controlled for firm age to limit potential affects of liability of newness (Stichcombe, 1965). To control for industry specifics related to sales growth, we utilized data from the S&P index. The effect of ownership on compensation policy was controlled for by using the number of employed family members and the degree of family ownership (measured by percentage of stock held by the family). These indicators have been identified as key definitional aspects of family firms (e.g., Chua, Chrisman and Sharma, 1999).

4.3 Analytical Approach

Our analysis follows the research methodology of Edwards and Lambert (2007), who propose the simultaneous testing of moderation and meditation effects. [1] By integrating

[1] Traditionally, moderation and mediation are separately analyzed, and results are interpreted together to infer combined effects of moderation and mediation (Edwards and Lambert, 2007). Alternatively, in subgroup analysis the sample is split into subgroups based on different levels of the moderator variable, and mediation is then examined within each subgroup (Wegener and Fabrigar, 2000). A third approach incorporates moderator variables in a causal steps procedure for assessing mediation. In this framework proposed by Baron and Kenny (1986), one tests whether a previously significant moderator effect is no longer significant after controlling for a mediator

moderated regression analysis and path analysis, Edwards and Lambert's (2007) propose that mediation should be tested in the form of direct, indirect, and total effects; which then explain how paths constituting these effects vary across levels of the moderator variable. Specifically, they use the principle of simple slopes from the moderated regression approach (Aiken and West, 1991) to test direct, indirect, and total effects at selected levels of the moderator variable (Stolzenberg, 1980; Tate, 1998).

The model proposed in Figure 1 is a total effect moderation model (for details please refer to Edwards and Lambert, 2007). To facilitate interpretation of the equations below, the variables in our model were labeled Y (dependent), X (independent) and Z (moderator):

$$M = a_{01} + a_{X1}X + a_{Z1}Z + a_{XZ1}XZ + e_{M1} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

$$Y = b_{02} + b_{X2}X + b_{M2}M + b_{Z2}Z + b_{XZ2}XZ + b_{MZ2}MZ + e_{Y2} \ldots\ldots\ldots(2)$$

Substituting equation (1) in equation (2), and applying algebraic manipulations, the final model equation (3) may be written as:

$$Y = [b_{02} + b_{Z2}Z + (a_{01} + a_{Z1}Z)(b_{M2} + b_{MZ2}Z)] + [(b_{X2} + b_{X2}Z) + (a_{X1} + a_{XZ1}Z)(b_{M2} + b_{MZ2}Z)]X + e_{Y2} + b_{M2}e_{M1} + b_{MZ2}Ze_{M1} \ldots\ldots\ldots\ldots\ldots \quad (3)$$

The equations are estimated with OLS regression, utilizing bootstrapping techniques (Edwards and Lambert, 2007); a procedure that repeatedly estimates coefficients with a bootstrap sample to generate a distribution of the product of two variables. Each bootstrap sample consists of *N* cases (*N* is the size of the original sample) randomly sampled with replacement from the original sample. Coefficient estimates from each bootstrap sample are used to compute the product, and these products are rank ordered to locate percentile values that bound the desired confidence interval (e.g., the 2.5 and 97.5 percentiles for a 95% confidence interval). Bias

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variable (Baron and Kenny, 1986). Unfortunately, these approaches suffer from various methodological problems that seriously undermine their utility. Briefly, strong assumptions or invalid inferences due to independent tests are major problems (Edwards and Lambert, 2007).

corrected confidence intervals are estimated by correcting for differences between the product from the full sample and the median of the products estimated from the bootstrap samples (Efron and Tibshirani, 1993; Mooney and Duval, 1993; Stine, 1989). As recommended, we used a bootstrap sample of 1000 to yield reliable estimates. Once the coefficients were estimated and confidence intervals established, direct, indirect, and total effects were estimated. As suggested by Aiken and West (1991), we used one-standard deviation above and below the family firm identification mean when plotting the moderation effects.

4.4. Model Estimation and Results

The means, standard deviations, and zero-order correlations are shown in Table 2. The estimations are portrayed in Table 3a and Table 3b.

Insert Table 2, 3a and 3b about here

We used equations (1) and (2) to assess the model, and evaluated inferences using estimations in the form of an equation (3). We utilized estimation methods proposed by Edwards and Lambert (2007). Equations (1) and (2) were estimated using SPSS 16.0 using the regression module. The constrained nonlinear regression (CNLR) module was used to estimate coefficients from 1,000 bootstrap samples to estimate confidence intervals. The CNLR module develops bootstrap samples, and writes estimated regression coefficients for each sample in an output file. Using the default loss function of the CNLR module, which minimizes the sum of squared residuals, OLS coefficient estimates and CI cutoffs were estimated (Edwards and Lambert, 2007). Individual coefficients from Equations (1) and (2) were tested using the standard errors reported by the regression module. Products of coefficients, such as indirect and total effects, were tested with bias corrected confidence intervals based on the bootstrap coefficient estimates

generated by the CNLR module. These confidence intervals and estimations were used to compute direct, indirect and differences between paths as shown in Equation (3).

First, we report the main effects. As reported in Table 3(a), the main effect for formalized governance mechanisms is marginally, negatively related to performance (b_{m2}=-.059; p=.08), refuting Hypothesis 1. Family firm commitment is negatively related to formalized governance mechanisms (a_{X1}=-.400; p=.02), thus indicating the opposite direction than we proposed in Hypothesis 2. Lastly, higher levels of family firm commitment are positively related to performance (b_{X2}=.491; p=.03), supporting Hypothesis 3.

Although we did not explicitly formulate a mediation hypothesis we will report the findings in more detail below. The indirect effect of formalization is the product of a_{X1} and b_{M2} that equals =.0236 (-.400*-.059), p=.03 (c.f., Baron and Kenny, 1986 for calculation of standard error). Therefore, formalized governance mechanisms was found to partially mediate the relationship between family firm commitment and firm performance. Below, we describe how this mediation is moderated by family firm identification.

Our moderator, family firm identification exerts a direct positive effect on performance (b_{Z2} =.187; p=.01). Family firm identification also positively moderates the relationship between family firm commitment and performance (b_{XZ2}=.288; p=.01). Thus, with increasing levels of commitment, family firms may further enhance performance in the presence of higher levels of family firm identification. These results support Hypothesis 4 (Figure 2). Hypothesis 5 argued that family firm identification positively moderates the relationship between family firm commitment and formalized governance mechanisms. However, our findings suggest that committed family members with high family firm identification resist formalization. Indeed, the a_{XZ1} (-.945; p=.10) is marginally significant and opposite to the hypothesized relationship

(Figure 3). Hypothesis 6 argues that family firm identification enhances the relationship between formalized governance mechanisms and performance (b_{MZ2}). While the effect of formalized governance mechanisms on performance is negative and marginally significant, the presence of family firm identification changes this relationship, suggesting moderation (bm_{Z2}=.111; p=.06). That is, formalized governance mechanisms positively influence the performance of firms with high family firm identification, supporting Hypothesis 6 (Figure 5). We further plotted the interaction terms to facilitate interpretation (Aiken and West, 1991; Cohen, Cohen, West and Aiken, 2003), please see Figure 2 to 4. A detailed elaboration on the interactions is also provided in the discussion.

Insert Figure 2 to 4 about here

To fully utilize the benefits from the approach suggested by Edwards and Lambert (2007), we used the coefficients estimated thus far to estimate direct, indirect and total effects, through a bootstrap technique. For the low centralized value of family firm commitment our cutoff was -.129 and for the upper level our cutoff was +.129 (values calculated by the bootstrap output). For illustrative purposes, the first stage of indirect effect for family firm commitment (a_{X1}+a_{XZ1}Z) equals .4+[-.945*-.129]=.522. While the second stage direct effect (b_{x2}+b_{XZ2}Z) equals –.491+[.111*-.129]=-.073. The indirect effect of low family firm commitment is a product of first and second stage effects and equals (.522*-.073) = -.038. The total effect, the sum of direct effect (b_{X2}+b_{XZ2}*-.129) and indirect effect [(a_{X1}+a_{XZ1}Z) (b_{x2}+b_{XZ2}Z)], equals [(-.491)+(.288)(-.129)]+[.522*-.073]=-.567. For high family firm commitment we proceeded with calculations in a similar manner, except the cutoff for these calculations was one standard deviation above the mean of family firm commitment (i.e. .129). Table 3b, summarizes the overall model.

We see that the difference between effects of low and high family firm commitment is consistently positive except for first stage effects. In the overall model the indirect effects show stronger significance for high levels of family firm commitment (.023; p=.025) than for low levels of family firm commitment. In addition, the direct effects are marginally significant for low levels of family firm identification (.454; p=.06), and highly significant for high levels of family firm identification (.528; p=.000). Overall, the direct effect for high levels of identification is significantly different from low levels of identification. The total effects for the model show a small but significant difference in the overall effects of family firm identification in exploiting the effects of family firm commitment on family firm performance [high = .552, p=.03; low = .474, p=.02; difference = .077, p=.003).

4.5 Robustness Checks

Our first concern was our response rate. In light of the 20 page long questionnaire, a low response rate was not surprising and seemed acceptable. To mitigate any potential concerns, we compared our sample with other large scale samples to assess the representativeness of our respondents. We compared our sample with the 1997 National Family Business Survey (NFBS) (Winter, Danes, Koh, Fredericks and Paul, 2004) and the 1995 survey of American family businesses (AFB) as reported by Schulze et al. (2003a). Our survey respondents were quite similar in respondent age (mean=58.13; sd=11.90) and family firm age (mean=50.42; sd=29.22) compared to NFBS (respondent age: mean=60.13; sd=13.26; firm age: mean=51.25; sd=29.26) and AFB data (respondent age: mean=59.43; sd=12.03; firm age: mean=52.21; sd=28.71). However, the median sales for the NFBS, which used continuous data, was $85,000, which is substantially lower than the values observed in our study. This can be attributed to the fact that the NFBS study included many home-based and life-style businesses. In comparison, our family

firms were associated with centers for family business, which tend to attract larger firms, suggesting that our data is more generalizable to established or larger family firms (Eddleston, Otondo and Kellermanns, 2008b). However, our sample composition is comparable to the AFB sample from 1995 (as reported in Schulze et al., 2003a). Table 1 reports the summary of our comparisons and shows that the parameters between the studies were not significantly different.

Insert Table 1 about here

To address any multicollinearity concerns, we centered our independent variables. Other than the expected high correlation between industry and sales-growth, the correlations between the variables were low. We calculated the variance inflation factors (VIF) and Condition index. Since all VIF values were below 10 (VIF = 3.01) and the Condition index was below 30 (Condition Index = 20.04), multicollinearity did not seem to be a problem in this study (Hair, Anderson, Tatham and Black, 1998; Tabachnick and Fidell, 1996).

Additionally, we used a test suggested by Podsakoff and Organ (1986). We entered all items used in our study into a factor analysis. Five factors with Eigenvalues > 1.0 were extracted, which accounted for 76.23% of the variance. The first factor accounted for 22.09 %, while the remaining factors accounted for 54.14 % of the variance, respectively. Because more than one factor was identified, and none of the factors accounted for the majority of variance explained, common method bias did not appear to be a concern. Furthermore, since one of our control variables was obtained from the S&P index, common method bias seems unlikely in this study.

We also addressed the potential for endogeneity in our paper. Family member commitment, formalized governance mechanisms, and family firm identification could result from the growth of the business. We use a recently developed test -- Cragg–Donald statistic (Kleibergen and Paap, 2006) to assess the joint significance of our three exogeneous variables

with a list of multiple instrumental variables. We ran ivreg2 in Stata 11, to show that our instrumental variables are relevant; indeed our Cragg-Donald statistic was 33.122 and higher as the suggested critical value of 24.71 by Stock and Yogo (2005). We then conduct tests for exogeneity using Wu-Hausman F-test and the Durbin-Wu-Hausman test. Non-significant *F*-tests and non-significant chi-square tests as part of the Durbin-Wu-Hausman test suggest that the independent variables in question are exogenous, and that their estimates are unbiased and can thus be reported (Davidson and Mackinnon, 1983). Using ivreg2 in Stata 11, our findings suggest that the independent variables can be considered exogenous and that the estimation is not biased (Family firm commitment: Wu-Hausman *F-test* = .749; p = .39, and Durbin-Wu-Hausman test χ^2 *test* = .753; p = .39; formalized governance mechanisms: Wu-Hausman *F-test* = .509; p = .48, and Durbin-Wu-Hausman test χ^2 *test* = .511; p = .47; family firm identification: Wu-Hausman *F-test* = .837; p = .37, and Durbin-Wu-Hausman test χ^2 *test* = .882; p = .35).

Furthermore, we provide robustness checks with alternate dependent variables (Appendix B). Although we found significant results for our performance variable sales growth, it is quite possible that such results may not hold with other performance variables or with broader performance outcomes. To assess these possibilities we tested the current model with an alternate performance measure – employee growth – and with a broader performance measure – satisfaction with firm performance. As shown in Appendix B, the results of the moderated-mediation models were similar to those found with our original performance variable.

Lastly, the nature of the industry could affect our results and therefore we compared family firms in technology sectors (SICs 35, 36, 38, and 73) and non-technology sectors. We did not find differences in relationships. Furthermore, firms with non-family CEOs could display a

different dynamic. To address this issue we split the sample into family vs. non-family CEOs, and compared results. Again, we found regression results consistent with our original findings.

5. Discussion

5.1 Theoretical Implications

In an effort to make sense of the family firm research "jungle" (Rutherford et al., 2008), our study attempts to synthesize recommendations drawn from research rooted in agency theory and stewardship theory. In line with agency theory, we first tested the effect of formalized governance mechanisms on family firm performance since these mechanisms are believed to curb the dysfunctional aspects of family involvement thereby contributing to family firm success. Then, we integrated thoughts from the stewardship perspective that views positive family relationships as a benefit to family firm performance. As such, our study aimed to determine if family firms that heed the advice of agency theory and harness the stewardship of the family enjoy superior performance. While we tested our hypotheses with sales growth as our performance variable (see also Schulze et al., 2003b; Schulze et al., 2001), our findings remained consistent with alternative performance measures (please see Appendix B). Accordingly, we simply refer to "performance" in the subsequent paragraphs.

While we did not set out to prove or disprove agency versus stewardship theory predictions, our findings appear to offer more corroboration to the stewardship perspective of family firms. As predicted, family firm commitment was found to be positively associated with firm performance and family firm identification further enhanced this effect. These findings suggest that the family can have both direct and indirect influences on the family firm and that consideration of the family is key to understanding family firms. Our study also substantiates previous claims in the stewardship literature that the family can provide a competitive advantage

to family firms; a resource that differentiates the most successful family firms (i.e., Corbetta and Salvato, 2004; Eddleston and Kellermanns, 2007).

Interestingly, our study showed that formalized governance mechanisms only had a positive effect on performance when family firm identification was high. We believe that this result further substantiates the applicability of stewardship theory to family firms and may indicate that agency theory predictions should be tempered by stewardship theory insights. This finding also indicates that the family plays an important role in whether agency theory advice aids family firm performance and that future family firm research rooted in agency theory should consider the complexity of the family. The literature has long maintained that family firms are subject to counteracting forces (Tagiuri and Davis, 1992). Due to heterogeneity among family firms, formal management practices may not be universally beneficial to all firms or similarly related to firm performance (Bloom & Van Reenen, 2007). The adoption of formal management practices may also cause adjustment costs (Bloom & Van Reenen, 2007).

Contrary to our prediction, we found that family firm commitment was negatively related to formalized governance mechanisms. Perhaps highly committed family members, who are likely characterized as stewards, regard formalized governance mechanisms as unnecessary impediments to business processes. For example, founders who control ownership and decision-making often hesitate to institutionalize governance processes because such processes are likely to impede the execution of their strategic intent (Gedajlovic et al., 2004). However, while the lack of formal governance processes may benefit founder-managed and owned family firms (Villalonga and Amit, 2006), the reluctance to formalize governance may have negative consequences at later stages in the family firm's life-cycle.

When considered in conjunction with the rest of the results, our findings indicate that family firm commitment contributes to family firm performance directly and indirectly through its negative effect on formalized governance mechanisms. As such, family firm commitment appears to be an important resource for family firms. Indeed, we were the first study to show the positive effects of commitment on family firm performance, which has been suggested in the family firm literature (e.g., Sharma and Irving, 2005), but never empirically tested. Our findings are hereby consistent with stewardship theory which would suggest that committed family members show extra-role behaviors that improve firm functioning and performance. This finding is important in the overall effort to build a theory of the family firm (e.g. ,Chrisman, Chua and Steier, 2003; Steier, Chrisman and Chua, 2004), since the relationship between commitment and performance has not been consistently found in non-family firms (e.g., Mathieu and Zajac, 1990). Thus, our finding provides a unique family firm specific characteristic and consequence.

Family firm identification was found to have a positive effect on performance. In addition, family firm identification moderates the relationship between family firm commitment and formalized governance mechanisms. Specifically, family firms with high identification reported less formalized governance mechanisms when their family firm commitment was high in comparison to when their identification was low. In contrast, family firms with high identification but low family firm commitment had a great degree of formalized governance mechanisms. Therefore, families that are aligned with the tenets of stewardship theory, rich in family firm commitment and identification, may be best positioned to succeed, relying less on formalized governance mechanisms and more on family support as they manage their businesses.

Finally, we need to discuss the benefits of Edward's and Lambert's (2007) approach. One of the benefits of Edwards and Lambert's (2007) framework is the ability to test moderated

mediation relationships. In other words, one may simultaneously test the moderated-mediation, unlike two-step processes previously used. This allows for the separate estimation of both first stage and second stage effects, as well as direct, indirect and total effects of our moderator variable (family firm identification). In our study we tested whether the relationship between family firm commitment and firm performance would be mediated by formalized governance mechanisms and if these relationships were moderated by family firm identification. We found formalized governance mechanisms to partially mediate the aforementioned relationships and found family firm identification to be a potent moderator. The simple effects (left side of Table 3b) detail the influence of family firm commitment on formalized governance mechanisms (first stage effects) and commitment on performance (second stage effects) with high and low levels of family firm identification, respectively. The direct and indirect effects on performance represent the overall performance effects of the entire model (right side of Table 3). Specifically, higher levels of family firm identification are associated with higher levels of family firm performance in comparison to scenarios with low levels of identification (.552 vs. .474, difference p =.003). These results confirm the importance of family firm identification to family businesses.

5.2 Limitations, Future Research and Conclusion

Before discussing the implications of our findings, a few limitations of our study should be noted. Our research design was cross-sectional and a longitudinal design would have been preferred. Additionally, common-method bias (all but one control variable were collected from the same questionnaire) can also be regarded as a limitation. However, our analysis suggests that common method bias is not a significant concern of our study (Podsakoff and Organ, 1986) and prior research has shown that even if such a bias is present, it is unlikely to significantly affect the results or conclusions (Doty and Glick, 1998; Spector and Brannick, 1995).

We need to mention that we relied on self-reported data of sales growth to assess performance and the other performance variables utilized in Appendix B. Although this approach has been consistent with prior research on family firms (e.g., Kellermanns et al., 2008; Schulze et al., 2001), objective performance measures to validate our self-reported measures would have been desirable. Because the family firms in our sample were not publicly traded, this data was not available. However, our utilized performance indicator has distinct advantages, as it is not prone to be underreported like income-based performance indicators (Daily and Dollinger, 1992; Schulze et al., 2001). We further need to mention that family business researchers have called for more multi-respondent studies. However, empirical deployment of such data collection strategies has been rare. Although multiple respondents could add to the reliability, "appealing, multi-respondent surveys are rare and occur almost exclusively in studies of large firms" (Rindfleisch, Malter, Ganesan and Moorma, 2008, p. 273). Not only is locating multiple respondents difficult in privately owned firms, but this is further complicated in family firms since the nature of involvement of family members can vary substantially in the firm. However, when single and multiple-respondents in family firms have been compared, high levels of consistency were observed (e.g., Eddleston et al., 2008a). Therefore, relying on single respondents, particularly the CEO, does not seem to pose a serious problem in family firm research. Nevertheless, future research is encouraged to validate our findings utilizing multiple-respondent data.

We also want to point out additional directions for future research. We investigated the commitment—performance relationship. Earlier family firm studies addressed the importance of commitment in the succession process (Sharma and Irving, 2005) and on strategic flexibility (Zahra et al., 2008). Future research can expand this research by focusing on how commitment affects additional outcomes like satisfaction, withdrawal and citizenship behaviors (e.g., Meyer,

Stanley, Herscovitch and Topolnytsky, 2002), which have not been investigated in the family firm literature as of yet. Also, the study of family firm identification deserves further attention. Here, the application of social identity theory (Hogg and Abrams, 1988; Hogg and Terry, 2000; Tajfel and Turner, 1979) offers promise. Indeed, the antecedents and consequences of family firm identification are not well understood (e.g., Eddleston and Kellermanns, 2007). For example, how family firm identification affects the reputation building efforts of the family business as well as an individual's desire for transgenerational succession remain unexplained. Lastly, identity conflicts in family firms need to be empirically investigated (Shepherd and Haynie, 2009).

Contrary to expectations, our findings showed formalized governance mechanisms to be marginally negatively related to performance. Recent research suggests that not all formalized management practices are adopted quickly by family firms and that founder-effects often delay the implementation of such practices (Bloom and Van Reenen, 2007). Further, because family firms are heterogeneous (Westhead and Howorth, 2007), formalized governance mechanisms may not be equally beneficial for all types of family firms. As Bloom and Reenen (2007) point out, the effects of different governance forms can vary substantially in firms across countries. Accordingly, future research should identify governance mechanisms that benefit family firms' idiosyncratic needs and take cultural influences and institutional norms into account.

In conclusion, our paper applied the rigorous methodological approach of moderated mediaton to investigate the link between agency and stewardship theory predictions in family firms. We contribute to the growing theory of the family firm (e.g., Chrisman et al., 2003), by showing the unique benefits of family involvement and answering the call for more sophisticated

methods in family firm research (e.g., Sharma, 2004). We hope our findings and chosen methodology spark future research in the realm of family business research.

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Table 1: Comparison of Samples for representativeness

	AFB vs. Current Study		NFBS vs. Current Study	
	t-test	p-values	t-test	p-values
Firm Size	0.71	0.24	0.80	0.21
Family Ownership	0.70	0.24	1.07	0.14
Sales Growth	0.85	0.20	1.22	0.11
Firm Age	0.52	0.61	1.13	0.26
Ratio of total family employees and total employees	0.97	0.17	1.09	0.14

Table 2: Correlation Table

	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
1. Firm Age	50.52	29.15											
2. Firm Size	98.47	35.43	.13**										
3. Industry Sales Growth	4.23	7.52	.02	.07*									
4. Number of Family Members Employed	20.62	21.24	.05	.05†	.04								
5. Degree of Family Ownership	0.79	0.55	.06†	.06†	.03	.11*							
6. Family Firm Commitment	3.24	1.29	-.14**	.02	-.01	.01	0.06*	(0.87)					
7. Family Firm Identification	3.16	1.65	-.06	-.19**	-.03	-.08*	0.03*	0.03	(0.69)				
8. Formalized governance mechanisms	2.64	1.82	.05	.00	.10*	.07*	-0.01	0.26**	.03†	(0.66)			
9. Performance (Sales growth)	2.23	2.02	.09*	.01	.41*	.04	0.08†	0.06	0.08*	.09*			
10. Employee Growth (for robustness test)	0.06	0.18	.06*	.03	.20*	.04	.06	.08	.09*	.06	.11*		
11. Satisfaction with firm performance (for robustness test)	2.86	0.91	.10*	.02	.37*	.03	.09	.05	.11*	.10*	.13*	.08	(0.92)

N = 663: *† p<0.1, * p<0.05, ** p<0.01; numbers in parentheses along the diagonal represent the reliabilities.*

Table 3a: Coefficient Estimates

Moderated Variable	a_{X1}	a_{Z1}	a_{XZ1}	R^2	b_{X2}	b_{M2}	b_{Z2}	b_{XZ2}	b_{MZ2}	R^2
Coefficient	-.400	.562	-.945	.07**	.491	-.059	.187	.288	.111	.341*
p-value	.02	.000	.10	.000	.03	.08	.01	.01	.06	.04

Note. N = 663. Entries under columns labeled a*X1*, a*Z1*, and a*XZ1* are unstandardized coefficient estimates from Equation 1, which uses formalized governance mechanisms as the dependent variable. Entries under columns labeled b*X*2, b*M*2, b*Z*2, b*XZ*2, and b*MZ*2 are unstandardized coefficient estimates from Equation 2, which uses performance as the dependent variable. Coefficients are from equations that use Family firm identification as the moderator variable.

Table 3b: Analysis of Simple Effects

Moderator	Stage		Effect		
	First	Second	Direct	Indirect	Total
Family-firm identification					
Low	-.278	-.073	.454	.020	.474
p-value	.058	.003	.060	.290	.028
High	-.522	-.045	.528	.023	.552
p-value	.013	.013	.000	.025	.030
Difference	-.244	.029	.074	.003	.077
p-value	.028	.060	.000	.568	.003

Figure 1: Hypothesized Model

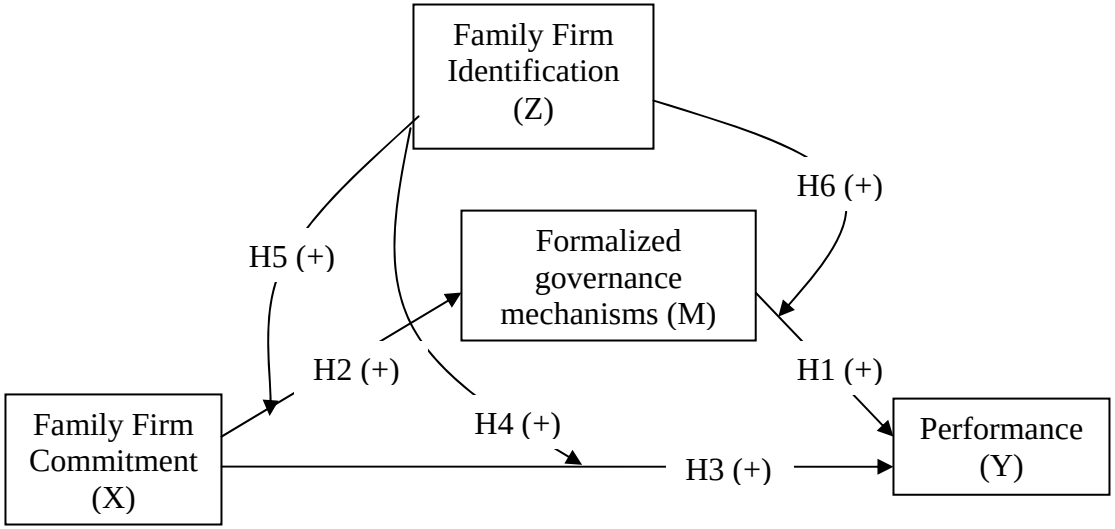


Figure 2: Hypothesis 4

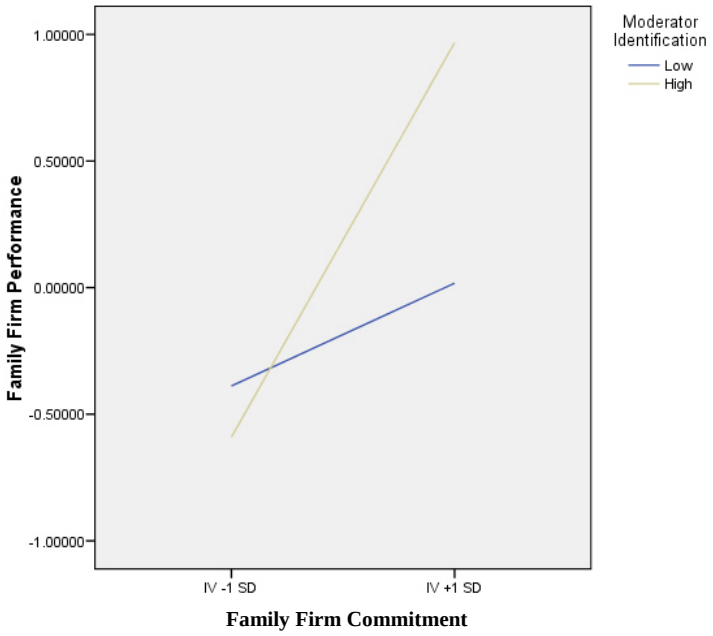


Figure 3: Hypothesis 5

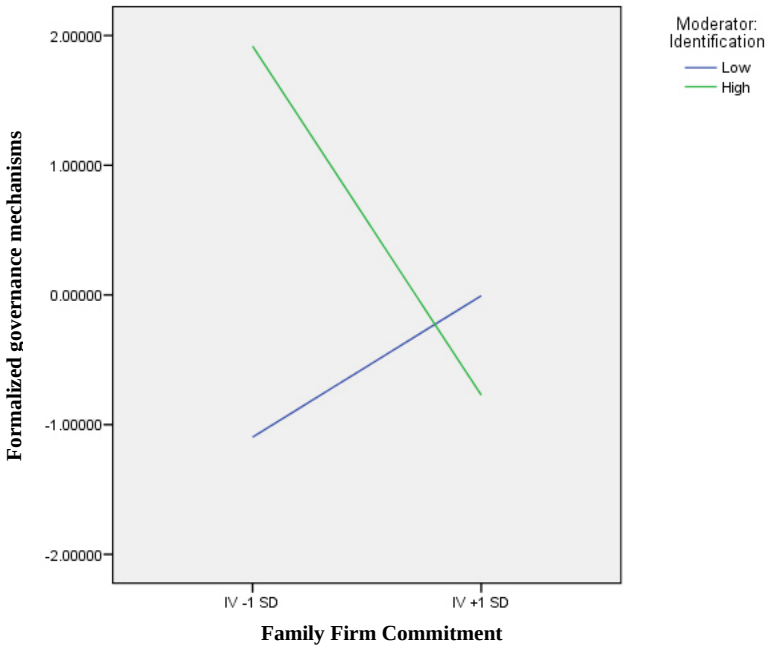
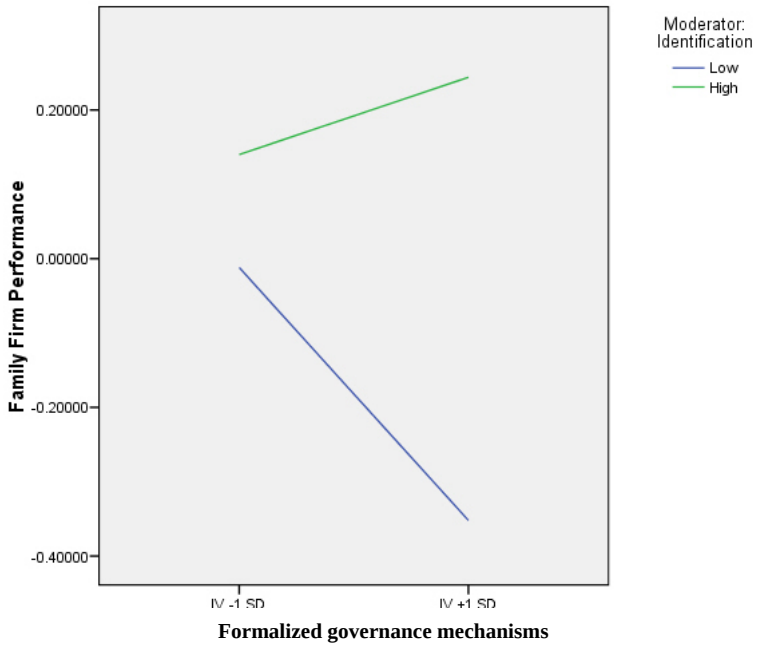


Figure 4: Hypothesis 6



Appendix A

This appendix focuses on evaluating the constructs of family firm commitment, formalized governance mechanisms, and family firm identification. We test (a) dimensionality (b) establish construct validity and (c) test reliability. In addition, we conduct validity tests for (a) face validity (b) convergent validity (c) discriminant validity and (d) concurrent validity. We follow general guidelines developed by Netemeyer et al. (2003) and Schwab (1980).

1. Dimensionality.

First, because the scale items are a mix of dichotomous and continous measures, traditional Maximum Likelihood (ML) estimation method may not be valid (Byrne, 2001). To address this issue we use a Robust Weighted Least Sqaures (RWLS) approach widely used in the literature (Curran, West and Finch, 1996). The statistical software EQS 6.1 was employed for this analysis. The RWLS method requires samples greater than 500 cases. We further test for non-normality in the data using observed variables and following the rules of thumb suggested by West et al. (1995) for a sample size greater than 500, allowing for moderately non-normal data (univariate skewness < 2, univariate kurtosis < 7). RWLS accommodates any non-normality and bimodal distributions for the dichotomous items. In the data, the absolute values of skewness and kurtosis for any of the items were not more than 1.263 and 2.441, respectively. The absolute values of skewness and kurtosis for sales growth, employee growth, and satisfaction with firm performance variables were no more than 1.021 and 1.057, respectively. The psychometric properties of the three constructs were assessed using χ^2/d.f., goodness-of-fit index (GFI) (Jöreskog and Sörbom, 1999), the comparative fit index (CFI) (Bentler and Mooijaart, 1989), and the root mean square error of approximation (RMSEA) (Hu and Bentler, 1999). χ^2 is sensitive to sample size and assumes a perfect fit between the hypothesized model and the sample data. Thus, in complex models χ^2 tends to be large and may not be a useful indicator of model fit. Values of GFI and CFI should be greater than, 0.90. RMSEA values less than 0.06 represent good fit, and values as high as 0.10 are acceptable (e.g., Browne and Cudeck, 1993).

The primary goal of testing construct dimensionality is to measure its effect on the dependent variable accurately, disentangling its effect from the unwanted variation of any other constructs (e.g., Netemeyer et al., 2003). Thus, as a pre-requisite for reliability and validity, unidimensionality requires that a set of items forming a construct measure have just one thing in common. As shown in Table A-1(a), we conduct first order and second order confirmatory factor analysis. For first order factor loadings all the item loadings had a significant t-ratio and were well above recommended values - t>1.96; p<0.001. Furthermore, first-order model fit indices were: χ^2=178.215; df=74; p=0.000; χ^2/df=2.408; GFI = 0.912; CFI = 0.946; RSMSEA = 0.062. We further tested two other possibilities (a) a second-order factor model, (b) a single model with all the items loaded on a single factor. For the second order factor model, none of the loadings of the constructs from the first-order model were significant. Second-order fit indices were: χ^2=260.05; df=71; p=0.000; χ^2/df=3.662; GFI = 0.717; CFI = 0.739; RSMSEA = 0.218. The combined model with all items as a part of a single construct was: χ^2=273.074; df=77; p=0.000; χ^2/df=3.546; GFI = 0.717; CFI = 0.739; RSMSEA = 0.218. Alternatively, we also tested if family firm identification and family firm commitment could be explained under one construct. Here, a worse fit was observed: χ^2=228.48; df=72; p=0.000; χ^2/df=3.173; GFI = 0.804; CFI = 0.834; RSMSEA = 0.197. For higher order constructs, the loadings from first-order constructs must be greater than 0.70 (Chin, 1998). However, as shown in Table A-1(a) the higher

order construct for family firm identification and family firm commitment was no higher than 0.31. Overall, a three-factor model had the best fit.

Table A-1 (a): Dimensionality

Construct	Items	Mean	Std. Dev	First Order loading (t-ratio)	Second-order loading (t-ratio)
Family Firm Identification	Extent to which family has influence on the firm	2.68	0.92	0.82[2]	0.28[1]
(5-point scale)	Extent to which family members share similar values	2.79	0.76	0.75 (7.213)	
	Extent to which family and business share similar values	2.58	0.79	0.76 (9.855)	
Degree of Formalization	Family members are compensated at market rates (Likert-type scale 1-5)	2.71	0.61	0.60	0.31 (1.583)
	Number of shareholder meetings in a year (1, 2, 3, 4, and 5 or more)	2.17	1.10	0.74 (8.358)	
	Does the firm have a strategic plan (Yes/No)	0.31	0.18	0.78 (9.552)	
	Does the firm have a Human Resource Manager (Yes/No)	0.17	0.21	0.72 (8.783)	
Family Firm Commitment	Family members support business	2.82	0.81	0.71	0.19 (1.257)
(5-point scale)	Family members loyal to business	2.38	0.82	0.78 (7.606)	
	Family members value involvement with business	2.15	0.73	0.65 (6.715)	
	Family members proud of business	2.39	0.80	0.76 (8.220)	
	Family members agree with goals	2.86	0.72	0.72 (6.808)	
	Family members positively influence the firm	2.87	0.69	0.78 (7.225)	
	Family members understand and support family decisions	2.55	0.76	0.80 8.254)	

[2] For model identification purposes, the path of each first and second-order factor to its first item is fixed to 1. Therefore, t-ratio for this path is not available

2. Construct Validity.

Based on Schwab (1980) and Netemyer et al. (2003), we conducted construct validity through the following steps (a) face validity (b) convergent validity and (c) discriminant validity.

2.1. Face Validity.

Face validity explains the observational meaningfulness of a construct while content validity explains the theoretical meaningfulness of a construct. In line with practices on construct validity, the items that comprise the constructs were chosen based on an extensive review of the family firm literature review.

2.2. Convergent Validity.

Convergent validity explains the degree to which two or more measures of the same theoretical construct agree (Netemeyer et al., 2003). Because there are no existing validated scales for our explanatory constructs, we cannot provide empirical evidence to support that our constructs are highly correlated to respective independent constructs. Therefore, the AVE was used as an alternative measure for convergent validity (e.g., Bagozzi and Yi, 1988; Fornell and Larcker, 1981). As shown in Table A-1(b), AVEs for the constructs were above 0.5, the threshold recommended by Bagozzi & Yi (1988). Therefore, convergent validity was established.

2.3 Discriminant Validity.

Discriminant validity requires that 'a measure does not correlate too highly with measures from which it is supposed to differ' (Netemeyer et al., 2003, p. 77). We assessed discriminant validity using two approaches. First, as recommended by Fornell & Larcker (1981), discriminant validity was tested by comparing the AVE of each construct with the shared variance between the construct and all other constructs. As demonstrated in Table A-1(b), for each comparison, the AVE exceeds all combinations of shared variances. Therefore, discriminant validity seems present. We also compared differences in χ^2 between constrained and unconstrained models. We conducted this analysis for all three outcome variables – sales growth, employee growth, and satisfaction with firm performance. For the Sales Growth model, the results showed the following differences between constrained and unconstrained models, IV-Mediator ($\chi^2(1)=2.254$; $p<.001$), IV-Moderator ($\chi^2(1)=8.524$; $p<.001$), Moderator-Mediator ($\chi^2(1)=12.441$; $p<.001$). These results suggest sufficient differences between the constructs. For the Employee Growth Model the results were: IV-Mediator ($\chi^2(1)=4.623$; $p<.001$), IV-Moderator ($\chi^2(1)=6.054$; $p<.001$), Moderator-Mediator ($\chi^2(1)=7.158$; $p<.001$), indicating significant differences among the constructs. Finally, for satisfaction with firm performance, the results were: IV-Mediator ($\chi^2(1)=5.265$; $p<.001$), IV-Moderator ($\chi^2(1)=6.110$; $p<.001$), Moderator-Mediator ($\chi^2(1)=8.257$; $p<.001$), which suggests sufficient difference between the constructs. Again, the results demonstrated sufficient differences between the constructs. Therefore, the results support discriminant validity.

Appendix B: Robustness Analysis

To assess if the study results hold with different performance outcomes, we replicated the moderated mediation model using employee growth and satisfaction with firm performance as outcome variables.

Employee Growth was measured as the percentage growth in number of employees over a three-year period. ***Satisfaction with Firm Performance*** was measured with eight items using a five-point scale (1 = very satisfied; 5 = not satisfied at all; reverse coded). The respondent was asked to indicate satisfaction with following firm performance dimensions (i) volume growth (ii) net profit growth (iii) return on investment (iv) profits from investments in growth opportunities (v) increase in cash balances (vi) return on assets (vii) increase in positive cash flow (viii) economic value added The reliability for the scale was 0.92. We found significant convergent and discriminant validity for the two models. Table A2(i) and A2(ii) show the results for employee growth and satisfaction with firm performance. Results were similar to those found with the original outcome variable – sales growth.

Table A2(i): Coefficient Estimates

Moderated Variable	a_{X1}	a_{Z1}	a_{XZ1}	R^2	b_{X2}	b_{M2}	b_{Z2}	b_{XZ2}	b_{MZ2}	R^2
Employee Growth										
Coefficient	-.126	.124	-.384	.04**	.106	-.020	.078	.143	.072	.174*
p-value	.04	.01	.17	.03	.04	.09	.03	.04	.08	.044
Satisfaction with firm performance										
Coefficient	-.414	.507	-.883	.09**	.410	-.062	.172	.291	.118	.353*
p-value	.01	.000	.08	.000	.02	.06	.02	.01	.07	.03

Note. N = 663. For explanations of the labeling, please see the method section of the paper.

Table A2(ii): Analysis of Simple Effects

Moderator	**Stage**		**Effect**		
	First	Second	Direct	Indirect	Total
	Employee Growth				
Low	-0.454	0.041	0.228	-0.019	0.209
p-value	.072	.010	.08	.253	.034
High	0.202	-0.081	-0.016	-0.016	-0.033
p-value	.022	.034	.02	.032	.041
Difference	0.656	-0.123	-0.244	0.002	-0.242
p-value	.020	.072	.02	.660	.022
	Satisfaction with firm performance				
Low	0.396	-0.170	0.143	-0.067	0.076
p-value	.051	.012	.071	.310	.026
High	-1.224	0.046	0.677	-0.057	0.620
p-value	.010	.017	.001	.020	.026
Difference	-1.619	0.216	0.534	0.011	0.545
p-value	.020	.057	.003	.503	.007